

Department of Planning, Housing and Infrastructure

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Hunter Transmission project

State Significant Infrastructure Assessment Report (SSI-70610456)

July 2026





Acknowledgement of Country

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Preface

This assessment report provides a record of the Department of Planning, Housing and Infrastructure's (the Department) assessment and evaluation of the critical State significant infrastructure (CSSI) application for the Hunter Transmission project located within the Muswellbrook, Singleton, Cessnock, Lake Macquarie and Central Coast local government areas, lodged by the Energy Corporation of NSW (EnergyCo). The report includes:

- an explanation of why the project is declared CSSI and who the approval authority is;
- an assessment of the project against government policy and statutory requirements, including mandatory considerations;
- a demonstration of how matters raised by the community and other stakeholders have been considered;
- an explanation of any changes made to the project during the assessment process;
- an assessment of the likely environmental, social and economic impacts of the project;
- an evaluation which weighs up the likely impacts and benefits of the project, having regard to the proposed mitigations, offsets, community views and expert advice; and provides a view on whether the impacts are on balance, acceptable; and
- a recommendation to the decision-maker, along with the reasons for the recommendation, to assist them in making an informed decision about whether project approval for the project should be granted and any conditions that should be imposed.

Executive Summary

This report details the Department's assessment of the critical State significant infrastructure application (CSSI) SSI-70610456 for the Hunter Transmission project. This report will be provided to the Minister for Planning and Public Spaces (the Minister) for his consideration when deciding whether to approve the carrying out of the CSSI.

Project

The Energy Corporation of NSW (EnergyCo) proposes to develop the Hunter Transmission project (the project), which involves the construction and operation of 110 kilometres (km) of 500 kilovolt (kV) transmission line between Bayswater in the Upper Hunter and Olney in the Lower Hunter. The project spans the Muswellbrook, Singleton, Cessnock, Lake Macquarie and Central Coast local government areas.

The project would connect the state's existing 500 kV transmission lines, creating a 500 kV ring of transmission infrastructure and would provide the backbone of the state's new electricity grid and increase transmission capacity between Bayswater and Olney and enable the transfer of energy generated from the Central-West Orana Renewable Energy Zone (CWO REZ) and New England Renewable Energy Zone (NE REZ) into the National Electricity Market (NEM).

The project is expected to generate 830 construction jobs and 10 operational jobs. If approved, construction of the project is proposed to commence in 2027 and take approximately 30 months.

Strategic context

The NSW energy system and broader National Electricity Market (NEM) is undergoing a complex and accelerating transformation. The impending closure of the Eraring, Bayswater and Vales Point power stations located in the Hunter region, with a combined capacity of 6,840 MW, pose a significant challenge to the State's energy security and underscore the critical need for new transmission line infrastructure to connect new renewable energy sources to the energy market.

The project forms the northern network option of the 500 kV Sydney Ring, supporting the delivery of energy from renewable projects in the Central-West Orana and New England REZs into the NEM.

Statutory context

The project is classified as CSSI under Section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is listed as CSSI under Section 30 of Schedule 5 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning systems SEPP). Consequently, the Minister is the approval authority.

Engagement

The Department exhibited the environmental impact statement (EIS) from 27 August 2025 until 24 September 2025 (29 days) and received 128 unique submissions from the public (93 in objection, 10 in support and 25 comments) and 35 submissions from special interest groups (15 in objection, two in support and 18 comments). Key concerns raised related to biodiversity, aviation, social impacts and traffic.

The Department received advice from 22 government agencies and submissions from four host councils including Muswellbrook, Singleton, Cessnock and Lake Macquarie City Council. The Department engaged with local councils and relevant government agencies on the issues, and each recommended implementing mitigation and management measures. The Department visited the project area and surrounds from 3 to 4 November 2025.

Assessment

Energy rebuild

The Department considers that the project could play an important role in:

- reinforcing the grid to make sure clean energy from wind and solar projects in the CWO REZ and NE REZ can be reliably transferred to consumers;
- enhancing the capacity of the NEM, by providing an additional 5 gigawatts of transfer capacity between Bayswater and Eraring;
- lower prices for residents of NSW and the broader NEM by enabling power transfers between regions and encouraging more efficient investment in lower-cost generation sources; and
- facilitating the shift to lower carbon emission energy system as coal fired generators retire.

Consequently, the Department considers that the project is critical for energy security and reliability in NSW and in supporting the rebuild of the energy system.

Consideration of alternatives

The preferred project route prioritises the use of government-owned land (including NSW State forests and Commonwealth Government land), mining and existing energy land (around 86% combined) with limited impacts on private land (about 7%) and separation from residential areas. While several public submissions raised concerns regarding the corridor selection process and associated impacts to biodiversity and amenity, the Department considers that the preferred alignment represents a justified and balanced outcome.

Biodiversity

EnergyCo has strategically designed the project to avoid and minimise biodiversity impacts by prioritising co-location with existing disturbed corridors, including mining sites and cleared land. Of the approximately 945 hectares (ha) of native vegetation to be impacted, around 44% of this is in varying degrees of disturbance, including derived grasslands, thinned / poor / plantation woodlands associated with previous clearing, mine rehabilitation and hardwood forestry plantations.

To regulate biodiversity impacts, the Department has recommended conditions requiring EnergyCo to implement a Biodiversity Management Plan that details measures to avoid, minimise, monitor and report on impacts to biodiversity values. The recommended conditions also require EnergyCo to retire the relevant biodiversity credits in accordance with the NSW *Biodiversity Conservation Act 2016* and associated regulation.

The recommended conditions also allow a reduction in credits post approval with the aim to incentivise EnergyCo to achieve further reductions in impacts during the final detailed design of the transmission line. This condition required concurrence of the Minister for Environment under the BC Act which was granted on 17 June 2026.

Overall, the Department considers that, subject to the recommended conditions, the project would have an acceptable impact on the biodiversity values of the locality.

Traffic and Transport

The potential traffic and transport impacts would largely be restricted to the construction period and traffic generation during operation would be minimal with a negligible impact on roads. The Department's assessment has therefore focused on the construction-related impacts, including increased traffic volumes, cumulative traffic impacts, road safety, property access and road conditions.

While the additional traffic movements would bring a noticeable increase to the local road environment, all roads would continue to operate within the existing capacity throughout the construction period. Potential impacts on narrow local and Forestry roads and near sensitive receivers can be effectively managed through the proposed mitigation measures, including completing necessary road upgrades prior to commencing construction, restricting construction traffic during peak periods, and implementing other traffic management controls. The Department is satisfied that property access for rural properties can be maintained throughout construction and that appropriate measures would be implemented to address road safety risks.

The Department has recommended conditions requiring EnergyCo to implement the road upgrades in accordance with the relevant standard and timing requirements, and to regularly maintain all roads along the transport route, repair any damage to the road network caused by project related traffic

and prepare and implement a Traffic Management Plan to manage and mitigate impacts to the capacity and safety of the road network.

Subject to the recommended conditions, the Department and the relevant road authority consider that the project would not result in unacceptable impacts on the capacity, efficiency or safety of the road network.

Visual

The Department assessed the visual impacts of the project against the requirements of the Transmission Guideline Visual Supplement, having regard to EnergyCo's Landscape and Visual Impact Assessment (LVIA) and visited the project area.

The Department considers the landscape character impacts ranging from negligible to moderate would not fundamentally alter the broader character of the project area.

In accordance with the Transmission Guideline, private landholdings that are hosting proposed transmission infrastructure are considered easement affected and do not need to be assessed in accordance with the Visual Supplement and would be eligible for compensation under the *Land Acquisition (Just Terms Compensation) Act 1991*.

There are no non-easement affected receivers within the 400 m setback prescribed by the Visual Supplement. Five non-easement affected receivers are predicted to experience a moderate visual impact. EnergyCo has committed to manage these predicted visual impacts by implementing appropriate mitigation measures in consultation with these receivers. Accordingly, the Department has recommended conditions requiring EnergyCo to implement these measures (such as landscaping and vegetation and screening) in consultation with the landowners.

Evaluation

The Hunter Transmission project is critical for energy security and reliability in NSW as it would enhance the capacity of the NEM, transmit renewable energy from the Central-West Orana and New England REZ to consumers and would play an essential role in supporting the shift from a long-standing reliance on coal fired power stations to a reliance on renewable energy. It would also deliver significant economic benefits to NSW including the creation of up to 830 jobs during construction.

Overall, the Department considers that the project has been designed in a way that avoids and minimises social and environmental impacts as far as practicable. The Department has carefully considered issues raised in public submissions including key concerns related to project's biodiversity and traffic impacts and visual amenity. The Department has worked closely with key government agencies to provide a robust assessment of the impacts of the project and to prepare a comprehensive framework of recommended conditions of approval, requiring a range of controls and measures to minimise the impacts of the project.

On balance, the Department considers that the Hunter Transmission project provides benefits to energy security and reliability that outweighs its costs, and that the project is in the public interest and approvable, subject to strict conditions.

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1 Introduction

EnergyCo is seeking approval to develop the Hunter Transmission project (the project), which includes the construction and operation of approximately 110 kilometres (km) of 500 kilovolt (kV) transmission lines and associated infrastructure between Bayswater in the Upper Hunter and Olney in the Lower Hunter. The project spans the Cessnock, Muswellbrook, Singleton, Lake Macquarie and Central Coast local government areas (LGAs).

The project is critical state significant infrastructure (CSSI) because the project is necessary to strengthen the State's core electricity grid and unlock the supply of electricity from the Central-West Orana and New England Renewable Energy Zones (REZ) to reinforce supply to consumers. The project and its regional context are shown in **Figure 1**.

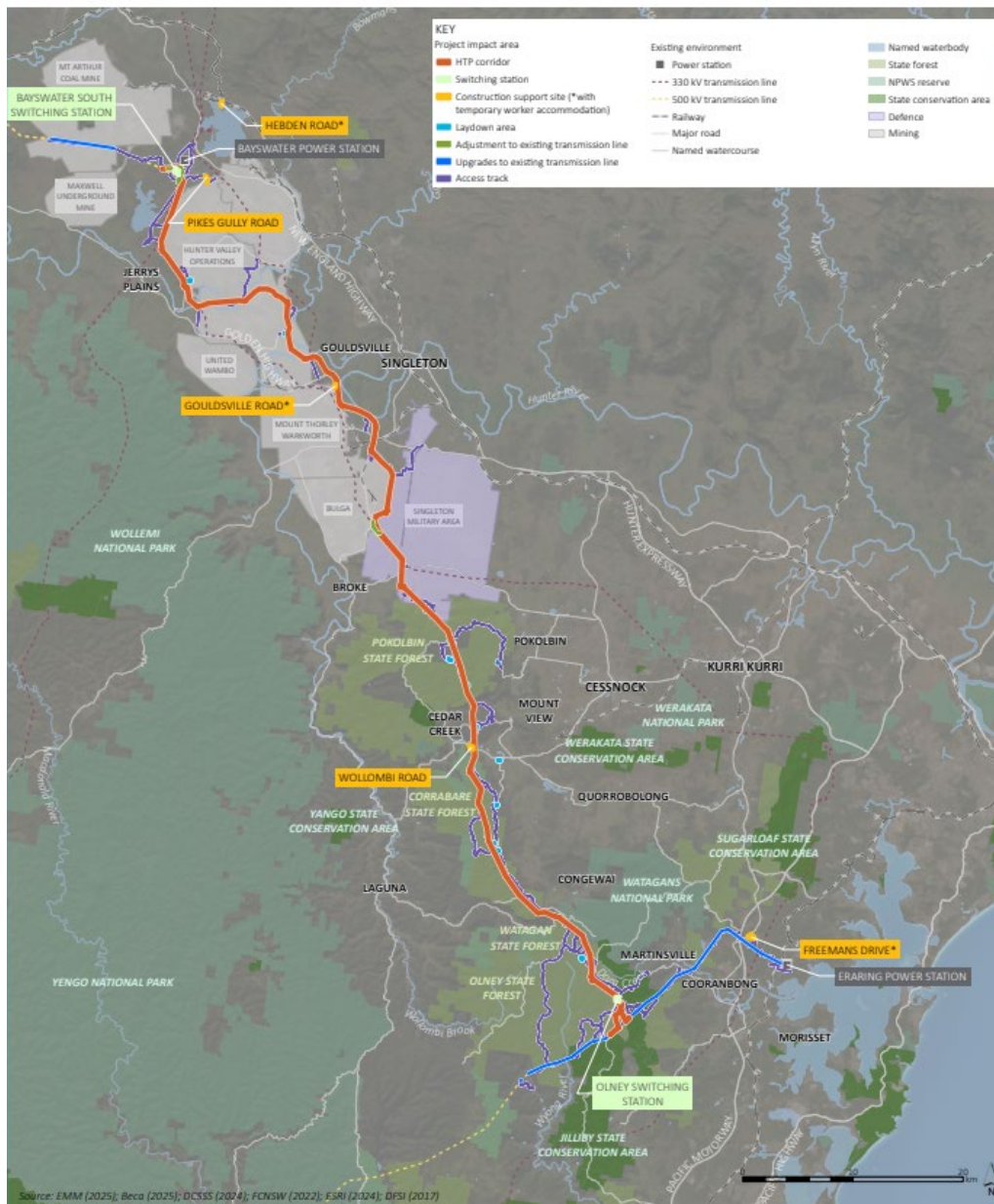


Figure 1 | Regional context map

2 Project

2.1 Project overview

The project involves:

- development of 110 km of new 500 kV double circuit transmission lines on steel lattice towers up to 85 m high and associated infrastructure between the proposed Bayswater South and Olney switching stations;
- adjustments and upgrades to existing 500 kV and 330 kV lines at Eraring, Bayswater, Cedar Brush Creek, Martinsville, Newcastle, Ravensdale and Tomago;
- development of new switching stations at Bayswater South and Olney;
- augmentation of the existing Bayswater and Eraring substations; and
- ancillary infrastructure such as site offices, laydown areas and temporary workforce accommodation (TWA) for construction works; and
- access roads and tracks and public road upgrades.

The key aspects of the project are provided in detail in the Project Description chapter of the Environmental Impact Statement (EIS) and subsequent amendment report, and are outlined in **Table 1** and shown in **Figure 2** to **5**.

Table 1 | Key aspects of the project

Aspect	Description
Project area	• Development footprint: 2,379 hectares (ha) • Operational development footprint: 1,371 ha
Transmission lines	• 110 km of new double circuit 500 kV transmission lines • Steel lattice towers up to 85 m high with a typical spacing of 300 to 600 m and, where topography requires, up to 1.5 km apart • Augmentation of the existing 500 kV and 330 kV transmission lines in Eraring, Bayswater, Cedar Brush Creek, Martinsville, Newcastle, Ravensdale and Tomago • Tower strengthening of Transgrid towers on lines 5A1, 5A2, 5A3 and 5A4
Switching stations and substations	• Development of Bayswater South and Olney 500 kV switching stations • Augmentation of the existing Bayswater and Eraring 500/330 kV substations • New communication infrastructure, including underground fibre cable connections and optical ground wires

Aspect	Description
Ancillary Infrastructure	• Laydown areas to facilitate construction activities • New and upgraded temporary and permanent access tracks • Five construction support sites at Hebden Road, Pikes Gully Road, Gouldsville Road, Wollombi Road and Freemans Drive • Helipads and helicopter facilities at each construction support site • Three TWAs for a combined total of up to 900 workers at Hebden Road, Freemans Drive and Wollombi Road construction support sites • Utility connections and relocations, including fibre optics, electricity, gas, telecommunications, sewer, water and stormwater
Access Routes	• The daily construction route to and from construction areas within the project area includes New England Highway, Golden Highway, Hunter Expressway, Pacific Highway, Denman Road, John Renshaw Drive, Mandalong Road, Freemans Drive, Wine Country Drive and the Pacific Motorway. Regional roads include Broke Road, Cessnock Road and Wollombi Road • 35 sealed and unsealed local roads in the Muswellbrook, Singleton, Cessnock, Central Coast, and Lake Macquarie local government areas would be utilised during construction, as well as unsealed roads within Pokolbin, Corrabare, Watagan and Olney State Forests • Non-standard or oversized loads would be transported from the Port of Newcastle via gazetted OSOM routes
Road Upgrades	Seven local roads, 11 Forestry roads, five Crown roads, one NPWS road and 32 new or existing intersections would be required to be upgraded to provide safe access to construction sites and access points. (See Section 6.6.5).
Construction	• Approximately 2.5 years, commencing in 2027 with the peak construction period expected to be in 2028 • Site establishment, use of construction compounds, access road upgrades, utility connection and TWA construction would occur before major construction works • Construction hours would generally be Monday to Friday 7 am to 6 pm and Saturday 8 am to 1 pm, with some out of hours work proposed
Operation	The operational life of the project is not limited
Decommissioning and rehabilitation	Upon completion of the construction, all construction equipment and temporary ancillary facilities would be demobilised and removed from the construction footprint, and disturbed areas would be rehabilitated (unless designated as a permanent access track).
Employment	Up to 830 construction jobs and 10 operational jobs

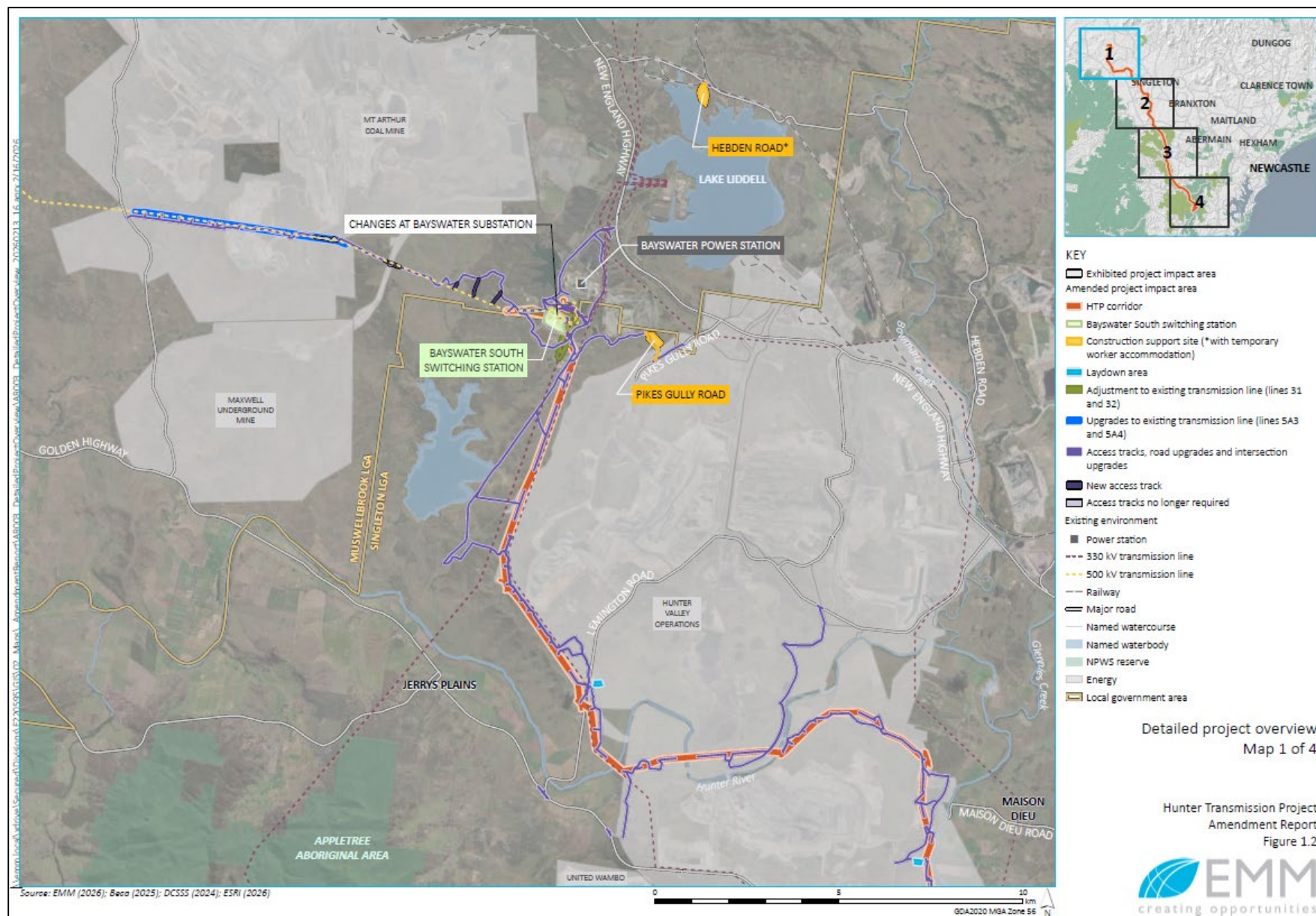


Figure 2 | Site layout (1 of 4)

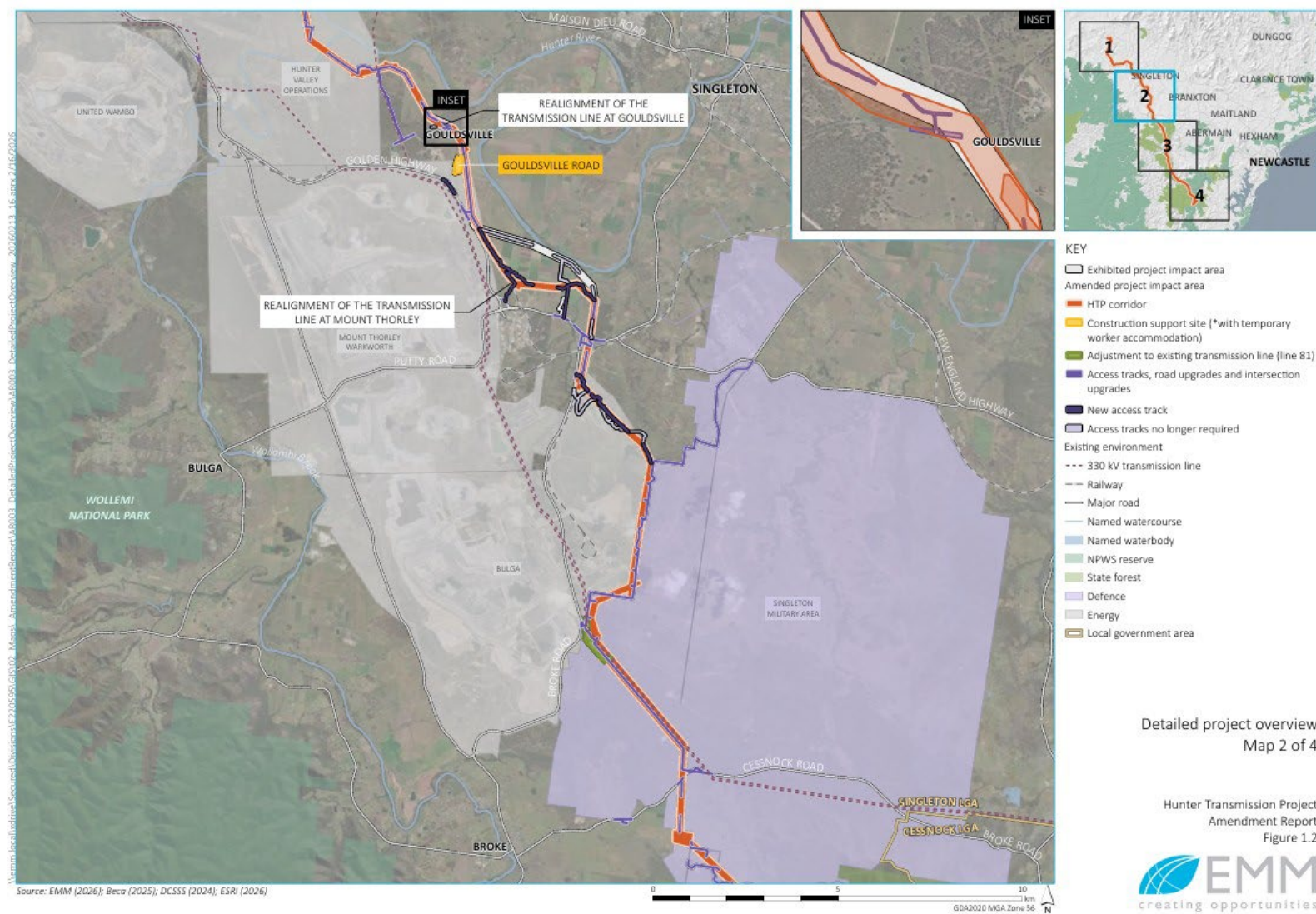


Figure 3 | Site layout (2 of 4)

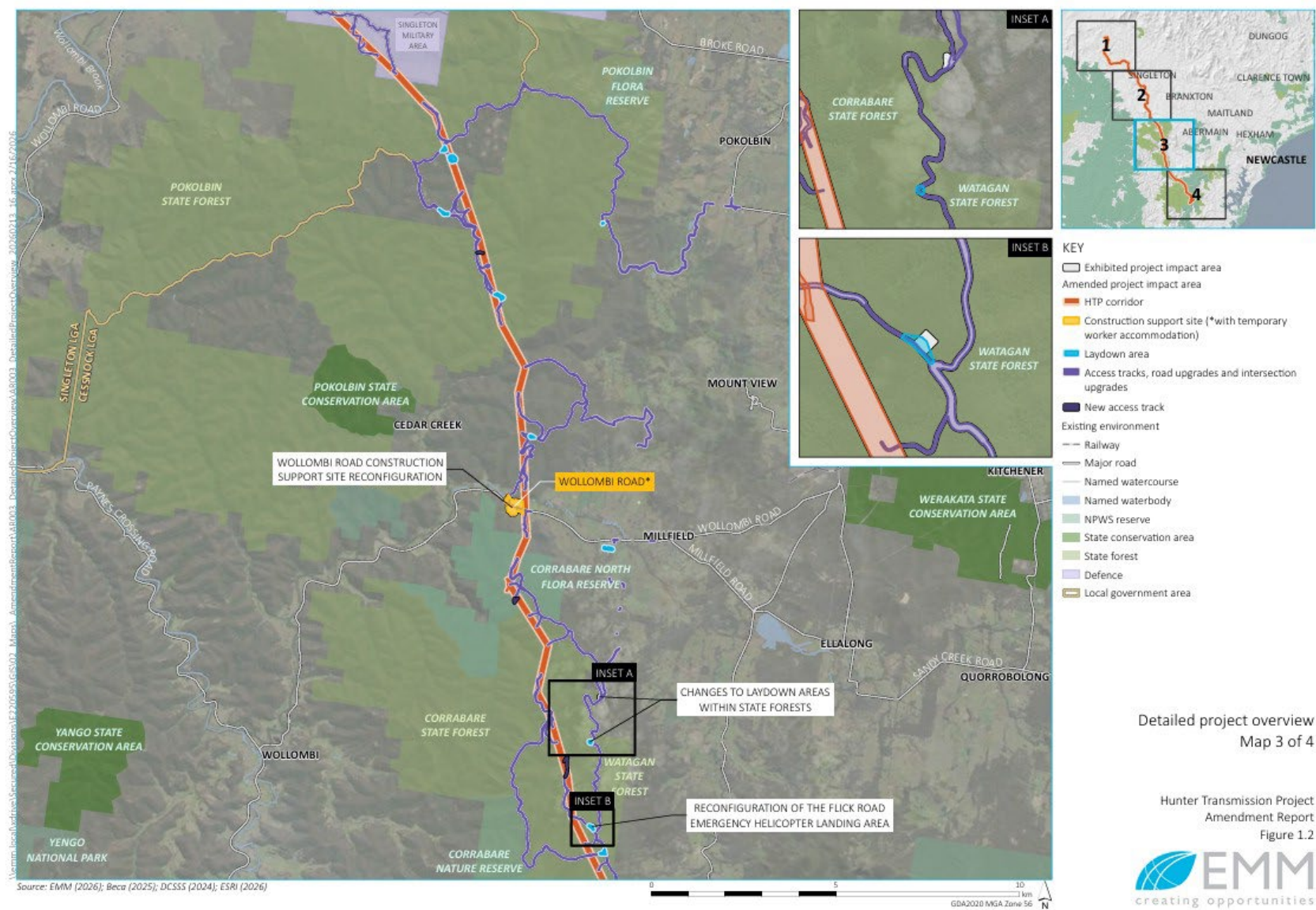


Figure 4 | Site layout (3 of 4)

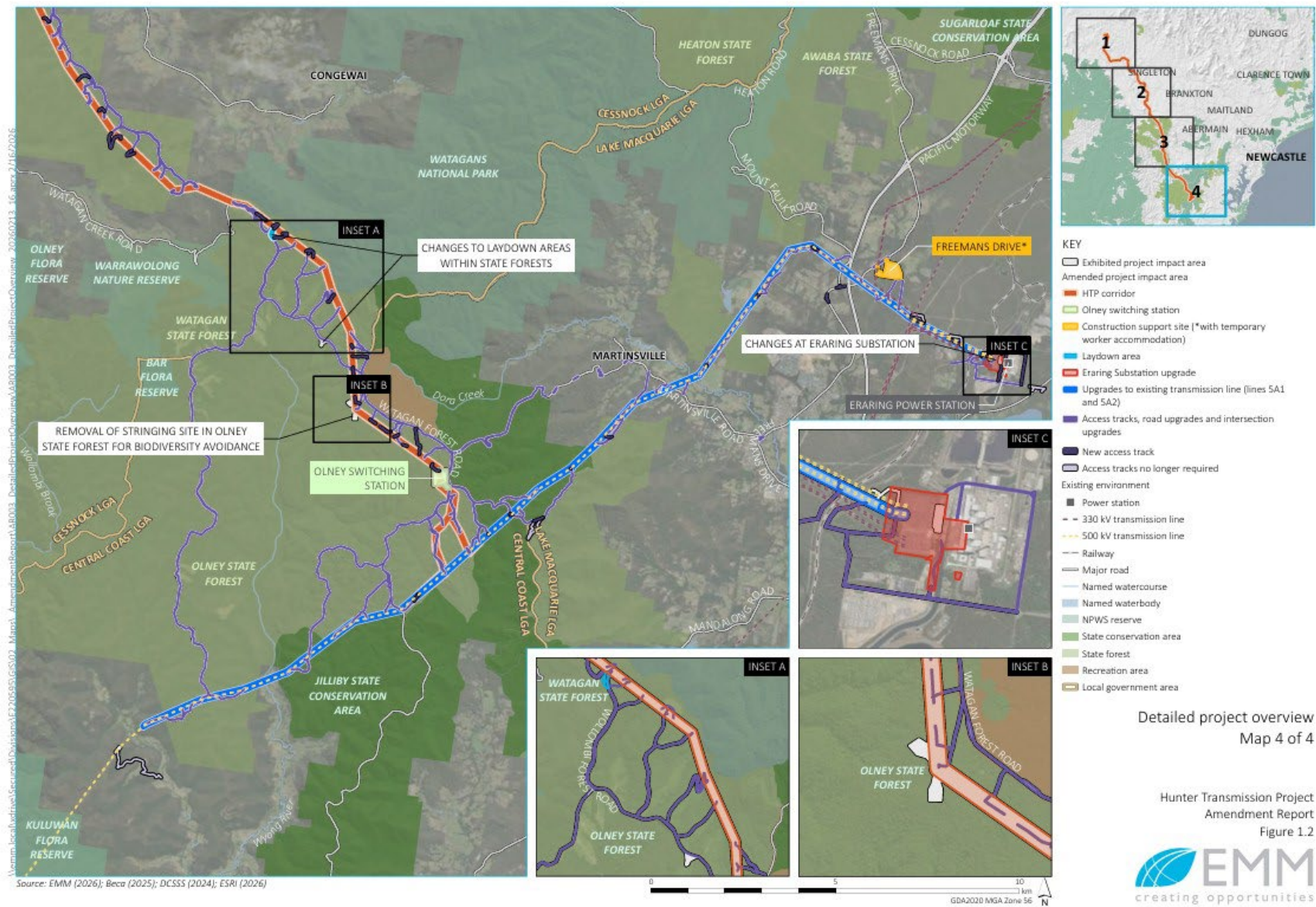


Figure 5 | Site layout (4 of 4)

2.2 Project design

2.2.1 Options analysis

EnergyCo has primarily located the transmission infrastructure on publicly owned land, thereby minimising impacts to private landowners and major towns wherever possible. Approximately 86% of the project would be on mining, energy and government land and has been designed to avoid sensitive areas such as Watagan National Park and the Pokolbin tourist area and away from major towns like Singleton, Cessnock, and Maitland, and villages like Broke, Millfield, and Ellalong. The project has undergone a process of feasibility and option analysis and included placing the preliminary corridor on public exhibition in November and December 2023, resulting in refinements in response to feedback to the project before lodging the Scoping Report. Early consultation efforts resulted in significant reductions in the number of affected private landowners; and adjusting the route in State forests to minimise impacts on culturally significant areas and sightlines, scenic landscapes and biodiversity values. EnergyCo has considered the costs and benefits of supplying electricity to consumers, as well as the impacts of this delivery on the surrounding environment and communities.

Refinements made between the initial preparation of the Scoping Report and EIS include:

- relocating the southern switching station to Olney State Forest to reduce impacts on the Martinsville and Cooranbong communities;
- minimising impacts on visual amenity, Aboriginal heritage sites and biodiversity value in the following locations by relocating the project further away from:
 - recreation areas in the Olney State Forest;
 - hardwood plantations in the Watagan State Forest;
 - high value biodiversity and Aboriginal areas in the Pokolbin and Corrabare State Forests; and
 - privately owned land in the Masion Dieu community through corridor placement in the Hunter Valley Operations coal mine.

2.2.2 Project amendments

Amendments to the project post exhibition of the EIS include:

- adjustments to the transmission alignment, and localised easement widening;
- refinements to the project area to avoid important frog breeding habitat, between the Olney switching station and Corrabare State Forest;
- changes to substation infrastructure at Eraring and Bayswater;

- changes to intersections, access roads and access tracks, including revised access track locations, minor adjustments to the project impact areas for intersection upgrades, and adjustments to proposed construction access routes;
- changes to ancillary facilities, including reconfiguration of construction support sites and temporary worker accommodation, laydown areas, the Flick Road emergency helicopter landing area and stringing sites within Olney State Forest; and
- changes to construction plant and equipment types and locations of use.

2.2.3 Indicative transmission line and refinement

There is a well-established process for assessing the nature and scale of potential impacts before determination, while also allowing for further assessment and reduction of impacts post-determination. While there is only an indicative transmission line footprint within a defined 70 m wide permanent easement (up to 140 m during construction), the Department is of the view that EnergyCo could site the exact location of the transmission line without materially changing the key environmental impacts of the project (i.e. biodiversity, heritage, visual and noise). Detailed design of the final transmission line alignment within the easement would be based on further minimising environmental impacts where practicable.

2.2.4 Partial clearing

A key measure proposed by EnergyCo to minimise biodiversity impacts is partial vegetation clearing within the easement. In areas earmarked for partial clearing, vegetation under 2 m would be retained in certain areas of the transmission line easement. Partial clearing has benefits for biodiversity values – retaining low trees, shrubs and groundcover vegetation provides nesting, foraging and shelter habitat and connectivity for fauna, and maintains soil stability. Of the project's 2,379 ha total construction development footprint, approximately 210 ha (22%) of native vegetation would be partially impacted. The partial impacts of the project are considered further in **Section 6.4**.

3 Strategic context

3.1 Energy context

The NSW energy system and broader NEM is undergoing a complex and accelerating transformation. The impending closure of the Eraring, Bayswater and Vales Point power stations, supplying a combined capacity of 6,840 MW, poses a significant challenge to the State's energy security. Eraring is forecast to close by April 2029, followed by both Bayswater and Vales Point in 2033.

The project would connect the state's existing 500 kV transmission lines to form a continuous network that would serve as the backbone of the state's future electricity grid. It forms the northern network component of the 500 kV Sydney Ring, supporting the delivery of energy from renewable projects in the Central-West Orana and New England REZs to consumers. This project has been identified as critical by all major electricity strategic planning reports at both the national and state levels, as it protects NSW's energy security and enables the transfer of an additional 5 GW of electricity generated at renewable energy zones into the NEM. Further, the *NSW Electricity Infrastructure Investment Act 2020* (EI Act) identifies the project as a Priority Transmission Infrastructure project (PTIP) as it is essential for energy security and avoiding breaches of the NSW energy security target. The project aligns with State and Commonwealth policies and strategies as summarised in **Table 2**.

Table 2 | Summary of government strategies, plans and policies

Strategy, plan or policy	Comments
<i>Australia's Long Term Emissions Reduction Plan (2021) and Nationally Determined Contribution (2025)</i>	Sets a pathway to net zero emissions by 2050 and affirms Australia's commitment to meeting its 2030 (43% below 2005 levels) and 2035 targets (62-70% below 2005 levels). The plan identifies the expansion of electricity transmission networks and associated enabling infrastructure as critical in achieving these targets.
<i>NSW Climate Change (Net Zero Future) Act 2023</i>	Legislates a whole-of-government climate action to deliver net zero by 2050.
<i>Australian Energy Market Operator's (AEMO) 2026 Integrated System Plan (ISP)</i>	Identifies that investment is urgently needed to install around 6,000 km of new transmission lines by 2050 (down from 10,000 km in 2024 as some projects have been downsized or are no longer needed in response to policy or other changes) to provide energy security and reliability, and that this additional transmission plays an essential role in the NEM shift to renewable energy. Identifies a demand for 80 GW of utility-scale wind and solar in the NEM by 2035 and 117 GW by 250.

Strategy, plan or policy	Comments
	The project is listed as Sydney Ring North (Hunter Transmission) in the ISP as an Actionable project, with an expected operational timing of 2029.
NSW:	Relevant aspects of these policy documents:
<i>Climate Change Policy Framework (2016)</i>	aim to achieve net zero emissions in NSW by 2050 and reduce emissions by 70% below 2005 levels by 2035;
<i>Transmission Infrastructure Strategy (2018)</i>	note that all coal fired power plants in NSW are scheduled for closure within the next twenty years;
<i>Electricity Strategy (2019)</i>	set out how the NSW government will deliver on this objective and fast-track emissions reduction;
<i>Electricity Infrastructure Roadmap (2020)</i>	identify REZs across NSW, aimed at encouraging investment in electricity infrastructure and unlocking additional generation capacity in order to provide secure and reliable energy in NSW;
<i>Net Zero Plan Stage 1: 2020 - 2030 (2020) and Implementation update (2022)</i>	note the need to expand transmission infrastructure into REZs to open new parts of the grid for renewable energy projects;
<i>Hunter Regional Plan 2041 (DPE 2022)</i>	unlock regional investment and new energy generation infrastructure;
<i>Hunter Regional Economic Development Strategy (Regional NSW 2023)</i>	- notes the sequencing of connection infrastructure noting renewable projects require transmission lines to be productive; and - notes economic benefits of infrastructure programs in the regions.

3.2 Project area and surrounds

3.2.1 Land use

The project is located within the LGAs of Muswellbrook, Singleton, Cessnock, Central Coast and Lake Macquarie. The nearest regional population centres to the project are Singleton, Muswellbrook, Cessnock, Maitland and Newcastle.

Land tenure is primarily freehold land held by mining and energy companies, as well as State and Commonwealth land. NSW Government land includes State forests, National Parks, and land owned by State Government authorities. Commonwealth land includes the Singleton Military Area.

Most of the project area and surrounds are zoned RU1 Primary Production under the relevant Local Environment Plans (LEP), with approximately 213 ha mapped as Biophysical Strategic Agricultural Land (BSAL). Other areas of the project are zoned as follows:

- SP2 Infrastructure and Defence in the northern sections of the project, including Bayswater Power Station and the Singleton Military Area;
- RU3 Forestry, RU2 Rural Landscape in central areas of the project, including Pokolbin and Corrabare State Forests and associated flora reserves; and
- RU3 Forestry, C1 National Parks, C2 Environmental conservation and C3 Environmental Management with small areas of RU2 and SP2 in the southern section of the project, including Watagan State Forest.

Land use in the corridor is predominantly production native forestry (32%), and agricultural land (37%). Other land uses include mining, utilities, nature conservation and plantation forests. The existing Bayswater and Eraring 500 kV / 330 kV substations and several existing transmission lines are located within the surrounding project area.

The project occupies around 774 ha of land across four State forests: Pokolbin, Corrabare, Watagan and Olney. These State forests have many land uses, including timber harvesting, recreation (including hunting, bushwalking, trail bike riding, four-wheel driving, camping) and flora reserves.

About 95 ha of land managed by the NSW National Parks and Wildlife Service (NPWS), including the Corrabare North Flora Reserve and Jilliby State Conservation Area, would be impacted by the project. These areas are used for species conservation, horse trail riding, mountain biking and bushwalking.

3.2.2 Natural environment

There is a wide variety of landscapes across the project area, consisting of:

- forested sandstone plateaus intersected by steep ravines and gorges;
- rugged terrain with exposed Hawkesbury sandstone outcrops;
- flat to undulating rural valleys and hills; and
- undulating coastal plains.

The project spans across the Hunter River, Lake Macquarie and Tuggerah Lakes catchments. It crosses four major waterways, including the Hunter River, Wollombi Brook, Congewai Creek, and Dora Creek, as well as several smaller watercourses. The nearby catchments include Glenbawn Dam, Glennies Creek Dam and Mardi Dam, which provide water supply for towns, industry, irrigators, stock and domestic users as well as flood mitigation and recreation.

Much of the landscape surrounding the project's north, between Bayswater Power Station and Singleton Military Area has been historically cleared and is highly fragmented. Key landscape features located for the southern portion in the Cessnock and Central Coast LGAs include Pokolbin State Forest, Pokolbin Flora Reserve, Pokolbin State Conservation Area, Corrabare State Forest, and Corrabare North Flora Reserve.

3.2.3 NSW Renewable Energy Planning Framework

In November 2024, the Department released the Renewable Energy Planning Framework (the Framework). The Framework seeks to provide greater clarity, consistency and transparency for industry and the community regarding assessment and decision-making on State significant transmission infrastructure projects.

The Framework provides a merit-based approach to assessing transmission projects, focusing on the issues unique to transmission infrastructure, particularly visual impacts. The key documents comprising the Framework (relating to transmission infrastructure) include the *Transmission Guideline* and *Transmission Visual Technical Supplement* (the Visual Supplement).

The Department's assessment of the project against the requirements of the Framework is detailed in **Section 6**.

4 Statutory context

4.1 Critical State significant infrastructure

The project is classified as CSSI under Section 5.13 of the EP&A Act because it is listed as CSSI under section 30 of Schedule 5 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), as it would strengthen the State's core electricity grid and unlock electricity supply from the Central-West Orana and New England REZs. Consequently, the Minister for Planning and Public Spaces (the Minister) is the approval authority. Under Section 2.15 of the *Planning Systems SEPP*, the project may be carried out without development consent under Part 4 of the EP&A Act.

4.2 Administrative and procedural requirements

Under the EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), several administrative and procedural requirements must be met before the Minister may determine the application, including EnergyCo applying to the Minister for approval, preparing an EIS and responding to submissions, and the Department exhibiting the EIS and making key documents available on the NSW Planning Portal. The Department is satisfied that all requirements have been met, and the Minister may now proceed to determine the application.

4.3 Amended application

EnergyCo has sought to amend its application (**Section 5.3**) in accordance with clause 179(2) of the EP&A Regulation.

On 3 March 2026, the Director, Energy Assessments accepted EnergyCo's amended application for the following reasons:

- the amended application directly responds to key issues raised;
- the amendments capture refinements to the design and construction methodology for the project;
- EnergyCo assessed the impacts of the amended project (see **Appendix E**); and
- the Department made the amendment report and additional information available online and sent it to relevant agencies.

4.4 Exempt approvals

Under section 5.23 of the EP&A Act, the following approvals are not required for CSSI projects:

- a permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*;

- various approvals for State Conservation Areas and heritage under *the National Parks and Wildlife Act 1974* (NPW Act) and *Heritage Act 1977*;
- a bushfire safety authority under section 100B of the *Rural Fires Act 1997*; and
- various water-related approvals under sections 89 to 91 of the *Water Management Act 2000*.

However, the assessment of these matters has been integrated with the assessment of all other matters under the EP&A Act. The Department has considered all the relevant matters associated with these in its assessment (**see Section 6**), consulted with the agencies responsible for administering these (**see Section 5**), and included conditions in the recommended project approval (**see Appendix G**) to make sure EnergyCo minimises the biodiversity, heritage, bushfire and water impacts of the project.

4.5 Environmental planning instruments

Although environmental planning instruments do not apply to CSSI projects under section 5.22 of the EP&A Act, the Department has assessed the project against the provisions of several instruments and concluded that the land is suitable for the project, and that the project is not a potentially hazardous or offensive development under the *State Environmental Planning Policy (Resilience and Hazards) 2021*.

4.6 Mandatory matters for consideration

When deciding whether or not to approve the carrying out of the project under section 5.19 of the EP&A Act, the Minister is required to consider the reports, advice and recommendations contained in this report which includes the EIS, public submissions, agency advice, the Department whole-of-government assessment, and the recommended conditions of approval. The Department has considered these matters in its assessment as summarised in **Section 6** of this report.

4.7 Other NSW approvals

Under section 5.23 of the EP&A Act, a number of other approvals are integrated into the SSI approval process and consequently are not required to be separately obtained for the project. These include approvals and permits relating to heritage under the EP&A Act, *Heritage Act 1977* and *NP&W Act*, and certain water approvals under the *Water Management Act 2000*.

Under section 5.24 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any planning approval for the project. These include:

- approvals for works on public roads under the *Roads Act 1993* (Roads Act). The Department has consulted with the agencies responsible for these approvals in its assessment of the project;

- an environment protection licence (EPL) under the *Protection of the Environment Operations Act 1997* (POEO Act). It is noted that an EPL may be required for the project, specifically for crushing, grinding or separating material (to be used for tower foundations) under Clause 16 of Schedule 1 of the *POEO Act*, and helicopter-related activities under Clause 20 of Schedule 1 of the *POEO Act*; and
- obtain various approvals for both the construction and operation of the project under section 151 of the *National Parks and Wildlife Act 1974*. Activities must remain consistent with the *Watagans National Park and Jiliby SCA Plan of Management NPWS 2010*.

4.8 Objectives of the EP&A Act

The Department has assessed the project against the objects in section 1.3 of the EP&A Act, including incorporating ecologically sustainable development principles and promoting the social and economic welfare of the community and a better environment (see **Appendix I**).

The Department acknowledges that the objects of the EP&A Act were amended by the *Environmental Planning and Assessment Amendment (Planning System Reforms) Act 2025*, which commenced on 15 December 2025. Transitional arrangements apply such that the amended objects do not apply to applications lodged prior to that commencement date. The Department has therefore assessed the proposal under the legislative framework that applied at the time the application was lodged.

4.9 Application of the Biodiversity Conservation Act 2016

4.9.1 Biodiversity Development Assessment Report

The EIS was accompanied by a biodiversity development assessment report (BDAR) in accordance with section 7.9 of the *Biodiversity Conservation Act 2016* (BC Act). The Minister must consider the likely impact of the project on biodiversity values as assessed under the BDAR in accordance with section 7.14 of the BC Act. The Department has considered the findings of the BDAR (including revisions) and the advice from CPHR in its assessment (see **Section 6.4**).

4.9.2 Concurrence

Concurrence from the NSW Minister for the Environment is required in accordance with section 7.14 of the *Biodiversity Conservation Act 2016* (BC Act) for State significant projects where a consent authority decides to grant project approval with a condition other than to retire the number and class of biodiversity offset credits detailed in the final BDAR.

The Department has recommended conditions that require the retirement of the number and class of biodiversity offset credits detailed in the final BDAR but allowing EnergyCo to reduce the total

biodiversity credit liability post approval. It is intended that this may be achieved through the following:

- further avoidance of impacts to biodiversity values through detailed design works and micro siting transmission lines and ancillary infrastructure; and
- undertaking additional ecological surveys for species that were assumed to be present.

This approach to conditions is intended to provide an incentive to EnergyCo to reduce the biodiversity impact of the project reflecting the avoid, minimise and offset hierarchy set out as the purpose of the BC Act.

This approach to conditions required concurrence from the NSW Minister for the Environment should the Minister decide to grant project approval with this approach to conditions.

4.10 Commonwealth matters

On 5 February 2025, the project (EPBC 2024/09874) was declared to be a controlled action in accordance with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to likely significant impacts to listed threatened species and communities (sections 18 and 18A) and Commonwealth land (sections 26 and 27A).

The assessment process under the EP&A Act has been accredited under a bilateral agreement with the Australian Government. Accordingly, the NSW Government has undertaken the assessment on behalf of the Australian Government and has assessed matters of national environmental significance (see **Section 6.4** and **Appendix J**). The Department consulted with the Australian Government Department of Climate Change, Energy, the Environment and Water (AG DCCEEW) in accordance with the bilateral agreement, provided draft copies and incorporated comments from AG DCCEEW into this assessment report and the recommended conditions of approval.

5 Engagement

5.1 Department's engagement

The Department publicly exhibited the EIS on the NSW Planning Portal from 27 August 2025 until 24 September 2025 and advertised the exhibition in several local and national newspapers. The Department visited the project area and its surrounds from 3 to 4 November 2025.

The Department engaged with relevant Councils and government agencies throughout the assessment.

5.2 EnergyCo's engagement

EnergyCo's engagement with the local community included a dedicated website, interactive mapping tool, phone number and email address, stakeholder briefings, community information sessions, landowner webinars, and face-to-face meetings with easement-affected landowners.

EnergyCo also consulted with the Department, relevant Commonwealth and State government agencies, local councils, Aboriginal stakeholders and developers of renewable generation projects during the assessment process, and potentially impacted neighbours and easement-affected landowners to inform the project amendment detailed below.

5.3 Amended Application

Following consideration of submissions on the project, EnergyCo amended its application to reduce impacts particularly in relation to land use and property, traffic and access, visual impacts and biodiversity, as detailed in the Amendment Report (Appendix E). This included:

- adjustments to the transmission alignment, and localised easement widening;
- changes to substation infrastructure at Eraring and Bayswater;
- changes to intersections, access roads and access tracks, including revised access track locations, minor adjustments to the project impact areas for intersection upgrades, and adjustments to proposed construction access routes;
- changes to ancillary facilities, including reconfiguration of construction support sites and TWAs, laydown areas, the Flick Road emergency helicopter landing area and stringing sites within Olney State Forest; and
- changes to construction plant and equipment types and locations of use.

5.4 Summary of submissions

The Department received 163 public submissions (128 from members of the public and 35 from special interest groups). In accordance with section 2.7(6) of the Planning System SEPP, each petition or any submissions that contain the same or substantially the same text are counted as one submission.

Of the 128 submissions from the public, 93 objected, 25 commented and 10 supported the project. Of the 35 submissions that were received from special interest groups, 18 commented, 15 objected, and two supported the project. Approximately 60% of all submissions came from people located within 50 km of the project area, and around 32% of these were within 5 km. Further details are summarised in **Table 3**, and a link to all submissions in full is provided in **Appendix C**.

Table 3 | Public submitter proximity to the project

Submitter	Object	Support	Comment	Total
<5 km	32	2	16	50
5–15 km	5	2	5	12
15–50 km	16	7	10	33
> 50 km*	55	1	12	68
Total	108	12	43	163

* Including 21 interstate submissions

5.4.1 Submissions in objection

The most common matters raised in submissions objecting to the project included impacts on:

- biodiversity due to the amount of vegetation clearing required and impacts to threatened species habitat, including the Littlejohn's Tree Frog;
- aviation and the safe operation of the Hunter Valley Gliding Club due to the proximity to Warkworth Aerodrome;
- social and economic, including the loss of access to public recreation areas within State forest lands, increased reliance on local amenities such as health facilities and accommodation, and it was unclear how the local community would benefit from the project;
- traffic and road safety on the local road network and interaction with schools; and
- visual amenity due to the scale and location of the project.

Other matters raised in submissions included criticism of the engagement undertaken by EnergyCo, perceived increases in bushfire risk, soil and water impacts, noise impacts, and the need for this project.

Section 6 provides a summary of the Department's consideration of these matters.

5.4.2 Submissions in support and comments

Submissions in support of the project noted social and economic benefits, including local job creation and a benefits scheme for host communities and local businesses. Other submissions in support noted the project’s substantial contribution to the renewable energy rebuild in NSW.

The key matters raised in submissions are summarised in Figure 6.

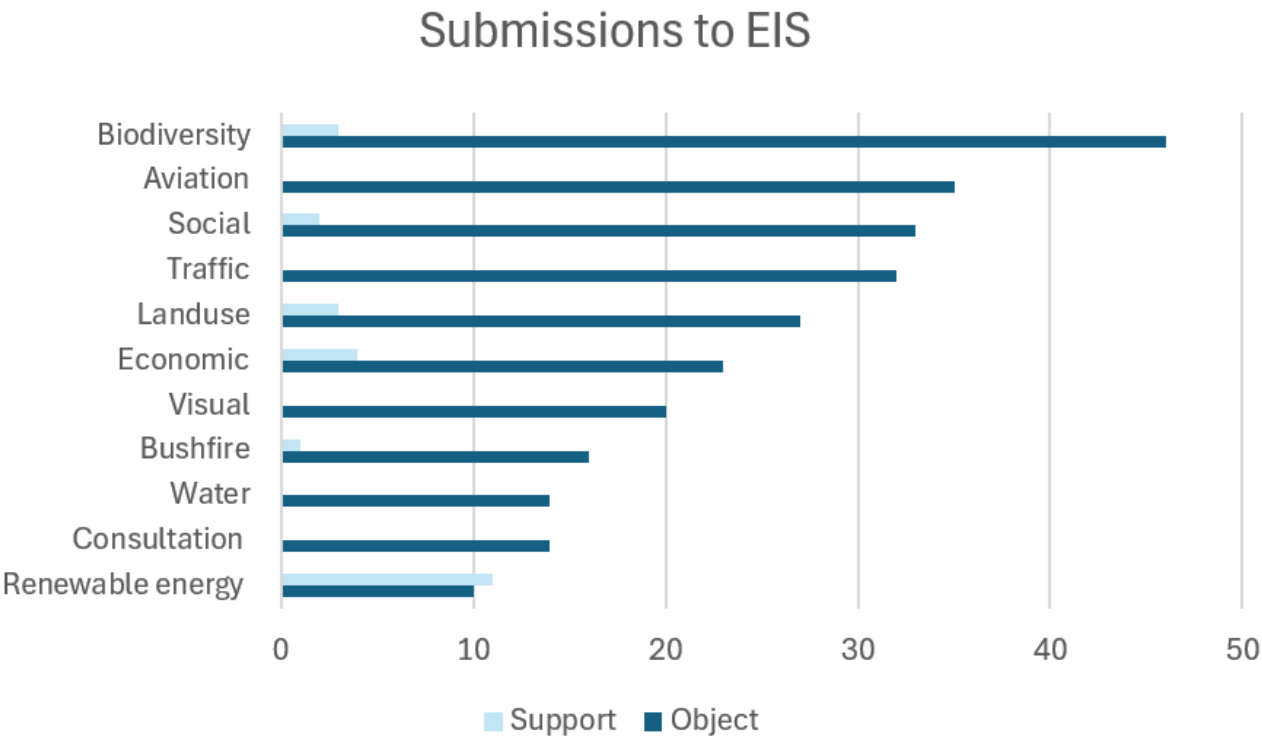


Figure 6 | Key Issues raised in Submissions

5.4.3 Special interest groups and organisations

There were 35 submissions on the project from special interest groups and organisations, with matters raised summarised in Table 4.

Table 4 | Summary of matters raised by special interest groups and organisations

Submission type	Submitters	Issues
Comment (18)	Birdlife Australia, Origin Energy Eraring Pty Ltd, Pokolbin Mountains Road Group, Hunter Wildlife Rescue (NATF Inc), Yancoal Australia Ltd, Centre for Conservation Science, Hunter Joint Organisation, NSW Apiarist's Association Inc, Hunter Valley Wine & Tourism Association, Dantia, Glamping Estate Hunter Valley, Nature Conservation Council of NSW, Millfield Public School, Glencore, Biodiversity Council (Vic), HV Operations Pty Ltd, Mindaribba Local Aboriginal Land Council, Xatech International Pty Ltd	• Biodiversity impacts from vegetation removal, including impacts on threatened species • Aviation, specifically the Warkworth airstrip and its gliding club operation. • Tourism and local economies • Traffic on existing local roads • Heritage value of the area • Requested further consultation to reduce impacts to existing energy and mining operations
Object (15)	NSW Gliding Association, Vintage Gliders Australia, Mulgoa Valley Landcare Group, Hunter Valley Gliding Club, The Centre for Independent Studies, Hunter Region Landcare Network, Millfield Community Association Steering Committee, Gliding Australia, Save Our Surroundings – Riverina, Save Our Surroundings – Lancefield, Save Our Surroundings – Hay, Save Our Surroundings – Murrumbidgee, Save Our Surroundings – Redbank Plains, Save Our Surroundings – Swan Hill	• Aviation, specifically the Warkworth airstrip and its gliding club operation. • Biodiversity in the area including the Littlejohn's Tree Frog. • Local communities including traffic impacts and increased pressure on existing local amenities • General objection to renewable energy projects and their impacts on regional communities
Support (2)	Business Hunter, Committee for the Hunter	• Economic benefits for local communities including job creation and investment in the Hunter area

Feedback was also received from the National Parks Association of NSW, Hunter Landcare network and Aussie Ark outside the exhibition process. Their concerns relate to impacts on biodiversity, habitat fragmentation, inadequate frameworks designed to manage offset arrangements, lack of meaningful consultation, scenic amenity impacts and impacts to cultural heritage values in the project area.

The Department also met with the University of Newcastle and Aussie Ark, which sought further engagement with EnergyCo regarding impacts to biodiversity, in particular regarding the habitat fragmentation of the Littlejohn's Tree Frog.

5.5 Response to submissions and amendment report

Following the public exhibition period, the Department asked EnergyCo to respond to the issues raised in submissions and the advice received from government agencies. EnergyCo provided a submissions report (see **Appendix D**) and amendment report (see **Appendix E**) to the Department on 3 March 2026.

The Department published the submissions report and amendment report on the NSW Planning Portal and forwarded both reports to relevant government agencies and local council(s).

5.6 Summary of advice received from government agencies

The Department received advice on the EIS from 22 government agencies. Five agencies (FRNSW, DPHI Hazards, DPIRD Agriculture, Water NSW and AirServices) raised no comments or concerns at the EIS stage. A summary of the agency advice is provided in **Table 5**. A link to the full copy of the advice is provided in **Appendix C**.

Table 5 | Summary of agency advice

Agency	Advice summary
Conservation Programs Heritage and Regulation (CPHR)	Following review of the EIS: • Provided advice on revisions to inputs into the BDAR, including classification of native vegetation, spatial data and Biodiversity Assessment Method (BAM) Calculator inputs and updates to MNES assessment in line with these revisions. • Sought further information on indirect and prescribed impacts, and clarification on the mitigation, monitoring, and management of impacts during construction. • Requested flood management plans controls for all construction sites and access tracks. Following review of the submission and amendment reports: • Requested revision of species polygons, assumed presence and partial loss. • Confirmed that a revised BDAR subsequently submitted by EnergyCo adequately addressed all residual issues.
Civil Aviation Safety Authority (CASA)	Following review of the EIS: • Raised the increased risk of impacts to gliding operations at Warkworth Aerodrome and the matters raised by the Hunter Valley Gliding Club. • Requested further information on whether an alternative alignment further from the aerodrome, or an alternative design, such as undergrounding is possible. • Requested confirmation on whether the Obstacle Limitation Surface could be nominally Code 2, which affects the take off surface length.

Agency	Advice summary
	Following review of the submission and amendment reports: • Noted the risk to the uncertified Warkworth Aerodrome had not been sufficiently quantified and offered design and engineering solutions to resolve. Following review of additional information provided by EnergyCo: • Acknowledged that the risk to gliding operations at Warkworth Aerodrome had been verified. • Recommended ongoing engagement with Gliding Australia regarding the feasibility of proposed risk mitigation measures. Agreed with the intent to mitigate hazards to the maximum extent practicable if relocating or undergrounding transmission infrastructure is not possible.
Crown Lands	Following review of the EIS: • Noted Crown land parcels and roads exist within the project area and described processes and licencing requirements needed to occupy the land. Following review of the submission and amendment reports: • Noted that appropriate tenure will be required prior to any access or use of travelling stock reserves within the project area.
Department of Defence	Following review of the EIS: • Requested EnergyCo liaise with Defence concerning the detailed design of the project, prior to and during construction, as well as during operation and maintenance, in order to address Defence requirements in relation to: - the coordinates and elevations of infrastructure; - obstacle lighting and marking of cables/lines and structures; - electromagnetic interference and communications; and - use of cranes, drones and helicopters during construction.
DPIRD Fisheries	Following review of the EIS, submissions report and amendment report: • Recommended conditions for works near waterways.
Environment Protection Agency (EPA)	Following review of the EIS: • Noted that an Environment Protection Licence may be required for the project. • Identified the potential for construction noise and corona noise impacts. • Requested clarification regarding nearby receivers in air quality impact assessment. • Identified the need for a waste management strategy. • Identified the need to consider interactions with other licenced premises and to comply with any environment protection licence conditions at those premises.

Agency	Advice summary
	- Recommended conditions for the management of noise, air quality, waste and contamination. Following review of the submission and amendment reports: - Recommended specific conditions for construction noise impacts and operation noise impacts of the project, including post-commissioning monitoring and verification of operational noise against relevant noise limits.
Forestry Corporation NSW (Forestry)	Following review of the EIS: - Concerned about vegetation management and increased fire risk associated with partial clearing model, recommended mosaic vegetation removal to reduce risks. - Concerned about assessment of Aboriginal cultural heritage impacts, for which Heritage NSW has separately provided expert advice to the Department. - Concerned about impacts on State forests, including visitors, amenity, scenic values, road network and water quality. - Provided feedback on technical aspects of the biodiversity assessment, for which CPHR has separately provided expert advice to the Department. Following review of the submission and amendment reports: - Advised that many issues from the EIS had been addressed or clarified. - Detailed preferred vegetation management practices that align with bushfire and Forestry management objectives. - Requested the project use a Visitor Safety and Access Management Plan and requested to be consulted on the Soil and Water Management Plan.
Heritage NSW	Following review of the EIS: - Concerned with amalgamation of isolated artefacts and low density scatters. - Requested greater consideration of implications for heritage management where there is overlapping approvals and/or land managers. - Requested more detailed mapping of sites and potential archaeological deposits. - Requested clarification of significance and impact assessments for all sites. - Requested clarification of timeline for outstanding testing and surveys. - Requested updates to management and mitigation measures. - Requested updates to assessment based on outcomes of ongoing survey and test excavations and updates to AHIMS and additional information on RAP consultation. Following review of the submission and amendment reports: - Identified some inconsistencies relating to AHIMS classifications and other administrative issues.

Agency	Advice summary
	• Requested clarification of management commitments and supporting documentation. • Noted the need to explicitly identify Aboriginal sites to be avoided or managed under other development consents/approvals or heritage management plans. • Recommended residual matters be addressed in the Aboriginal Cultural Heritage Management Plan.
Heritage Council	Following review of the EIS: • Requested ground truthing and updated archaeological assessment to identify potential unlisted sites. • Requested an Archaeological Research Design and Excavation Methodology (ARDEM) and updated mapping post-approval. • Requested clarification of significance and impacts assessments for all sites. Following review of the submission and amendment reports: • Confirmed that there are no State Heritage Register (SHR) listed items within or in close vicinity to the visual study area. • Noted that no potential State significant archaeological relics have been identified within the project area. • Recommended ongoing consultation with relevant local councils and additional efforts be made to access existing Conservation Management Plans for three sites to ensure appropriate management during detailed project design. • Supported the recommendation for management and mitigation of visual impacts.
Hunter Water	Following review of the EIS, submission and amendment reports: • Suggested inclusion of a condition to facilitate the supply of water and wastewater services to the project. • Provided pathway for any required adjustments to any Hunter Water assets during construction.
National Parks and Wildlife Services (NPWS)	Following review of the EIS: • Requested clarification on the statutory considerations of the project under the NPW Act and Forestry Act (Flora Reserves). • Requested finalised project description including the full extent of the project's construction and access requirements. • Requested recognition from EnergyCo of the project's impacts on aerial operations on or near NPWS estate. • Require EnergyCo deliver statutory provisions for bushfire management relating to the management of bushfire risk subject to the <i>NSW Rural Fires Act 1997</i>.

Agency	Advice summary
	• Requested consideration of the adequacy of emergency access routes. • Require protection and management strategies for Aboriginal cultural heritage values managed under the <i>NPW Act</i> and management of the loss of historical heritage values. • Expect loss of biodiversity values in national parks and forests be managed through offsets designed to ensure no net loss of values. • Requires EnergyCo to ensure sustained environmental quality in national parks by reducing impacts to visitor amenity, waterways and air quality. Following review of the submission and amendment reports: • Sought clarification on the statutory application of <i>NPW Act</i> to the project. • Recommended conditions and post approval requirements.
DCCEE Water	Following review of the EIS: • Recommended post approval water usage licencing requirements. Following review of the submission and amendment reports: • Requested that the footprint of the construction support sites be amended to address vegetation riparian zone requirements under the <i>Guidelines for Controlled Activities on Waterfront Land</i>.
Rural Fire Service (RFS)	Following review of the EIS: • Requested remodelling of fire risk ensuring fuel loads used in bushfire report are consistent with RFS records. • Requested a detailed site plan to be provided including location and set back of TWA and infrastructure. • Requested a detailed slope assessment to inform Bushfire attack level (BAL) and the APZ required for the proposed works. • Recommended emergency response procedures and plans for the construction and operation of the project. Following review of the submission and amendment reports: • Requested site plans for TWA and ancillary infrastructure be provided to RFS. • Made recommendations on conditioning asset protection zones to be consistent with <i>Planning for Bush Fire Protection, 2019</i>.
Transport for NSW (TfNSW)	Following review of the EIS: • Requested additional information on access tracks with direct connection to state road network. • Requested traffic count surveys, turn warrants, traffic volumes for all intersections.

Agency	Advice summary
	• Requested SIDRA analysis completed with revised cumulative traffic data. • Requested revised strategic designs with addition information on drainage, preferred design options and reaction times on designs as specified in advice. • Requested revision of the high risk OSOM route analysis to address risk to TfNSW assets and scope of road upgrades. Following review of the submission and amendment reports: • Identified residual information required to address TfNSW comments on SIDRA analysis, strategic designs and OSOM route assessment.
Resources NSW	Following review of the EIS: • Requested active monitoring of data sets for mining title changes that interact with the project. Following review of the submission and amendment reports: • Requested consultation on proposed biodiversity offset areas to make sure there is no reduction in access to land for potential future mineral exploration.
Subsidence Advisory NSW	Following review of the EIS: • Noted some sections of the project are located within mine subsidence districts. • Approval will be required from Subsidence Advisory NSW under section 22 of the <i>Coal Mine Subsidence Compensation Act 2017</i>. • Subsidence Advisory NSW confirmed that an application has been made and is currently under assessment. • No further specific issues were raised.
State Emergency Services (SES)	Following review of the EIS, submission and amendment reports: • Recommended conditions of approval around flooding and emergency management plans.

5.7 Summary of Council submissions

Cessnock City Council, Lake Macquarie City Council, Muswellbrook Shire Council and Singleton Council, provided submissions on the project. The Department met with Singleton and Cessnock Councils to discuss key issues during the assessment of the project. A summary of the issues raised by each council is provided in **Table 6** below and a link to all submissions in full is provided in **Appendix C**.

Table 6 | Summary of issues raised by council

Council	Submission summary
Cessnock City Council	• Supported the project but requested additional information regarding the impacts on local road infrastructure, strategic design considerations, and long-term maintenance agreements. • Requests the exploration of alternate traffic routes from the Hunter Expressway. • Requested a detailed assessment of proposed laydown areas, along with further information about the Wollombi Road A and B construction support sites, particularly in relation to their potential use for TWA and helipad. • Requested details on the Community and Employment Benefit Program and commitment to Voluntary Planning Agreement (VPA).
Lake Macquarie City Council	• Requested a more detailed biodiversity assessment for the Freemans Drive TWA site, with reference to vegetation retention targets and offsetting arrangements. • Encouraged EnergyCo to explore repurposing built structures for long-term community benefit. • Sought further information on traffic impacts, pedestrian safety, and the Council's future maintenance responsibilities for upgraded roads. • Raised concerns with visual impacts from the M1 Motorway and the environmental cost of vegetation loss. • Recommended formalising social impact management measures as consent conditions and requested comprehensive plans addressing waste, helicopter operations, contamination, wastewater, bushfire risk, and noise.
Muswellbrook Shire Council	• Requested clarification on the proposed TWA including its location, scale, and potential impacts on tourism and local services. • Recommended a health resourcing strategy to avoid strain on local GPs and medical services. • Requested details on the Community and Employment Benefit Program, with an emphasis on Indigenous employment. • Expressed concerns about traffic for Edderton Road, Thomas Mitchell Drive, and Hebden Road/New England Highway intersections, with a request for a traffic management plan developed in consultation with Council. • Requested clarification on visual impacts along the Golden Highway, waste and water management, stormwater upgrades, and inclusion of the Muswellbrook Bypass in the cumulative impact assessment.

Council	Submission summary
Singleton Council	• Supported the use of the Singleton Bypass for OSOM movements but raised concerns about cumulative traffic impacts on local roads, including stringing works across Putty Road. • Requested further consultation and appropriate management of freehold land. • Emphasised the need for the equitable implementation of a Social Impact Management Plan and the Community and Employment Benefit Program and commitment to Voluntary Planning Agreement (VPA). • Identified the need to develop and implement management plans to effectively manage potential impacts on biodiversity and traffic.

6 Assessment

6.1 Overview

The Department has undertaken a comprehensive assessment of the merits of the project. This report provides a detailed discussion of the key issues, including energy security and reliability, consideration of alternatives, biodiversity, visual and traffic impacts (**Sections 6.2 to 6.6**). The Department has also assessed the full range of other issues and potential impacts of the project and has included its assessment of these matters in **Section 6.7**.

6.2 Energy transformation

The project is consistent with a range of national and state policies that identify transmission expansion as essential for energy security and reliability, including:

- NSW Government's *Transmission Infrastructure Strategy*, which highlights the need for prioritising increasing transmission capacity;
- AEMO's 2026 ISP, which identifies a demand for 80 GW of utility-scale wind and solar in the NEM by 2035 and 117 GW by 2050, about five times the current NEM capacity of 23 GW, highlights the urgent need for additional transmission capacity to enable the NEM to shift to renewable energy;
- *Net Zero Plan Stage 1: 2020 - 2030 (2020)* and *Implementation update (2022)*, which identifies opportunities to expand transmission infrastructure to open new parts of the grid for renewable energy projects;
- NSW Government's *Electricity Strategy and Electricity Infrastructure Roadmap*, which supports transmission upgrades; and
- The *NSW Electricity Infrastructure Investment Act 2020* (EII Act) identifies the project as a Priority Transmission Infrastructure project (PTIP) as it is essential for energy security and avoiding breaches of the NSW energy security target.

The Department considers that the project could play an essential role in:

- enhancing the capacity of the NEM, by providing an additional 5 gigawatts of transfer capacity;
- support the delivery of clean energy from wind and solar projects from the Central-West Orana and New England REZs to consumers;
- facilitating the shift to lower-carbon emissions energy system as coal fired generators retire; and
- lowering prices for residents of NSW and the broader NEM by enabling power transfers between regions and encouraging more efficient investment in lower-cost generation sources.

Consequently, the Department considers the project critical to energy security and reliability in NSW, as well as to supporting the rebuild of the energy system.

6.3 Consideration of alternatives

Several public submissions raised concerns regarding the corridor selection process, including its proximity to townships and associated amenity impacts; biodiversity impacts; extent of co-location with existing infrastructure and selection of overhead rather than underground transmission lines. Feedback was also received from Aussie Ark and University of Newcastle's Centre for Conservation Science requesting further consideration of alternatives that avoid critical habitat for Littlejohn's Tree Frog and other threatened amphibians.

EnergyCo used a multi-criteria assessment to select the preferred alignment, balancing environmental, social, technical and cost considerations. The Department notes that the preferred project route prioritises the use of government-owned land (including NSW State forests and Commonwealth Government land), mining and existing energy land (around 86% combined), limiting impacts on private land (about 7%) and increasing distance from residential areas. This approach has less impacts on private land and is further from residential dwellings, reducing visual amenity impacts. Visual impacts are discussed further in **Section 6.5**. The preferred route also presented greater capacity for co-location with existing transmission lines and the utilisation of large amounts of public and already cleared land.

EnergyCo's corridor selection process was targeted in selecting alternatives with lower biodiversity impacts. The preferred alignment avoids higher value conservation areas including Watagans and Werakata National Parks, Warrawolong Flora Reserve; a designated conservation offset area associated with Bulga Mine; threatened ecological communities; old growth vegetation and important habitat for key threatened species. Particular attention was given to refining the project to minimise impacts to threatened frog species in Olney State Forest, with further design changes after exhibition of the EIS resulting in avoidance of 96% of the artificial breeding ponds. Biodiversity impacts and avoidance measures are discussed further in **Section 6.4**.

EnergyCo also assessed the potential for underground transmission and found it would significantly increase costs and construction time, require extensive excavation and vegetation clearing, restrict future agricultural use, reduce efficiency, and complicate maintenance. These findings are consistent with conclusions from two recent NSW parliamentary committee inquiries. EnergyCo determined that as the expense would be passed on to consumers it would not represent an efficient investment compared to overhead lines. The Department considers that while undergrounding may be suitable in some cases, it is impractical for this project given it is urgently required to support energy security and reliability in NSW and facilitate the energy rebuild.

The Department considers that EnergyCo has strategically designed the project to limit impacts on sensitive receivers and has also undertaken a comprehensive and proportionate assessment of alternatives. Residual impacts are considered manageable with the implementation of recommended conditions and that the preferred alignment represents a justified and balanced outcome.

6.4 Biodiversity

The project would impact biodiversity values during construction of the transmission line through native vegetation clearing, as well as direct and indirect impacts to listed threatened flora, fauna and vegetation communities. Other impacts could arise during operations, including ongoing edge effects and avifauna strike.

Many community objections, including from the University of Newcastle and special interest group Aussie Ark, raised concerns about biodiversity impacts and this has been a key focus of the Department's assessment.

As outlined in **Section 6.3**, EnergyCo has given significant consideration to alternative transmission alignments. About 75% of the development footprint within the selected alignment is covered by native vegetation. The remaining areas include land previously disturbed by mining, agricultural, energy transmission, and defence activities.

6.4.1 Biodiversity Assessment Process

EnergyCo commissioned WSP to prepare a BDAR for the EIS. A revised BDAR was submitted in response to advice from CPHR, matters raised in public submissions, and adjustments to the development footprint described in the amendment report. This included minor changes to the assessment approach informed by feedback from CPHR and is described in detail in section 2 of the revised BDAR.

The Department considers that the biodiversity assessment process has been comprehensive for this project and, in consultation with CPHR, is satisfied that the revised BDAR has been prepared in accordance with the BC Act and the underlying Biodiversity Assessment Method (BAM).

6.4.2 Avoidance and Mitigation

While EnergyCo has sought to avoid and minimise the project's impacts on biodiversity values, the scale, length, and linear nature of constructing 110 km of transmission line infrastructure mean that some impacts are unavoidable.

Importantly, high conservation value areas such as Watagans National Park, Werakata National Park, Warrawolong Flora Reserve and existing biodiversity offset areas would be avoided.

Additionally, the alignment avoids the better-quality remnants of the *Central Hunter Valley Eucalypt Forest and Woodland* and *Warkworth Sands Woodland of the Hunter Valley* Threatened Ecological Communities (TECs), which provide habitat for threatened species, including important habitat for the critically endangered Regent Honeyeater and endangered Swift Parrot.

Section 6.3 provides further detail about the measures to avoid and minimise impacts on biodiversity and other key constraints during the selection of the project corridor. Following the corridor selection, an iterative design process based on the results of field surveys was undertaken to further avoid and minimise the project's impacts on biodiversity, including:

- **co-location** – co-locating infrastructure with existing transmission lines where possible or in disturbed areas, such as mining sites, forestry operations or cleared lands;
- **relocation** – adjusting the corridor alignment to avoid impacts on threatened species and communities and known populations of serious and irreversible impact (SAIL) entities, including the Brush-tailed Rock Wallaby, microbats and threatened flora habitats;
- **partial clearing** – implementing controlled vegetation clearing within and adjacent to the transmission line easement (detailed further in **Section 6.4.3**);
- **spanning and retention of forested gullies** – reducing the extent of clearing within the State forests by spanning steep ravines and valleys where adequate conductor clearance can be achieved (detailed further in **Section 6.4.3**);
- **access** – using existing access tracks where possible to minimise additional vegetation clearing and minimising construction of new access tracks; and
- **micro-siting** – mechanisms to adjust project features during the detailed design phase to avoid areas with high biodiversity value when construction commences, including the minor relocation of project elements such as transmission towers.

Cumulatively, the design measures implemented to avoid and minimise impacts on biodiversity have resulted in a significant reduction in the clearing of native vegetation. Significantly, this includes avoiding more than 100 ha of TECs and habitat for a range of potential SAIL entity species.

Avoidance and minimisation of impacts on frog habitat

A key issue raised during the exhibition of the EIS was the project's potential impact on threatened frog species within the Olney State Forest (in particular the Littlejohn's Tree Frog and Stuttering Frog). In response to these concerns, EnergyCo put considerable effort into refining the development footprint between the Olney switching station and Corrabare State Forest to further avoid and minimise impact on the important breeding habitats for threatened frog species. EnergyCo also engaged Dr Frank Lemckert (a CPHR-accredited species expert) to provide advice on this matter.

The design and construction methodology refinements included:

- reducing the development footprint of stringing areas (cable brake and winch sites) near waterways where threatened frogs were detected;
- significantly reducing direct impacts on the University of Newcastle's artificial breeding ponds for Littlejohn's Tree Frog (i.e. 60 of 62 ponds avoided);
- conservatively assuming the presence of threatened frog species in additional areas which would be managed accordingly;
- introducing and relocating towers to create additional no-clearing zones;
- increasing buffers to waterways; and
- committing to hand clearing within easement areas associated with waterway crossings.

As a result of these refinements, the amended project has avoided 60 of 62 (or 96%) of the recently constructed breeding ponds and 9.29 ha of vegetation of core breeding habitat for this species in the Olney State Forest.

EnergyCo has also committed to preparing and implementing a Threatened Frog Management Sub-Plan for the duration of construction. This plan would include:

- locating, designing and installing supplementary breeding ponds or alternative connectivity measures in the design within areas subject to partial clearing and the Olney switching station;
- measures to prevent the spread of chytrid fungus to/from the development footprint and adjoining threatened amphibian habitat where accessible;
- location and design of specific erosion and sediment control measures, maintaining existing water quality and preventing sedimentation of potential breeding habitats during construction;
- monitoring requirements; and
- measures to be implemented on-site to clearly demarcate areas to be retained as 'no-go areas'.

The Department acknowledges that EnergyCo refined its design to reduce its impacts on threatened frog species, noting that CPHR's advice on the amended BDAR also acknowledges EnergyCo's significant work to avoid and reduce impacts on these species.

6.4.3 Disturbance area categories

The development footprint incorporates different project elements with varying degrees of physical disturbance to reflect construction and operational requirements. These disturbance area categories are described in **Table 7** and shown on **Figure 7** to **Figure 9**.

Table 7 | Disturbance area categories

Disturbance Area Category	Description
Disturbance Area A	The area where vegetation would be completely removed. Impacts within this area would include sub-surface disturbance from construction activities such as grading, excavation, and full tree removal. With the exception of areas that only require temporary disturbance (i.e. temporary access tracks and stringing sites), this area would also be subject to ongoing maintenance during operation (including vegetation removal to ground level) for operational and safety requirements, including bushfire risk management.
Disturbance Area A (Centreline)	A 20 m wide centreline area between transmission towers where vegetation would be completely removed to ground level during construction. This is a subset of Disturbance Area A. This area would also be subject to ongoing maintenance during operation (i.e. removal to maintain vegetation clearance requirements) for operational and safety requirements, including bushfire risk management.
Disturbance Area B	The area within the transmission line easement, excluding Disturbance Area A and Disturbance Area A (centreline), where partial clearing would be undertaken. Removal of vegetation (including trees) would be undertaken only where it has the potential to exceed vegetation clearance heights. Vegetation with mature growth heights up to 2 m can remain, while vegetation exceeding 2 m would be managed to maintain these clearance heights. This area would be subject to ongoing maintenance during operation.
Disturbance Area Hazard Tree Zone (HZ)	Hazard trees are those that have the potential to pose a risk to safe operation of the transmission line by falling onto the transmission towers, conductors and associated infrastructure within the easement. Hazard tree management would occur during operation to maintain safe operating clearances for the conductors and tower structures. The hazard tree zone would be inspected for trees in the height range of 20 m or more, which is typically in the high-risk category. High-risk category trees would be assessed for structural instability and managed according to the risk present, including tree removal if required.

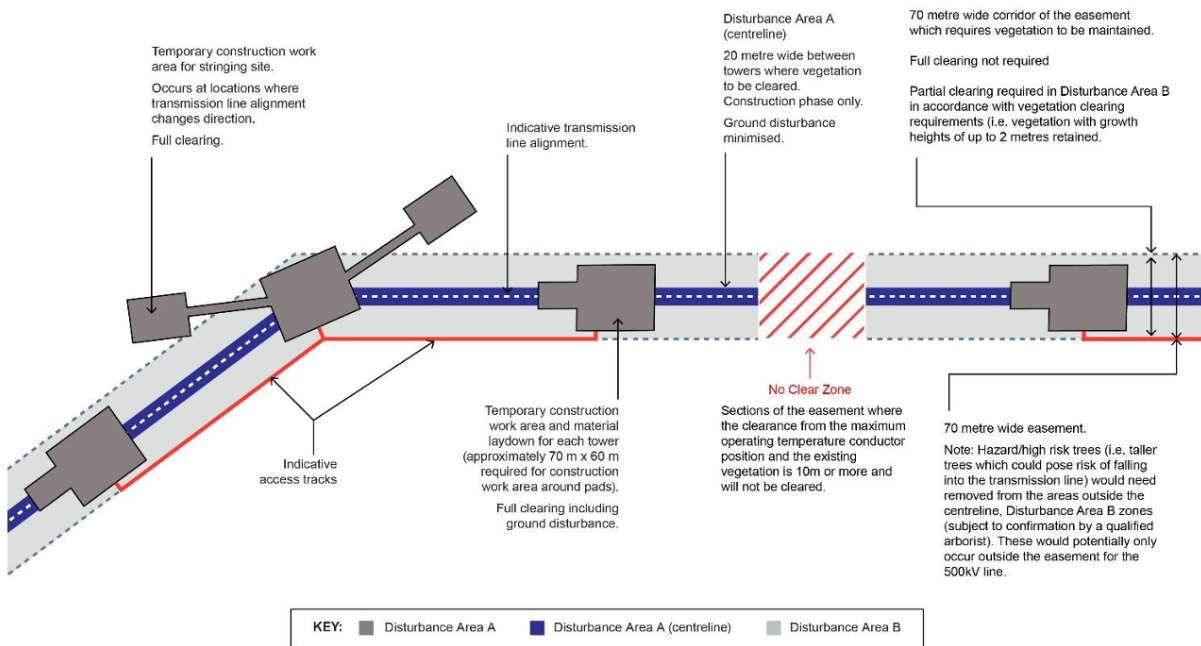


Figure 7 | Disturbance areas for a typical 500 kV transmission line section

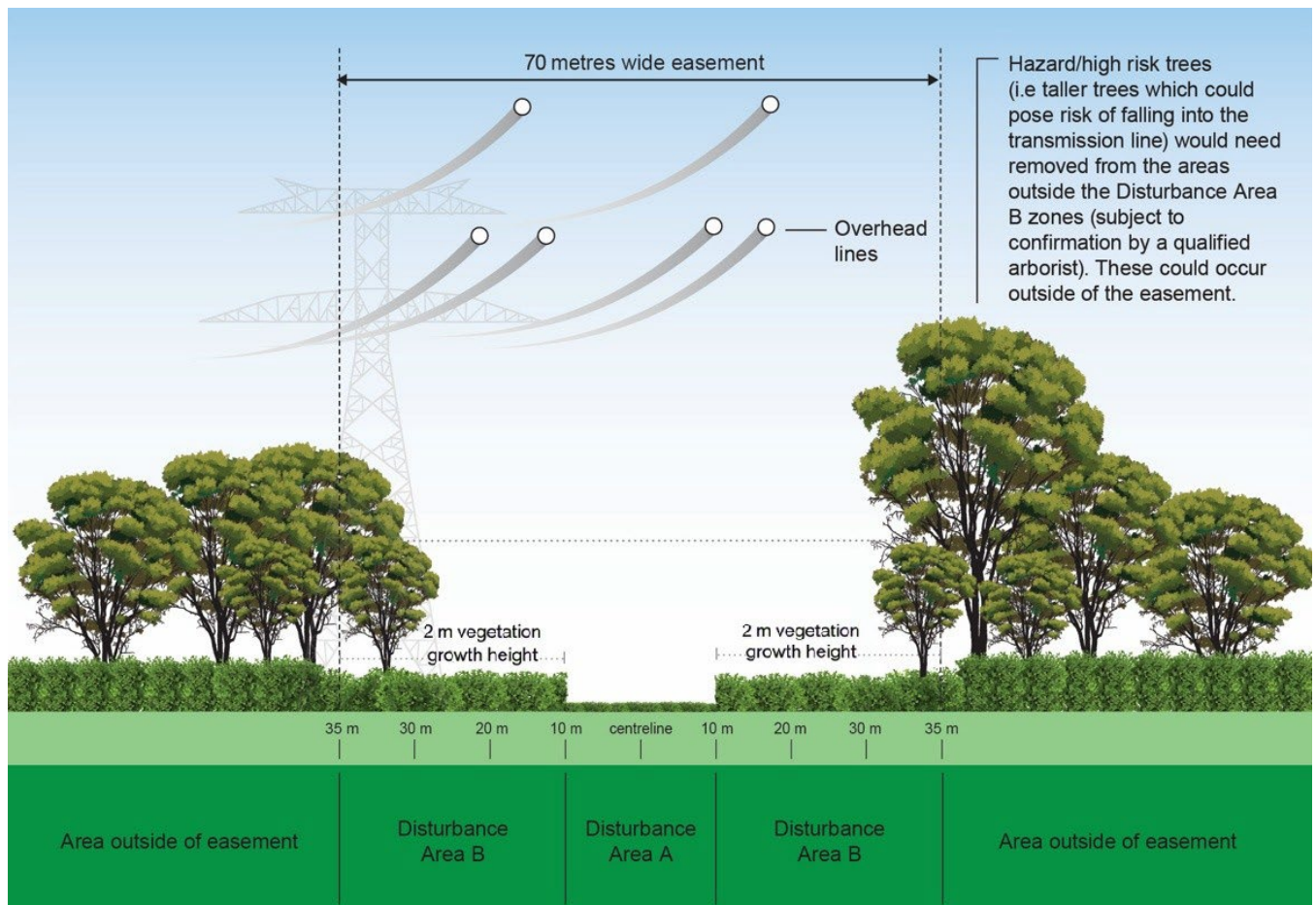


Figure 8 | Disturbance areas and widths applied for typical 500 kV transmission line section

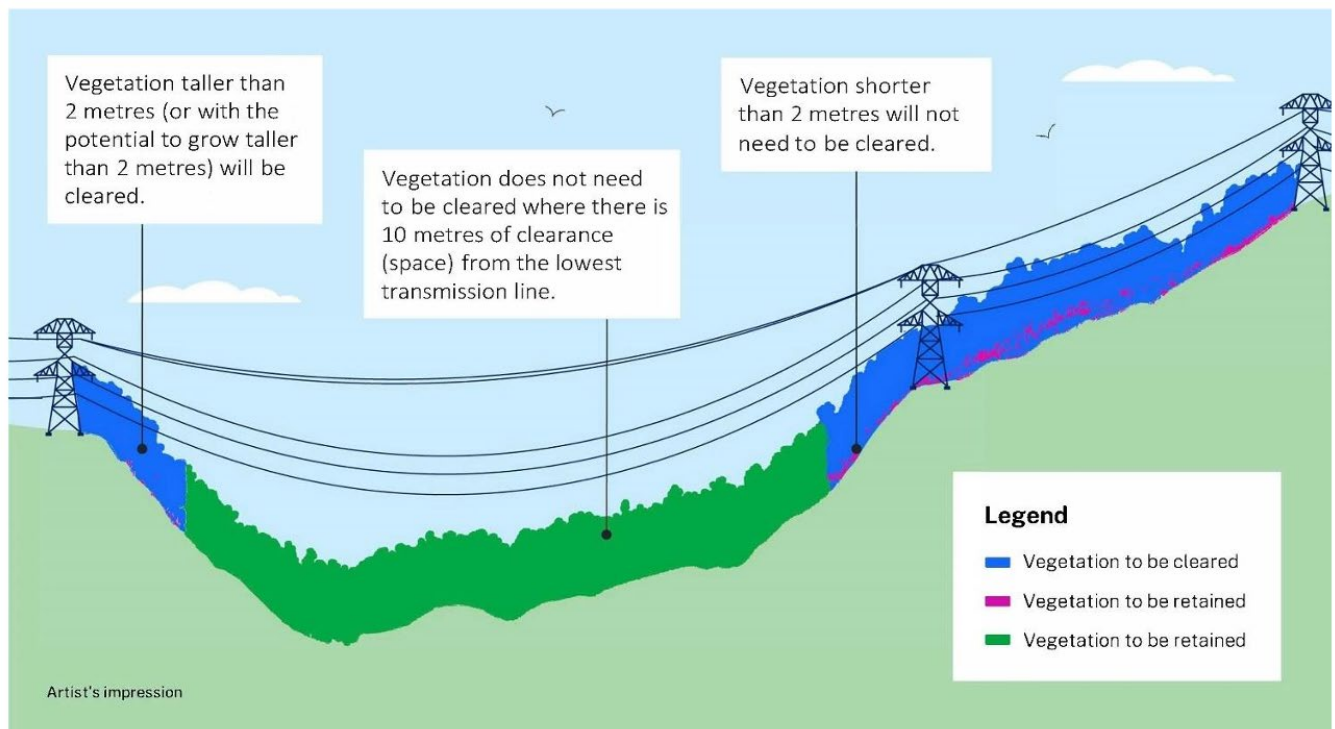


Figure 9 | Disturbance areas and 'no-clearing' zone section for a typical 500 kV transmission line section

6.4.4 Native Vegetation

Approximately 945 ha of native vegetation would be impacted by the project. Of this, 44% is in disturbed condition, including derived grasslands (~200 ha), thinned/poor/plantation woodlands associated with previous clearing and mine rehabilitation (~186 ha), and hardwood forestry plantations (~31 ha).

Native vegetation within the amended development footprint aligns with 38 plant community types (PCTs), which occur in varying condition states. **Table H-1** and **Table H-2** of **Appendix H** provide a summary of the vegetation types that would be impacted by the project, as well as the ecosystem credit liability under the *NSW Biodiversity Offset Scheme*.

The remaining areas have been previously disturbed by historical and ongoing mining, agricultural, energy transmission and defence activities and have therefore been mapped as Category 1 – Exempt land under the *NSW Local Land Services Act 2013* (LLS Act) or non-native vegetation. These areas are excluded from further assessment under the BAM.

Threatened Ecological Communities

Based on PCT association, approximately 228 ha of native vegetation within the development footprint aligns with seven threatened ecological communities (TECs) listed under the BC Act, and approximately 166 ha aligns with three TECs listed under the EPBC Act (see **Table 8**).

Table 8 | Threatened Ecological Communities within the development footprint

Community Name	Conservation Status	Area (ha)
Threatened Ecological Community Listed under the BC Act		
Central Hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions	E	165.92
Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions	E	9.56
Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	E	4.31
Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions	E	1.13
Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin and NSW North Coast Bioregions	E	44.68
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	2.24
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E	0.39
	Total	228.23
Threatened Ecological Community Listed under the EPBC Act		
Central Hunter Valley eucalypt forest and woodland	CE	164.19
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	E	0.12
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	CE	2.24
	Total	166.55

6.4.5 Threatened Flora Species

The project has the potential to impact flora species listed under the BC Act and EPBC Act through direct loss from vegetation clearing, and from indirect impacts.

Targeted surveys recorded the presence of 13 threatened flora species listed under the BC Act and/or EPBC Act within the development footprint. Based on desktop assessment, presence of suitable habitat and field observations, an additional 18 threatened flora species listed under the BC Act and/or EPBC Act have been assumed present by EnergyCo.

Of these flora species, seven are identified as SAI entities, four which were recorded and three which have been assumed present. These SAI entities are further discussed in **Section 6.4.7**.

Table H-3 of Appendix H details the impacts and species credit liability for threatened flora species potentially impacted by the project.

6.4.6 Threatened Fauna Species

The project has the potential to impact fauna species through direct habitat loss from vegetation clearing, and indirectly due to the potential for birds and bats to collide with the transmission lines and from EMF impacts on birds nesting in the transmission towers. Prescribed impacts may also occur due to fragmentation from clearing for the easement, resulting in impacts on biodiversity connectivity.

Habitat Loss

The project would result in the clearance of approximately 945 ha of habitat for native fauna species within the development footprint. This includes habitat for threatened species listed under the BC Act.

In recognition of the disturbance area categories outlined in **Section 6.4.3**, the BDAR has assessed the 'partial loss' of vegetation within Disturbance Area B and HZ. This recognises that vegetation (including fauna habitat) within the maintenance zone underneath the transmission line would be managed by removing vegetation with specific growth heights (i.e. more than 2 m) in accordance with vegetation clearing requirements, leaving the midstory and groundcover intact.

Accordingly, the BDAR assigns a future vegetation integrity score to the PCTs within Disturbance Area B and HZ to recognise the loss of habitat value in these areas. Importantly, for fauna species which are reliant on habitat features that would be removed (e.g. owl species reliant on tree hollows for breeding) 'complete loss' of habitat has been assumed.

The loss of fauna habitat and associated impacts on threatened species would be offset via the ecosystem and species credits detailed in **Table H-1** and **Table H-4** of **Appendix H**. CPHR has reviewed the credit calculations for all fauna species predicted to be impacted by the project, including the partial loss scenarios, and confirmed it has no outstanding concerns.

Of the threatened fauna species recorded or predicted to utilise the habitat within the project area, eight are identified as SAI entities (or potential SAI entities) and are discussed in **Section 6.4.7**.

Indirect and Prescribed Impacts

There is the potential for indirect and prescribed impacts on fauna species associated with the loss of habitat connectivity, risk of transmission line 'strike' to avifauna, and EMF impacts on birds nesting in transmission line towers.

A detailed assessment of potential indirect and prescribed impacts associated with the project has been prepared in accordance with Section 8.2 of the BAM and is provided in Section 8.3 of the amended BDAR. EnergyCo's assessment concludes that all potential indirect and prescribed impacts can be appropriately avoided and/or managed through focused mitigation measures, including:

- implementation of a Biodiversity Management Plan with measures to manage indirect impacts (e.g. weed and pest control, erosion and sediment control, bushfire management);

- development of a connectivity strategy for the project, which would contain detailed and specific measures to avoid/minimise impacts from loss of connectivity to the squirrel glider, southern greater glider, eastern pygmy possum and brush-tailed phascogale;
- implementation of a supplementary hollow and nest strategy for the installation of nest boxes or other hollow creation methods to provide alternative roosting and/or nesting habitat for threatened fauna displaced during clearing;
- implementation of measures to avoid potential vehicle strike (i.e. detailed road design to avoid key fauna habitats, use of appropriate road signage, speed limits and driver training); and
- tower designs which discourage nesting and installation of bird diverters in high-risk areas to minimise potential EMF-related impacts.

In addition to the above, EnergyCo has committed to providing \$250,000 to the NSW DCCEEW Saving our Species program to support targeted conservation actions that assist the recovery of specific threatened amphibian species in the Olney State Forest.

Following its review of the amended BDAR, CPHR confirmed it had no outstanding concerns regarding indirect or prescribed impacts. Accordingly, the Department considers that potential indirect and prescribed impacts have been appropriately assessed in the amended BDAR, and has recommended conditions requiring EnergyCo to implement the mitigation and management measures proposed in the amended BDAR.

6.4.7 Serious and irreversible impacts

Under Clause 6.7 of the BC Regulation, an impact is to be regarded as serious and irreversible if it is *“likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct”* on the basis of four set principles.

The amended BDAR prepared for the project included a detailed assessment of potential impacts on SAIL entities in accordance with Chapter 9 of the BAM and the NSW Government’s *Guidance to Assist a Decision maker to Determine a Serious and Irreversible Impact*, 2019. This included a detailed assessment of one TEC, seven flora and eight fauna species, that are either known to occur or assumed to be present within the development footprint (two of which are nominated ‘SAIL entities’).

The Department’s key considerations regarding SAIL are outlined below. This was informed by CPHR, which conducted a thorough review of the project’s potential to result in an SAIL.

Scrub Turpentine and Native Guava

Both the Scrub Turpentine and Native Guava are considered under SAIL Principles 1 (Species in rapid decline) and 4 (Unlikely to respond to management) as Myrtle Rust has irreversibly spread across the State, leading to a rapid decline in their populations throughout their ranges. A very small number of individuals flower and set seed, but seedling survival rates are also impacted by Myrtle Rust.

Four of the 47 Native Guava individuals and 1,528 Scrub Turpentine individuals would be removed. The individuals identified are badly affected by Myrtle Rust and are very unlikely to sustain the local population.

EnergyCo has committed to detailing and implementing a biosecurity protocol as part of the BMP to help limit the spread of weeds and Myrtle Rust. The Department also notes that scientists are using DNA sequencing and seed banking to identify, breed, and ultimately reintroduce rust-resistant individuals.

The final determination made by the NSW Threatened Species Scientific Committee concluded that the Exotic Rust Fungi, clearing of vegetation, population fragmentation, and weed invasion are all key threatening processes for the species. However, the risk of extinction of these two species is more likely to be related to existing threats, while the impact of this project is not likely to contribute significantly to the risk of the species becoming extinct.

Littlejohn's Tree Frog and Stuttering Frog

The Littlejohn's Tree Frog has been nominated for listing under SAI Principle 4 (Unlikely to respond to management), and the nomination is currently under review. It is a forest-dependent species known from only three locations: the Central Coast Range (Watagan Mountains), Blue Mountains, and Woronora Plateau. Despite widespread suitable habitat, the estimated population is between 659 and 1318 mature individuals, as the species is susceptible to infection by the deadly amphibian chytrid fungus.

Following the exhibition of the EIS, EnergyCo refined the project design to remove a stringing site, reduce impacts to core breeding habitats by 9.29 ha, and establishing 9 non-disturbance areas where the alignment crosses key breeding habitat in waterways. The project has also avoided 60 of the 62 artificial breeding ponds that the University of Newcastle constructed for this species.

The project would impact up to 70.34 ha of habitat for this species, which represents 6% of the estimated suitable habitat available to the Watagan's population. The BDAR estimates direct mortality of up to 15 mature individuals of the estimated 250 mature individuals. The species has an estimated area of occupancy of between 268 to 296 km² across its three known locations.

The Stuttering Frog is listed under SAI Principle 4 as the population has been severely impacted by amphibian chytrid fungus. There is an estimated population in the Watagan Mountains of 50 to 250 individuals, with most of the records for this species within the development footprint overlap with the Littlejohn's Tree Frog locations. Up to 191.99 ha of habitat would be impacted, which represents 5% of the associated habitat available to the Watagan's population. The species has an estimated area of occupancy of approximately 188 km².

EnergyCo has committed to the following specific measures for the protection of these species:

- during construction, sensitive hand clearing zones would be established for waterways where clearing is required in sensitive biodiversity areas associated with mapped breeding habitat for threatened amphibian species;
- prepare and implement a Threatened Frog Management Sub-Plan including an amphibian hygiene protocol to mitigate potential spread of chytrid fungus during construction; and
- providing \$250,000 of funding to NSW DCCEEW Saving our Species Program towards activities under the conservation strategy assisting population recovery for selected amphibian species in Olney State Forest.

The Department and CPHR are satisfied that subject to the implementation of the recommended conditions of approval and EnergyCo's commitments above, the project's impacts would not contribute significantly to the risk of extinction of the two frog species and would not constitute SAIL.

Large-eared Pied Bat

Suitable breeding habitat for the Large-eared Pied Bat includes caves, cliffs and escarpments that cannot be readily recreated and are considered irreplaceable. For this reason, this species is listed as an SAIL entity under Principle 4 (unlikely to respond to measures to improve its habitat and vegetation integrity), and any potential SAIL for this species is only related to impacts to its breeding habitat.

While the project avoids direct impacts on any caves identified as breeding habitat, it would still affect 5.25 ha of known breeding habitat, 2.55 ha of assumed breeding habitat, and an additional 574.24 ha of foraging habitat. Noise and vibration from construction activities could result in temporarily increased indirect impacts to cave structures.

EnergyCo has committed to the following mitigation measures for this species:

- conducting assessments in areas within 100 m of breeding habitat prior to any construction or clearing activity commencing. This may result in halting construction activity during the breeding season or employing alternative clearing equipment if deemed necessary; and
- preparing and implementing a microbat sub-plan during construction as part of the BMP, including reporting on monitoring outcomes.

The Department has considered EnergyCo's assessment, the proposed avoidance and mitigation measures, and advice from CPHR for the species. Consequently, the Department and CPHR are satisfied that the project's impacts would not contribute significantly to the risk of extinction and would not constitute an SAIL to the Large-eared Pied Bat.

Other SAIL entities

The Department's assessment of impacts on the other SAIL entities recorded or assumed present are summarised below in **(Table 9)** and in **Table H-4 of Appendix H**. The Department has carefully

considered the five assessment provisions in sections 9.1.1 and 9.1.2 of the BAM 2020, and the *Guidance to assist a decision-maker to determine a serious and irreversible impact*, 2019, the assessment provided in the amended BDAR and the advice provided by CPHR. The Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of any species or community and would not constitute SAIL.

Commonwealth matters

EnergyCo identified and addressed all threatened species and communities included in the Commonwealth Referral Decision (EPBC 2024/09874) (Referral Decision). Assessments of significance were undertaken for threatened species and communities that were recorded during field surveys or were identified as having a moderate or higher potential to occur within the project area.

Based on the assessment of significance, the project would result in significant residual impacts to two TECs (Central Hunter Valley eucalypt forest and woodland and River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria) and 37 threatened species.

The Department has considered Commonwealth matters (including potential impacts on Commonwealth Land such as the Singleton Military Area) in consultation with CPHR and AG DCCEEW. This includes consideration of assessments of significance and the relevant approved conservation advice, recovery plans and threat abatement plans (TAPs).

A summary of this assessment is provided in **Appendix J**.

Table 9 | Key considerations on other SAI entities

Entity	SAI Principle	Key Considerations
Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	P1, P2	- Up to 1.19 ha total and 3.12 ha partial loss of the estimated geographic extent of 2,589 ha and 7,144 ha. - The project is unlikely to alter the current extent of occurrence or area of occupancy.
Broken Back Ironbark (<i>Eucalyptus fracta</i>)	P3	- Up to 4.62 ha of known habitat and 8.48 ha of assumed habitat impacted. 66 individuals removed from a total population estimated at 3,539–3,639 across three subpopulations. - The project is unlikely to alter the current extent of occurrence or area of occupancy.
Charmhaven Midge Orchid (<i>Genoplesium branwhiteorum</i>)	P1, P3	Not recorded during surveys but assumed present in a 6.12 ha unsurveyed area. While the number of individuals to be impacted by the project is uncertain, it is likely to be low.
Eastern Underground Orchid (<i>Rhizanthella slateri</i>)	P2	Known from fewer than 14 subpopulations, each with fewer than 75 individuals. 81.37 ha of assumed suitable habitat, but likely impacts are expected to be minor.
Variable Midge Orchid (<i>Genoplesium insigne</i>)	P3	Up to 4.25 ha of known and 6.42 ha of assumed habitat impacted. 15 individuals would be removed from an estimated population of 432 individuals across 14-sub populations, impacts expected to be minor.
Wyang Sun Orchid (<i>Thelymitra adorata</i>)	P2, P3	Not recorded during survey but assumed present in a 0.79 ha area. The number of individuals to be impacted by the project is uncertain, but likely to be low given the small area of potential habitat and the species not being recorded during surveys.
Brush-tailed Rock-wallaby (<i>Petrogale pencillata</i>)	P4	Project has avoided direct impacts to caves with significant habitat for the colony in the Pokolbin and Watagan State Forests. Up to 114.84 ha of habitat in Disturbance Area A and 49.12 ha of habitat in Disturbance Area B and HZ. Indirect impacts are expected to be minor and would be managed in accordance with a BMP.
Hunter Valley Delma (<i>Delma vescolineata</i>)	Nomination under review	Up to 281.36 ha of habitat in Disturbance Area A and 72.17 ha in Disturbance Area B. The estimated area of occupancy is 48 km².

Entity	SAII Principle	Key Considerations
		This species occurs in secondary native grassland remaining after the removal or dieback of previous woody canopy in its associated PCTs. Areas of retained suitable habitat adjoining the proposed impact areas would be delineated and protected.
Regent Honeyeater (<i>Anthochaera phrygia</i>)	P1, P2	- Up to 96.91 ha of Mapped Important Habitat impacted. - The project is unlikely to reduce the area of occupancy or extent of occupancy for the species, and although it would contribute to cumulative loss of habitat, it is not likely to contribute significantly to the extinction of this species. - The proposed transmission line has been co-located with existing transmission infrastructure to minimise fragmentation of woodland habitat in the Hunter Valley key breeding area.
Sooty Owl (<i>Tyto tenebricosa</i>)	P4	- The proposed project would impact 293.43 ha of Sooty Owl habitat, however there would be no direct impacts to the cave breeding habitat observed in Corrabare State Forest. - While indirect impacts may occur, they are expected to be minor and would be managed in accordance with the project BMP.
Swift Parrot (<i>Lathamus discolor</i>)	P1	- Removal of up to 45.32 ha of Mapped Important Habitat. - CPHR has advised that the project is unlikely to reduce the area of occupancy or extent of occupancy for the species, but would contribute to cumulative loss of habitat, which is linked to population declines.

Table Note: Proposed mitigation measures include further micro-siting, preclearance surveys, implementation of an unexpected and incidental finds protocol, and implementation of a Biodiversity Management Plan.

6.4.8 Biodiversity offsets

Credit liability

Under the BC Act, the impact on biodiversity from the project would generate 21,123 ecosystem credits and 269,301 species credits. **Table 10** summarises the estimated biodiversity credit liability requirements under the NSW Biodiversity Offset Scheme for the project.

Table 10 | Biodiversity Credit Liability for the project

Credit Type	Credits
Ecosystem Credits	
Native Vegetation	21,097
Scattered trees	26
Total	21,123
Species Credits	
Threatened Flora	17,671
Threatened Fauna	251,630
Total	269,301

Biodiversity offset strategy

EnergyCo intends to enter into a Strategic Offset Delivery Agreement (SODA) with the Secretary of NSW DCCEEW for the project. Under this agreement, responsibility for delivering biodiversity offsets would be transferred to NSW DCCEEW with commensurate funding. Biodiversity offsets secured under the SODA would constitute either the retirement of like-for-like credits or conservation actions that are targeted at impacted entities.

Offset selection would be guided by the *Hunter Conservation Investment Strategy*, which has been recently finalised by NSW DCCEEW to identify the key strategic conservation principles and actions to be undertaken in the Hunter region. Importantly, the *Hunter Conservation Investment Strategy* has been developed to:

- integrate conservation programs and priorities to optimise delivery of regional conservation outcomes;
- protect regionally significant conservation values;
- improve ecological connectivity and resilience to climate change;
- restore degraded ecosystems and habitats;

- contribute to a comprehensive, adequate and representative protected area system; and
- deliver social benefits for the region.

The Department considers this to be an appropriate approach and has recommended conditions requiring the retirement of biodiversity credits in accordance with the NSW Biodiversity Offsets Scheme.

6.4.9 Recommended conditions

The Department in consultation with CPHR, has recommended conditions requiring EnergyCo to:

- minimise the clearing of native vegetation and key fauna habitat, including hollow bearing trees and habitat for threatened bird and bat populations, within the development footprint and protect native vegetation and key fauna habitat outside the development footprint in accordance with limits in the recommended conditions;
- prepare and implement a Partial Clearing Monitoring Strategy which would include a description of the measures to confirm and report on the number and class of biodiversity credits impacted within areas of partial clearing;
- allow for a Revised Offset Obligation Report to change the number and class of biodiversity credits required to be retired where there is a change to the impacts on biodiversity values or vegetation integrity prior to retirement of credits;
- if a SODA is entered into, allow for the verification of the offset credits for the development's actual impact, post-clearing verification of actual impacts, or a change resulting from the outcomes of the Partial Clearing Monitoring Strategy;
- prepare and implement a Biodiversity Management Plan which would include a description of the measures to:
 - implement clearing and operational management protocols;
 - avoid and minimise impacts on potential SAI entities and provide minimisation measures for these entities to mitigate harm;
 - minimise the potential indirect impacts on threatened flora and fauna species,
 - implement a connectivity strategy for the project;
 - minimise the loss of key fauna habitat (including tree hollows);
 - rehabilitate and restore temporary disturbance areas and maximise the salvage of resources within the development footprint for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and restoration of the project area; and
 - control weeds and pests;

- prepare and implement a Threatened Frog Management Sub-Plan which would include a description of measures to be implemented to:
 - clearly demarcate areas to be retained as ‘no go areas’, including buffer areas around breeding ponds to be retained;
 - prevent the introduction and spread of chytrid fungus;
 - maintain existing water quality and prevent pollution of potential breeding habitats during construction;
 - locate, design and install supplementary breeding ponds and/or other connectivity measures within areas subject to partial clearing, and the Olney switching station;
 - hand clearing riparian corridors in the Stuttering Frog and Littlejohn’s Tree Frog habitat; and
 - monitor and report on the effectiveness of these measures; and
- prepare a detailed program to monitor, evaluate and publicly report on the effectiveness of these measures.

The recommended conditions to allow reduction in credits post approval aim to incentivise EnergyCo to achieve further reductions in impacts during the final detailed design of the transmission line. This condition required concurrence of the Minister for Environment under the BC Act. Concurrence was granted by the Minister for Environment on 17 June 2026.

6.4.10 Conclusion

The project would clear approximately 945 ha of native vegetation. Importantly, approximately 44% of this is in varying degrees of disturbed condition state, including derived grasslands, and thinned/poor/plantation woodlands associated with previous clearing and mine rehabilitation, and hardwood forestry plantations. The Department considers that the project has been designed to avoid and minimise impacts on high quality vegetation and habitat as far as practicable, particularly through co-locating sections of the transmission line with existing infrastructure and relocating other sections to avoid key biodiversity features.

The Department considers that the biodiversity assessment process has been comprehensive for this project and the collaboration between EnergyCo and CPHR has resulted in a rigorous assessment which complies with the requirements of the NSW BC Act, and underlying BAM.

The project involves various mitigation measures to reduce biodiversity impacts, including partial vegetation clearing beneath the transmission lines and implementation of a Biodiversity Management Plan and Threatened Frog Management Sub-Plan. Importantly, the Revised Offset Obligation Report condition would incentivise EnergyCo to achieve further reductions in impacts during the final detailed design of the transmission line. EnergyCo intends to enter into a SODA with NSW DCCEEW in order to offset the impacts of the project.

The Department considers that, subject to the recommended conditions, the project would not significantly impact the biodiversity values of the locality and would not contribute significantly to the risk of extinction of any species (i.e. it would not constitute SAI).

6.5 Landscape character and visual amenity

EnergyCo commissioned a Landscape and Visual Impact Assessment (LVIA) as part of its EIS and provided additional information, including further assessment of receivers and more wireframes, during the Department's assessment. The Department also visited the project area to assess the landscape character and potential visual impacts.

The project area traverses varied landscapes including cleared land used for energy, open-cut mining, defence, agriculture and viticulture as well as densely forested land within the Pokolbin, Corrabare, Watagan and Olney State Forests.

The project transmission tower spacing would typically range from 300 to 600 m but may be spaced at a minimum of 75 m or a maximum of 1.3 km in some instances due to topography. The maximum tower height would be 85 m.

6.5.1 Avoidance and mitigation

EnergyCo has located the transmission line corridor and associated infrastructure to avoid and minimise visual impacts, including:

- maximising the distance between the project and existing dwellings and towns;
- retaining vegetation that provides screening of the project to the furthest extent possible;
- siting transmission infrastructure in areas of low scenic quality where possible;
- consideration of transmission tower design, including tower height and shape, as well as spacing between individual towers; and
- minimising off-site lighting impacts to the greatest extent possible.

The Department notes that in accordance with the Framework, private landholdings that are hosting proposed transmission infrastructure are considered easement affected. Easement affected receivers need not be assessed in accordance with the Visual Supplement and would be eligible for compensation under the *Land Acquisition (Just Terms Compensation) Act 1991*. As such, the Department has not considered visual impacts to these receivers.

6.5.2 Impact assessment approach

The Department assessed the visual impact of the project against the requirements of the Visual Supplement. The technical supplement differentiates between:

- **landscape character impact assessment** – the assessment of the potential impact on an area’s cumulative built, natural and cultural character or sense of place; and
- **visual impact** – the assessment of the potential impact on views:
 - setbacks to private viewpoints – the Visual Supplement prescribes setback distances for transmission towers that are likely to have a dominant appearance at a private viewpoint. A sensitive receiver will trigger a high visual impact if it is located within the relevant setback distance of a transmission tower and has an unobstructed view of it. For an 85 m high transmission tower, the setback is 400 m;
 - visual magnitude – the apparent size of the project within the viewshed;
 - viewpoint sensitivity – the relative importance of viewpoints and the value the community or visitors may place on landscapes viewed from public use areas, public travel ways and private receivers such as dwellings. Sensitivity should also consider the importance of the view (i.e. the primary view from a dwelling);
 - scenic quality – the holistic and relative scenic, cultural or aesthetic value of the landscape within the viewshed; and
 - visual sensitivity – determined based on the scenic quality and viewpoint sensitivity of a receiver.

In accordance with the methodology outlined in the Visual Supplement, the overall visual impact to a receiver is determined using the visual sensitivity and the visual magnitude.

6.5.3 Impact assessment

Views from receivers

EnergyCo’s LVIA considered impacts on receivers within 1.625 km of the proposed transmission alignment, in accordance with the Visual Supplement (for towers with a maximum height of 85 m). No non-easement-affected receivers were identified within the 400 m setback prescribed by the Visual Supplement.

The LVIA initially identified 68 private receivers requiring assessment. Of these 68, eight receivers were predicted to experience a potential high impact and 13 to experience a moderate impact. The remaining 47 were expected to experience a low or negligible visual impact from the project.

EnergyCo prepared a revised LVIA for the amended transmission route described in **Section 4.3**. In total, 11 non-easement affected receivers were reassessed, with one non-easement affected receiver (receiver 238) reducing from a moderate to low visual impact as a result of the amended transmission route.

In accordance with the Visual Supplement, EnergyCo undertook a detailed assessment for those non-easement affected receivers with an expected impact rating of moderate or higher. The Department's assessment of these receivers is presented in **Table 11**.

EnergyCo has committed to managing the predicted visual impacts of the project by implementing appropriate mitigation measures in consultation with the landowners of potentially impacted receivers. Accordingly, the Department has recommended conditions requiring EnergyCo to implement appropriate mitigation measures (such as landscaping and vegetation screening) in consultation with receivers 465, 466, 467, 2920 and 2928.

Table 11 | Visual impact assessment - views from private receivers

Receiver ID	Distance to nearest tower (m)	Magnitude	Visual Sensitivity	Scenic Quality	EnergyCo's Visual Impact Rating	Department's Assessment and Recommended Mitigation
465	1,132	Low	High	High	Moderate	Although these receivers are more than 1 km from the nearest tower, the moderate visual impact to these receivers is predominantly driven by the high scenic quality views of the rocky escarpments and ridge lines to the south east. The Department recommends that additional screen planting in agreement with the landowners would mitigate the potential visual impact from these receivers and considers that screen planting could be implemented to reduce views of the transmission towers while preserving views of the main landscape features to the south east of the dwellings. EnergyCo has also committed to minimising tower heights as far as practicable to the east of these receivers to reduce obstruction of the ridgeline and reduce the prominence of the towers in the viewshed. Given the distance between the receivers and the proposed transmission towers (i.e. greater than 1 km), the Department considers these mitigation measures appropriate to manage visual impact to these receivers.
466	1,251	Low	High	High	Moderate	
467	1,080	Low	High	High	Moderate	

Receiver ID	Distance to nearest tower (m)	Magnitude	Visual Sensitivity	Scenic Quality	EnergyCo's Visual Impact Rating	Department's Assessment and Recommended Mitigation
2920	820	High	Moderate	Low	Pre-mitigation: Moderate Post-mitigation: Low	The proposed transmission towers would be visible on the gentle rolling hills east of the project. The existing view includes a 132 kV transmission line and Putty Road. Sparse mature vegetation along the property boundary would screen views to some of the proposed transmission towers. Additional screen planting is proposed along the property boundary to the east, reducing the potential visual impact from moderate to low. With the implementation of the above mitigation measures, the Department considers that the visual impacts to this receiver can be appropriately managed.
2928	350	Moderate	Moderate	Low	Pre-mitigation: Moderate Post-mitigation: Low	The closest towers to the dwelling are screened by existing mature vegetation, screening views to west. The unmitigated visual impact rating for this receiver was assessed as moderate. Additional screen planting is proposed to the south of the dwelling, reducing the potential visual impact from moderate to low. With the implementation of the above mitigation measures, the Department considers that the visual impacts to this receiver can be appropriately managed.

Key public viewpoints

The LVIA conducted a simple assessment for representative viewpoints including roads on the State and public road networks, the Hunter Valley Gliding Club, Flat Rock Lookout and Olney Headquarters campground and picnic area. The simple assessment identified one public viewpoint with a potential high impact and five with a moderate impact. The remainder were assessed as having a low or very low visual impact and did not warrant further assessment.

The LVIA conducted a detailed assessment of the public viewpoints with a predicted moderate or greater visual impact. The detailed assessment indicated that one public viewpoint (P07: Cessnock Road) would have a residual moderate visual impact, with the remainder expected to experience low or negligible visual impact.

In accordance with the Visual Supplement, for viewpoints from a public road with a moderate impact, EnergyCo should seek to reduce impacts to road users as far as is reasonable and feasible. Mitigation should only be considered if it would not obstruct important views and sight lines, could be confined to a relatively small area and with agreement from the relevant road authority.

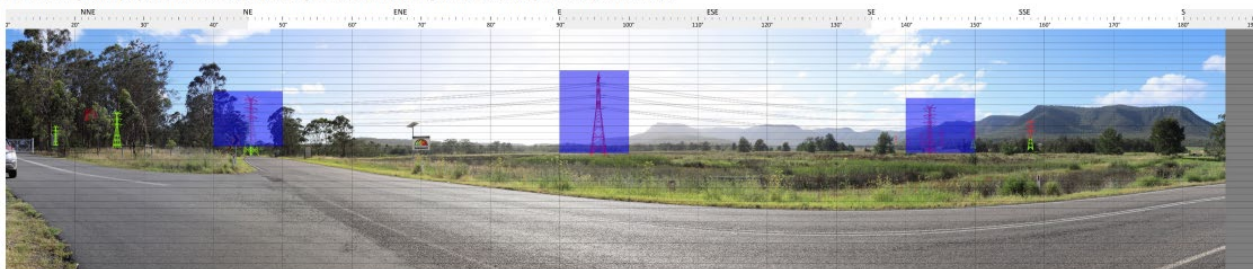
Viewpoint P07 represents the point at which the transmission alignment crosses Cessnock Road. The LVIA considered that while the sensitivity of the viewpoint is low, the scenic quality was considered high due to the presence of the rocky escarpments and ridge lines.

Viewpoint P07: Cessnock Road, Broke

Photomontage - including indicative transmission structure locations shown in silhouette (red in view, green out of view)



Photomontage with project in silhouette (red in view, green out of view), magnitude tool overlay and occupied cell count



Detailed viewpoint assessment:

Distance to project	Viewpoint type	Viewpoint sensitivity	Scenic quality	Visual sensitivity	Occupied cells	Magnitude rating	Impact rating
410 metres	Local road	Low	High	Moderate	31	High	Moderate

Scenic quality discussion

Cessnock Road connects two important vineyard areas (Hermitage Road and Broke-Fordwich) and is used by tourists visiting both wine precincts. Open views of the landscape are intermittent along this route, depending on direction of travel, the extent of tall vegetation within the road reserve, and orientation of the road.

In this location there is a broad, open view across the flat to gently undulating Wollombi Brook rural valley, in the foreground. The prominent and distinct ridges of the Broke Back Range in the background are a landscape feature of high scenic quality. The view toward the ranges is relatively unobstructed across agricultural pastures in this location. There are some native trees in the middle ground and rural dwellings and agricultural buildings are scattered across the landscape, often enclosed by trees and partly visible from the road. There is some scattered Road signage in the foreground and an existing transmission line in the distance which somewhat detract from the scenic quality of the view. To the east, the view is limited by dense bushland surrounding the Singleton Military Area.

Viewpoint location plan:



Hunter Transmission Project
Landscape and visual impact assessment
Appendix G: Public viewpoint assessment



Date: July 2025 G-7

Figure 10 | P07: Cessnock Road

The Department notes that vegetation screening at this location would obscure the existing views to the escarpment beyond the proposed transmission alignment. Given the fleeting nature of the views and the landscape features beyond the proposed transmission alignment, screen planting is not necessary to mitigate the visual impacts. EnergyCo has committed to minimising the transmission tower heights in this area as far as practicable to reduce the magnitude of change to this viewpoint.

Similarly, while views of the project from portions of some local roads along the extent of the project would be direct, views would generally be short in duration and between existing vegetation.

Overall, the Department considers that visual impacts at public viewpoints would not be significant.

Landscape impacts

The project area extends across 12 broad landscape types, where the visual impact of the project during operation would range from negligible to moderate. These landscape types are discussed in more detail in **Table 12**.

Night-time amenity impacts

Night-time visual amenity impacts associated with the construction of the project would generally result in a negligible to moderate impacts across the project landscape, with the exception of the landscape around the Wollombi Road TWA, which would experience a high impact. Night lighting at the TWAs at Wollombi Road, Hebden Road, and Freemans Drive would result in the introduction of a new source of night-time lighting to the landscape.

The Department acknowledges that the introduction of night lighting would contrast to the existing low brightness rural setting of many of the landscapes in the project area. However, this impact would be limited in duration and restricted to the construction of the project. No lighting of the transmission lines and structures is proposed during operation.

Intermittent use of lighting associated with the operation of the Bayswater and Olney switching stations would introduce a new source of night-time lighting to the project landscape. Importantly, permanent lighting at the switching stations would only be used occasionally at night (e.g. during emergency maintenance).

The Department has recommended conditions requiring EnergyCo to minimise the off-site visual impacts of lighting associated with the project. As such, the Department considers that the overall night-time amenity impacts of the project would not be significant.

Cumulative impacts

The LVIA identified a number of major projects proposed in the project's surrounds. These projects are largely located at significant distances from the proposed transmission corridor and would be separated from the project by dense vegetation and topography. The Department considers that the construction and operation of the project would not cause cumulative visual impacts to the landscape.

Table 12 | Landscape impacts

Landscape character zone	Description	Sensitivity	Impact
Energy and mining	Highly modified for mining operations, power stations (e.g. Bayswater Power Station) and transmission infrastructure.	Very low	Very low – project infrastructure would occupy a small portion of the landscape and viewed in the context of existing industrial infrastructure (e.g. Bayswater South switching station) and mining land uses
Jerrys Plains rural village	Flat to gently undulating land with isolated strands of vegetation in an otherwise cleared landscape. Includes some recreational areas, community services (a church and primary school) and an existing 330 kV transmission line	Moderate	Negligible – no project related infrastructure or construction activities would occur in the area that would alter the physical characteristics of the landscape
Hunter River (Lemington) rural village	Flat to undulating cleared, cultivated land interspersed with rural residences and farm sheds. Cleared transmission line easements and towers (132 kV and 330 kV)	Moderate	Low – temporary nature of construction activities and distant views of transmission infrastructure
Hunter River (Maison Dieu) rural valley	Flat to undulating open, cleared, cultivated land with some dense remnant vegetation along the Hunter River. Scattered agricultural landholdings with rural residences and farm sheds. Cleared transmission line easements and towers (132 kV and 330 kV)	Low	Low – project infrastructure viewed in the context of existing transmission infrastructure in the landscape
Bushland and open forest	Hilly landscapes with open forests, scattered agricultural residences and an existing 132 kV transmission line. Includes the Singleton military area.	Low	Very low – project infrastructure viewed in the context of existing transmission infrastructure in the landscape

Landscape character zone	Description	Sensitivity	Impact
Broke rural village	Flat to gently undulating land with dense vegetation along Wollombi Brook and some cleared paddocks. Broke rural village, including housing, tourist accommodation, cafes, a primary school and a church, is an important node for supporting viticulture and local tourism. The key landscape values of the village's surrounds include pastoral and viticulture land and the surrounding ranges associated with Wollemi National Park.	High	Negligible – no project related infrastructure or construction activities would occur in the area that would alter the physical characteristics of the landscape. Broke is approximately 4 km from the project corridor
Wollombi Brook rural valley	Flat to undulating land within a broad valley enclosed by steeply elevated ridges and rocky outcrops associated with Yengo National Park, Wollemi State Conservation Area and Pokolbin State Forest. The valley floor is typified by cropping, grazing, and a small area of viticulture. Rural residences are interspersed within the agricultural land holdings.	Moderate	Moderate - vegetation removal and works to install the transmission towers would contrast with the existing characteristics of the landscape
Forested hills	Steeply elevated, rugged ridges, forested sandstone plateaus with rocky outcrops. The landscape includes Watagans National Park and Jilliby State Conservation Area. Recreational use including camping areas, picnic areas and hiking trails. An existing 500 kV transmission line and associated cleared corridor runs through the Jilliby State Conservation Area.	Moderate	Moderate - vegetation removal and works to install the transmission towers would contrast with the existing characteristics of the landscape
Millfield suburban area	Gently undulating land within a broad rural valley. The area is typically suburban, characterised by small residential lots	Low	Negligible – no project related infrastructure during operation would occur in the area that would alter the physical characteristics of the landscape

Landscape character zone	Description	Sensitivity	Impact
Congewai Creek rural valley	Broad and expansive valley enclosed by steep ridges. Characterised by open, cleared, cultivated land with rural residences within agricultural land holdings.	Moderate	Negligible – no project related infrastructure during operation would occur in the area that would alter the physical characteristics of the landscape
Narrow rural valley	Narrow, cleared rural valleys along Watagan Creek, the upper reaches of Congewai Creek and upper valleys near Lemon Tree and Cooranbong. The valley floors are narrow and enclosed by steep vegetated ridges. The valleys are typified by cleared, cultivated land supporting rural residences within agricultural land holdings.	Moderate	High - during construction due to the presence of a TWA within the Wollombi Road construction support site. The Department notes that a construction support site would temporarily become a major element in the landscape during construction. Moderate – during operation transmission towers would contrast with the existing characteristics of the landscape
Managed forestry	Steeply elevated, rugged ridges and elevated plateau with rocky outcrops. Includes NSW State forests (Olney State Forest, Pokolbin State Forest, Corrabare State Forest and Watagan State Forest). Timber within Forestry land is actively harvested. Recreational use in designated camping areas, picnic areas, walking trails and lookouts. An existing 500 kV transmission line easement is present	Low	Low - construction infrastructure and activities would not be substantially different from ongoing Forestry harvesting operations

6.5.4 Recommended conditions

The Department has recommended conditions requiring EnergyCo to:

- implement appropriate visual impact mitigation measures, such as landscaping and/or vegetation screening at receivers 465, 466, 467, 2920 and 2928 residences upon receiving a written request from the owners of these residences;
- make sure that external lighting is minimised and complies with the relevant Australian Standards;
- prohibit any signage or advertising on the site, unless it is for safety purposes; and
- make sure ancillary facilities, TWAs and area of temporary impact are rehabilitated.

6.5.5 Conclusion

The Department considers that the project has been located and the route alignment designed in a way that reduces visual impacts to private receivers. The visual assessment has been undertaken in line with the methodology prescribed in the Visual Supplement. Moderate impacts are limited to a very small number of receivers and these impacts could be effectively reduced through mitigation measures such as screening and tower siting. Importantly, the project would not fundamentally change the broader landscape characteristics of the area or result in any significant visual impacts on the surrounding non-easement affected receivers subject to the recommended conditions.

6.6 Traffic and transport

Construction of the project has the potential to impact the local and regional road network due to the movement of vehicles carrying plant and equipment, materials and workers.

Once operational, the project would have minimal impact on the road network due to the very low operational traffic volumes generated. The Department's assessment has therefore focused on the impacts of the construction phase of the project.

Public submissions raised the potential traffic impacts of the project, including increased vehicle movements, access to private property, road safety, the suitability of local and Forestry roads for construction traffic and impacts to road conditions. There was particular concern in several submissions on the potential safety impacts from construction vehicles in and around Millfield and Millfield Public School, as well as property access for residents and businesses along Mount View Road, Mount Barker Road and Pokolbin Mountains Road.

A Traffic Impact Assessment (TIA) was prepared as part of the EIS to assess the project's traffic impacts. In response to submissions received, EnergyCo amended the project as described in **Section 5.3**, and supplemented its amendment report with a revised TIA to assess the traffic impacts

of these amendments. Additional information was also provided in response to residual matters raised by TfNSW following its review of the revised TIA.

6.6.1 Transport route

The primary transport routes that would be used to access the project during construction are shown in **Figure 11** to **Figure 13**.

Key State roads to be used during construction include New England Highway, Golden Highway, Denman Road, Mandalong Road, Freemans Drive and Wine Country Drive. Key regional roads include Broke Road, Cessnock Road and Wollombi Road. While around 35 sealed and unsealed local roads in the Central Coast, Cessnock, Lake Macquarie, Muswellbrook and Singleton LGAs would be utilised during construction as well as unsealed roads within Corrabare, Olney, Pokolbin and Watagan State Forests.

Although the recommended conditions of approval require all vehicles related to the project to travel to the project area via the nominated transport routes, this does not preclude EnergyCo from requesting approval for vehicles to access the project area via secondary access routes, subject to EnergyCo demonstrating that any impacts associated with use of secondary access routes can be managed within acceptable standards and in consultation with the relevant roads authority.

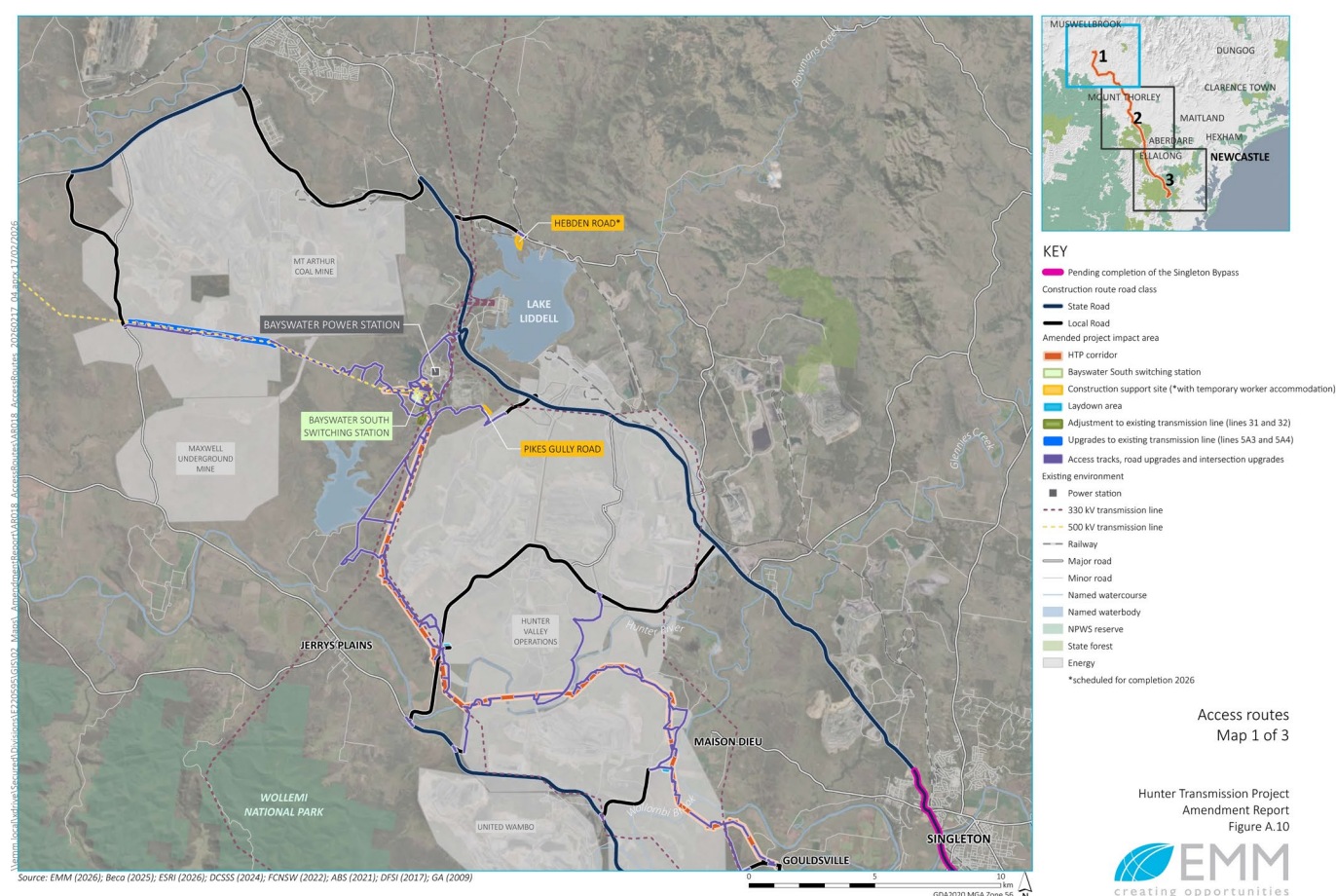


Figure 11 | Access routes - Map 1 of 3

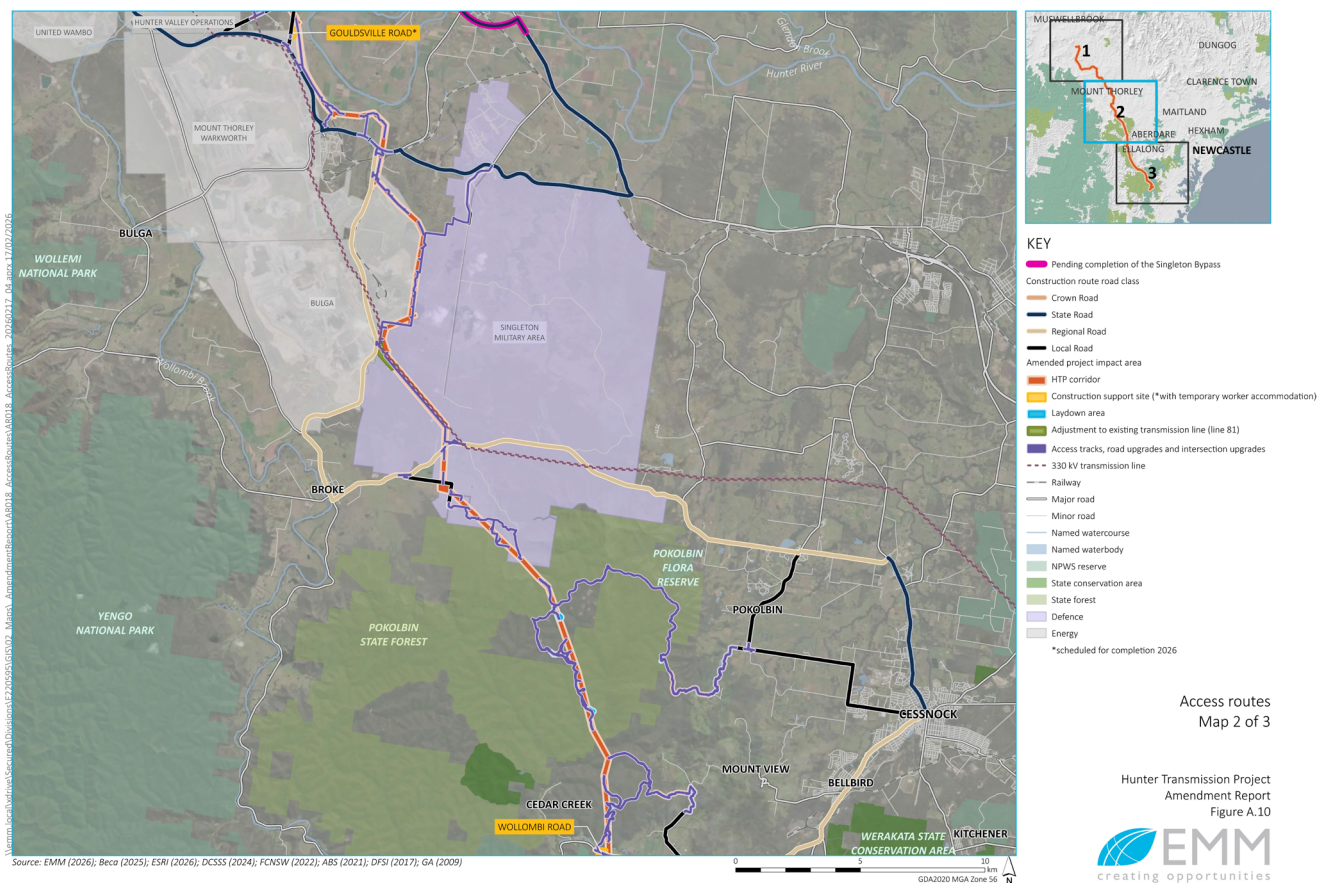


Figure 12 | Access routes – Map 2 of 3

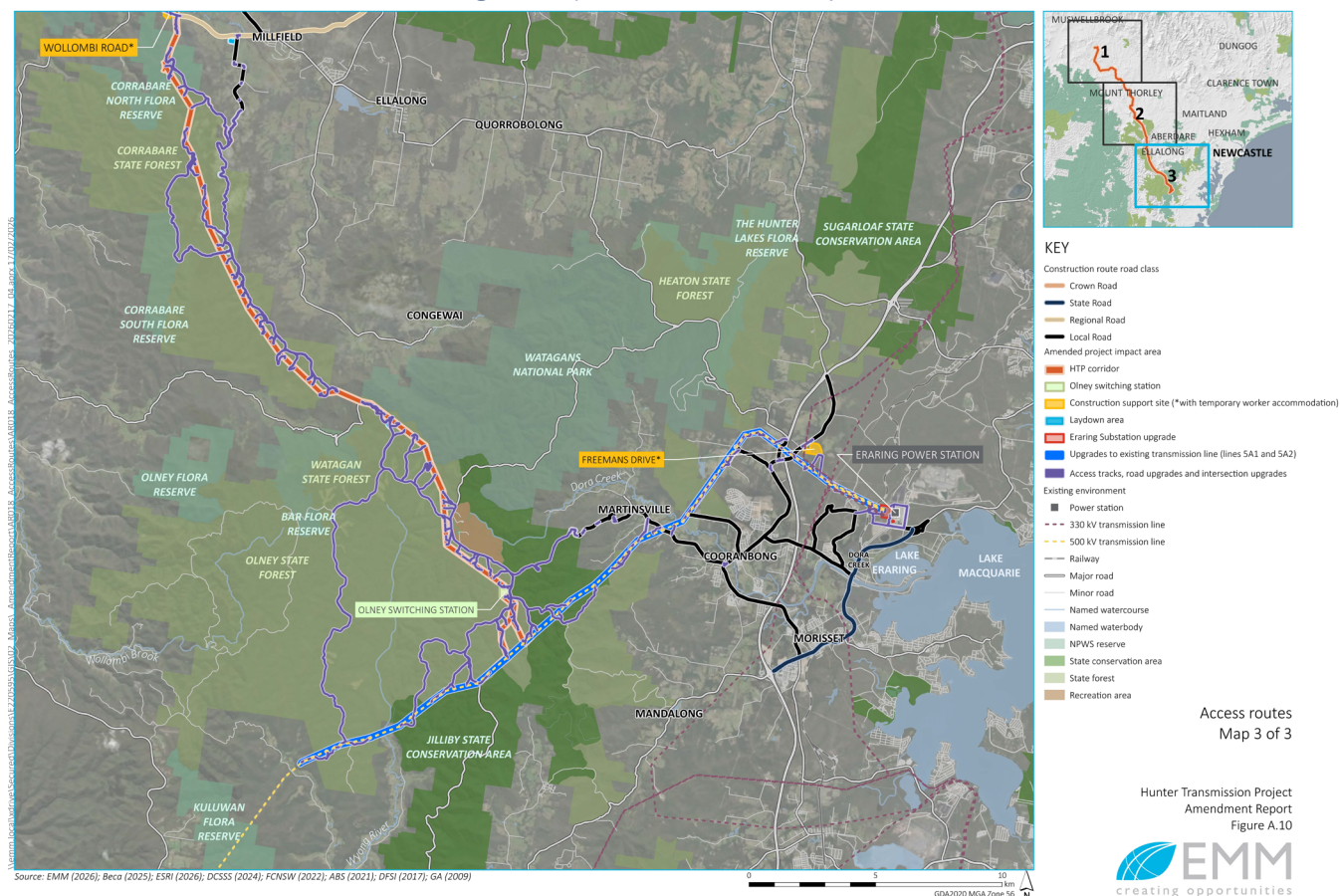


Figure 13 | Access routes – Map 3 of 3

6.6.2 Site access

To access the transmission line alignment, the project would use a combination of new and existing access tracks on public and private land.

Existing tracks would be upgraded to accommodate construction vehicles and machinery, where required, including widening to up to 6 metres in width, resurfacing or grading and/or drainage works. Vegetation trimming or removal may also be required either side of tracks for safety or to provide for passing bays, batters and drainage. Total clearing widths would generally be up to 10 metres, with limited areas requiring clearing of up to 20-30 metres for steep terrain or passing bays.

Where there are no existing tracks that provide access to the project corridor, new tracks would be constructed to the same dimensions and clearing requirements as upgraded tracks.

6.6.3 Traffic volumes

Peak construction traffic movements are expected to occur between 6:00 am and 7:00 am, and 5:00 pm and 6:00 pm. These peaks are associated with light vehicles travelling to and from construction support sites and active work sites, as well as heavy vehicles delivering construction materials to these locations. As shown in **Table 13**, around 85 to 130 vehicle movements are anticipated on the roads adjacent to construction support sites during these peak hour periods at the construction peak expected in 2028.

Table 13 | Peak construction vehicle movements (2028)

Construction Support Site	Peak hour vehicle movements			Total daily vehicle movements		
	Light	Heavy	Total	Light	Heavy	Total
Hebden Road	60	43	103	434	406	840
Pikes Gully Road	50	35	85	378	335	713
Gouldsville Road	50	38	88	434	406	840
Wollombi Road	60	35	95	434	335	769
Freemans Drive	80	50	130	562	480	1,042

Other roads used to access the project alignment would have lower traffic volumes for intermittent periods as the focus of construction activities move within the transmission line alignment.

While the additional traffic movements would bring a noticeable change to the local road environment, all roads would continue to operate within the existing capacity throughout the construction period.

Most local intersections would also continue to perform at an acceptable level of service, however there are several intersections where performance is predicted to be unsatisfactory due to existing traffic conditions or the contribution of project construction traffic.

EnergyCo has proposed measures to mitigate the contribution of construction traffic at these intersections by limiting project use by construction traffic during peak hour periods. These proposed measures are outlined in **Table 14**.

Table 14 | Intersection mitigation measures

Intersection	Proposed mitigation measure
New England Highway / Hebden Road intersection	No construction traffic during AM HTP peak (6:00–7:00 AM) except left turn out from Hebden Road. No construction traffic during PM network peak (4:45–5:45 PM) except right turn into Hebden Road.
New England Highway / Lemington Road	No construction traffic before 7:00 AM or during PM network peak (4:45–5:45 PM).
New England Highway / Pikes Gully Road	No construction traffic during AM HTP peak (6:00–7:00 AM) or PM network peak (4:45–5:45 PM), except left turn out from Pikes Gully Road.
Golden Highway / Range Road	No construction traffic before 7:00 AM or during PM network peak (4:00–5:00 PM). Install variable message signs at intersection to communicate possible delays.
Golden Highway (Putty Road) / Broke Road	No construction traffic before 7:00 AM.
Putty Road / Mitchell Line of Road	No construction traffic during PM network peak (4:00–5:00 PM).
Wine Country Drive / Broke Road	Limit construction heavy vehicle use to no more than 10 heavy vehicle movements during PM network peak (3:15–4:15 PM) and redirect all construction light vehicles via Mount View Rd, Oakey Creek Rd and McDonalds Rd during PM network peak (3:15–4:15). Install variable message signs at intersection to communicate possible delays.
Freemans Drive / Martinsville Road	Limit construction traffic to no more than 15 heavy vehicle and 40 light vehicle movements during AM network peak (8:15–9:15 AM).

In addition to these restrictions, EnergyCo has committed to install variable message signs to communicate possible delays at any other location agreed with TfNSW.

To monitor compliance with these measures, EnergyCo has committed to:

- install permanent cameras with number plate recognition at the intersections in **Table 14**;
- maintain GPS tracking in construction vehicles to report the route used by heavy vehicles;
- daily review of vehicle monitoring data and implementation of compliance and corrective actions, along with monthly reporting of monitoring results and corrective actions; and
- a Driver Code of Conduct outlining intersection restrictions, requirements for vehicle monitoring and an escalating driver compliance system.

The Department has recommended conditions requiring these measures to be included in a Traffic and Transport Management Plan for the project. The conditions require monitoring and review of the effectiveness of these mitigation measures, as well as adaptive management should a measure be found not to be effective.

The Department and TfNSW are satisfied that these measures are appropriate to minimise the project's contribution to these existing constraints within the local road network.

6.6.4 Over-dimensional vehicles

A total of 12 over-dimensional vehicle deliveries would be required to transport large or heavy equipment from the Port of Newcastle, including 7 deliveries to Eraring Power Station, 4 deliveries to Bayswater South switching station and 1 delivery to Olney switching station.

Over-dimensional vehicle movements require a permit from the National Heavy Vehicle Regulator and would occur at night, with a pilot vehicle and traffic management at intersections.

Limited works would be required to accommodate over-dimensional vehicles, including tree maintenance and temporary removal of signs and barriers at locations along the routes, as well as road widening and strengthening of Watagan Road to the Olney Switching Station.

TfNSW sought additional confirmation that the road network can accommodate the over-dimensional vehicles that would eventually be selected to transport equipment to the project. The Department has recommended conditions requiring the provision of this information, along with confirmation of the works required to accommodate these vehicles on the road network, prior to commencing over-dimensional vehicle transport.

6.6.5 Road upgrades and maintenance

Road and intersection upgrades

EnergyCo has identified seven local roads, 11 Forestry roads, five Crown roads, one NPWS road and 32 new or existing intersections that would require upgrades to provide safe access to construction sites, enable movement of heavy vehicles and maintain intersection performance.

Proposed road upgrades involve localised road widening on narrow unsealed roads to enable one-lane movement of heavy vehicles, as well as construction of passing bays on Oakley Lane, Pokolbin Mountains Road, Mf1 Road, Mount Baker Road, Mount View Road, Hayes Road and several Forestry roads. Traffic controllers would be required along these roads during construction to provide safe one-way operation.

Proposed intersection upgrades include widening to provide for vehicle turning paths, as well as changes to turning treatments to maintain intersection performance with additional project construction traffic.

All upgrades would be required to be completed prior to commencing construction works for the transmission line. The Department has recommended conditions requiring EnergyCo to implement all necessary upgrades to the satisfaction of the relevant roads authority.

Road maintenance

Construction traffic would impact road condition, particularly for unsealed roads that are designed to support low traffic volumes. The condition of sealed roads in the vicinity of construction support sites would also experience moderate impacts due to increased volume of heavy vehicle movements.

Several submissions raised concerns regarding the impact of construction traffic on local roads, particularly unsealed roads. The Department notes that impacts to the condition of low-volume local roads are predicted and upgrades are required to accommodate construction traffic on these unsealed roads. Local roads on the construction route would also require regular inspection and maintenance during the construction period to make sure they are maintained in a safe and serviceable condition.

EnergyCo has committed to undertake road dilapidation surveys and regular inspections of road condition prior to and during construction on all nominated construction routes and access tracks. The Department has recommended conditions that would require EnergyCo to regularly maintain all roads along the transport route and repair any damage to the road network caused by any project-related traffic in consultation with the relevant roads authority.

6.6.6 Road safety

A number of submissions raised road safety concerns regarding increased construction traffic around Millfield Public School, noting limited sight distance at the school crossing, lack of adequate school fencing and off-street carparking during wet weather.

EnergyCo has committed to investigate and implement measures to address the concerns raised in submissions, in consultation with the school, including:

- improvements to the school car park to make it more suitable to all weather conditions;
- improvements to the school fencing; and
- traffic control measures for pedestrians near the school during pick-up and drop-off times for the duration of construction.

These measures must be outlined in the Traffic and Transport Management Plan required to be approved prior to commencing construction.

EnergyCo has also identified a number of intersections that are proposed to be used by the project that, based on desktop review, may not comply with safe intersection sight distance criteria. EnergyCo has committed to undertake further assessment at each of these intersections and, where compliance is not achieved, to implement additional safety measures to improve sight distance and/or reduce risk. These measures may include the provision of additional advance warning signs, clearing of vegetation, temporary reductions in speed limits on approach to these intersections (where agreed with the relevant roads authority) and/or relocating road signage. The scope of measures required at each intersection would be confirmed following further detailed design and consultation with the relevant road authority.

The Department has recommended conditions for these measures to be confirmed in the Traffic and Transport Management Plan, which requires approval prior to commencing construction.

6.6.7 Property access

Construction of the project is expected to impact property access in areas where roads are only wide enough for one heavy vehicle to pass. This primarily relates to properties on unsealed roads in the Pokolbin, Mount View and Millfield areas and State Forest roads, including:

- 10 rural properties along Pokolbin Mountains Road;
- 10-15 rural properties along Mount View Road and Mount Barker Road;
- 10 rural properties along MF1 Road and Trig Road in Corrabare State Forest; and
- recreational areas and State forest work areas in Watagan and Olney State Forests accessed via Watagan Road, Watagan Forest Road and Martinsville Hill Road.

Traffic management measures, including passing bays and traffic controllers, are proposed to minimise disruptions to residents and road users on these roads. Passing bays are also proposed on construction routes within Corrabare and Olney State Forest to minimise disruption to Forestry activities and recreational users.

EnergyCo has committed to maintain access to properties throughout construction, and where this is not feasible, to provide temporary alternative access arrangements in consultation with affected landowners. Details of how access would be maintained would be presented in a property access plan prepared for Pokolbin Mountains Road, and parts of Mount View Road and Mount Barker Road. The plan would incorporate specific commitments made by EnergyCo, including:

- maximum wait times under traffic management controls;
- minimum notification periods for works or disruptions;
- 24/7 contact details for access issue and emergencies; and
- timing restrictions on construction traffic movements.

The Department has recommended conditions requiring EnergyCo maintain access to all properties for the duration of construction unless agreed with the relevant landowner. Conditions have also been recommended that require EnergyCo to maintain access to State and NPWS reserves, minimise impacts to recreational users and to keep the community informed of traffic management arrangements within these areas.

6.6.8 Road and rail crossings

Transmission lines would be strung over several roads, including Putty Road, Cessnock Road, Wollombi Road and several local, mining and Forestry roads. Traffic management would be required during stringing operations, and may include short-term road closure, traffic controls and/or reductions in speed limit.

Upgrades to existing transmission lines would require a new earthwire over the M1 Pacific Motorway. A pulley system would be used to guide the earthwire along the existing transmission line over the road corridor. Closure of the M1 Pacific Motorway would not be required, however traffic management would be in place, including reductions in speed limit, and works would be carried out outside peak periods.

Stringing across the Main Northern Railway and Whittingham to Mount Thorley rail corridors would be undertaken during rail maintenance periods or rail possessions to minimise impact to rail services.

Detailed traffic management and stringing procedures would be developed in consultation with the relevant road and rail authorities and documented in the Traffic and Transport Management Plan required by the recommended conditions of approval.

6.6.9 Cumulative

An assessment of the cumulative traffic impacts of the project with other major construction projects in the region was completed as part of the revised TIA. The assessment was highly conservative and assumed a worst-case whereby all major projects in the planning system with the potential to use a common transport route were assumed to overlap with the project's peak construction phase in 2028.

The assessment found that:

- the intersection layouts required for the project would be the same as those required for cumulative traffic volumes;
- the majority of intersections would continue to perform at a similar level of service with cumulative traffic volumes; and
- where intersection performance was found to deteriorate with cumulative traffic volumes, EnergyCo's proposed intersection mitigation measures outlined in **Table 14** were largely effective at minimising potential cumulative impacts.

The Department and TfNSW are satisfied that based on this commitment, cumulative traffic impacts can be managed appropriately.

6.6.10 Recommended conditions

The Department has recommended conditions requiring EnergyCo:

- undertake all necessary road upgrades to the satisfaction of the relevant road authority;
- undertake dilapidation surveys of the relevant local, regional, Forestry and Crown roads along the transport routes prior to construction, upgrade and decommissioning, on an annual basis during construction, within one month of the completion of the constructions, upgrade and decommissioning and repairing any damage resulting from construction traffic;
- maintain property access throughout construction and pre-construction minor works, unless agreed in writing with the relevant landowner; and
- prepare a Traffic and Transport Management Plan in consultation with the relevant roads authority that outlines the measures that would be implemented to:
 - minimise traffic safety impacts of the development and disruptions to local road users;
 - make sure the road network can accommodate over-dimensional vehicles associated with the project;
 - minimise the impacts of the road upgrades of the development;
 - maintain access to property throughout construction;
 - minimise construction traffic impacts at key intersections on the transport route;

- make sure compliance with safe intersection sight distance requirements;
- make sure drivers comply with all necessary mitigation measures and safe driving practices;
and
- monitor, review and report on compliance with measures outlined in the plan.

6.6.11 Conclusion

The project would result in temporary impacts to the local and regional road network during construction. The Department has worked closely with TfNSW and Councils throughout the assessment to provide suitable measures are implemented to minimise impacts to the safety and capacity of the road network. These measures are reflected in the recommended conditions of approval and EnergyCo's proposed mitigation commitments, which form part of the EIS.

With suitable road upgrades, regular road maintenance, and the implementation of a Traffic Management Plan, the Department considers that the project would not result in unacceptable impacts on the capacity, efficiency or safety of the road network.

6.7 Other issues

The Department's consideration of other issues is provided in **Table 15** below.

Table 15 | Assessment of other issues

Findings and conclusions	Recommended conditions
Noise and Vibration	
EnergyCo prepared a Noise and Vibration Impact Assessment (NVIA) for the project and an addendum assessing project amendments, in accordance with the relevant guidelines. The NVIA is considered conservative and assumes all plant and equipment is used concurrently.	Minimise noise during construction by implementing noise mitigation measures set out in the ICNG.
Construction noise	
- Construction noise was assessed under the <i>Interim Construction Noise Guideline</i> (DECC 2009) (ICNG). The NVIA predicted up to 603 sensitive receivers could experience noise levels greater than noise management levels during standard daytime hours, for construction of the project, of which 15 are potentially 'highly noise affected' (higher than 75 dB(A)) under the ICNG. These exceedances would mainly be due to road and access track works and, to a lesser extent, earthworks and clearing. - The majority of potentially highly noise affected receivers are in proximity to either the Wollombi Road / Hayes Road intersection or the Martinsville Road / Freemans Drive intersection. The impacts on these receivers would be temporary, occurring during daytime construction periods only and limited to the duration of the upgrade works at each intersection. - Construction of the tower foundations would involve noise intensive works such as excavation and piling. Up to 92 residential receivers along the transmission line alignment are predicted to be impacted and one receiver may be highly noise affected. Due to the scale and linear nature of the project, transmission line construction noise impacts at individual receivers are likely to be relatively short duration while construction is occurring in proximity to that receiver.	- Restrict construction to standard construction hours (i.e. 7 am to 6 pm Monday to Friday, and 8 am to 1 pm Saturday). - Prepare a Noise and Vibration Management Plan that evaluates and reports on the effectiveness of the noise and vibration management systems and identifies a process for the consideration, management and approval of works outside standard construction hours. - Comply with relevant vibration criteria at all sensitive receivers.

Findings and conclusions

- EnergyCo have committed to mitigation measures during construction including screening, scheduling works to make sure noisy works are not undertaken concurrently, notifying sensitive receivers of periods of noisy works and maximising offset distance between receivers and noise sources.
- The Department has recommended conditions requiring EnergyCo to implement all reasonable and feasible measures to minimise construction noise in accordance with the requirements of the ICNG, as well as to implement noise mitigation measures to reduce impacts to below the highly noise affected criteria at impacted sensitive receivers.

Ancillary facilities (substations, construction support sites and TWA)

- Construction works at construction support sites, laydown areas, substations, and switching stations are predicted to result in noise impacts at 58 individual residential receivers and one 'other sensitive' receiver (Millfield Cemetery). The noisiest works would be earthworks (particularly where rock breaking is required) to construct these sites. Use of the compounds and TWA would result in more sustained noise impacts over the duration of the construction period.
- Daytime use of construction support sites during construction could result in noise disturbance at nine receivers. Night time use of the Freemans Drive TWA including vehicle movements and power generators, has the potential to cause sleep disturbance at two receivers.
- EnergyCo has committed mitigation measures including controls such as noise path control (hoarding or earth bunds) positioned strategically to act as a barrier blocking noise from sensitive receivers.
- The Department acknowledges that construction noise exceedances are likely to occur, however, given the temporary nature of construction and EnergyCo's proposed mitigation measures, noise impacts can be adequately managed.

Out of hours work

- EnergyCo is seeking approval to undertake certain works outside standard construction hours. This could include activities such as stringing of transmission lines across roads, emergency works, transmission line connection or commissioning, works that are inaudible at receivers or where agreement is reached with affected receivers.
- Noise levels from the potential out of hours stringing works are predicted to have impacts at up to 57 individual residential receivers during the night, 10 of which could experience noise levels exceeding the sleep disturbance criteria.

Recommended conditions

- Implement Construction Noise and Vibration Management Plan prior to commencing construction.
- For receivers predicted to experience noise which exceeds the 'noise affected' level or sleep disturbance criteria under the ICNG, as a result of construction or use of a TWA, implement reasonable and feasible mitigation measures prior to commencing works.
- Implement noise mitigation measures to comply with sleep disturbance criteria at nearby receivers.
- Implement reasonable and feasible noise mitigation measures at receivers predicted to experience corona discharge or circuit breaker noise levels that exceed relevant criteria.
- Prepare an Operational Noise Compliance Assessment to confirm whether further noise

Findings and conclusions

Recommended conditions

- The Department acknowledges there may be a need for such works and has recommended a condition to establish a protocol for the consideration, management, and approval of works outside standard hours, including a requirement for the Planning Secretary's approval prior to undertaking any high-risk activities outside standard hours.

mitigation is required at any residences surrounding the project.

Construction road traffic noise

- Construction traffic noise was assessed in accordance with *NSW Road Noise Policy* (DECCEW, 2011). Construction traffic is likely to result in a noticeable increase in noise levels (>2 dB) on most local roads, due to the relatively low existing traffic volumes. Around 77 residential receivers have the potential to be impacted by an increase in road traffic noise levels due to construction related vehicle movements on local roads. Traffic noise levels on major roads would not increase by more than 2 dB.
- EnergyCo proposes to reduce noise emitted by construction traffic by limiting out of hours vehicle movements, planning traffic flow and parking to avoid areas close to receivers and including driver behaviour requirements in all worker's inductions. The Department has recommended a condition requiring EnergyCo to take all reasonable and feasible steps to minimise construction traffic noise associated with the project in accordance with the RNP.

Aircraft Noise

- Aircraft use within the transmission corridor would include helicopters and drones for stringing work. The NVIA indicates the noise from drones would not impact any receivers and that the use of helicopters for stringing of transmission lines could result in noise impacts at up to 56 receivers.
- Four of the six proposed construction support sites would include a helipad to enable helicopter use during construction. Noise levels from helicopters at the Freemans Drive construction support site are predicted to be above 75 dBA at six residential receivers nearest to the potential helipad location, during helicopter arrival and departure. For the remaining three support sites with helipads, the nearest receivers are far enough away to not be impacted by helicopter noise. Helicopter use is expected to be intermittent during construction.
- EnergyCo have committed to notifying sensitive receivers of upcoming works requiring the use of aircraft, prioritising the use of helipads further away from sensitive receivers (Hebden Road and Pikes Gully), varying the flight path between helipads to limit repeated noise and sensitive receivers and operating aircraft in accordance with relevant guidelines.

- The Department notes that certain helicopter related activity may require an Environment Protection Licence. Notwithstanding, the Department has recommended conditions restricting hours of use of helicopters, unless otherwise specified in an Environment Protection Licence.

Vibration

- During construction, vibration levels are predicted to be within human comfort levels at 51 receivers and are within the minimum distance to potentially cause cosmetic damage at eight receivers (including one commercial receiver – Watagan Inn). These levels are based on a worst-case scenario of the use of an 8-10T vibratory roller at the boundary of the works area.
- The NVIA found one historic heritage item (the Catholic Church and Cemetery) and 26 Aboriginal objects within the safe working distance (31 m) of the project, 14 of which are within the amended development footprint. EnergyCo have committed to confirming any vibration sensitive heritage structures that could be impacted by the works and confirming their structural integrity to determine appropriate construction methodology. EnergyCo committed to avoiding direct and indirect vibration impacts on all identified Aboriginal objects and sites of high significance within the development footprint. The Department has recommended conditions requiring EnergyCo to develop measures to avoid or minimise indirect impacts from vibration on items located within or near the development area to be addressed in the Aboriginal Cultural Heritage Management Plan and Heritage Management Plan.
- EnergyCo have committed to investigating lower-vibration construction methods where feasible. Vibration monitoring would be undertaken to confirm actual levels at nearby receivers and construction activities would be modified or stopped if monitoring confirms vibration is likely to exceed, applicable criteria.
- The Department has recommended conditions requiring EnergyCo comply with relevant vibration criteria at all sensitive receivers.

Operational noise

- Operational noise impacts for the project are limited to noise from the Olney and Bayswater switching stations and corona discharge noise, -a crackling sound occurring during wet weather, mist conditions and/or with an accumulation of pollution on the conductor surface of the transmission lines.

Findings and conclusions

Recommended conditions

- Operational noise levels were assessed in accordance with the Environment Protection Authority *Noise Policy for Industry* (EPA, 2017).
- Corona noise impacts are predicted at up to 12 residential receivers during inclement weather, at nighttime, three of which could experience exceedances of nighttime noise levels of greater than 5 dB(A). Of these exceedances three are considered negligible, six are considered moderate and three are considered potentially significant.
- Predicted operational noise levels of switching stations and substations are not predicted to cause exceedances in acceptable noise criteria.
- EnergyCo have committed to undertaking noise monitoring at residences where operational noise levels are predicted to exceed the Project Noise Trigger Levels (PNTL) and implementing noise mitigations in consultation with the landowner where noise levels above the operational criteria are confirmed. This may include receiver-based treatment options, such as upgrading windows or glazing and sealing doors and windows.
- The Department has recommended conditions requiring EnergyCo implement all reasonable and feasible noise mitigation measures at receivers predicted to experience corona discharge noise levels that exceed the operational noise criteria.

Aboriginal Heritage

- EnergyCo prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR) and an addendum ACHAR addressing project amendments and concerns raised by Heritage NSW. The addendum included the results of additional field surveys and test excavations undertaken following submission of the EIS.
- 322 Aboriginal heritage objects, sites and places were documented in the ACHAR.
- EnergyCo has committed to avoiding 20 highly or moderately significant Aboriginal objects, sites and places, including rock shelters and most recorded stone arrangements and grinding grooves in or near the amended project area.
- A further 69 Aboriginal objects, sites and places located within the amended project area are considered unlikely to be impacted by the project. EnergyCo has committed to avoiding or minimising impacts to these sites where possible.
- Make sure the development does not cause any harm to any Aboriginal heritage items beyond those identified in the conditions of approval.
- Manage the Aboriginal cultural heritage sites in accordance with the specified mitigation and management measures in the conditions of approval

Findings and conclusions

- Overall, 233 Aboriginal objects, sites or places were identified that could be directly or indirectly (vibration or hydrological impacts) impacted. This includes: 217 Aboriginal objects, sites and places that would be either completely (158) or partially (75) impacted by the project.
- The Warkworth Sand System is a geological unit that is often correlated with the presence of cultural deposits. There are 117 hectares of predicted Warkworth Sand System within the amended project area, of which approximately 50 hectares (43%) would be in areas where no ground disturbance is proposed and would be unaffected.
- EnergyCo have developed guiding principles and committed to mitigation measures in consultation with Heritage NSW including:
 - a detailed site-specific avoidance and options analysis for high and moderate significant Aboriginal objects, sites and places proposed for impact;
 - micro-siting of project infrastructure and optimisation of construction activities in consultation with an Aboriginal heritage specialist and registered Aboriginal parties to avoid or minimise impacts;
 - developing an early works and construction phase Aboriginal cultural heritage management plan; and
 - additional archaeological excavations including reporting on the findings.
- There has been survey coverage of 82.5% of the amended impact area. The remaining unsurveyed areas are mostly in areas with pending access agreements or areas of rugged terrain.
- Both EnergyCo and Heritage NSW agree that additional test excavations are required to be conducted prior to carrying out any work within 100 m of test excavation locations identified as 105, 111, 117, 118, 119, 120, 121, 122, 123, 126, 129, 159, 188, 189, 190 and the Pikes Gully Road construction support site. Accordingly, the Department has recommended conditions requiring EnergyCo to prepare a Test Excavations Report before any work in these locations. This report would be prepared in consultation with RAPs and Heritage NSW.
- The Department has recommended conditions specifying the items to be avoided and those to be managed in accordance with required mitigation and management measures. As part of the Aboriginal Cultural Heritage Management Plan, EnergyCo would also be required to develop measures for protecting Aboriginal heritage items located outside the development area that may be subject to indirect vibration impacts from construction.

Recommended conditions

- Undertake additional test excavations prior to carrying out any work within specified untested areas and prepare a Test Excavations Report in consultation with Aboriginal stakeholders and Heritage NSW.
- Prepare and implement an Aboriginal Cultural Heritage Management Plan, in consultation with Aboriginal stakeholders, including procedures for unexpected finds and preparation of Aboriginal Site Impact Recording Forms.

Findings and conclusions

Recommended conditions

- Heritage NSW has no further concerns, subject to the implementation of the recommended conditions. The Department considers that, with the implementation of the recommended conditions, including an Aboriginal Cultural Heritage Management Plan, potential impacts on Aboriginal Cultural Heritage can be appropriately managed.

Historic Heritage

- No heritage items listed on Commonwealth, National or State registers are located within or near the project area.
 - The assessment identified the following within or near the project area:
 - seven heritage items and/or historic heritage value sites on Commonwealth Land;
 - 20 heritage items and/or historic heritage value sites listed under conservation registers or local environmental plans; and
 - 21 Activity Areas containing features considered to have moderate to high potential heritage significance (noting that some activity areas are associated with the above listed heritage items and/or historic heritage value sites).
 - The project has the potential to directly impact the following:
 - nine heritage items and/or historic heritage value sites (eight minor impacts, one major impact), four of which have associated activity areas; and
 - nine Activity Areas (three minor impacts, six major impacts).
 - The project has the potential to indirectly impact (visual and vibration) a further (noting that some sites subject to direct impact above would also be subject to indirect impacts however they are not relisted here):
 - 15 heritage items and/or historic heritage value sites (13 minor impacts, two moderate impacts); and
 - six Activity Areas (one minor impact, four moderate impacts, one major impact).
 - Prior to construction activities near avoided heritage items, EnergyCo committed to installing an exclusion barrier (e.g. fence or suitable alternative) at the curtilage of heritage items, and historic heritage value sites and activity areas to reduce the risk of unintentional impacts to heritage values.
- Avoid direct impacts on all heritage items located outside the development footprint.
 - Prepare an Archaeological Research Design and Excavation Methodology in consultation with Heritage NSW which includes a process for the preparation of a Heritage Interpretation Plan in accordance with *Interpreting Heritage Places and Items Guidelines* (Heritage Office 2005) should significant relics be identified during archaeological works.
 - Prepare and implement a historic heritage management plan, in consultation with the Heritage Council, including procedures for unexpected finds and for any harm to potential maritime

Findings and conclusions	Recommended conditions
• Further archaeological excavation is required to confirm the extent of heritage artefacts and potential impacts (if any) at a number of locations adjacent to the proposed project corridor. EnergyCo has committed to preparing an Archaeological Research Design and Excavation Methodology (ARDEM) in accordance with the <i>Archaeological Assessments</i> (Heritage Office and DUAP 1996) and the <i>Criteria for Assessing Excavation Directors</i> (Heritage Council of NSW, 2019) guidelines. • Heritage Council of NSW noted the potential for maritime archaeological artifacts in proximity to waterways. The Department has conditioned that EnergyCo include a program to identify, assess and report on harm to potential maritime archaeological resources if any work is required to be carried out within 50 metres of the Hunter River. • Heritage Council of NSW confirmed it considers that the EIS (including EnergyCo's responses) adequately addressed all requests for further information and that it supports the proposed mitigation measures for impacts on potential historic heritage items as outlined in the EIS. • No residual concerns were raised by local councils regarding locally listed heritage items. • Subject to the implementation of the recommended conditions, the Department considers that the potential impacts on heritage values would be appropriately managed. Any unexpected finds of potential heritage significance could be appropriately managed by an unexpected finds protocol.	- archaeological resources if any work is required to be carried out within 50 metres of the Hunter River • Requirements for archaeological investigations

Land Use	
• Approximately 37% of the construction area is used for agriculture (primarily grazing) and 31% for forestry, including four State forests managed by FCNSW. Other land uses include mining and exploration (mostly coal), Commonwealth Land (Singleton Military Area), conservation land managed by NPWS, power generation (Bayswater and Eraring power stations) utilities, transport and communications infrastructure. • Around 12% is freehold land owned by private individuals or companies. • The project would require the whole of property acquisitions of five properties for project infrastructure.	• Management plans to be prepared in consultation with FCNSW, including – Aboriginal Cultural Heritage Management Plan, Biodiversity Management Plan, Soil and Water Management Plan, Traffic and Transport Management Plan;

Findings and conclusions

Recommended conditions

Agricultural land

- Approximately 877 ha of agricultural land is within the construction area (0.4% of agricultural land in the region). This land would be unavailable during the 2.5 year construction period, costing up to \$1.1 million dollars in productivity a year.
- During operation, around 206 ha of agricultural land (0.1% of agricultural land in the region) is required, equating to a productivity loss of up to \$265,000 per year.
- The project area includes 190 ha of Biophysically strategic agricultural land (BSAL) and with up to 110 ha in the development footprint. The Department is satisfied that EnergyCo has demonstrated appropriate avoidance of BSAL through its project design, which prioritised land owned by mining and energy companies, as well as State and Commonwealth land.
- The Department notes the project has completely avoided the highest Land and Soil Capability (LSC) class 1 or 2 land in the project impact area. Up to 159 ha of LSC class 3 land may be impacted during construction, with 89 ha of LSC class 3 land needed for operation. EnergyCo proposed mitigation measures to include remediating the affected LSC class 3 land by reinstating a soil growth medium at a suitable depth, sediment tracking and reapplication of topsoil post works. The Department considers mitigation measures committed to by EnergyCo, including a soil and water management plan, sufficient to protect high capability land and soil in NSW.
- Around 12 ha of project access routes occur within the Hunter Valley viticulture Critical Industry Cluster, which is sensitive to biosecurity impacts and a potential increase in dust and noise.
- EnergyCo propose to manage impacts to agricultural land through landholder consultation and the preparation of a biosecurity management plan and property management plans for directly impacted properties, including measures to minimise disruption.
- The Department and DPIRD Agriculture are satisfied that the overall impact of the project on agricultural land could be managed by implementing these measures.

Emergency Plan, Rehabilitation Management Plan.

- Management plans to be prepared in consultation with NPWS, including – Aboriginal Cultural Heritage Management Plan, Historic Heritage Management Plan Biodiversity Management Plan, Traffic and Transport Management Plan; Emergency Plan, Rehabilitation Management Plan.
- Rehabilitate temporary disturbance areas in State forest and NPWS areas to facilitate natural regeneration of suitable native species.

State Forest

- About 774 ha of the construction area is within FCNSW land, including the Olney, Watagan, Pokolbin and Corrabare State Forests. Permanent impacts include transmission line easements, access tracks and the Olney switching station.
- During construction, there would be temporary impacts to FCNSW operations and recreational users, including those relating to temporary closures of roads, restrictions on access, biosecurity, noise and dust. Longer term impacts are associated with changes to visual amenity, and economic impacts associated with foregone revenue from timber harvesting.
- FCNSW land is categorised into management zones. In Pokolbin State Forest and Corrabare State forests, the project will mostly impact on General management (Zone 4) and Harvesting Exclusion (Zone 3a). The project mainly intersects General Management (Zone 4) and Hardwood plantation (Zone 5) in the Watagan State forest. And in Olney State Forest the project would impact General Management (Zone 4), with small areas of Special Management (Zone 2) and Non-Forestry (Zone 7) land which is associated with the easement of the existing transmission line.
- During the design process, EnergyCo sited the transmission line easement strategically to avoid heritage items and limit impacts on biodiversity, proposing new passing bays to limit traffic impacts,
- FCNSW initially raised concerns regarding vegetation management, bush fire safety, impacts to biodiversity and heritage, the use of the Forestry NSW road network, visitor amenity, scenic values and water quality.
- EnergyCo has committed to ongoing consultation with FCNSW for the development of the bushfire management plan, Aboriginal heritage management plan, traffic and transport management plan and biosecurity management plan.
- The Department has recommended that, in its conditions, the development of relevant management plans must be prepared in consultation with FCNSW and considers the use of forestry land has reduced impacts on private land and sensitive communities. The Department also notes that the development would be managed in accordance with an easement agreement negotiated between EnergyCo and FCNSW. Overall, impacts would be adequately managed subject to the implementation of mitigation measures in line with the recommended conditions.

Mining land

- 705 ha of the construction area is within inactive mining land, including Mount Arthur Coal, Maxwell Underground Coal Mine, Hunter Valley Operations, Mount Thorley Warkworth and Bulga Coal Mine.
- EnergyCo sited the easement inside mining land to avoid impacts to privately owned property, biodiversity values such as remnant Warkworth Sands Woodland TEC at Gouldsville and known heritage items.
- EnergyCo have committed to ongoing consultation and interface management plans to manage any interactions with mining operations during construction.
- The project areas within mine subsidence districts require specific design considerations and appropriate construction methods would be required to manage this risk. Approval to construct structures within a mine subsidence area is required from Subsidence Advisory NSW.

Commonwealth land

- Around 13 km of transmission line is within the Singleton Military Area (SMA), which is Commonwealth Land owned by the Department of Defence, partly adjacent to an existing Transgrid 330kV line within SMA. The assessment of impacts to Commonwealth land is a matter of national environmental significance and as such, has been considered in **Appendix J**. The Department considers that the impacts on the Singleton Military Area would be acceptable, subject to the avoidance and mitigation measures described in the EIS, Amendment Report and the recommended instrument of approval. The Department has consulted with AG DCCEEW and Department of Defence during the assessment process, and neither party has raised any residual concerns.

Conservation land

- The project would result in direct impacts to 52 ha of NPWS land in Jilliby State Conservation Area (mostly adjacent to the existing Transgrid transmission easement), 31 ha in Corrabare North flora reserve and the remaining 8 ha in other NPWS vested lands.

Findings and conclusions

Recommended conditions

- Regarding the NPWS query on the permissibility pathway and statutory application of the NPW Act to the project, the Department's consideration on permissibility and status as CSSI is addressed in section 4.1, while the requirement to obtain an agreement for an easement under section 151 of the NPW Act is addressed in 4.7.
- NPWS originally requested further information regarding impacts on aerial operations, bushfire management, emergency access, heritage, biodiversity, visitor amenity and waterways. These matters have been addressed, and NPWS is supportive of the recommended conditions.
- EnergyCo has committed to ongoing consultation with NPWS during construction and operation, and for the preparation of the Aboriginal cultural heritage management plan and historic heritage management plan. EnergyCo also committed to providing final design coordinates and elevations to NPWS to inform aviation safety.
- The Department has recommended in its conditions that the development of relevant management plans be done in consultation with NPWS, and that temporary disturbance areas must be rehabilitated to the satisfaction of NPWS.

Water use and Supply

- The amount of water required for construction is estimated to be around 1,580 ML, of which 170 ML would be potable and 1,410 ML would be from non-potable sources. Around 10,000 L per year would be required for maintenance during operation.
- EnergyCo proposes to prioritise use of non-potable water for construction, including from rainwater harvesting, reuse of construction water and treated wastewater before utilising water extracted from surface and groundwater sources (under water access licences). Potable water would be sourced from commercial suppliers including Hunter Water and Singleton Council.
- Wastewater treatment facilities would be established at all TWA and construction support sites.
- The Department, including the Water Group, and Hunter Water is satisfied that the project's water use is unlikely to have any significant impact on water supply in the region. However, the Water Group noted that any water take by the project is required to be appropriately licenced.
- Make sure the development has sufficient water for all stages of the project and that it obtains any necessary licences under the *Water Act 1912* or *Water Management Act 2000*. If necessary, adjust the scale of the project to match the available water supply.
- Prepare and implement an Accommodation Camp Management Plan in consultation with Councils, including

Findings and conclusions

Recommended conditions

measures to make sure water and wastewater utilities are designed and located in accordance with Council specifications.

Surface water and Flooding

Surface Water

- Around 90% of the project area is located within the Hunter River catchment, with the southern portion located within the Lake Macquarie and Tuggerah Lakes catchments. The transmission line would cross the Hunter River, Wollombi Brook and several other smaller creeks.
 - A surface water assessment was prepared for the project that considered impacts on water quality, streamflow regime, watercourses and riparian corridors. The greatest risks to surface water environments were considered to be in the State forests where there is steeper topography and more vegetation clearing required.
 - Construction impacts to riparian corridors would be associated with clearing of vegetation within the transmission line alignment, construction of watercourse crossings for access tracks and the construction of the Olney switching station. The clearing and earthworks associated with construction of the Olney switching station would occur across the riparian corridors of two minor watercourses upstream of sensitive receiving environments.
 - EnergyCo has committed to designing and implementing site specific water quality and stormwater controls within these sensitive areas, as well as adopting modified clearing methods to reduce impacts to riparian corridors, maximise stability of watercourses and minimise water quality impacts.
 - The Department has recommended a condition requiring all works on waterfront land (including waterway crossings) be undertaken in accordance with the relevant guidelines. DPIRD Fisheries and DCCEE Water confirmed they are satisfied with the conditions.
- Comply with legislation to prevent pollution of waters.
 - Require all works on waterfront land and within watercourses to comply with the relevant policies and guidelines.
 - Require that the development does not materially alter the flood storage capacity, flows or characteristics in the development area or off-site
 - Manage flood risk during construction and operation
 - Include a flood emergency response plan that considers flood risks up to and including the Probable Maximum Flood

Findings and conclusions

Recommended conditions

- The EPA did not raise any concerns regarding impacts on water quality and the Department notes that it is a strict liability offence to pollute any waters under the POEO Act, unless authorised by an Environment Protection Licence.
- EnergyCo has committed to the preparation of a Soil and Water Management Plan that incorporates a water quality monitoring program, erosion and sediment control plan and stormwater management plan to manage water quality impacts during construction.
- The Department considers that with implementation of the mitigation measures proposed by EnergyCo and compliance with the recommended conditions of approval, risks to surface water environments can be adequately managed.

Flooding

- The project crosses several flood plains and construction works have the potential to obstruct water flow, leading to minor increases in water depth or delaying the passage of floodwater. An assessment of flooding impacts indicates that potential impacts on flood behaviour would be short term, minor and localised.
- All construction support sites would be affected by flooding to varying degrees, however the flood depths and velocities remain safe for all sites except sections of the Wollombi Road and Freemans Drive construction support sites. To manage the flood risk at these sites, EnergyCo has committed to:
 - design all construction support sites to manage the flood risk to personnel, facilities and equipment, and not worsen offsite flood impacts;
 - make sure the floor level of buildings used for TWAs are a minimum of 0.5 m above the peak 1% AEP flood level;
 - prepare and implement flood emergency procedures that include contingency planning, monitoring of weather data, flood warnings and evacuation procedures.
- During operation, sections of the transmission line and access tracks would be inundated by floodwaters. Transmission towers in these locations would be reinforced at their base to make sure of their integrity and be designed to avoid or minimise adverse impacts on flood behaviour. Scour protection measures would also be incorporated in the design. Permanent access tracks would also be designed with appropriate drainage controls to manage runoff and scour potential.

Findings and conclusions

Recommended conditions

- The proposed switching stations at Bayswater South and Olney would result in localised changes to flooding and overland flows, including increased flood depth, flow velocity and an increase in flood duration in the vicinity of the substation and switching stations. Access to these facilities would not be impacted and impacts would not extend to any privately owned land.
- Overall, operation of the project would not have a significant impact on the extent of the flood storage area, would not increase the overall flood hazard and would not have an adverse impact on existing emergency response arrangements.
- The Department has recommended conditions requiring the project not materially alter the flood storage capacity, flows or characteristics in the project area or off-site and to prepare a flood emergency response plan for the project.
- The Department and SES are satisfied that the operation of the project would have only minor and localised impacts on flood behaviour, which can be appropriately managed through careful design and compliance with the recommended conditions of consent.

Groundwater

- EnergyCo's assessment concluded that the risk the project poses to groundwater resources is likely to be low to moderate. Using the *NSW Aquifer Interference Policy* (AIP) the groundwater impact assessment found the impact would be AIP level 1, generating minimal impact considerations. The main disturbance would be the construction of five-metre-deep concrete bases for the transmission line structures, which generally occur in elevated areas.
- Excavations for the bases or substations are unlikely to make alterations to flow during the construction period and it is only during this short window that there is any potential to impact groundwater quality. This could be effectively managed through standard site environmental controls.
- The project also has the potential to damage groundwater bores in the construction period; there are 26 identified bores in the project area. EnergyCo has proposed to protect these bores during construction and to compensate owners should damage occur.
- Drawdown from dewatering of these excavations has the potential to temporarily reduce groundwater availability for surrounding GDEs and groundwater users. However, any excavations would be temporary and only open for a short period,
- Prepare and implement soil and water management plan, including trigger action response measures should groundwater inflows exceed 3 ML per year.

Findings and conclusions

Recommended conditions

limiting the volumes to be dewatered and any associated impact to GDEs. Given the limited and short-term nature of dewatering activities, impacts to GDEs and groundwater users are expected to be low.

- The operation of the project would have negligible impacts on groundwater, largely limited to minor changes to recharge process associated with changes in flow patterns and increases in impervious ground cover.
- The Department considers that conditions including a Soil and Water Management Plan being developed for the project, would comprehensively detail potential impacts and mitigation measures so that groundwater quality and availability are not impacted by the project.

Air Quality

- The Department considers the potential air quality impacts associated with the construction of the project would be minimal.
- EnergyCo has committed to minimising air quality impacts by utilising a range of dust mitigation measures and preparing a dust control protocol as part of the Construction Environmental Management Plan and Soil and Water Management Plan.
- Minimise emissions of dust, fume, blast and other air pollutants from the project.
- Minimise surface disturbance.

Greenhouse Gas

- Construction is estimated to generate up to 644,384 tonnes of CO₂-e per year, reducing to 942 tonnes of CO₂-e per year during operation.
- EnergyCo's analysis demonstrates that it is a very small contribution to emissions in NSW and would not compromise ability of NSW to meet emission reduction targets. Although the NSW Guide for Large Emitters (NSW EPA, 2025) does not apply to the project as it not a scheduled premises under POEO Act, the project's emissions would be below the threshold for assessment under that guide. In addition, the project would reinforce the grid to make sure clean energy from wind and solar projects in the CWO and NE REZ can be reliably transferred to consumers and facilitate the shift to a lower carbon emissions energy system as coal fired generators retire.

Findings and conclusions	Recommended conditions
EMF and radiocommunications • Predicted electric and magnetic field (EMF) levels associated with the project are well below the relevant International Commission on Non-Ionizing Radiation Protection EMF criteria of 2,000 milligauss (mG) for general public exposure. New substations would be designed to comply with EMF exposure limits. • Department of Defence and Singleton Council noted that existing transmission lines have some impact to radio communications. Under wet conditions, the project has potential to impact AM radio signals within 131 m of the centre of transmission line. EnergyCo committed to ongoing consultation with the Department of Defence and to investigating AM radio impacts further during detailed design to determine whether compliance with relevant limits could be achieved. • The project is not predicted to impact other radiocommunications, including FM radio, aeronautical VHF, UHF CB radio or digital television and NSW Telco Authority has not raised concern with the proposed tower locations. • The Department has conditioned that EnergyCo must Proponent must make good any disruption to these services, ensuring the project would not impact EMF or radiocommunications in the area.	• Comply with the applicable EMF criteria. • Make good any disruption to radio communications services in the area cause by the project.
Social and Economic EnergyCo prepared a Social Impact Assessment (SIA) as part of the EIS, which identified a range of potential social impacts, both positive and negative. These include: - local business stimulus and generation of employment and training opportunities; - improved energy reliability regionally; - private property impacts relating to the establishment of the transmission easement; - decrease in amenity availability as the temporarily increased population share the roads, resources and space; - amenity impacts as the temporary construction works could increase existing levels of dust, noise and vibration; and - temporary workforce availability challenges due to increased competition for skills and labour. • Submitters raised concerns about the social impact of the project, in particular, concern was raised regarding the use of local roads, particularly near the Millfield Primary School on Wollombi Road. Additional social impacts raised in	• Prepare an accommodation and employment strategy in consultation with the council, with consideration to prioritising the employment of local workers. • Other management plans such as traffic and transport management plan, and conditions around having suitable procedures in place to

Findings and conclusions	Recommended conditions
submissions included community safety, loss of amenity within State forests and recreational areas, impacts to tourism and disruptions to local businesses and services. • EnergyCo has committed to constructing a road crossing for the Millfield Primary School, employment of a traffic controller during construction, upgrades to the school's carpark and fencing and ongoing consultation with the school during construction. • The project would generate direct and indirect benefits to the local community including the creation of up to 830 construction jobs and 10 ongoing jobs during operation. Expenditure in local economies would increase by workers who would temporarily reside in the area and by the procurement of goods and services by EnergyCo and associated contractors. • Several councils requested EnergyCo establish a community and employment benefit program and provide a commitment to a VPA. EnergyCo has committed to establishing and implementing a Hunter Central Coast Community and Employment Benefits Program in consultation with relevant councils and impacted communities and in accordance with the <i>Electricity Infrastructure Investment Regulation 2021</i>. • EnergyCo have committed to preparing a Social Impact Management Plan (SIMP), developed in consultation with Councils and relevant stakeholders. The SIMP would include: - detail commitments and management measures, specifying the social impacts addressed, affected stakeholders, implementation timeframes, roles and responsibilities; - mechanisms for community to have input into mitigation planning and evaluation of effectiveness; and - maintaining a complaints register to promptly notify landowners, businesses and local residents about upcoming activities and potential impacts and have an established process for complaint management. • EnergyCo has also committed to implementing a Local Business and Employment Strategy that would investigate local skill gaps and workforce training skill requirements, set targets for local employment including diversity and inclusion targets as well as provide education and training opportunities through TAFE NSW and other education institutions. • The Department is satisfied that EnergyCo's commitments and mitigation measures and the recommended conditions would avoid and mitigate adverse impacts. Amenity impacts including visual impacts, noise impacts and traffic impacts	provide safe access to forests and conservation areas.

Findings and conclusions

Recommended conditions

have also been adequately considered in the EIS and associated technical studies and can be managed by the recommended conditions of approval.

Waste and Contamination

Contamination

- The EIS included a Preliminary Site Investigation (PSI) that noted there are three notified contaminated sites near the project area. They include Bayswater Power Station, Bulga Coal Mine and the Dyno Nobel Emulsion Plant in Warkworth.
 - The PSI identified areas with medium to high contamination risk that would require further investigation and management prior to construction. EnergyCo has committed to further investigation of these areas prior to ground disturbance. These investigations would further inform any management measures required to be implemented during construction, in accordance with relevant legislation including the *National Environment Protection (Assessment of Contamination) Measure 1999* and the *Contaminated Land Management Act 1997*. The Department has recommended conditions requiring EnergyCo to develop measures to investigate, assess and manage contaminated land prior to the commencement of construction.
 - EnergyCo would be required to consult with relevant landowners to manage known contamination issues, including on Department of Defence (i.e. the Singleton Military Area) land where construction activities may interact with areas having the potential presence of unexploded ordinance (UXO).
 - The EPA did not raise any concerns relating to the management of contaminated land, subject to the implementation of appropriate management measures developed in accordance with the *Guidelines for Consultants Reporting on Contaminated Land - Contaminated Land Guidelines* (NSW EPA 2020). As such, the Department is satisfied that contamination impacts can be managed with the implementation of the recommended conditions.
- Require waste be dealt with in accordance with the waste hierarchy.
 - Prepare and implement a waste management plan in consultation with host Councils and the EPA.
 - Prepare and implement a soil and water management plan which details the investigation and management of contaminated land, if encountered during construction.

Waste management

- EnergyCo has committed to minimising, reusing and recycling waste where feasible. Where generated waste cannot be recycled or reused, EnergyCo would dispose of waste at a licenced facility where capacity to handle the types and volumes of waste is available.

Findings and conclusions

Recommended conditions

- EnergyCo has also committed to preparing a waste management plan that would detail measures to manage waste generation by the project and disposal.
- The Department considers that the waste generated by the project could be appropriately managed.

Aviation safety

- There are three certified aerodromes within 60 km of the project (RAAF Williamtown / Newcastle Airport, Cessnock Aerodrome and Maitland Aerodrome) as well as four uncertified aerodromes within 10 km. Warkworth Aerodrome is the closest airstrip, located approximately 2.5 km to the west of the project.
 - Public submissions raised concerns regarding the safe operation of aircraft in the vicinity of the project, particularly impacts to the operation of the Warkworth Aerodrome.
 - The Department notes that EnergyCo consulted with Gliding Australia, which is approved by CASA as an Approved Self-Administering Aviation Organisation, and the Hunter Valley Gliding Club (HVGC), which owns and operates the Warkworth Aerodrome. EnergyCo considered an alternative alignment further northeast from Warkworth Aerodrome, but this option was considered unfeasible due to greater impacts to private property, flooding risks, and the presence of threatened ecological communities.
 - EnergyCo undertook an Aviation Impact Assessment (AIA) as part of its EIS. Following the exhibition of the EIS, EnergyCo engaged a separate aviation expert, To70, to undertake a peer review of the AIA, and a subsequent Aviation Risk Assessment of the project in relation to gliding and aviation operations at Warkworth Aerodrome in consultation with Gliding Australia and HVGC.
- Addressed through implementation of committed mitigation measures.
 - Engage a suitably qualified, experienced and independent expert(s) to verify that the final layout, in conjunction with the implementation of control measures results in residual risk levels to aerial activities are no greater than what was identified in the risk assessment.
 - Provide a schedule for the implementation of the control measures, including timing and staging to the Planning Secretary.

Airspace interference

- The project is not located in controlled airspace, but is partly within Restricted Area R564A associated with the Singleton Military Area. The Department of Defence did not raise any specific concerns relating to the construction and operation of the project in Restricted Area R564A and requested consultation during detailed design and construction.
- The AIA concluded that there would be no infringement to the Lowest Safe Altitudes (LSALTs) or any Obstacle Limitation Surface (OLS) or Air Navigation Services – Aircraft Operations (PANS-OPS) for certified aerodromes. The project is also

outside the clearance zones associated with any aviation navigation aids, communication systems and air traffic control surveillance radars.

- Transmission infrastructure may pose some risk to aerial applications of fertilisers and pesticides, aerial operations (e.g. firefighting and baiting) in NPWS land and emergency services operations. Temporary construction cranes are unlikely to pose a hazard to aviation operations, provided they are marked with obstacle lighting and clearly visible against the background terrain.
- EnergyCo would consult Airservices Australia, CASA, NPWS and the Department of Defence during construction and detailed design. EnergyCo has committed to notifying relevant stakeholders of any construction activities that present an aviation hazard, i.e. the use of cranes, drones or helicopters. The final transmission tower locations and heights would also be provided to relevant stakeholders, nearby landowners and owners of local aircraft landing areas.
- The project is not expected to present an unusual or unacceptable risk to aerial operations, and risks can be managed by standard aviation risk management practices for above-ground infrastructure.

Obstacle impacts for nearby airstrips

- 10 helicopter landing sites were identified within 10 km of the project and would not be impacted by the project.
- The To70 Aviation Risk Assessment noted that multiple existing operational risks are present around the Warkworth Aerodrome. It concluded that there would be an increased risk to aerial operations in abnormal or non-routine operating conditions (e.g. equipment failure, degraded aircraft performance or other emergency situations) at Warkworth Aerodrome prior to mitigation. This includes risks introduced by the construction and operation of the project and / or risks exacerbated by the introduction of project infrastructure.
- The Aviation Risk Assessment considered that the existing risk for the Warkworth Aerodrome was high and focused on the incremental risk to extreme posed by the project and identified a number of control measures to mitigate the increased risk to aerial operations at Warkworth Aerodrome. These would include:
 - establishment of a new emergency landing area east of Warkworth Aerodrome;
 - high-visibility paint and markers on transmission infrastructure to increase visibility; and

Findings and conclusions

Recommended conditions

- administrative and procedural controls, including amending existing operating and safety procedures, pilot briefings, updating aeronautical charts and equipment monitoring and maintenance.
- Based on the findings of the Aviation Risk Assessment, while the project would introduce a new obstacle for aerial activities, with the implementation of the above control measures, the risks to aerial operations at Warkworth Aerodrome would be reduced from extreme to be consistent with the existing high risk when considered against the Gliding Australia Safety Management System (MOSP Part 5). Continuation of operations could be undertaken subject to the implementation of the identified controls, which would be verified prior to EnergyCo submitting its final layout plan.
- EnergyCo has committed to providing funding to support the establishment and maintenance of an alternative emergency landing area which is seen by Gliding Australia to be the most effective and most important risk control measure in the absence of elimination options. The Department is aware that Hunter Valley Operations, adjacent to Warkworth Aerodrome, is willing to provide land for this purpose. Funding would also be provided to support the HVGC to update relevant safety procedures as required. The Department has recommended conditions to this effect.
- With the implementation of the above control measures and recommended conditions, the Department is satisfied that the project does not present an unacceptable risk to aerial operations at Warkworth Aerodrome.

Bushfire

- The majority of the project area is classed as bushfire prone land. FCNSW and NPWS reiterated their role as the bushfire fighting authority on their respective lands, while several public submissions raised concerns that the project could increase bushfire risk.
- EnergyCo would be required to establish and maintain an appropriate Asset Protection Zone (APZ) around all TWAs; construction support sites and temporary buildings, substations and switching stations.
- Vegetation removal and trimming along the transmission line easement and APZ surrounding the switching stations, and TWAs would be undertaken to maintain appropriate clearances to manage bushfire risk.
- Make sure that the project complies with relevant Planning for Bushfire Protection 2019 (or equivalent) and Australian Standard AS3959- 2018.
- Make sure the project is suitably equipped to respond to fires on site, including the provision of a 20,000 litre water tank at each construction compound.

Findings and conclusions

- The Department notes that evidence provided to the *Select Committee on the Feasibility of Undergrounding the Transmission Infrastructure for Renewable Energy Projects (2023)* in relation to bushfire risk associated with overhead transmission lines was that high voltage transmission lines, over 220 kV, were unlikely to act as an ignition source.
- EnergyCo has committed to a number of mitigation measures and strategies, including the preparation of a bushfire emergency management and evacuation plan and bushfire safety system. This would be developed in consultation with RFS, FCNSW, FRNSW and NPWS.
- The Department has recommended a condition for the preparation and implementation of an Emergency Plan for the construction and operation of the project, in compliance with *RFS's Planning for Bushfire Protection 2019*. The Department, RFS, FCNSW, FRNSW and NPWS are satisfied that the bushfire risks of the project can be suitably managed through the implementation of standard fire management plans and procedures during construction and throughout operations.

Recommended conditions

- Prepare and implement an emergency plan and detailed emergency procedures.

Cumulative Impacts

- A number of public submissions commented on the cumulative impacts of the project, in particular visual amenity, agricultural impacts, demand on local resources and traffic impacts.
 - EnergyCo prepared its cumulative impact assessment in accordance with the Department's *Cumulative Impact Assessment Guidelines for State Significant Infrastructure Projects*. The cumulative impact assessment evaluated the potential impacts of the project alongside those of other relevant proposed projects.
 - Where construction schedules overlap, these projects would potentially place pressure on existing communities and services such as accommodation, health services, retail, hospitality, emergency services and waste facilities. These projects could also have cumulative amenity impacts associated with visual, traffic, noise, and air quality during construction. Cumulative impacts during construction would be temporary and vary with the level of concurrent activity at each project. Each project would implement mitigation measures to minimise its potential impacts.
 - The scale of negative cumulative social impacts is expected to be minor. If the proposed construction periods overlap, impacts may be exacerbated, but are expected to remain minor. Overlaps may temporarily increase labour demand, potentially leading to temporary labour shortages and added pressure on local housing supply from commuter workers.
- Addressed through implementation of committed mitigation measures and recommended conditions.

Findings and conclusions

Recommended conditions

- Negative cumulative social impacts associated with the demand for rental housing and short-term accommodation would be reduced with the inclusion of TWAs as part of the project.
- Other identified cumulative impacts would be managed by implementing the mitigation measures detailed for other environmental matters, including noise and vibration, traffic, transport and access, as well as the implementation of equivalent mitigation measures as part of the delivery of the relevant additional future projects.
- The Department acknowledges that the project has the potential to contribute to cumulative impact associated with the development of multiple projects. The Department also considers that the majority of these impacts would occur during the construction phase and be temporary, and that they can be suitably addressed through the implementation of committed mitigation measures and recommended conditions.

Rehabilitation

- EnergyCo proposes progressive site rehabilitation following the completion of construction, involving the removal of all temporary facilities not required for operation. This would include removal of construction support sites, temporary construction compounds and TWAs. These areas would be restored to the previous natural conditions as far as possible. State forest and National Park land inside the project's development area would be rehabilitated under a Rehabilitation Management Plan made in close consultation with NPWS and FCNSW.
- To make sure that redundant infrastructure is removed and the areas rehabilitated appropriately, the Department has recommended conditions requiring EnergyCo to progressively rehabilitate and revegetate temporary disturbance areas, removing TWAs and ancillary facilities following construction and make good any project related damage to safeguard public safety.
- Progressively rehabilitate the development footprint.
- Comply with rehabilitation objectives.
- Prepare a rehabilitation management plan for the development area within the National Park Estate and State forests.

7 Evaluation

The Hunter Transmission project is critical for energy security and reliability in NSW as it would play an essential role in supporting the shift from long standing reliance on coal fired power stations to a reliance on renewable energy and would unlock the supply of electricity from the CWO and NE REZ to the greater Sydney region. Consequently, the Minister for Planning and Public Spaces declared the project to be CSSI.

The project is consistent with AMEO's roadmap for the NEM and ISP and relevant strategic NSW planning policy documents including the *Transmission Infrastructure Strategy*, the *Electricity Strategy*, and more broadly the *Climate Change Policy Framework* and *Net Zero Plan Stage 1: 2020 – 2030*.

It would also deliver significant benefits to NSW including the creation of around 830 construction jobs.

Overall, the Department considers that the project has been designed in a way that avoids and minimises social and environmental impacts as far as practicable. The Department has carefully considered the potential residual impacts of the project on the environment and landowners. The Department has worked closely with key government agencies to provide a robust assessment of impacts of the project and to prepare a comprehensive framework of recommended conditions of approval, requiring a range of controls and measures to minimise the impacts of the project.

The Department has carried out a detailed assessment of the merits of the project in accordance with all relevant NSW legislation, policies, and guidelines. It has also consulted widely with the community and key government agencies and closely considered the issues they have raised during this consultation in its assessment. The Department notes that EnergyCo amended the project alignment to reduce direct impacts on native vegetation and Aboriginal cultural heritage sites.

The Department considers the key impacts are biodiversity, visual amenity and traffic and transport impacts. The Department has also considered a range of other impacts in its assessment including landscape character and visual amenity, heritage, land use, social, economic, water, waste and contamination, hazards, air quality, and cumulative impacts. The Department considers these impacts can be appropriately mitigated and/or offset in accordance with NSW government statutory requirements, guidelines and policy requirements.

The Department has carefully weighed the impacts of the project against the benefits. The project would have long-term benefit for the transmission of electricity in NSW and the broader NEM, would support the shift of the NEM away from long-standing reliance on coal-fired power stations and would transmit renewable energy from the CWO and NE REZ to energy consumers.

On balance, the Department considered that the Hunter Transmission project benefits to energy security and reliability outweigh its costs, and the project is in the public interest and approvable, subject to strict conditions.

8 Recommendation

It is recommended that the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to grant approval to the application;
- **considers** any advice provided by the Minister having portfolio responsibility for the project
- **agrees** with the key reasons for approval listed in the notice of decision;
- **grants approval** for the application in respect of Hunter Transmission project (SSI 70610456) as amended, subject to the conditions in the attached infrastructure approval; and
- **signs** the attached infrastructure approval (**Appendix G**).

Prepared by:

- Anthony Ko, Team Leader
- Gabrielle Allan, Team Leader
- Kurtis Wathen, Principal Planning Officer
- Julia Green, Principal Planning Officer
- Natasha Homsey, Principal Planning Officer
- Emma Mitchell, Environmental Assessment Officer

Recommended by:



Nicole Brewer
Director
Energy Assessments
19 June 2026

Recommended by:



Chris Ritchie
Executive Director
Energy, Resources and Industry
19 June 2026

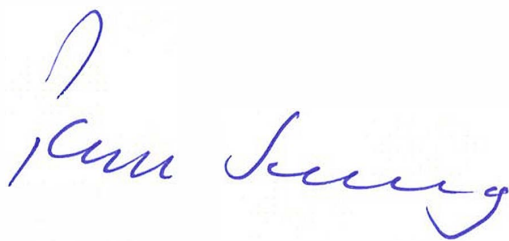
Recommended by:



Madeleine Thomas
A/Deputy Secretary
Development Assessment and Sustainability
24 June 2026

9 Determination

The recommendation is **adopted** by:



Paul Scully

Minister for Planning and Public Spaces

27/7/2016

Appendices

Appendix A – Summary of key amendments to the project

Since lodgement, some key aspects of the project have been amended by EnergyCo in response to public submissions, agency advice and at the request of the Department via an amendment report.

A summary of the key amendments is provided in **Table A-1** below.

Table A-1 | Key amendments

Project element	Summary of exhibited project	Summary of amended project
New transmission line and transmission towers	- Overhead 500 kV double circuit transmission line of around 110 kilometres between the Bayswater South 500 kV switching station and the Olney 500 kV switching station - Steel lattice towers up to 85 metres high and that are spaced anywhere between 75 metres to around 1.5 kilometres apart depending on topography (typically between 300 and 600 metres) 500 kV transmission lines with a minimum vertical clearance of 13.5 metres - Construction corridor 140 metres wide	Changes to the transmission line alignment at Mount Thorley and Gouldsville.
Adjustments and crossings – existing transmission lines	- Adjustments to existing 500 kV transmission lines: - Line 5A1 and 5A2: Eraring – Kemps Creek 500 kV at Ravensdale to connect to the new Olney 500 kV switching station - Line 5A3: Bayswater – Mt Piper 500 kV at Bayswater to connect to the new Bayswater South 500 kV switching station - Line 5A4: Bayswater – Wollar 500 kV at Bayswater to connect to the new Bayswater South 500 kV switching station - Adjustments to existing 330 kV transmission lines: - Line 31: Bayswater – Regentville 330 kV - Line 32: Bayswater – Sydney West 330 kV - Line 81: Newcastle – Liddell 330 kV - Crossing of existing 330 kV transmission lines: - Line 31: Bayswater – Regentville 330 kV at Bayswater	No change.

Project element	Summary of exhibited project	Summary of amended project
	- Line 32: Bayswater – Sydney West 330 kV at Bayswater - Line 81: 330 kV: Newcastle – Liddell 330 kV at Lemington and again at the Singleton Military Area - Line 82: 330 kV: Tomago – Liddell 330 kV at Warkworth and again at the Singleton Military Area	
Upgrades – existing transmission lines and towers	• Upgrades to overhead earth wire on existing 500 kV transmission lines including: - around 10 kilometres of upgrades at Bayswater (Line 5A3 and Line 5A4) - around 17 kilometres of upgrades at Martinsville, Ravensdale and Cedar Brush Creek (Line 5A1 and 5A2) • New communications infrastructure including: - new underground fibre cable connection between the existing Bayswater 500 kV/330 kV substation and the new Bayswater South 500 kV switching station - new optical ground wire for the new HTP 500 kV transmission line between Bayswater South 500 kV switching station and Olney 500 kV switching station - new optical ground wire on the existing and upgraded 500 kV transmission line between Olney 500 kV switching station and Eraring 500 kV/330 kV substation (Line 5A1 and 5A2) • Tower strengthening on various existing towers on Line 5A1, Line 5A2, Line 5A3 and Line 5A4	• No change.
Switching stations/ substation upgrades	• New Bayswater South 500 kV switching station – construction impact area around 26.6 hectares • Modifications at the existing Bayswater 500 kV/330 kV substation within the existing footprint • New Olney 500 kV switching station – construction impact area around 20 hectares	• The amended project would include an underground fibre optic communication connection between the Bayswater 500 kV/330 kV substation and the Bayswater South 500 kV switching station. As part of the amended project, this

Project element	Summary of exhibited project	Summary of amended project
	• Augmentation and modifications at the Eraring 500 kV/ 330 kV substation, including installation of two new 1500 MVA transformers • Remote work at existing substations, consisting of replacing or upgrading existing control and communication equipment	underground fibre optic connection would be located in a trench within the exhibited HTP corridor and would not result in any alteration to the exhibited construction impact area. • The amended project would include the following at the Eraring 500 kV/330 kV substation: - a larger footprint for constructability, including for parking and the adjustment of utilities - substation generator connections on the existing hardstand area - modification works on the existing substation bench - new poles and adjustment of the existing generator connections into Eraring Power Station. • The construction impact area at the Eraring substation would increase to 24 hectares to accommodate these changes.
Access roads and tracks	• Access roads and tracks, including oversize/overmass routes, for the construction of the project is described in section 2	• The amended project would include changes to access track arrangements in response to consultation with the Forestry Corporation of NSW and other landowners, and to minimise impacts to biodiversity.

Project element	Summary of exhibited project	Summary of amended project
Construction impact area	- Construction impact area around 2,350 hectares - This is the area that would be affected by the construction of the project, including (but not limited to) transmission towers and lines, stringing sites, access roads, access tracks, substations, switching stations, adjustments and upgrades to existing lines, communications infrastructure, TWAs, construction support sites, laydown areas and utility adjustments - As the larger of the construction and operation impact areas, the construction impact area was used to determine the extent of the overall project impact area	The amended construction impact area would be around 2,379 hectares
HTP corridor	140 m wide to allow for the construction of the new transmission line - This includes areas required for stringing activities and material laydown	- The HTP corridor would be realigned in Mount Thorley in response to landowner consultation - The HTP corridor would be realigned in Gouldsville to reduce impacts to biodiversity - A stringing site has been removed in Olney State Forest to reduce impacts to biodiversity - The location of laydown areas within State forests have been adjusted in response to feedback received from Forestry Corporation of NSW - The Flick Road emergency helicopter landing area has been adjusted in response to feedback received from Forestry Corporation of NSW
Vegetation clearing	Around 762 ha of native vegetation cleared within a development footprint of 2,350 ha	Around 945 ha of native vegetation cleared within the development footprint of 2,379 ha

Project element	Summary of exhibited project	Summary of amended project
Construction support sites	- Five construction support sites: Hebden Road, Pikes Gully Road, Gouldsville Road, Wollombi Road and Freemans Drive - Helicopter pads (helipads) indicatively at: Hebden Road, Pikes Gully Road, Gouldsville Road and Freemans Drive	No change.
Temporary workforce accommodation (TWA)	Three TWAs catering for around 780 of the main construction workforce are located at the Hebden Road, Gouldsville Road and Freemans Drive construction support sites	- An additional TWA would be provided at the Wollombi Road construction support site. This facility would provide accommodation for up to 300 workers during construction - The provision of a TWA at the Hebden Road, Gouldsville Road and Freemans Drive construction support sites would remain consistent with the exhibited project
Ancillary sites	Laydown areas, which would be established to allow for various construction activities and to minimise the need for vehicle movements to and from the construction support sites	- Two laydown areas would be established in the Corrabare State Forest and the State Forest of the Watagan Mountains to replace two laydown areas assessed as part of the exhibited project - The Flick Road emergency helicopter landing area would be reconfigured as part of the amended project
Access roads and tracks	Upgrades to the existing public road network and existing access tracks and the construction of new access tracks would be required in some locations to provide access to the construction impact area and would be undertaken prior to and during construction. Permanent access requirements during operation of the project is described below	The amended project would include changes to access track arrangements in response to consultation with the Forestry Corporation of NSW and other landowners, and to minimise impacts to biodiversity.

Project element	Summary of exhibited project	Summary of amended project
Land requirements	• Total permanent areas (including transmission line easement and access road easements): 926 ha • Total temporary areas (including construction leases within the HTP corridor and other temporary locations such as construction support sites and laydown areas): 1,886 ha • Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha	• Total permanent areas (including transmission line easement and access road easements): 1,014 ha • Total temporary areas (including construction leases within the HTP corridor and other temporary locations such as construction support sites and laydown areas): 1,954 ha • Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha
Utility adjustments	• Third party utility works including fibre optics, electricity, gas, telecommunication, water, sewer and stormwater	• The utility adjustment schedule from the exhibited project has been updated to capture additional utility adjustment requirements during construction
Construction program	• Construction to start in 2027 • Operation by the end of 2029	• No change.
Construction resource requirements	• Around 830 full-time equivalent workers during peak construction periods • Plant and equipment including dozers, excavators, graders, compactors, rollers, cranes, dump trucks, water carts, delivery trucks, stringing blocks and winches, concrete trucks, asphalt truck and sprayers, helicopters/stringing drones, mobile concrete batching plants, mulchers, spider excavators and dewatering equipment (among others) • Materials such as concrete and steel reinforcement for tower foundations, steel for the transmission towers and substation gantry, densely graded base and crushed rocks, conductors, insulators and cabling for the transmission line, electrical components for the substations, PVC conduits,	• In addition to the construction plant and equipment assessed as part of the exhibited project, diesel generators, crushing and screening plant, washdown facilities and wastewater treatment plants would also be required. This has been informed by contractor feedback

Project element	Summary of exhibited project	Summary of amended project
	metal fencing and gates, stormwater drainage materials, diesel and petrol, pre-fabricated buildings, general building materials and fire system materials • Around 1580 ML of water (170 ML of potable water and 1410 ML of non-potable water)	
Operation impact area	• Operation impact area around 1260 hectares • This is the area that would be occupied by permanent components of the project and/or maintained during operations, including transmission line easements, transmission lines and towers, substations, switching stations, communications infrastructure, maintenance facilities, permanent access roads to substations and switching stations and access tracks to the transmission line easement	• The amended operation impact area would be around 1,371 hectares
Operational transmission line easement	• Operational easement generally 70 metres wide within which the 500 kV transmission line would be located	• The operational easement would largely remain consistent with the 70-metre-wide easement assessed as part of the exhibited project, with the exception of some discrete areas where the operational easement would be required to be wider than 70 metres to account for conductor swing during periods of high wind
Access roads and tracks	• Treatment works at existing public roads and intersections to support construction requirements would be permanent improvements to be maintained by the relevant road authority • New permanent access to the transmission line easement and switching stations	• No change.
Land requirements	• Total permanent areas (including transmission line easement and access road easements): 926 ha • Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha	• Total permanent areas (including transmission line easement and access road easements): 1,014 ha

Project element	Summary of exhibited project	Summary of amended project
		Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha
Vegetation management	- Vegetation within the easement would be maintained to achieve operational and safety requirements, including bushfire risk management (indicatively 13.5 metres below the conductors under maximum operating line conditions) - Hazard trees that pose a risk to safe operation of the transmission line by falling onto tower structures, conductors and associated infrastructure, would be removed to manage any future risk to the transmission infrastructure - Vegetation in the easement and in asset protection zones (APZ) would be managed as needed on a cyclical basis over the life of the project	No change.
Resource requirements	- Operational workforce of up to 10 full-time equivalent workers - Resources used during operation would be associated with, but not limited to: - maintenance of electrical components at Eraring substation and the new switching stations such as transformers, reactors, control and protection systems, electrical cabling and high voltage plant such as circuit breakers as required - maintenance of the transmission line and towers - maintenance of access tracks and roads - maintenance of fences and access gates - maintenance activities and use of machinery and vehicles (e.g. fuels, lubricants and metals) - maintenance of vegetation throughout the transmission line easement and along access tracks and roads - potable and non-potable water requirements - electricity for the operation of the switching stations and communications facilities.	No change.

Project element	Summary of exhibited project	Summary of amended project
	- During operation of the project, about 10,000 L of water per year would be required for maintenance activities, on-site staff facilities and testing of firefighting systems and services - Potable water would preferentially be sourced from council owned potable water supplies. Water would be purchased and transported to the switching stations as required, where it would be stored in water tanks	

Appendix B – Environmental Impact Statement

Appendix C – Submissions and government agency advice

Appendix D - Submission Report

Appendix E – Amendment Reports

Appendix F – Additional Information

Appendix G - Recommended Infrastructure Approval

Appendices B to G available at: [Hunter Transmission project Planning Portal - Department of Planning, Housing and Infrastructure](#)

Appendix H – Biodiversity impact summary

Table H-1 | Native vegetation impacts

Plant Community Type	Conservation status		SAIL Entity	Direct impact area (ha)	Ecosystem Credit Liability
	BC Act	EPBC Act			
3029 - Lower North Wet Gully Palm Rainforest	-	-	No	3.34	92
3086 - Lower North Hinterland Riparian Dry Rainforest	-	-	No	7.45	248
3087 - Lower North Ranges Riparian Turpentine Forest	-	-	No	2.82	73
3150 - Hunter Coast Ranges Turpentine Wet Forest	-	-	No	47.87	1,125
3151 - Northwest Sydney Sandstone Grey Myrtle Dry Rainforest	-	-	No	1.85	36
3152 - Hunter Range Turpentine-Grey Myrtle Gully Forest	-	-	No	0.92	16
3230 - Central Coast Escarpment Moist Forest	-	-	No	88.29	2,299
3237 - Hunter Range Blue Gum Gully Forest	-	-	No	5.92	142
3238 - Hunter Range Colluvial Apple-Gum Forest	-	-	No	0.05	1
3239 - Hunter Range Sheltered Grey Gum Forest	-	-	No	109.25	2,701
3241 - Lower North White Mahogany-Spotted Gum Moist Forest	-	-	No	20.12	542
3242 - Lower North Ranges Turpentine Moist Forest	-	-	No	39.18	1,004
3244 - Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest	-	-	No	3.04	78
3250 - Northern Foothills Blackbutt Grassy Forest	-	-	No	5.92	110
3263 - Watagan Range Turpentine-Mahogany Grassy Forest	-	-	No	59.38	1,534
3314 - Central Hunter Slopes Grey Box Forest	CE	E	No	127.60*	1,996
3315 - Central Hunter Ironbark-Spotted Gum Forest	CE	E	No	27.02*	496

Plant Community Type	Conservation status		SAIL Entity	Direct impact area (ha)	Ecosystem Credit Liability
	BC Act	EPBC Act			
3328 - Lower Hunter Red Gum-Paperbark Riverflat Forest	CE	E	No	1.08	17
3431 - Central Hunter Ironbark Grassy Woodland	CE	E	No	174.41*	2,766
3433 - Hunter Coast Foothills Spotted Gum-Ironbark Grassy Forest	-	-	No	2.00	40
3436 - Hunter Coast Sandy Creekflat Low Paperbark Scrub	-	-	No	0.43	19
3438 - Hunter Escarpment Foothills Ironbark Forest	CE	-	No	8.76	266
3444 - Lower Hunter Spotted Gum-Ironbark Forest	-	E	No	44.68*	1,459
3446 - Lower North Foothills Ironbark-Box-Gum Grassy Forest	CE	E	No	1.13	45
3489 - Hunter Escarpment Grey Box Forest	-	-	No	4.74	157
3581 - Hunter Coast Foothills Apple Forest	-	-	No	0.67	16
3582 - Hunter Coast Lowland Apple-Bloodwood Forest	-	-	No	11.09	223
3583 - Hunter Coast Lowland Scribbly Gum Forest	-	-	No	8.43	156
3599 - Blue Mountains Peppermint Shrub Forest	-	-	No	8.55	218
3605 - Hunter Range Ironbark Forest	-	-	No	62.39	1,536
3617 - Sydney Hinterland Peppermint-Apple Forest	-	-	No	36.17	1,028
3621 - Sydney Hinterland Turpentine-Apple Gully Forest	-	-	No	4.66	129
4015 - Central Hunter Swamp Oak Riparian Forest	-	-	No	10.59*	298
4039 - Hunter Range Creekflat Apple-Red Gum Forest	CE	E	No	1.16	50
4042 - Lower North Riverflat Eucalypt-Paperbark Forest	-	-	No	0.94	33

Plant Community Type	Conservation status		SAIL Entity	Direct impact area (ha)	Ecosystem Credit Liability
	BC Act	EPBC Act			
4044 - Northern Creekflat Eucalypt-Paperbark Mesic Swamp Forest	E	E	No	0.39	13
4072 - Hunter River Oak Mesic Forest	-	-	No	0.37	13
4089 - Namoi-Upper Hunter River Red Gum Forest	-	E	No	12.58*	122
Total				945.24	21,097

* These PCTs include vegetation zones with heights of less than 2 m where impacts would be avoided in Disturbance Area B and HZ.

Table H-2 | Ecosystem Credits Required for the project – Scattered Trees

Plant Community Type	Ecosystem Credits
3314 - Central Hunter Slopes Grey Box Forest	1
3489 - Hunter Escarpment Grey Box Forest	6
3431 - Central Hunter Ironbark Grassy Woodland	14
4042 - Lower North Riverflat Eucalypt-Paperbark Forest	3
4015 - Central Hunter Swamp Oak Riparian Forest	2
Total	26

Table H-3 | Threatened flora impacts (species credit species)

Species Name	Conservation Status		SAIL Entity	Disturbance Area (ha)			Species Credits
	EPBC Act	BC Act		Known	Assumed	Total	
Acacia bynoeana (Bynoe's Wattle)	V	E	-	-	5.79	5.79	174
Angophora inopina (Charmhaven Apple)	V	V	-	-	3.70	3.70	142
Asperula asthenes (Trailing Woodruff)	V	V	-	-	2.75	2.75	118
Corybas dowlingii (Red Helmet Orchid)	-	E	-	-	43.02	43.02	1,593
Cryptostylis hunteriana (Leafless Tongue Orchid)	V	V	-	-	7.13	7.13	116
Cymbidium canaliculatum population in the Hunter Catchment	-	EP	-	1 individual	4 individuals	5 individuals	10
Cynanchum elegans (White-flowered Wax Plant)	E	E	-	-	2.67	2.67	99
Dendrobium tetragonum var. melaleucaphilum (Spider Orchid)	-	E	-	-	0.17	0.17	5
Diuris tricolor (Pine Donkey Orchid)	-	V	-	-	41.15	41.15	336
Epacris purpurascens var. purpurascens	-	V	-	-	14 individuals	14 individuals	21
Eucalyptus camaldulensi population in the Hunter catchment	-	EP	-	6.10	-	6.10	106
Eucalyptus fracta (Broken Back Ironbark)	-	E	Yes	4.62	8.48	13.10	679

Species Name	Conservation Status		SAIL Entity	Disturbance Area (ha)			Species Credits
	EPBC Act	BC Act		Known	Assumed	Total	
<i>Eucalyptus glaucina</i> (Slaty Red Gum)	V	V	-	-	34 individuals	34 individuals	68
<i>Genoplesium branwhiteorum</i> Syn. <i>Corunastylis</i> sp. Charmhaven (Charmhaven Midge Orchid)	CE	CE	Yes	-	6.12	6.12	205
<i>Genoplesium insigne</i> (Variable Midge Orchid)	CE	CE	Yes	4.25	6.42	10.67	389
<i>Grammitis stenophylla</i> (Narrow-leaf Finger Fern)	-	E	-	-	8.12	8.12	288
<i>Grevillea parviflora</i> subsp. <i>Parviflora</i> (Small-flower Grevillea)	V	V	-	7.09	5.13	12.22	286
<i>Melaleuca biconvexa</i> (Biconvex Paperbark)	V	V	-	-	6.05	6.05	242
<i>Melaleuca groveana</i> (Grove's Paperbark)	-	V	-	202 individuals	36 individuals	238 individuals	476
<i>Olearia cordata</i>	V	V	-	-	2.24	2.24	83
<i>Ozothamnus tessellatus</i>	V	V	-	-	0.65	0.65	16
<i>Pomaderris queenslandica</i> (Scant Pomaderris)	-	E	-	-	0.65	0.65	19
<i>Prasophyllum petilum</i> (Tarengo Leek Orchid)	E	E	-	-	13.74	13.74	454
<i>Prasophyllum</i> sp. Wybong	CE	-	-	-	13.74	13.74	677
<i>Prostanthera cineolifera</i> (Singleton Mint Bush)	V	V	-	47.33	17.67	65.00	2,406
<i>Pterostylis chaetophora</i>	-	V	-	-	18.23	18.23	616

Species Name	Conservation Status		SAIL Entity	Disturbance Area (ha)			Species Credits
	EPBC Act	BC Act		Known	Assumed	Total	
Pterostylis gibbosa (Illawarra Greenhood)	E	E	-	4.98	12.95	17.93	655
Rhizanthella slateri (Eastern Underground Orchid)	E	V	Yes	-	4.27	4.27	202
Rhodamnia rubescens (Scrub Turpentine)	CE	CE	Yes	1,434 individuals	90 individuals	1,524 individuals	4,572
Rhodomyrtus psidioides (Native Guava)	CE	CE	Yes	1.80	16.07	17.87	1,091
Rutidosia heterogama (Heath Wrinklewort)	V	V	-	-	0.66	0.66	14
Senna acclinis (Rainforest Cassia)	-	E	-	2.69	16.35	19.04	781
Syzygium paniculatum (Magenta Lilly Pilly)	V	V	-	-	61 individuals	61 individuals	122
Tetradlea juncea (Black-eyed Susan)	V	V	-	3.35	11.88	15.23	437
Thelymitra adorata (Wyong Sun Orchid)	CE	CE	Yes	-	0.79	0.79	21
Velleia perfoliata	V	V	-	-	2.24	2.24	75
Zieria involucreata	V	E	-	-	2.24	2.24	75
						Total	17,671

Table H-4 Threatened fauna impacts (species credit species)

Species Name	Conservation Status		SAIL Entity	Disturbance Area (ha)			Species Credits
	EPBC Act	BC Act		Known	Assumed	Total	
Regent Honeyeater (<i>Anthochaera Phrygia</i>)	CE	CE	Yes	96.91	-	96.91	5,203
Gang-gang Cockatoo (<i>Callocephalon fimbriatum</i>)	E	E	-	9.74	22.50	32.24	1,150
South-eastern Glossy Black-Cockatoo (<i>Calyptorhynchus lathami lathami</i>)	V	V	-	-	18.52	18.52	685
Eastern Pygmy-possum (<i>Cercartetus nanus</i>)	-	V	-	7.72	339.44	347.16	11,961
Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>)	E	E	Yes	574.24	-	574.24	28,615
Hunter Valley Delma (<i>Delma vescolineata</i>)	E	E	Yes ¹	353.53	-	353.53	6,530
Giant Burrowing Frog (<i>Heleioporus australiacus</i>)	E	V	-	25.31	48.31	73.62	2,124
Pale-headed Snake (<i>Hoplocephalus bitorquatus</i>)	-	V	-	-	3.60	3.60	113
Stephens' Banded Snake (<i>Hoplocephalus stephensi</i>)	-	V	-	227.39	7.33	234.72	9,191
Swift Parrot (<i>Lathamus discolor</i>)	CE	E	Yes	45.32	-	45.32	2,397
Littlejohn's Tree Frog (<i>Litoria littlejohni</i>)	E	E	Yes ¹	59.91	10.43	70.34	2,703
Stuttering Frog (<i>Mixophyes balbus</i>)	V	E	Yes	184.28	7.71	191.99	11,141
Giant Barred Frog (<i>Mixophyes iteratus</i>)	V	V	-	2.22	8.54	10.76	319
Southern Myotis (<i>Myotis macropus</i>)	-	V	-	161.83	-	161.83	3,248

Species Name	Conservation Status		SAIL Entity	Disturbance Area (ha)			Species Credits
	EPBC Act	BC Act		Known	Assumed	Total	
Barking Owl (<i>Ninox connivens</i>)	-	V	-	36.94	3.51	40.45	1,522
Powerful Owl (<i>Ninox strenua</i>)	-	V	-	209.83	3.51	213.34	7,938
Parma Wallaby (<i>Notamacropus parma</i>)	V	V	-	72.55	216.47	289.02	9,939
Southern Greater Glider (<i>Petauroides volans</i>)	E	E	-	533.42	26.97	560.39	21,072
Squirrel Glider (<i>Petaurus norfolcensis</i>)	-	V	-	728.17	-	728.17	26,115
Brush-tailed Rock-wallaby (<i>Petrogale penicillata</i>)	V	E	Yes	153.46	10.50	163.96	8,439
Brush-tailed Phascogale (<i>Phascogale tapoatafa</i>)	-	V	-	105.31	265.88	371.19	12,760
Koala (<i>Phascolarctos cinereus</i>)	E	E	-	625.71	-	625.71	23,304
Common Planigale (<i>Planigale maculata</i>)	-	V	-	46.37	247.82	294.19	6,287
Long-nosed Potoroo (<i>Potorous tridactylus</i>)	V	V	-	23.07	100.65	123.72	4,394
Red-crowned Toadlet (<i>Pseudophryne australis</i>)	-	V	-	47.17	17.18	64.35	1,853
Masked Owl (<i>Tyto novaehollandiae</i>)	-	V	-	76.09	3.51	79.60	2,913
Sooty Owl (<i>Tyto tenebricosa</i>)	-	V	Yes	337.00	-	337.00	18,990
Eastern Cave Bat (<i>Vespadelus troughtoni</i>)	-	V	-	424.14	-	424.14	20,724

Total 251,630

Table H-5 | Assessment of Impacts on SAI Entities

Species	Assessment Summary
Threatened Communities	
Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions	• The Hunter Floodplain Red Gum Woodland in the NSW North Coast and Sydney Basin Bioregions is considered under SAI Principles 1 and 2. • The project would result in the clearance of 4.31 ha of this community, noting that the BDAR estimates the current extent of this community in NSW to be between 2,589 ha and 7,144 ha (i.e., the project would remove less than 0.1% of the community extent in NSW). • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Flora Species	
Broken Back Ironbark (<i>Eucalyptus fracta</i>)	• The Broken Back Ironbark is considered under SAI Principle 3 as the species has a limited geographic distribution (i.e. extent of occurrence 233 km² and area of occupancy 52 km²). • A total of 13.1 ha of habitat would be removed, of which 4.62 ha is habitat where the species has been recorded and 8.48 ha where presence has been assumed to be present. A total of 66 individuals would be removed from a total population estimated to contain 3,539-3,639 individuals across three subpopulations. • CPHR has advised that the project is unlikely to alter the current extent of occurrence or area of occupancy. • It is also possible that micro-siting during detailed design would avoid impacts on some of these records, noting an unexpected and incidental finds protocol would also be implemented if the species is recorded in pre-clearing surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Charmhaven Midge Orchid (<i>Genoplesium branwhiteorum</i>)	• The Charmhaven Midge Orchid is considered under SAI Principle 1 and Principle 3 as there is evidence of a rapid rate of decline and a very limited geographic distribution. • The species was not recorded during survey, however the species has been assumed to be present over an area of 6.12 ha which was not surveyed.

Species	Assessment Summary
	While the number of individuals to be impacted by the project is uncertain, CPHR consider that it is likely to be low. • An unexpected and incidental finds protocol would also be implemented and enacted if the species is recorded in pre-clearing surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Eastern Underground Orchid (<i>Rhizanthella slateri</i>)	• The Eastern Underground Orchid is considered under SAI Principle 2 as it has a small population size, known from fewer than 14 subpopulations, each containing only a few individuals up to a maximum of about 75. • The species was assumed present in 81.37 ha of suitable habitat. While the number of individuals likely to be impacted is uncertain, the impact is likely to be minor given the species' broad distribution and the small area of assumed presence. • An unexpected and incidental finds protocol would also be implemented and enacted if the species is recorded in pre-clearing surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Native Guava (<i>Rhodomyrtus psidioides</i>)	• The Native Guava population is considered under SAI Principles 1 and 4 as the NSW population has already undergone, or is projected to undergo, a >80% decline within 10 years or three generations due to severe myrtle rust infection. • A total of 17.87 ha would be impacted by the project, comprising 1.8 ha of recorded habitat (4 individuals) and 16.07 ha where the species is assumed to be present. • An unexpected and incidental finds protocol would also be implemented if the species is recorded in pre-clearing surveys. Biosecurity protocols outlined in the BDAR would also help limit the spread of weeds and myrtle rust. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Scrub Turpentine (<i>Rhodamnia</i>)	• The Scrub Turpentine is considered under SAI Principles 1 and 4 as the population in NSW has already undergone, or is projected to undergo, a

Species	Assessment Summary
<i>rubescens</i>	>80% decline within 10 years or three generations due to myrtle rust infection (<i>Austropuccinia psidii</i>). - A total of 1,528 individuals would be removed by the project, noting the field surveys recorded over 3,000 individuals within the study area, most of which occurred within the Olney, Watagan, and Corrabare State Forests. with an extent of occurrence 14,734,000 ha and an area of occupancy of 336,000 ha. - An unexpected and incidental finds protocol would also be implemented and enacted if the species is recorded in pre-clearing surveys. Biosecurity protocols outlined in the BDAR which would be included in the Biodiversity Management Plan would also help limit the spread of weeds and myrtle rust. - In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Variable Midge Orchid (<i>Genoplesium insigne</i>)	- The Variable Midge Orchid is considered under SAIL Principle 3 as there is evidence of a very limited geographic distribution (3 extant populations and extent of occurrence <100 km²). Additional populations have since been identified and the extent of occurrence was recalculated to 210 km² and an area of occupancy of 576 km². - A total of 10.67 ha of habitat would be removed, of which 4.25 ha is habitat where the species was recorded and 6.42 ha where it is assumed to be present due to lack of surveys. A total of only 15 individuals would be removed from a total estimated population of 432 individuals across 14 sub-populations. - An unexpected and incidental finds protocol would also be implemented and enacted if the species is recorded in pre-clearing surveys. - In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Wyong Sun Orchid (<i>Thelymitra adorata</i>)	- The Wyong Sun Orchid is considered under SAIL Principles 2 and 3 the species has a small population size and limited geographic range. - The project would impact 0.79 ha of habitat where the species is assumed to be present. If present, the number of individuals occurring in this location is uncertain, however likely to be low given the small area of potential habitat and noting the species has not been detected elsewhere on the subject land.

Species	Assessment Summary
	• An unexpected and incidental finds protocol would also be implemented if the species is recorded in pre-clearing surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Fauna Species	
Brush-tailed Rock-wallaby (<i>Petrogale pencillata</i>)	• The Brush-tailed Rock-wallaby is considered under SAIL Principle 4 as the caves, cliffs and escarpments used by this species for habitat cannot be offset (i.e. readily re-created or existing caves enhanced). • The proposed project would impact 114.84 ha of Brush-tailed Rock-wallaby habitat in Disturbance Area A and 49.12 ha of habitat would be partially impacted in Disturbance Area B and HZ. • Direct impacts to caves with significant habitat for the Brush-tailed Rock Wallaby colony in the Pokolbin and Watagan State Forests have been avoided. • While indirect impacts may occur, they are expected to be minor and would be managed in accordance with the project's Biodiversity Management Plan. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Hunter Valley Delma (<i>Delma vescolineata</i>)	• The Hunter Valley Delma has been nominated for inclusion on DCCEEW's list of species at risk of SAIL and the nomination is currently under review. • The project would remove 281.36 ha of suitable habitat and an additional 72.17 ha of habitat in Disturbance Area B would be subject to partial impacts. • Areas of retained suitable habitat adjoining the proposed impact areas would be delineated and protected. Unexpected and incidental finds protocol, as detailed in the BDAR, would be enacted if the species is recorded in pre-clearing surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>)	• The Large-eared Pied Bat is considered under SAIL Principle 4 as the caves, cliffs and escarpments used by this species for breeding cannot be offset (i.e. readily re-created or existing caves enhanced).

Species	Assessment Summary
	• The proposed project would directly impact 574.24 ha of known habitat for the species. • The project would not directly impact any caves identified as Large-eared Pied Bat breeding habitat. • To minimise indirect impacts, ecologists would conduct assessments in areas within 100m of breeding habitat prior to any construction or clearing activity commencing. This may result in halting activity during the breeding season or employing alternative clearing equipment if deemed necessary. • A microbat sub-plan would be prepared and implemented during construction as part of the Biodiversity Management Plan and the monitoring outcomes of microbat occupation and activity would be provided. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.
Littlejohns Tree Frog (<i>Litoria littlejohni</i>)	• Littlejohns Tree Frog has been nominated for inclusion on DCCEEW's list of species at risk of SAIL. This nomination is currently under review. The species is susceptible to infection by amphibian chytrid causing the disease chytridiomycosis, and the species is intended to be considered under SAIL Principle 4. • The project would impact 70.34 ha of habitat for this species, which represents 6% of the estimated suitable habitat available to the Watagans' population. • Impacts proposed by the project to core breeding habitats have been reduced by 9.29 ha through design amendments, resulting in the retention of 9 non-disturbance areas where the alignment crosses key breeding habitat in waterways and the removal of a stringing site. • The project has also avoided 60 of 62 artificial breeding ponds constructed by the University of Newcastle for this species. • During construction, sensitive hand clearing zones would be established for waterways where clearing is required, and an amphibian hygiene protocol would be implemented as part of the Threatened Frog Management Sub-Plan to mitigate potential spread of chytrid fungus during construction. • EnergyCo has also committed to providing \$250,000 of funding to target activities under the conservation strategy for the species. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAIL.

Species	Assessment Summary
Stuttering Frog (<i>Mixophyes</i> <i>balbus</i>)	• The Stuttering Frog is considered under SAI Principle 4, as the ability to control the key threatening process 'Infection of frogs by amphibian chytrid causing the disease chytridiomycosis' is negligible at the site scale. • The project would impact 191.99 ha of habitat for this species, with most of the records within the development footprint located between towers 1 and 10. • Impacts proposed by the project to core breeding habitats have been reduced by 8.69 ha through design amendments, resulting in the retention of 9 non-disturbance areas where the alignment crosses key breeding habitat in waterways and the removal of a stringing site. • The project has also avoided 60 of 62 artificial breeding ponds constructed by the University of Newcastle for this species. • During construction, sensitive hand clearing zones would be established for waterways where clearing is required, and an amphibian hygiene protocol would be implemented as part of the Threatened Frog Management Sub-Plan to mitigate potential spread of chytrid fungus during construction. • EnergyCo has also committed to providing \$250,000 of funding to target activities under the conservation strategy for the species. • The BDAR identifies the extent of impacts proposed would affect 5% of the associated habitat available in the wider area for the estimated population in the Watagan Mountains of 50 to 250 individuals. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Regent Honeyeater (<i>Anthochaera phrygia</i>)	• The Regent Honeyeater is considered under SAI Principles 1 and 2, as the species has experienced >80% population decline and has an extremely small population (<250 mature individuals). • The proposed project would directly impact 96.91 ha of Mapped Important Habitat for the species. • CPHR has advised that the project is unlikely to reduce the Area of Occupancy or Extent of Occupancy for the species but would contribute to cumulative loss of habitat which is linked to population declines. • The proposed transmission line has been co-located with existing transmission infrastructure to minimise fragmentation of woodland habitat in the Hunter Valley key breeding area and the BDAR indicates that further avoidance and minimisation may occur through micro-siting, preclearance surveys and maintaining no-go zones during the breeding period.

Species	Assessment Summary
	• In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Sooty Owl (<i>Tyto tenebricosa</i>)	• The Sooty Owl is considered under SAI Principle 4 as the caves, cliffs and escarpments used as breeding site cannot be offset (i.e. readily re-created or existing caves enhanced). • The proposed project would impact 293.43 ha of Sooty Owl habitat, however there would be no direct impacts to the cave breeding habitat observed in Corrabare State Forest. • While indirect impacts may occur, they are expected to be minor and would be managed in accordance with the project Biodiversity Management Plan. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.
Swift Parrot (<i>Lathamus discolor</i>)	• The Swift Parrot is considered under SAI Principle 1, having undergone a population decline >80% over three generations. • The project would result in the removal of 45.32 ha of Mapped Important Habitat for the species. • CPHR has advised that the project is unlikely to reduce the Area of Occupancy or Extent of Occupancy for the species but would contribute to cumulative loss of habitat which is linked to population declines. • The proposed transmission line has been co-located with existing transmission infrastructure to minimise fragmentation of woodland habitat in the Hunter Valley key biodiversity area and the BDAR indicates that further avoidance and minimisation may occur through micro-siting, preclearance surveys. • In consideration of the assessment provided in the amended BDAR, and the advice provided by CPHR, the Department is satisfied that the project's impacts would not contribute significantly to the risk of extinction of this species and would not constitute SAI.

Appendix I – Statutory considerations

Objects of the EP&A Act

A summary of the Department’s considerations of the relevant objects (found in Section 1.3 of the EP&A Act) is provided in **Table I-1** below.

The Department notes that the objects of the EP&A Act were changed in recent reforms. While those changes came into effect on 15 December 2025, they do not apply to projects that were lodged before this date and therefore do not apply to this project.

Table I-1 | Objects of the EP&A Act and how they have been considered

Summary
Objects of the EP&A Act The objects of most relevance to the approval authority’s decision on whether to approve the project are found in section 1.3(a), (b), (c), (e), (f), (g), (h), (i) and (j) of the EP&A Act. The Department considers the project encourages the proper development of natural resources (Object 1.3(a)) and the promotion of orderly and economic use of land (Object 1.3(c)), particularly as the project: • is a permissible land use on the subject land; • is able to be managed such that the impacts of the project could be adequately minimised, managed, or at least compensated for, to an acceptable standard; • would contribute to a more diverse local industry, thereby supporting the local economy and community; • would not fragment or alienate resource lands in the LGAs; and • is consistent with the goals of NSW’s <i>Climate Change Policy Framework</i> and <i>Net Zero Plan Stage 1: 2020 - 2030 and Implementation update (2022)</i> and would assist in meeting Australia’s renewable energy targets whilst reducing greenhouse gas emissions. Ecologically Sustainable Development (ESD) (Object 1.3(b)) has been considered in assessment of the project. This assessment integrates all significant socio-economic and environmental considerations and seeks to avoid any potential serious or irreversible environmental damage, based on an assessment of risk-weighted consequences. The definition of ESD is contained within section 6(2) of the <i>Protection of the Environment Administration Act 1991</i>. In addition, the Department considers that appropriately designed transmission infrastructure facilitating connection to renewable energy generation projects, in itself, is consistent with many of the principles of ESD. EnergyCo has also considered the project against the principles of ESD. Consideration of the key principles of ESD is detailed below. Precautionary Principle The Department has considered the Precautionary Principle and assessed the project’s potential direct and indirect environmental impacts and considers there is sufficient certainty regarding environmental impacts and residual risk to enable determination of the application.

Summary

The EIS contains a number of specialist environmental impact assessments and a number of design and operation measures to mitigate, remediate or offset potential impacts. The Department has also recommended conditions that further mitigate potential residual impacts of the projects such as, limits on clearing and requiring EnergyCo to retire biodiversity offsets. The Department considers the recommended conditions can provide appropriate level of protection to environmental values in the region.

Inter-generational equity

The Department recognises that the NSW energy market is in a state of transformation from one dominated by coal-fired power stations to a renewable energy mix. Whilst this shift is being fuelled by investment in renewable energy zones and increased battery storage systems, increased interconnection between regions of the NEM will play a crucial role in the transformation of the energy market. The Department recognises that climate change and reducing greenhouse gas emissions are key considerations for inter-generational equity and consider that the project contributes to reducing potential climate impacts by linking new renewable sources of generation to the energy market.

Conservation of biological diversity and ecological integrity

The project's potential impacts on biodiversity were an important consideration of the Department's assessment of the project. As described in **Section 6.4** and **Appendix J**, the Department considers that direct and indirect impacts on biodiversity and on EPBC matters, including the likely impacts to listed threatened species and communities, can be minimised through proposed mitigation measures.

Improved valuation, pricing and incentive

This principle of ESD emphasises the internalisation of environmental costs in the pricing of assets and services. The Department's assessment has sought to apply the 'polluter pays principle', as EnergyCo would be required to offset or remediate potential environmental impacts. As such, the Department conditioned biodiversity impacts be offset.

The Department considers that the project can be carried out in a manner that is consistent with the principles of ESD.

Consideration of environmental protection (Object 1.3(e)) is provided in **Section 6** of this report. The Department considers that the project is able to be undertaken in a manner that would at least maintain the biodiversity values of the locality over the medium to long term and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and retiring the required biodiversity credits.

Consideration of the sustainable management of built and cultural heritage (Object 1.3(f)) is provided in **Section 6** of this report. The Department considers the project would not significantly impact the built or cultural heritage of the locality, and any residual impacts can be managed and/or mitigated by imposing appropriate conditions.

Consideration of good design and the amenity of the built environment (Object 1.3(g)) is provided in **Section 6**. The Department considers the proposal would not alter the existing character and nature of the surrounding environment, as it utilises an existing easement for transmission lines and visual impacts are able to be mitigated.

The Department has considered the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants (Object 1.3(h)) and considers the mitigation measures

Summary

for fire safety and minimising bushfire risks would provide acceptable levels of protection for the health and safety of construction workers, the overall project area and surrounding residents. The Department has conditioned further requirements including finalisation of emergency planning and ensuring all new buildings and structures are constructed in accordance with the Building Code of Australia.

Object 1.3(i) aims to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State. The Department notified and consulted with Muswellbrook, Cessnock, Lake Macquarie and Central coast Councils and relevant NSW government authorities throughout the assessment of the project and all concerns have been considered and addressed. The Department has also consulted with the AG DCCEEW throughout the assessment regarding MNES under the EPBC Act.

Regarding opportunity for community participation in environmental planning and assessment (Object 1.3(j)), the Department publicly exhibited the application and EIS and made all relevant documents publicly available on its website (see **Section 6** of this report). All public submissions have been considered by EnergyCo and the Department during the assessment process.

Environmental Planning Instruments (EPIs)

The project may be carried out without development consent under section 2.15 of the *State Environmental Planning Policy (Planning Systems) 2021* as the project has been declared CSSI under Schedule 5. EPIs do not apply to CSSI projects under section 5.22 of the EP&A Act. However, the Department has assessed the project against the provisions of several instruments and concluded that the land is suitable for the project and that the project is not a potentially hazardous or offensive development under the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP).

Appendix J - Assessment of Matters of National Significance

In accordance with the Bilateral Agreement between the Australian Government and NSW Government, the Department provides the following additional information required by the Commonwealth Minister, in deciding whether to approve a proposed action (i.e. the project) under the EPBC Act.

The Department's assessment has been based on the assessment contained within the project Environmental Impact Statement (EIS), Submissions Report, Amendment Report, revised Biodiversity Development Assessment Report (BDAR) and additional information provided during the assessment process, public submissions, and advice provided by CPHR, other NSW government agencies and the AG DCCEEW. This Appendix is supplementary to, and should be read in conjunction with, the assessment included in **Section 6.4** of this report, which includes consideration of impacts to listed threatened species and communities, and mitigation and offsetting measures for threatened species and communities, including Matters of National Environmental Significance (MNES).

Identifying MNES

The Commonwealth Referral Decision (EPBC 2024/09874) (Referral Decision) was based on likely significant impacts to the following Controlling Provisions:

- Listed threatened species and communities (sections 18 and 18A).
- Commonwealth land (sections 26 and 27A).

EnergyCo assessed the significance of the impacts on these controlling provisions using the methodology outlined in the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (2013) as documented in the revised BDAR and additional information provided during the assessment process.

Impact on Listed Threatened Species and Communities

Impacts on Threatened Ecological Communities

EnergyCo assessed the potential impacts on the following three listed TECs with known habit within the project area:

- Central Hunter Valley eucalypt forest and woodland (CE).
- Coastal Swamp Sclerophyll Forest of New South Wales and Southeast Queensland (E).
- River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria (CE).

These assessments concluded that a significant residual impact would occur to the *Central Hunter Valley eucalypt forest and woodland* and *River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria*.

A further seven TECs which predicted to occur based on desktop assessment were excluded from further assessment because they did not meet EPBC Act diagnostic criteria and/or were absent in vegetation plots. Justification for these exclusions is provided in Section 4.3.2 of the revised BDAR and has been reviewed and is supported by CPHR. While CPHR note that there is some minor residual uncertainty regarding the presence of the Warkworth Sands Woodland (as defined under the EPBC Act), it is considered that this can be appropriately managed through the implementation of the Biodiversity Management Plan.

EnergyCo has committed to minimise clearing of TECs where feasible via micro-siting at the detailed design stage, and to offset the residual biodiversity impacts of the project in accordance with the requirements of NSW Biodiversity Offset Scheme.

The Department considers that the TECs identified above would be appropriately offset via the ecosystem credit requirements detailed in **Section 6.4** and **Appendix H** of this report. The Department has recommended conditions and additional measures to avoid or minimise impacts on TECs as detailed in **Section 6.4** of this report.

Impacts on Threatened Flora Species

Of the 68 threatened flora predicted to occur within the subject land or surrounding locality, eight were recorded, and 18 were considered to have a moderate to high likelihood of occurrence. Each of these species were subject to a significant impact assessment in the revised BDAR.

These assessments concluded that a significant residual impact would occur to the following species:

- *Acacia bynoeana* (Bynoe's Wattle) – Vulnerable.
- *Asperula asthenes* (Trailing Woodruff) – Vulnerable.
- *Genoplesium braunhiorum* (Braun's Midge Orchid) – Critically Endangered.
- *Genoplesium insigne* (Variable Midge Orchid) – Critically Endangered.
- *Prasophyllum petilum* (Tarengo Leek Orchid) – Endangered.
- *Prasophyllum sp. Wybong* (Wybong Leek Orchid) – Critically Endangered.
- *Prostanthera cineolifera* (Singleton Mint Bush) – Vulnerable.
- *Pterostylis gibbosa* (Illawarra Greenhood) – Endangered.
- *Rhizanthella slateri* (Eastern Australian Underground Orchid) – Endangered.
- *Rhodamnia rubescens* (Scrub Turpentine) – Critically Endangered.
- *Rhodomyrtus psidioides* (Native Guava) – Critically Endangered.
- *Tetradlea juncea* (Black-eyed Susan) – Vulnerable.
- *Zieria involucre* – Vulnerable.

The Department considers that the species identified would be appropriately offset via the ecosystem and species credit requirements detailed in **Section 6.4** and **Appendix H** of this report. The Department has recommended conditions and additional measures to avoid or minimise impacts on threatened flora species as detailed in **Section 6.4** of this report.

Impacts on Threatened Fauna Species

Of the 69 threatened fauna predicted to occur within the subject land or surrounding locality, 20 were recorded, and 9 were considered to have a moderate to high likelihood of occurrence. Each of these species were subject to a significant impact assessment in the revised BDAR.

These assessments concluded that a significant residual impact would occur to the following species:

- Giant Burrowing Frog (*Heleioporus australiacus*) – Endangered.
- Littlejohn's Tree Frog (*Litoria littlejohni*) – Endangered.
- Stuttering Frog (*Mixophyes balbus*) – Vulnerable.
- Regent Honeyeater (*Anthochaera phrygia*) – Critically Endangered.

- Gang-gang Cockatoo (*Callocephalon fimbriatum*) – Endangered.
- Swift Parrot (*Lathamus discolor*) – Critically Endangered.
- Hooded Robin (South-eastern) (*Melanodryas cucullata cucullata*) – Endangered.
- Southern Greater Glider (*Petaurus australis*) – Endangered.
- Koala (*Phascolarctos cinereus*) – Endangered.
- Spotted-tailed Quoll (*Dasyurus maculatus maculatus*) – Endangered.
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – Vulnerable.
- Hunter Valley Delma (*Delma vescolineata*) – Endangered.
- Giant Barred Frog (*Mixophyes iteratus*) – Vulnerable.
- Glossy Black-Cockatoo (South-eastern) (*Calyptorhynchus lathami lathami*) – Vulnerable.
- Pilotbird (*Pycnoptilus floccosus*) – Vulnerable.
- Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae*) – Vulnerable.
- Diamond Firetail (*Stagonopleura guttata*) – Vulnerable.
- Painted Honeyeater (*Grantiella picta*) – Vulnerable.
- Parma Wallaby (*Notamacropus parma*) – Vulnerable.
- Yellow-bellied Glider (*Petaurus australis australis*) – Vulnerable.
- Brush-tailed Rock-wallaby (*Petrogale penicillata*) – Vulnerable.
- Long-nosed Potoroo (*Potorous tridactylus tridactylus*) – Vulnerable.
- New Holland Mouse (*Pseudomys novaehollandiae*) – Vulnerable.
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable.

The Department considers that the species identified would be appropriately offset via the ecosystem and species credit requirements detailed in **Section 6.4** and **Appendix H** of this report. The Department has recommended conditions and additional measures to avoid or minimise impacts on threatened fauna species as detailed in **Section 6.4** of this report.

Conservation Advice, Recovery Plans and Threat Abatement Plans

Relevant conservation advice, recovery plans, threat abatement plans, wildlife conservation plans or strategic assessments for individual MNES have been referenced and discussed in the revised BDAR. CPHR's review of the revised BDAR has confirmed that the assessment has been adequately informed by relevant Commonwealth guidelines and Threatened Species Scientific Committee Listing and Conservation Advice.

The documents which have informed assessment for each MNES entity subject to assessment are identified in **Table J-1** below.

The Department's recommended conditions require EnergyCo to prepare and implement a Biodiversity Management Plan detailing how the key threats identified in these documents would be minimised and managed, including measures to:

- make sure the development does not adversely affect the native vegetation and habitat outside the disturbance footprint;
- minimise the clearing of native vegetation and habitat within the disturbance footprint;
- minimise the impacts of the development on threatened flora and fauna species within the disturbance footprint and its surrounds;
- rehabilitate and revegetate temporary disturbance areas;
- protect native vegetation and key fauna habitat outside the approved disturbance footprint;
- maximise the salvage of resources within the approved disturbance footprint soil resources including vegetative and for beneficial reuse (such as fauna habitat enhancement) during the rehabilitation and revegetation of the project area;
- control weeds and feral pests;
- control erosion; and
- manage bushfire.

EnergyCo would be required to prepare the Biodiversity Management Plan in consultation with CPHR, and the plan must be prepared by a suitably qualified and experienced biodiversity expert.

Subject to the recommended conditions, the Department considers that the project can be carried out in a manner that is consistent with the relevant conservation advice, recovery plans and threat abatement plans.

Review of EPBC listed threatened species and communities

Table J-1 provides a detailed review of whether the assessment documentation (i.e. the EIS, Submissions Report, Amendment Report and revised BDAR) includes all relevant required information.

Table J-1 | NSW DCCEW CPHR advice to the Department on EPBC Act listed threatened species and communities

TABLE 1: CPHR OFFICER PROJECT ADVICE TO DPHI ON EPBC ACT LISTED THREATENED SPECIES AND COMMUNITIES
Hunter Transmission Project SSI 70610456

Requirement	Information	Reference (BAM / BLA ¹)
Background & Description of Action	Does the EIS/BDAR²: ☒ clearly show how operational and construction footprints, including clearing boundaries, structures to be built and elements of the action are situated with regard to MNES ☒ depict stages and timing of the action that may impact on MNES ☒ provide a map(s) of the subject land boundary showing the final proposal/disturbance footprint with respect to location of MNES, including GIS shape files Include references to where this detail is provided.	BAM Chapters 3, 4, 5 and 8
	Provide advice on the adequacy of the background and action description with respect to MNES and identify any recommended additional information requirements: Project Background and Description: The Hunter Transmission Project (HTP) involves a 110 km overhead 500 kV transmission line between Bayswater and Olney, along with new switching stations, substation upgrades, access tracks, construction compounds and associated works, forming the northern link in NSW's 500 kV Ring that will support renewable energy transfer and grid reliability. As exhibited in the EIS, the corridor spans power station, mining, government lands and several State Forests, with potential interactions with EPBC-listed threatened species and ecological communities. The Submissions Report and Amendment Report introduce refinements including transmission line realignments, easement widening, access track changes and reconfiguration of construction support sites. The project requires clearing of 945.24 hectares of native vegetation which is likely to result in temporary and permanent residual impacts to MNES. The MNES assessment relies on the WSP Revised BDAR (Appendix C, dated 14 May 2026) (hereafter referred to as 'the revised BDAR'), which provides the updated mapped MNES values, refined disturbance footprint and revised BAM Calculator cases for evaluating impacts and offsets. The project documentation provides sufficient information to undertake an assessment of projects actions with respect to MNES. The revised BDAR , accompanying spatial data and Biodiversity Assessment Method	

¹ Bilateral agreement (BLA) made under section 45 of the EPBC Act, including Amending Agreement No. 1 (2020)

² Or revisions of the BDAR and associated documentation made as a result of previous reviews or project changes post-exhibition.

Requirement	Information	Reference (BAM / BLA ¹)																																												
	Calculator (BAM-C) cases have been reviewed by the CPHR Renewable Energy Biodiversity Support (REBS) team in consultation with the Commonwealth and a standard of assessment consistent with the NSW BAM 2020 has been applied. The MNES assessment concludes the following species have a residual significant impact. <table><tr><th>FAUNA</th><th>Common Name</th></tr><tr><td><i>Heleioporus australiacus</i></td><td>Giant Burrowing Frog</td></tr><tr><td><i>Litoria littlejohni</i></td><td>Littlejohn's Tree Frog</td></tr><tr><td><i>Mixophyes balbus</i></td><td>Stuttering Frog</td></tr><tr><td><i>Anthochaera phrygia</i></td><td>Regent Honeyeater</td></tr><tr><td><i>Callocephalon fimbriatum</i></td><td>Gang-gang Cockatoo</td></tr><tr><td><i>Lathamus discolor</i></td><td>Swift Parrot</td></tr><tr><td><i>Melanodryas cucullata cucullata</i></td><td>Hooded Robin (South-eastern)</td></tr><tr><td><i>Petaurus australis</i></td><td>Southern Greater Glider</td></tr><tr><td><i>Phascolarctos cinereus</i></td><td>Koala</td></tr><tr><td><i>Dasyurus maculatus maculatus</i> (SE mainland)</td><td>Spotted-tailed Quoll</td></tr><tr><td><i>Chalinolobus dwyeri</i></td><td>Large-eared Pied Bat</td></tr><tr><td><i>Delma vescolinea</i> (EPBC: <i>Delma vescolineata</i>)</td><td>Hunter Valley Delma</td></tr><tr><td><i>Mixophyes iteratus</i></td><td>Giant Barred Frog</td></tr><tr><td><i>Mixophyes balbus</i></td><td>Stuttering Frog</td></tr><tr><td><i>Calyptorhynchus lathamii lathamii</i></td><td>Glossy Black-Cockatoo (South-eastern)</td></tr><tr><td><i>Pycnophilus floccosus</i></td><td>Pilotbird</td></tr><tr><td><i>Climacteris picumnus victoriae</i></td><td>Brown Treecreeper (eastern subspecies)</td></tr><tr><td><i>Stagonopleura guttata</i></td><td>Diamond Firetail</td></tr><tr><td><i>Grantiella picta</i></td><td>Painted Honeyeater</td></tr><tr><td><i>Notamacropus parma</i></td><td>Parma Wallaby</td></tr><tr><td><i>Petaurus australis australis</i></td><td>Yellow-bellied Glider</td></tr></table>	FAUNA	Common Name	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	<i>Mixophyes balbus</i>	Stuttering Frog	<i>Anthochaera phrygia</i>	Regent Honeyeater	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	<i>Lathamus discolor</i>	Swift Parrot	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (South-eastern)	<i>Petaurus australis</i>	Southern Greater Glider	<i>Phascolarctos cinereus</i>	Koala	<i>Dasyurus maculatus maculatus</i> (SE mainland)	Spotted-tailed Quoll	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	<i>Delma vescolinea</i> (EPBC: <i>Delma vescolineata</i>)	Hunter Valley Delma	<i>Mixophyes iteratus</i>	Giant Barred Frog	<i>Mixophyes balbus</i>	Stuttering Frog	<i>Calyptorhynchus lathamii lathamii</i>	Glossy Black-Cockatoo (South-eastern)	<i>Pycnophilus floccosus</i>	Pilotbird	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	<i>Stagonopleura guttata</i>	Diamond Firetail	<i>Grantiella picta</i>	Painted Honeyeater	<i>Notamacropus parma</i>	Parma Wallaby	<i>Petaurus australis australis</i>	Yellow-bellied Glider	
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Requirement	Information		Reference (BAM / BLA ¹)
	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	
	<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo	
	<i>Pseudomys novaehollandiae</i>	New Holland Mouse	
	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	
	FLORA	Common Name	
	<i>Zieria involucreata</i>		
	<i>Tetraloche juncea</i>	Black-eyed Susan	
	<i>Rutidosia heterogama</i>	Heath Wrinklewort	
	<i>Prostanthera cuneolifera</i>	Singleton Mint-bush	
	<i>Asperula asthenes</i>	Trailing Woodruff	
	<i>Acacia bynoeana</i>	Bynoe's Wattle	
	<i>Rhizanthella slateri</i>	Eastern Underground Orchid	
	<i>Pterostylis gibbosa</i>	Illawarra Greenhood	
	<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	
	<i>Prasophyllum</i> sp. Wybong	Wybong Leek Orchid	
	<i>Rhodamnia rubescens</i>	Scrub Turpentine	
	<i>Rhodomyrtus psidioides</i>	Native Guava	
	<i>Genoplesium insigne</i>	Variable Midge-orchid	
	<i>Genoplesium branwhiteorum</i>	Braun's Midge-orchid	
	<i>Brachyscome brownii</i>		
	TEC: River-flat Eucalypt Forest on Coastal Floodplains		
	TEC: Central Hunter Valley Eucalypt Forest and Woodland		

Requirement	Information	Reference (BAM / BLA ¹)
Landscape Context of the MNES	Provide advice on the adequacy of the landscape context information and identify any additional information requirements: Landscape context information has been provided in accordance with chapter 3 of the BAM and the requirements of the BAM 2020 Operations Manual - Stage 1. The revised BDAR describes HTP as traversing a diverse, largely forested and topographically varied landscape spanning the Sydney Basin IBRA bioregion - Wyong, Yengo and Hunter IBRA subregions. The project corridor intersects State Forests, mining lands, power station lands, and extensive tracts of native vegetation, much of which contributes to regional habitat connectivity. The revised BDAR Chapter 3.2 identifies the following key landscape features relevant to ecological function along the corridor: - IBRA bioregions and subregions (Sydney Basin – Wyong, Yengo, Hunter) - Rivers, streams, estuaries and wetlands forming hydrological and habitat linkages - Habitat connectivity, particularly across forested ridges and continuous native vegetation - Karst, caves, crevices, cliffs, rocks and other geological features of significance This combined landscape supports movement pathways for regional fauna, patches of high-quality vegetation, and connections to conservation lands including nearby reserves. The landscape information is supported by figures and accompanying GIS spatial data sets that are adequate for impact assessment. No additional information requirements are identified. Singleton Military Area is on Commonwealth Land and will be impacted by the project. Impacts to 120.1 ha within the Singleton Military Area have been assessed against the <i>Significant impact Guidelines 1.2: Actions on or impacting upon, Commonwealth Land and actions by Commonwealth agencies (Significant Impact Guidelines 1.2)</i> and this assessment is contained within Appendix C of the revised BDAR.	BAM Section 3.1 BLA clause 7.4
EPBC Act Listed Threatened Species & Communities	Verify that the EIS/BDAR includes relevant information on the identification of all EPBC Act listed threatened species and communities on the site or in the vicinity³ via: ☒ field based survey effort ☒ published peer reviewed literature ☒ local data	BAM Chapters 4 and 5

³ On land to which impacts may extend

Requirement	Information	Reference (BAM / BLA ¹)
	☒ supporting databases (such as the NSW BioNet Vegetation Classification, NSW BioNet Threatened Biodiversity Data Collection, NSW BioNet Atlas, Commonwealth Species Profile and Threats Database search results) ☒ Verify that the EIS/BDAR includes appropriate mapping of all EPBC Act listed threatened species and communities in accordance with the relevant Commonwealth Listing Advice. The EIS/BDAR should include important populations and critical habitat as defined in Approved Listing Advice, Approved Conservation Advice and Recovery Action Plans.	

	Provide advice on the adequacy of the identification methods and mapping information / any additional information requirements: All EPBC Act listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the revised BDAR/EIS amendment report including those that are ecosystem credit species (Appendix C) and Tables 5.4-5.21. Maps of all species recorded within the subject land and their species polygons are identified in Figures 14.13 and spatial data files. Field Based Survey Effort The predicted MNES were subject to survey of native vegetation (vegetation mapping and vegetation integrity plots) and targeted surveys for candidate threatened species as documented in Chapter 5. Local Data No alternative local data was used for benchmark assessment. Remote area assessment Some areas of predicted habitat for MNES within inaccessible areas were assessed using surrogate survey areas and habitat constraint mapping where deemed appropriate by NSW DCCEE. The following species were excluded from inaccessible lands using surrogate survey information: - <i>Cyprostylis hunteriana</i> (5.32ha) - <i>Melaleuca biconvexa</i> (14ha) - <i>Genoplesium branwhiteum</i> (5.13ha) - <i>Asperula asthens</i> (7.39ha) - <i>Cynanchum elegans</i> (4.94ha) - <i>Eucalyptus camfeldii</i> (3.36ha) - <i>Eucalyptus glaucina</i> (4.02ha) - <i>Eucalyptus pumila</i> (12.15ha) - <i>Grevillea parviflora</i> (subs <i>parviflora</i>) (1.58ha in Hunter only) - <i>Leionema lamprophyllum</i> subsp <i>fractum</i> (1.43ha) - <i>Olearia cordata</i> (10.08ha) - <i>Ozothamnus tessellatus</i> (0.86ha) - <i>Persoonia hirsute</i> (8.08 ha)	
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	- <i>Rhodomyrtus psidioides</i> (0.5ha in Yengo only) - <i>Rutidosia heterogama</i> (13.5ha) - <i>Syngizium paniculatum</i> (9.85ha) - <i>Tetratheca juncea</i> (2.12ha in Hunter only) - <i>Thelymitra adorate</i> (5.13ha) - <i>Velleia perfoliate</i> (10ha) - <i>Ziera involucrate</i> (10.08ha) Assumed presence Species recorded as present within surrogate survey areas or species that could not be reliably determined to be absent using surrogate survey data were assumed present within inaccessible areas and subject to further assessment. Supporting Databases The following databases were used for the MNES assessment: • Commonwealth DCCEEW Protected Matters Search Tool (PMST) Database • BioNet Atlas of NSW Wildlife • Threatened Biodiversity Data Collection (TBDC) • Commonwealth Species Profile and Threats Database • Directory of Important Wetlands: Nationally Important Wetlands <i>Appropriate mapping of all EPBC Act-listed species and communities in accordance with relevant Commonwealth Listing Advice</i> Mapping has been provided for three (3) EPBC TEC's in Figure 14.11 recorded as present within the subject land. The mapping has been prepared in accordance with the Approved Conservation Advice (DCCEEW 2022). Further discussion on why the EPBC Act listed Warkworth Sands Woodland was not considered to be present is within Chapter 4.3.1.8	
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Confirm that all EPBC listed threatened species and communities that occur on the subject land, or in the vicinity, have been identified in the BDAR/EIS including those that are ecosystem credit species.

The Matters of National Environmental Significance (MNES) relevant to the project:

The revised BDAR identifies the following EPBC Act-listed entities with habitat occurring within the project area:

TEC: The locations of recorded MNES in relation to the project footprint are provided across multiple figures in Chapter 14 of the BDAR and identified in accompanying spatial data sets provided to CPHR. The following 3 TECs were detected within the impact area, were mapped to diagnostic criteria and are described in Chapter 4.3.2 and assessed in full in Appendix C:

- Central Hunter Valley eucalypt forest and woodland (CE) (Yengo & Hunter)
- Coastal Swamp Sclerophyll Forest of New South Wales and Southeast Queensland (E) (Yengo & Hunter)
- River-flat eucalypt forest on coastal floodplains of southern NSW and eastern Victoria (CE) (Yengo & Hunter)

Flora: Of the sixty-eight (68) threatened flora predicted to occur within the subject land or surrounding locality, 8 were recorded, and 18 were considered to have a moderate - high likelihood of occurrence and were subject to significance impact assessment in the BDAR. These are listed below

Flora	Common Name	EPBC Status
<i>Acacia bynoeana</i>	Bynoe's Wattle	V
<i>Angophora inopina</i>	Charmhaven Apple	V
<i>Asperula asthenes</i>	Trailing Woodruff	V
<i>Brachyscome brownii</i>	—	CE
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V
<i>Cynanchum elegans</i>	White-flowered Wax Plant	E
<i>Eucalyptus glaucina</i>	Slaty Red Gum	V
<i>Genoplesium braunhiorum</i>	Charmhaven Midge Orchid	CE
<i>Genoplesium insigne</i>	Variable Midge Orchid	CE

	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower Grevillea	V	
	<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	
	<i>Olearia cordata</i>	–	V	
	<i>Ozothamnus tessellatus</i>	–	V	
	<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	E	
	<i>Prasophyllum</i> sp. <i>Wybong</i>	Leek Orchid	CE	
	<i>Prostanthera cineolifera</i>	Singleton Mint Bush	V	
	<i>Pterostylis gibbosa</i>	Illawarra Greenhood	E	
	<i>Rhizanthella slateri</i>	Eastern Australian Underground Orchid	E	
	<i>Rhodamnia rubescens</i>	Scrub Turpentine	CE	
	<i>Rhodomyrtus psidioides</i>	Native Guava	CE	
	<i>Rutidosis heterogama</i>	Heath Wrinklewort	V	
	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	V	
	<i>Tetradlea juncea</i>	Black-eyed Susan	V	
	<i>Thelymitra adorata</i>	Wyong Sun Orchid	CE	
	<i>Velleia perfoliata</i>	–	V	
	<i>Zieria involucrata</i>	–	V	
	Fauna: Of the 69 EPBC Act listed threatened fauna species predicted to occur within the subject land or surrounding locality, 20 species were recorded within the subject land and a further 9 were predicted to have a moderate - high likelihood of occurrence. Each of these (listed below) were subject to a significant impact assessment in the BDAR (Appendix C):			
	Fauna	Common Name	EPBC Status	
	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	E	
	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	E	
	<i>Mixophyes balbus</i>	Stuttering Frog	V	

<i>Mixophyes iteratus</i>	Giant Barred Frog	V
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	E
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E
<i>Calyptrorhynchus lathamii</i> <i>lathamii</i>	South-eastern Glossy Black-Cockatoo	V
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V
<i>Gallinago hardwickii</i>	Latham's Snipe	V
<i>Grantiella picta</i>	Painted Honeyeater	V
<i>Hirundapus caudacutus</i>	White-throated Needletail	V, M ²
<i>Lathamus discolor</i>	Swift Parrot	CE
<i>Melanodryas cucullata</i> <i>cucullata</i>	South-eastern Hooded Robin	E
<i>Pycnoptilus floccosus</i>	Pilotbird	V
<i>Rostratula australis</i>	Australian Painted Snipe	E
<i>Stagonopleura guttata</i>	Diamond Firetail	V
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V
<i>Dasyurus maculatus</i>	Spotted-tail Quoll	E
<i>Notamacropus parma</i>	Parma Wallaby	V
<i>Nyctophilus corbeni</i>	Corben's Long-eared Bat	V
<i>Petaurus volans</i>	Southern Greater Glider	E
<i>Petaurus australis australis</i>	Yellow-bellied Glider	V
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	V
<i>Phascolarctos cinereus</i>	Koala	E
<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo	V
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	V
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V
<i>Delma vescolineata</i>	Hunter Valley Delma	E

	Confirm whether there is appropriate justification and supporting evidence for the addition and/or exclusion of any EPBC Act listed threatened species and/or communities from the list (if applicable): The revised BDAR provides clear reasoning and supporting evidence for the exclusion of EPBC listed threatened species and communities as follows: Tables detailing species recorded, assumed present, not recorded and/or removed from the assessment because of absent habitat constraints are in Tables 5.4-Table 5.21 of the revised BDAR. A likelihood of occurrence assessment used to rule out MNES with a low probability of occurrence from further assessment is provided in Appendix C (Attachment A). For each of the predicted EPBC Act listed threatened communities initially considered, the assessment applied the EPBC Act listing advice and approved conservation advice to determine whether the diagnostic characteristics, condition thresholds and landscape context required for TEC presence were met. Seven predicted TECs were excluded from further assessment because they did not meet EPBC Act diagnostic criteria and/or were absent in vegetation plots. Justification for these exclusions has been reviewed and supported by CPHR and is thoroughly discussed in the revised BDAR Chapter 4.3.2. TECs NOT considered further: - Coastal Swamp Oak Forest (E) - Hunter Valley Weeping Myall Woodland (CE) - Kurri Sand Swamp Woodland (E) - Lowland Rainforest of Subtropical Australia (CE) - Subtropical Eucalypt Floodplain Forest and Woodland (E) - Warkworth Sands Woodland of the Hunter Valley (CE) - White Box–Yellow Box–Blakely’s Red Gum Grassy Woodland & Derived Native Grassland (CE) Warkworth Sands Woodland (Endangered) Detailed floristic surveys demonstrated that the canopy is consistently dominated by <i>Eucalyptus crebra</i> (ironbark), with <i>Angophora floribunda</i> recorded only sporadically and key diagnostic understorey species were absent. The Project footprint does not intersect the current, accepted area of occupancy of Warkworth Sands Woodland, which is estimated to be approximately 390 hectares. On this basis, the TEC was considered to be absent from the HTP footprint and excluded from MNES assessment. The information accepted by CPHR places emphasis on: • alignment with mapped Warkworth Sands Woodland occurrences (Peake et al. 2002; Bell 2016)	
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	• floristic dominance and proportional representation of characteristic species • NSW PCT allocation and centroid matching tools • interpretation consistent with NSW Scientific Determination thresholds and jurisprudence (e.g. Bulga Milbrodale). These considerations are appropriate and sufficient for NSW BC Act purposes. The information may not fully address the EPBC Act diagnostic requirements, particularly in relation to: • Substrate: listing accepts aeolian sands and shallow sand veneers irrespective of mapped land systems • reliance on mapped Warkworth Land System boundaries is not sufficient to exclude MNES TEC presence • Floristics: EPBC diagnostic criteria require only the presence of multiple characteristic species, not dominance or floristic alignment • NSW style floristic weighting and centroid matching exceed EPBC requirements and cannot be used to exclude the TEC • Patch scale assessment: The EPBC Act requires identification of discrete, mostly continuous patches, including: - grassland gaps within or adjacent to woodland - connectors up to 30 m - patch scale canopy cover, configuration, and minimum patch size (≥ 0.1 ha) have not yet been demonstrated. The residual uncertainty that remains regarding whether this TEC is present or not will be managed through the post-approval framework. Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of NSW and South East Queensland EPBC Act Diagnostic Criteria Considered Under the Approved Conservation Advice, the TEC must: • occur in coastal catchments, typically within ~30 km of the coast • occur at low elevations (generally < 20 m AHD) • be associated with coastal floodplains, estuaries, wetlands or drainage lines with waterlogged or saline/brackish soils • have a canopy dominated by <i>Casuarina glauca</i> forming a woodland or forest structure • meet minimum condition thresholds, including native canopy and understorey integrity. Reasons for exclusion: • vegetation mapped as PCT 4015 within the subject land occurs well inland, outside the coastal distribution envelope required by the EPBC listing • the mapped areas occur at elevations well above 20 m AHD, inconsistent with the TEC's ecological setting	
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	• vegetation is not associated with coastal floodplain hydrology, estuarine processes, or saline/brackish soils • as several key diagnostic characteristics were not met simultaneously, the vegetation fails the EPBC diagnostic test for this TEC. Conclusion: The vegetation does not occur in the required coastal landscape, elevation or hydrological setting and therefore does not meet EPBC diagnostic criteria for Coastal Swamp Oak Forest. Coastal Swamp Sclerophyll Forest of NSW and Southeast Queensland EPBC Act Diagnostic Criteria Considered The TEC requires: • occurrence in coastal catchments, generally within 20–30 km of the coast • association with periodically waterlogged coastal soils • a characteristic swamp sclerophyll structure, including species such as <i>Melaleuca</i>, <i>Banksia</i> and <i>Casuarina</i> suited to coastal swamp conditions • compliance with minimum EPBC condition thresholds. Reasons for exclusion: • mapped vegetation occurs outside the coastal zone and lacks coastal hydrological influences • floristic composition is inconsistent with swamp sclerophyll assemblages described in the EPBC Act listing • condition and landscape context do not align with the TEC's coastal ecological niche. Conclusion: Despite superficial structural similarities, the vegetation lacks the required coastal context and floristic assemblage and does not satisfy EPBC TEC criteria. Hunter Valley Weeping Myall (<i>Acacia pendula</i>) Woodland EPBC Act Diagnostic Criteria Considered The TEC requires: • a canopy dominated by <i>Acacia pendula</i> (weeping myall) • association with river flats and heavy clay soils in the Hunter Valley • presence of characteristic understorey species • alignment with the known distribution of the TEC. Reasons for exclusion: • vegetation within the subject land does not contain a canopy or co-dominance of <i>Acacia pendula</i> • floristic composition aligns more strongly with other woodland PCTs rather than Weeping Myall Woodland • the vegetation occurs outside confirmed TEC extents.	
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	Conclusion: Absence of diagnostic canopy species means the vegetation cannot be assigned to the EPBC-listed Weeping Myall Woodland. Lowland Rainforest of Subtropical Australia EPBC Diagnostic Criteria Considered The TEC requires: • a closed or near-closed canopy rainforest structure • dominance by rainforest tree species, vines and shade-tolerant understorey flora • occurrence in moist, sheltered environments, often on fertile soils. Reasons for exclusion: • vegetation within the subject land displays a woodland or open forest structure, not rainforest. • rainforest canopy species are absent or minor, and the vegetation lacks rainforest stratification • structure and species composition clearly fall outside rainforest diagnostic thresholds. Conclusion: Vegetation does not meet the structural or floristic requirements for the Lowland Rainforest TEC. White Box–Yellow Box–Blakely’s Red Gum Grassy Woodland & Derived Native Grassland EPBC Diagnostic Criteria Considered The TEC requires: • dominance by <i>Eucalyptus albens</i>, <i>E. melliodora</i> and/or <i>E. blakelyi</i> • a grassy understorey with limited shrub cover • occurrence within specific bioregional and soil contexts • satisfaction of minimum condition thresholds. Reasons for exclusion: • vegetation mapped in the subject land is dominated by ironbark species, not box or yellow box gums • floristic composition and structure correspond more closely with Central Hunter Grey Box–Ironbark Woodland • diagnostic canopy species required for the TEC are absent or incidental. Conclusion: The vegetation lacks the diagnostic canopy composition necessary to meet the EPBC TEC definition.	
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	Subtropical Eucalypt Floodplain Forest and Woodland of the NSW North Coast and South-East Queensland (Endangered) EPBC Diagnostic Criteria Considered The TEC requires: • within the NSW North Coast and South-East Queensland bioregions, and on Curtis Island within the Brigalow Belt North IBRA bioregion • associated with alluvial landscapes, including floodplains, river terraces, alluvial fans, depressions and drainage lines, subject to periodic flooding • occur on alluvial soils of various textures (including silts, clays, loams, gravels and cobbles) • exclude aeolian sands, beach dunes and other non-alluvial substrates unless explicitly included in the listing • a woodland to open forest or tall forest structure • a canopy cover of at least 20%, dominated by one or more species of <i>Angophora</i>, <i>Corymbia</i>, <i>Eucalyptus</i>, <i>Lophostemon</i> and/or <i>Syncarpia</i>, Reasons for exclusion: • the HTP subject land occurs entirely within the Sydney Basin Bioregion, which is outside the bioregional extent of the EPBC-listed TEC. The assessor has provided appropriate justification and supporting evidence in Appendix C to exclude many of the predicted threatened entities identified for further assessment based on a lack of suitable habitat on site, geographic limitations and/or having not been detected on the subject land following targeted survey. This is consistent with the BAM.	
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Requirement	Information	Reference (BAM / BLA ¹)
Avoidance, Minimisation, Mitigation & Management	Verify that the EIS/BDAR demonstrates all feasible alternatives and efforts to avoid and minimise impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including an analysis of alternative: ☒ designs and engineering solutions ☒ modes or technologies ☒ routes and locations of facilities ☒ sites within the subject site ☒ Verify that the EIS/BDAR identifies any other site constraints in determining the location and design of the proposal (such as bushfire protection requirements, flood planning levels, servicing constraints, etc). Verify that the EIS/BDAR provides feasible measures to mitigate and/or manage impacts on EPBC Act listed threatened species and communities (including direct, indirect and prescribed impacts) including: ☒ techniques, timing, frequency and responsibility ☒ identify measures for which there is risk of failure ☒ evaluate the risk and consequence of any residual impacts ☒ any adaptive management strategy proposed to monitor and respond to impacts.	BAM Chapters 6, 7 and 8 BLA clause 7.1
	Provide advice on whether all feasible impact avoidance, minimisation, mitigation and management measures have been considered and are adequately justified: Chapter 7 of the revised BDAR outlines impact avoidance measures taken at all stages of the development assessment. Chapter 8 identifies mitigation measures to be applied to residual direct and indirect impacts. The avoid, minimise, offset and mitigate residual impact hierarchy was applied with highest avoidance priorities being: - Ramsar Wetlands - World Heritage areas - National Park estate and conservation areas - threatened ecological communities listed under the EPBC Act	

Requirement	Information	Reference (BAM / BLA ¹)
	- threatened ecological communities listed under the BC Act as serious and irreversible impact (SAIL) – entities - other important wetlands and water sources for migratory birds protected by international agreements - threatened species (flora/fauna) listed under the BC Act and EPBC Act - Large, contiguous/intact areas of moderate or better-quality woodland vegetation (only patch sizes of >5 hectares), only within 3 kilometres of existing corridor - threatened ecological communities listed under the BC Act (non-SAIL) - key fish habitat, including most permanent and semi-permanent freshwater habitats, such as Strahler 4/5 order streams - groundwater dependent ecosystems and riparian corridors (Strahler 4/6 order streams) requiring a 40-metre riparian buffer as outlined under Table 14 of the BAM. To avoid impacts to the above values the southern corridor was selected as the preferred option. The southern corridor: - co-locates with existing transmission line infrastructure - provides greater avoidance of NPWS estate and TEC's than other alignment options - prioritises hardwood plantation areas subject to clear fell harvesting - relocates Olney switching station from state conservation area to State Forest - avoids ridgelines supporting key breeding habitat for birds, bats and mammals - establishes no- clearing zones and buffers around waterways and threatened frog breeding habitat. To minimise impacts to the above values the following steps were undertaken: - co-location of transmission lines alongside existing infrastructure or in disturbed areas - spanning and retention of forested gullies has resulted in a net avoidance of 83.5 ha of native vegetation and threatened species habitats - partial clearing/ avoiding full loss of native vegetation and retention of understorey vegetation within easements across 210 hectares - use of existing access tracks where possible; 83% of proposed access tracks are based on existing roads - site selection to avoid SAIL and TEC - micro-siting – to adjust features during detailed design to avoid mapped high biodiversity constraints. To mitigate the residual impacts the following measures are listed in Table 8.23 including (but not limited to): - Biodiversity Management Plan (BMP) covering all biodiversity values, monitoring, reporting, mapping, avoidance measures, adaptive management, and integration of sub-plans including:	

Requirement	Information	Reference (BAM / BLA ¹)
	○ Unexpected finds protocol. ○ Supplementary nest box strategy ○ Fauna Management Protocol ○ Partial Clearing Protocol ○ Connectivity Strategy ○ ecology focused inductions, toolbox talks and training ○ Biosecurity Management Plan, ○ Riparian Vegetation Management Plan, ○ Amphibian Management Plan and additional frog mitigation, including habitat connectivity, monitoring, disease controls, and supporting research/biobanking. ○ Microbat sub plan ○ Biodiversity Impact Monitoring Plan (BIMP). - protecting no-go zones, applying clearing controls, and retaining vegetation where practicable - map and micro-site infrastructure to avoid threatened species, TECs, SAIL areas, high-value vegetation, and sensitive habitats - Erosion and Sedimentation Control Plan (ESCP).	
Impact Assessment	Verify that the EIS/BDAR: ☒ identifies the residual adverse impacts likely to occur to each EPBC Act listed threatened species and/or community after the proposed avoidance and mitigation measures are taken into account ☒ provides adequate justification and evidence for the predicted level of impact, with reference to the: • Commonwealth's Significant Impact Guideline: https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf • DPIE Guidance to Assist a Decision-Maker to Determine a Serious and Irreversible Impact (SAIL): https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf	BAM Chapters 8 and 9 BLA clauses 6.2(b)(i)-(ii) and 7.1

Requirement	Information	Reference (BAM / BLA ¹)																												
	Complete the following information for each EPBC Act listed threatened species and/or community (add/remove rows as necessary): • EPBC Act listed threatened species and/or community • nature and consequences of impacts (i.e. direct and indirect) • duration of impact (e.g. construction, operation, life of project) • quantum of impact • consequences of impacts on the species, the population and / or extent of the community at local, state and national scales Confirm the level of predicted impact (cross appropriate): ☒ high risk of impact (requiring offsets)[#] or SAIL ☒ Low risk of impact (not requiring offsets) [#] For purposes of EPBC approval, as a minimum, significant adverse residual impacts must be offset (significant impact can be evaluated with reference to the significance impact guidelines) The MNES assessment concludes the following species have a residual significant impact. <table><tr><th>FAUNA</th><th>Common Name</th></tr><tr><td><i>Heleioporus australiacus</i></td><td>Giant Burrowing Frog</td></tr><tr><td><i>Litoria littlejohni</i></td><td>Littlejohn's Tree Frog</td></tr><tr><td><i>Mixophyes balbus</i></td><td>Stuttering Frog</td></tr><tr><td><i>Anthochaera phrygia</i></td><td>Regent Honeyeater</td></tr><tr><td><i>Callocephalon fimbriatum</i></td><td>Gang-gang Cockatoo</td></tr><tr><td><i>Lathamus discolor</i></td><td>Swift Parrot</td></tr><tr><td><i>Melanodryas cucullata cucullata</i></td><td>Hooded Robin (South-eastern)</td></tr><tr><td><i>Petaurus australis</i></td><td>Southern Greater Glider</td></tr><tr><td><i>Phascolarctos cinereus</i></td><td>Koala</td></tr><tr><td><i>Dasyurus maculatus maculatus</i> (SE mainland)</td><td>Spotted-tailed Quoll</td></tr><tr><td><i>Chalinolobus dwyeri</i></td><td>Large-eared Pied Bat</td></tr><tr><td><i>Delma vescolinea</i> (EPBC: <i>Delma vescolineata</i>)</td><td>Hunter Valley Delma</td></tr><tr><td><i>Mixophyes iteratus</i></td><td>Giant Barred Frog</td></tr></table>	FAUNA	Common Name	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	<i>Mixophyes balbus</i>	Stuttering Frog	<i>Anthochaera phrygia</i>	Regent Honeyeater	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	<i>Lathamus discolor</i>	Swift Parrot	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (South-eastern)	<i>Petaurus australis</i>	Southern Greater Glider	<i>Phascolarctos cinereus</i>	Koala	<i>Dasyurus maculatus maculatus</i> (SE mainland)	Spotted-tailed Quoll	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	<i>Delma vescolinea</i> (EPBC: <i>Delma vescolineata</i>)	Hunter Valley Delma	<i>Mixophyes iteratus</i>	Giant Barred Frog	
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Requirement	Information	Reference (BAM / BLA ¹)
	<i>Mixophyes balbus</i>	Stuttering Frog
	<i>Calyptorhynchus lathamii lathamii</i>	Glossy Black-Cockatoo (South-eastern)
	<i>Pycnoptilus floccosus</i>	Pilotbird
	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)
	<i>Stagonopleura guttata</i>	Diamond Firetail
	<i>Grantiella picta</i>	Painted Honeyeater
	<i>Notamacropus parma</i>	Parma Wallaby
	<i>Petaurus australis australis</i>	Yellow-bellied Glider
	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby
	<i>Potorous tridactylus tridactylus</i>	Long-nosed Potoroo
	<i>Pseudomys novaehollandiae</i>	New Holland Mouse
	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox
	FLORA	Common Name
	<i>Zieria involucreta</i>	
	<i>Tetralochea juncea</i>	Black-eyed Susan
	<i>Rutidosia heterogama</i>	Heath Wrinklewort
	<i>Prostanthera cineolifera</i>	Singleton Mint-bush
	<i>Asperula asthenes</i>	Trailing Woodruff
	<i>Acacia bynoeana</i>	Bynoe's Wattle
	<i>Rhizanthella slateri</i>	Eastern Underground Orchid
	<i>Pterostylis gibbosa</i>	Illawarra Greenhood
	<i>Prasophyllum petilum</i>	Tarengo Leek Orchid
	<i>Prasophyllum</i> sp. Wybong	Wybong Leek Orchid
	<i>Rhodamnia rubescens</i>	Scrub Turpentine
	<i>Rhodomyrtus psidioides</i>	Native Guava
	<i>Genoplesium insigne</i>	Variable Midge-orchid

Requirement	Information	Reference (BAM / BLA ¹)																																						
	<table><tr><td><i>Genoplesium branwhiteorum</i>)</td><td>Braun's Midge-orchid</td></tr><tr><td><i>Brachyscome brownii</i></td><td></td></tr><tr><td>TEC: River-flat Eucalypt Forest on Coastal Floodplains</td><td></td></tr><tr><td>TEC: Central Hunter Valley Eucalypt Forest and Woodland</td><td></td></tr></table> CPHR agree that residual impacts to these species are likely to be significant given the predicted scale and nature of impacts to recorded/mapped habitats of these species and TECs. Table 2 provides the following details for each predicted EPBC Act listed threatened species and/or community • nature and consequences of impacts (i.e. direct and indirect) • duration of impact (e.g. construction, operation, life of project) • quantum of impact • consequences of impacts on the species, the population and / or extent of the community at local, state and national scales Offsets are required for all threatened species and communities that have been identified as being impacted by the project as detailed in Table 2 in this response. Provide advice on whether adequate justification and evidence is provided for species and communities that have been identified as being at low risk of impact. A likelihood of occurrence assessment (Appendix C - Attachment A) was used to rule out MNES with a low probability of occurrence from further assessment. CPHR have reviewed and accepted this advice as adequate to inform the impact assessment. <table><tr><th>Scientific name</th><th>Common name</th><th>EPBC status</th><th>Likelihood</th><th>Notes</th></tr><tr><td><i>Pomaderris brunnea</i></td><td>Brown Pomaderris</td><td>V</td><td>Low</td><td>Outside distribution; not recorded</td></tr><tr><td><i>Pomaderris reperta</i></td><td>Denman Pomaderris</td><td>CE</td><td>Low</td><td>Narrow distribution</td></tr><tr><td><i>Acacia pubescens</i></td><td>Downy Wattle</td><td>V</td><td>Low</td><td>Not recorded</td></tr><tr><td><i>Allocasuarina glareicola</i></td><td>-</td><td>E</td><td>Low</td><td>Restricted Sydney species</td></tr><tr><td><i>Androcalva procumbens</i></td><td>-</td><td>V</td><td>Low</td><td>Outside known habitat</td></tr></table>	<i>Genoplesium branwhiteorum</i>)	Braun's Midge-orchid	<i>Brachyscome brownii</i>		TEC: River-flat Eucalypt Forest on Coastal Floodplains		TEC: Central Hunter Valley Eucalypt Forest and Woodland		Scientific name	Common name	EPBC status	Likelihood	Notes	<i>Pomaderris brunnea</i>	Brown Pomaderris	V	Low	Outside distribution; not recorded	<i>Pomaderris reperta</i>	Denman Pomaderris	CE	Low	Narrow distribution	<i>Acacia pubescens</i>	Downy Wattle	V	Low	Not recorded	<i>Allocasuarina glareicola</i>	-	E	Low	Restricted Sydney species	<i>Androcalva procumbens</i>	-	V	Low	Outside known habitat	
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<i>Androcalva procumbens</i>	-	V	Low	Outside known habitat																																				

Requirement	Information					Reference (BAM / BLA ¹)
	<i>Androcalva rosea</i>	-	E	Low	Not recorded	
	<i>Astroloma elegans</i>	-	E	Low	Not recorded	
	<i>Astrotricha crassifolia</i>	Thick-leaf Star-hair	V	Low	Outside range	
	<i>Banksia penicillata</i>	-	E	Low	Outside range	
	<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid	V	Low	Outside range	
	<i>Darwinia biflora</i>	-	V	Low	Outside distribution	
	<i>Dichanthium setosum</i>	Bluegrass	E	Low	Not recorded	
	<i>Diuris praecox</i>	Rough Doubletail	V	Low	Outside distribution	
	<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	V	Low	Not recorded	
	<i>Eucalyptus</i> sp. <i>Cattai</i>	-	CE	Low	Restricted distribution	
	<i>Eucalyptus parramattensis</i>	Earp's Gum	V	Low	Not recorded	
	<i>decadens</i>					
	<i>Eucalyptus pumila</i>	Pokolbin Mallee	V	Low	Restricted range	
	<i>Euphrasia arguta</i>	-	CE	Low	Restricted range	
	<i>Gompholobium deanei</i>	-	V	Low	Outside range	
	<i>Genoplesium baueri</i>	Yellow Gnat-orchid	E	Low	Coastal only	
	<i>Haloragis exaltata</i>	Wingless	V	Low	Outside range	
	<i>exaltata</i>	Raspwort				
	<i>Hibbertia acaulothrix</i>	-	E	Low	Not recorded	
	<i>Homoranthus darwinioides</i>	Fairy Bells	V	Low	Outside range	
	<i>Kunzea rupestris</i>	-	V	Low	Restricted range	
	<i>Lasiopetalum joyceae</i>	-	V	Low	Outside range	
	<i>Leionema</i>	-	CE	Low	Not recorded	
	<i>lamprophyllum fractum</i>					
	<i>Lepidium aschersonii</i>	Spiny Peppergrass	V	Low	Outside range	
	<i>Melaleuca deanei</i>	Deane's Melaleuca	V	Low	Not recorded	
	<i>Micromyrtus blakelyi</i>	-	V	Low	Outside range	
	<i>Neoastelia spectabilis</i>	-	V	Low	Restricted range	
	<i>Persicaria elatior</i>	Tall Knotweed	V	Low	Habitat absent	

Requirement	Information					Reference (BAM / BLA ¹)
	<i>Persoonia pauciflora</i>	North Rothbury Personia	CE	Low	Restricted range	
	<i>Picris evae</i>	Hawkweed	V	Low	Habitat absent	
	<i>Pimelea curviflora</i>	-	V	Low	Outside range	
	<i>curviflora</i>					
	<i>Wollemia nobilis</i>	Wollemi Pine	CE	Low	Outside distribution	
	<i>Litoria aurea</i>	Green & Golden Bell Frog	V	Low	Not recorded	
	<i>Litoria booroolongensis</i>	Booroolong Frog	E	Low	Not recorded	
	<i>Uperoleia mahonyi</i>	Mahony's Toadlet	E	Low	No habitat	
	<i>Aphelocephala leucopsis</i>	Southern Whiteface	V	Low	Habitat absent	
	<i>Ardenna grisea</i>	Sooty Shearwater	V	Low	Marine only	
	<i>Arenaria interpres</i>	Ruddy Turnstone	V	Low	Coastal	
	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	V,M	Low	Coastal	
	<i>Calidris canutus</i>	Red Knot	CE,M	Low	Coastal	
	<i>Calidris ferruginea</i>	Curlew Sandpiper	CE,M	Low	Coastal	
	<i>Calidris tenuirostris</i>	Great Knot	CE,M	Low	Coastal	
Offsets	Verify that the EIS/BDAR: ☒ identifies any MNES that haven't been offset using the BAM ☒ identifies how impacts requiring offsets correlate to MNES impacts ☒ identifies the plant community types (PCTs) requiring offset and the number and type of ecosystem credits required for impacts to MNES ☒ identifies threatened species requiring offset and the number of species credits required for impacts to MNES ☒ correctly uses the BAM (and BAM calculator) to identify the number and class of biodiversity credits that need to be offset to achieve a standard of 'no net loss' of biodiversity ☒ identifies if ecological rehabilitation and/or biodiversity conservation actions are proposed for offsetting ☒ if known, identifies any other offsetting approach proposed, such as land-based offsets, retiring credits by payment into the Biodiversity Conservation Fund and/or through supplementary measures#. # In accordance the BAM there is no longer a requirement to define the offsetting approach at EIS stage. Complete the Impacts and Offsets Summary table below (Table 2)					BAM Chapter 10 BLA clauses 7.1 and 7.2

Requirement	Information	Reference (BAM / BLA ¹)
	Table 2 below provides an impact and offsets summary for each impacted MNES.	
	Provide advice on the adequacy of the proposed offsets in meeting the requirements of the BAM:	
Other Considerations	Verify if any relevant Commonwealth guidelines and policy statements are applicable to the action and listed threatened species and/or community, including but not limited to: ☒ International environmental obligations ☒ Recovery Plans ☒ Approved Conservation Advice ☒ Threat Abatement Plans <i>The relevant Commonwealth guidelines and policy statements for each species and community are available at: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl</i> For each EPBC Act listed threatened species and/or community, provide advice on whether the assessment has been adequately informed by applicable Commonwealth guidelines and/or policy statements. For example, the interaction between the proposed action and important populations or critical habitat identified in policy documents and/or the interaction between the proposed action and threatening processes or recommended conservation actions outlined in Commonwealth policies and plans. Relevant conservation advice, recovery plans, threat abatement plans, wildlife conservation plans or strategic assessments for individual MNES have been referenced and discussed in the BDAR (Appendix C). The assessment appears to have been adequately informed by relevant Commonwealth guidelines and Threatened Species Scientific Committee Listing and Conservation Advice. The documents which have informed assessment for each MNES entity subject to assessment are listed below: FLORA <i>Acacia bynoeana</i> — Bynoe's Wattle Approved Conservation Advice: Department of the Environment (2008). Approved Conservation Advice for <i>Acacia bynoeana</i>. Threat Abatement Plans: – Predation by feral cats (2024) – Predation by European red fox (2008) <i>Asperula asthenes</i> — Trailing Woodruff	BLA clauses 6.2(b)(iv), 7.2(c), 7.3 and 7.4

Requirement	Information	Reference (BAM / BLA ¹)
	Approved Conservation Advice: Department of the Environment (2008). Threat Abatement Plans: Fox (2008), Feral cats (2024) <i>Brachyscome brownii</i> Approved Conservation Advice: Department of the Environment (2008). <i>Genoplesium insigne</i> — Variable Midge Orchid Approved Conservation Advice: TSSC (2020c). Threat Abatement Plans: – Feral cats (2024) <i>Genoplesium braunhiorum</i> — Braun's Midge Orchid Approved Conservation Advice: TSSC (2020c). <i>Olearia cordata</i> Approved Conservation Advice: Department of the Environment (2008). <i>Ozothamnus tessellatus</i> Approved Conservation Advice: Department of the Environment (2008f) <i>Prostanthera cineolifera</i> — Singleton Mint-bush Approved Conservation Advice: DEWHA (2008g) <i>Rutidosis heterogama</i> — Heath Wrinklewort Approved Conservation Advice: DEWHA (2008). Threat Abatement Plans: – Rabbits (2016) – Feral cats (2024) <i>Syzygium paniculatum</i> — Magenta Lilly Pilly Approved Conservation Advice: DCCEEW (2023) Recovery Plan: OEH (2012) <i>Tetralthea juncea</i> — Black-eyed Susan Approved Conservation Advice: DEWHA (2008) Threat Abatement Plans: – Feral pigs (2017)	

Requirement	Information	Reference (BAM / BLA ¹)
	– <i>Phytophthora cinnamomi</i> (2018) – Feral cats (2024) <i>Velleia perfoliata</i> Approved Conservation Advice: DEWHA (2008) <i>Zieria involucrata</i> Recovery Plan: DEC NSW (2002) TEC — River-flat Eucalypt Forest on Coastal Floodplains Approved Conservation Advice: DAWE (2020d) TEC — Central Hunter Valley Eucalypt Forest and Woodland Approved Conservation Advice: DEE (2016, 2020) <i>Litoria littlejohni</i> — Littlejohn's Tree Frog Approved Conservation Advice: <i>Conservation Advice for Litoria littlejohni (Littlejohn's tree frog)</i> (Department of Agriculture, Water and the Environment, 2022) Threat Abatement Plans: – <i>Threat abatement plan for infection of amphibians with chytrid fungus resulting in chytridiomycosis</i> (Department of Environment and Energy, 2016) – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024) Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under EPBC Act from 24 December 2024 Relevant Survey Guidelines: – <i>Survey Guidelines for Australia's Threatened Frogs. EPBC Act survey guidelines 6.3</i> (Department of Australia, 2016u) <i>Heleioporus australiacus</i> — Giant Burrowing Frog Approved Conservation Advice: Department of the Environment (2014b). <i>Approved Conservation Advice for Heleioporus australiacus (giant</i>	

Requirement	Information	Reference (BAM / BLA ¹)
	<i>burrowing frog</i>). Canberra: Department of the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/1973-conservation-advice.pdf In effect under EPBC Act from 11 April 2014. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under EPBC Act from 24 December 2024. – <i>Threat abatement plan for infection of amphibians with chytrid fungus resulting in chytridiomycosis</i> (Department of the Environment and Energy, 2016). Available from: http://www.environment.gov.au/biodiversity/threatened/publications/tap/infection-amphibians-chytrid-fungus-resulting-chytridiomycosis-2016 Policy Statements / Guidelines: – <i>Survey Guidelines for Australia's Threatened Frogs</i> (Department of Environment, Water, Heritage and the Arts, 2010) <i>Anthochaera phrygia</i> — Regent Honeyeater Approved Conservation Advice: <i>Conservation Advice for Anthochaera phrygia, Regent Honeyeater</i> (Department of Environment, 2015) Recovery Plan: <i>National Recovery Plan for the Regent Honeyeater (Anthochaera phrygia)</i> (Department of the Environment, 2016) Threat Abatement Plans: – <i>Threat abatement plan for competition and land degradation by rabbits</i> (Department of Environment and Energy, 2016) – <i>Threat abatement plan for predation by feral cats 2024</i> (DCCEEW, 2024) Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under EPBC Act from 24 December 2024	

Requirement	Information	Reference (BAM / BLA ¹)
	Relevant Survey Guidelines: – <i>Survey Guidelines for Australia's Threatened Birds</i> (Department of Environment, Water, Heritage and the Arts, 2010b) <i>Callocephalon fimbriatum</i> — Gang-gang Cockatoo Approved Conservation Advice: Approved Conservation Advice for <i>Callocephalon fimbriatum</i> (Gang-gang Cockatoo). Canberra: Department of Agriculture, Water and the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/768-conservation-advice-02032022.pdf In effect under the EPBC Act from 02 March 2022. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). <i>Lathamus discolor</i> — Swift Parrot Approved Conservation Advice: Threatened Species Scientific Committee (2016). <i>Conservation Advice Lathamus discolor Swift Parrot</i>. Canberra: Department of the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/744-conservation-advice-05052016.pdf In effect under the EPBC Act from 05 May 2016. Recovery Plan: Department of Climate Change, Energy, the Environment and Water (2024). <i>National Recovery Plan for the Swift Parrot (Lathamus discolor)</i>. Canberra. Available from: http://www.dcccew.gov.au/environment/biodiversity/threatened/recovery-plans/swift-parrot-2024 In effect under the EPBC Act from 30 April 2024. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Available from: http://www.dcccew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under the EPBC Act from 24 December 2024.	

Requirement	Information	Reference (BAM / BLA ¹)
	Policy Statements / Guidelines: – <i>Survey Guidelines for Australia's Threatened Birds</i> (Department of Environment, Water, Heritage and the Arts, 2010b). <i>Botaurus poiciloptilus</i> — Australasian Bittern Approved Conservation Advice: Threatened Species Scientific Committee (2019). <i>Conservation Advice Botaurus poiciloptilus (Australasian Bittern)</i>. http://www.environment.gov.au/biodiversity/threatened/species/pubs/1001-conservation-advice-18012019.pdf In effect under the EPBC Act from 18 January 2019. Listing Advice: Threatened Species Scientific Committee (2011). <i>Commonwealth Listing Advice on Botaurus poiciloptilus (Australasian Bittern)</i>. http://www.environment.gov.au/biodiversity/threatened/species/pubs/1001-listing-advice.pdf In effect under the EPBC Act from 03 March 2011. Recovery Plan: Department of Climate Change, Energy, the Environment and Water (2022). <i>National Recovery Plan for the Australasian Bittern (Botaurus poiciloptilus)</i>. http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/australasian-bittern In effect under the EPBC Act from 24 February 2023. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). – <i>Threat abatement plan for predation by the European red fox</i> (DEWHA, 2008). <i>Melanodryas cucullata cucullata</i> — Hooded Robin (south-eastern) Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2023). <i>Conservation Advice for Melanodryas cucullata cucullata (hooded robin (south-eastern))</i>. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/67093-conservation-advice-31032023.pdf In effect under the EPBC Act from 31 March 2023. <i>Pycnoptilus floccosus</i> — Pilotbird	

Requirement	Information	Reference (BAM / BLA ¹)
	Approved Conservation Advice: Department of Agriculture, Water and the Environment (2022). Conservation Advice for <i>Pycnoptilus floccosus</i> (Pilotbird). Canberra: Department of Agriculture, Water and the Environment. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/525-conservation-advice-02032022.pdf In effect under the EPBC Act from 02 March 2022. Threat Abatement Plans: – Department of Climate Change, Energy, the Environment and Water (2024). Threat abatement plan for predation by feral cats 2024. Canberra: Commonwealth of Australia. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under the EPBC Act from 24 December 2024. <i>Rostratula australis</i> — Australian Painted Snipe Listing Advice: Threatened Species Scientific Committee (2013). <i>Commonwealth Listing Advice on Rostratula australis (Australian Painted Snipe)</i>. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/77037-listing-advice.pdf In effect under the EPBC Act from 15 May 2013. Recovery Plan: Department of Climate Change, Energy, the Environment and Water (2022). <i>National Recovery Plan for the Australian Painted Snipe (Rostratula australis)</i>. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/recovery/australian-painted-snipe-2022 Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024).	

Requirement	Information	Reference (BAM / BLA ¹)
	Policy Statements and Guidelines: – <i>Survey Guidelines for Australia's Threatened Birds</i> (Department of the Environment, Water, Heritage and the Arts, 2010). Approved Conservation Advice (additional excerpt): Department of Sustainability, Environment, Water, Population and Communities (2013). <i>Approved Conservation Advice for Rostratula australis (Australian painted snipe)</i>. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/77037-conservation-advice.pdf In effect from 15 May 2013. <i>Notamacropus parma</i> — Parma Wallaby Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2022). <i>Conservation Advice for Notamacropus parma (Parma wallaby)</i>. Canberra: Department of Climate Change, Energy, the Environment and Water. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/89289-conservation-advice-05102022.pdf In effect under the EPBC Act from 05 October 2022. Threat Abatement Plans: – Department of Climate Change, Energy, the Environment and Water (2024). <i>Threat abatement plan for predation by feral cats 2024</i>. Canberra: Commonwealth of Australia. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under the EPBC Act from 24 December 2024. – Department of the Environment, Water, Heritage and the Arts (2008). <i>Threat abatement plan for predation by the European red fox</i>. DEWHA, Canberra. Available from: http://www.environment.gov.au/biodiversity/threatened/publications/tap/predation-european-red-fox In effect under the EPBC Act from 01 October 2008. <i>Petauroides volans</i> — Greater Glider (southern and central) Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2022). <i>Conservation Advice for</i>	

Requirement	Information	Reference (BAM / BLA ¹)
	<i>Petauroides volans</i> (greater glider (southern and central)). Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/254-conservation-advice-05072022.pdf In effect under the EPBC Act from 05 July 2022. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). <i>Phascolarctos cinereus</i> — Koala Approved Conservation Advice: Department of Agriculture Water and the Environment (2022). <i>Conservation Advice for Phascolarctos cinereus (combined populations in Queensland, New South Wales and the Australian Capital Territory)</i>. Recovery Plan: <i>National Recovery Plan for the Koala Phascolarctos cinereus (combined populations in Queensland, New South Wales and the Australian Capital Territory)</i>. (Department of Agriculture, 2022). Threat Abatement Plans: – Department of Climate Change, Energy, the Environment and Water (2024). <i>Threat abatement plan for predation by feral cats 2024</i>. Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats In effect under the EPBC Act from 24 December 2024. Policy Statements and Guidelines: – <i>Identifying habitat for the endangered Koala</i> (DCCEEW, 2022). – <i>Referral guidance for the endangered Koala</i> (DCCEEW, 2023). <i>Dasyurus maculatus maculatus</i> — Spotted-tailed Quoll (SE mainland) Listing Advice: Threatened Species Scientific Committee (2004). <i>Commonwealth Listing Advice on Dasyurus maculatus maculatus (Spot-tailed Quoll, Spotted-tailed Quoll, Tiger Quoll)</i>. http://www.environment.gov.au/biodiversity/threatened/species/tiger-quoll.html In effect from 14 May 2004. Recovery Plan: Department of Environment, Land, Water and Planning (2016). <i>National Recovery Plan for the Spotted-tailed</i>	

Requirement	Information	Reference (BAM / BLA ¹)
	<i>Quoll Dasyurus maculatus</i>. http://www.environment.gov.au/biodiversity/threatened/recovery-plans/spotted-tailed-quoll In effect from 06 May 2016. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). – <i>Threat abatement plan for predation by the European red fox</i> (DEWHA, 2008). Policy Statements: – <i>Survey guidelines for Australia's threatened mammals. Guidelines for detecting mammals listed under the EPBC Act</i> (DSEWPac, 2011) <i>Chalinolobus dwyeri</i> — Large-eared Pied Bat Recovery Plan: Department of Environment and Resource Management (2011). <i>National recovery plan for the large-eared pied bat Chalinolobus dwyeri</i>. In effect from 10 February 2012. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats Policy Statements: – <i>Survey Guidelines for Australia's Threatened Bats</i> (DEWHA, 2010). Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2023). <i>Conservation Advice for Chalinolobus dwyeri (large-eared pied bat)</i>. http://www.environment.gov.au/biodiversity/threatened/species/pubs/183-conservation-advice-15112023.pdf In effect from 15 November 2023 <i>Delma vescolineata</i> — Hunter Valley Delma Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2024). <i>Conservation Advice for Delma vescolineata (Hunter Valley delma)</i>. Canberra: Department of Climate Change, Energy, the Environment and Water.	

Requirement	Information	Reference (BAM / BLA ¹)
	Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/92599-conservation-advice-16072024.pdf In effect under the EPBC Act from 16 July 2024. Mixophyes iteratus — Giant Barred Frog Approved Conservation Advice: Threatened Species Scientific Committee (2021). <i>Conservation Advice for Mixophyes iteratus (Giant Barred Frog)</i>. http://www.environment.gov.au/biodiversity/threatened/species/pubs/1944-conservation-advice-13112021.pdf In effect from 13 November 2021. Recovery Plan: Hines H.B. & SEQ Threatened Frogs Recovery Team (2002). <i>Recovery Plan for Stream Frogs of South-east Queensland 2001–2005</i>. In effect from 13 October 2003. Threat Abatement Plans: – <i>Threat abatement plan for infection of amphibians with chytrid fungus</i> (DoEE, 2016). – <i>Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa)</i> (DoEE, 2017). – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Policy Statements: – <i>Survey Guidelines for Australia's Threatened Frogs</i> (DEWHA, 2010). Mixophyes balbus — Stuttering Frog / Southern Barred Frog (in Victoria) Approved Conservation Advice: Department of Agriculture, Water and the Environment (2021). <i>Conservation Advice for Mixophyes balbus (Stuttering Frog, Southern Barred Frog in Victoria)</i>. http://www.environment.gov.au/biodiversity/threatened/species/pubs/1942-conservation-advice-23112021.pdf Recovery Plan: Hunter, D. & Gillespie, G.R. (2011). <i>National Recovery Plan for the Stuttering Frog Mixophyes balbus</i>. Available from: http://www.environment.gov.au/biodiversity/threatened/recovery-plans/national-recovery-plan-stuttering-frog-mixophyes-balbus In effect from 10 February 2012.	

Requirement	Information	Reference (BAM / BLA ¹)
	Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). – <i>Threat abatement plan for infection of amphibians with chytrid fungus</i> (Department of the Environment and Energy, 2016). Available from: http://www.environment.gov.au/biodiversity/threatened/publications/tap/infection-amphibians-chytrid-fungus-resulting-chytridiomycosis-2016 Policy Statements: – <i>Survey Guidelines for Australia's Threatened Frogs. EPBC Act survey guidelines 6.3</i> (DEWHA, 2010). <i>Calyptorhynchus lathami lathami</i> — South-eastern Glossy Black-Cockatoo Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2022). <i>Conservation Advice for Calyptorhynchus lathami lathami (South Eastern Glossy Black Cockatoo)</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Available from: http://www.dcceew.gov.au/environment/biodiversity/threatened/publications/tap/threat-abatement-plan-feral-cats. <i>Gallinago hardwickii</i> — Latham's Snipe Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2024). <i>Conservation Advice for Gallinago hardwickii (Latham's snipe)</i>. Available from: http://www.environment.gov.au/biodiversity/threatened/species/pubs/863-conservation-advice-05012024.pdf In effect under the EPBC Act from 05 January 2024. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). – <i>Threat abatement plan for predation by the European red fox</i> (DEWHA, 2008). Available from: http://www.environment.gov.au/biodiversity/threatened/publications/tap/predation-european-red-fox Wildlife Conservation Plans: – <i>Wildlife Conservation Plan for Migratory Shorebirds</i> (Department of the Environment, 2015).	

Requirement	Information	Reference (BAM / BLA ¹)
	Available from: http://www.environment.gov.au/biodiversity/publications/wildlife-conservation-plan-migratory-shorebirds-2016 <i>Potorous tridactylus tridactylus</i> — Northern Long-nosed Potoroo Approved Conservation Advice: Department of Agriculture, Water and the Environment (2022). <i>Conservation Advice for Potorous tridactylus tridactylus (Northern Long-nosed Potoroo)</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). – <i>Threat abatement plan for predation by the European red fox</i> (DEWHA, 2008). Policy Statements: – <i>Survey guidelines for Australia's threatened mammals. EPBC Act survey guidelines 6.5</i> (DSEWPaC, 2011). <i>Pseudomys novaehollandiae</i> — New Holland Mouse (Pookila) Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2024). <i>Conservation Advice for Pseudomys novaehollandiae (New Holland mouse, Pookila)</i>. Threat Abatement Plans: – <i>Threat abatement plan for disease in natural ecosystems caused by Phytophthora cinnamomi</i> (Department of the Environment and Energy, 2018). <i>Pteropus poliocephalus</i> — Grey-headed Flying-fox Listing Advice: Threatened Species Scientific Committee (2001). <i>Commonwealth Listing Advice on Pteropus poliocephalus</i>. Recovery Plan: Department of Agriculture, Water and the Environment (2021). <i>National Recovery Plan for the Grey-headed Flying-fox</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Policy Statements: – <i>Survey Guidelines for Australia's Threatened Bats. EPBC Act survey guidelines 6.1</i> (Department of the	

Requirement	Information	Reference (BAM / BLA ¹)
	Environment, 2010). – <i>Referral guideline for management actions in Grey-headed and Spectacled Flying-fox camps</i> (Department of the Environment, 2015). <i>Nyctophilus corbeni</i> — South-eastern Long-eared Bat Listing Advice: Threatened Species Scientific Committee (2001). <i>Commonwealth Listing Advice on ten species of Bats</i>. Approved Conservation Advice: Threatened Species Scientific Committee (2015). <i>Conservation Advice for Nyctophilus corbeni (south-eastern long-eared bat)</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). Policy Statements: – <i>Survey Guidelines for Australia's Threatened Bats. EPBC Act survey guidelines 6.1</i> (Department of the Environment, Water, Heritage and the Arts, 2010) <i>Grantiella picta</i> — Painted Honeyeater Approved Conservation Advice: Department of the Environment (2015). <i>Conservation Advice for Grantiella picta (Painted Honeyeater)</i>. Recovery Plan: Department of Agriculture, Water and the Environment (2021). <i>National Recovery Plan for the Painted Honeyeater (Grantiella picta)</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024) <i>Stagonopleura guttata</i> — Diamond Firetail Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2023). <i>Conservation Advice for Stagonopleura guttata (Diamond Firetail)</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024).	

Requirement	Information	Reference (BAM / BLA ¹)
	<i>Climacteris picumnus victoriae</i> — Brown Treecreeper (south-eastern) Approved Conservation Advice: Department of Climate Change, Energy, the Environment and Water (2023). <i>Conservation Advice for Climacteris picumnus victoriae (brown treecreeper (south-eastern))</i>. Recovery Plan: – (None included in your extract for this species) Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. DCCEEW (2024). <i>Hirundapus caudacutus</i> — White-throated Needletail Approved Conservation Advice: Threatened Species Scientific Committee (2019). <i>Conservation Advice for Hirundapus caudacutus (White-throated Needletail)</i>. Policy Statements: – <i>Draft referral guideline for 14 birds listed as migratory species under the EPBC Act</i> (Department of the Environment, 2015). Threat Abatement Plans: – <i>No Threat Abatement Plan identified as relevant for this species</i>. <i>Petaurus australis australis</i> — Yellow-bellied Glider (south-eastern) Approved Conservation Advice: Department of Agriculture, Water and the Environment (2022). <i>Conservation Advice for Petaurus australis australis (yellow-bellied glider (south-eastern))</i>. Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. Department of Climate Change, Energy, the Environment and Water (2024) <i>Petrogale penicillata</i> — Brush-tailed Rock-wallaby	

Requirement	Information	Reference (BAM / BLA ¹)
	Approved Conservation Advice: Department of Agriculture, Water and the Environment (2022). <i>Conservation Advice for Petrogale penicillata (Brush-tailed Rock-wallaby)</i>. Recovery Plan: <i>National Recovery Plan for the Brush-tailed Rock-wallaby</i> (Department of Agriculture, 2022). Threat Abatement Plans: – <i>Threat abatement plan for predation by feral cats 2024</i>. Department of Climate Change, Energy, the Environment and Water (2024). – <i>Threat abatement plan for competition and land degradation by rabbits</i> (Department of Environment and Energy, 2016). – <i>Threat abatement plan for competition and land degradation by unmanaged goats</i> (Department of the Environment, Water, Heritage and the Arts, 2008d).	
Recommended Conditions	Provide advice on any recommended conditions and reasons for imposing the conditions: The BDAR conforms to BAM requirements with no additional assessment required for MNES. CPHR has separately reviewed draft conditions of approval and had no further recommended conditions.	BLA clause 6.2(c)(iii)

TABLE 2: MNES IMPACT AND OFFSET SUMMARY

THREATENED ECOLOGICAL COMMUNITIES

EPBC MNES (TEC)	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Nature & Consequences of Impact (Direct & Indirect)	Consequences (Local / State / National)	Duration	Area Impacted (ha)	Credit Type & Quantity (BAM)	Offset Delivery Approach	RTS BDAR Reference
Central Hunter Valley Eucalypt Forest and Woodland (CE)	Associated PCTs include Central Hunter Ironbark–Spotted Gum and Grey Box woodland assemblages corresponding to PCTs 3314 (thinned), 3315 (thinned), 3431 (Plantation, Poor, Thinned), 3438 (mod good), 3446 (mod good)	Direct clearing and fragmentation of critically endangered woodland communities across multiple Ironbark–Spotted Gum and Grey Box PCTs; loss of TEC extent, structure and connectivity	Major permanent loss at local scale with material contribution to state-wide decline	Permanent	164.19	Ecosystem 5,071	Strategic Offset Delivery Agreement with NSW DCCEEW	RTS BDAR – Section 11, Table ES.1, Appendix E
Coastal Swamp Sclerophyll Forest of NSW & SE Qld (E)	Associated PCTs comprise Northern Creekflat Eucalypt–Paperbark Mesic Swamp Forest assemblages corresponding to PCTs 4044 (mod good)	Clearing of endangered swamp sclerophyll forest in modified and derived condition classes; fragmentation of remaining TEC patches	Irreversible local loss contributing to cumulative state-wide decline	Permanent	0.12	Ecosystem credits – 6	Strategic Offset Delivery Agreement with NSW DCCEEW	RTS BDAR – Section 11, Table ES.1, Appendix E
River-flat Eucalypt Forest on Coastal Floodplains of southern NSW & eastern Victoria (CE)	Associated PCTs include river-flat eucalypt and floodplain red gum forest assemblages corresponding to PCTs 3328 (mod good), 4039 (mod good)	Clearing of river-flat eucalypt forest and floodplain red-gum woodland across multiple PCTs; loss of alluvial forest function and connectivity	Permanent localised loss contributing to broader regional and state-wide decline	Permanent	2.24	Ecosystem credits – 67	Strategic Offset Delivery Agreement with NSW DCCEEW	RTS BDAR – Section 11, Table ES.1, Appendix E

FLORA – EPBC ACT LISTED THREATENED SPECIES (MNES)

EPBC MNES (Species)	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Nature & Consequences of Impact	Duration	Area Impacted (ha or count)	Consequence	Impact Risk	Offset Required	Credit Type & Quantity	Offset Approach	RTS BDAR Ref
Acacia bynoeana	3315, 3433, 3436, 3582, 3583, 3617 & 4039	Clearing of assumed habitat;	Permanent	5.79 ha	Local population decline	High	Yes	Species credits – 174	Strategic Offset Delivery Agreement with NSW DCCEW	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Angophora inopina	3244, 3250, 3315, 3433, 3436, 3581, 3582, 3583, 4042 & 4044.	Clearing of assumed habitat/Fragmentation of restricted populations	Permanent	3.70 ha	Local–state scale impact	Low	Yes	Species credits – 142	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Asperula asthenes	3086, 3241, 3242, 3244, 3250 & 3436	Removal of understorey habitat /assumed present	Permanent	2.75 ha	Local population decline	Low	Yes	Species credits – 118	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Brachyscome brownii (CE)	3241, 3239	Loss of confirmed habitat	Permanent	12.85	Local extinction risk	High	Yes	Ecosystem, 3243	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1

Cryptostylis hunteriana	3250, 3582 & 3583	Disturbance and clearing of assumed orchid habitat	Permanent	7.13 ha	Local impact	Low	Yes	Species credits – 116	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Cynanchum elegans	3029, 3086, 3087, 3151, 3152, 3237, 3239, 3244, 3250, 3489, 3617 & 3621	Clearing of climber habitat/assumed habitat	Permanent	2.67 ha	Cumulative decline	Low	Yes	Species credits – 99	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Eucalyptus glaucina	3152, 3239, 3241, 3314, 3315, 3431, 3433, 3438, 3446 & 3605	Loss of assumed present individuals	Permanent	34 trees	Local population loss	High	Yes	Species credits – 68	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Genoplesium insigne (CE)	3433, 3581, 3582, 3583 & 4042.	Clearing of suitable habitat	Permanent	10.67 ha	Local extinction risk	Low	Yes	Species credits – 389	Strategic Offset Delivery Agreement with NSW DCCEE	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Genoplesium braunwhiteorum (CE)	3581, 3433, 3582 & 3583	Clearing of suitable habitat	Permanent	6.12 ha	Local extinction risk	Low	Yes	Species credits – 205	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Grevillea parviflora ssp. parviflora	3244, 3433, 3436, 3444, 3446, 3581, 3582, 3583 & 4044.	Known Habitat loss	Permanent	12.22 ha	Local decline	High	Yes	Species credits – 286	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2

Melaleuca biconvexa	3029, 3150, 3241, 4=3242, 3244, 3250, 3582, 4042, 4044	Clearing of swamp forest components/assumed habitat	Permanent	6.05 ha	Local decline near limit of range	High	Yes	Species credits – 242	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Olearia cordata	3151, 3152, 3238, 3239, 3605, 3617	Assumed Habitat loss	Permanent	2.24 ha	Local impact	Low	Yes	Species credits – 83	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Ozothamnus tessellatus	3315, 3431	Assumed Habitat loss	Permanent	0.65 ha	Local impact	Low	Yes	Species credits – 16	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Prasophyllum petilum	3314, 3315, 3431, 3438 & 3444.	Clearing of assumed/potential orchid habitat	Permanent	13.74 ha	Local decline	Low	Yes	Species credits – 454	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Prasophyllum sp. Wybong (CE)	3314, 3315, 3431, 3438 & 3444.	Clearing of assumed/potential orchid habitat	Permanent	13.74 ha	Local extinction risk	Low	Yes	Species credits – 677	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Prostanthera cineolifera	3239, 3315, 3438, 3444, 3446, 3489 & 3605	Extensive habitat loss/known habitat and assumed habitat	Permanent	65.0 ha	Regional decline	High	Yes	Species credits – 2,406	Strategic Offset Delivery Agreement with NSW DCCEEW	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Pterostylis gibbosa	3431 & 3438	Loss of known orchid habitat	Permanent	17.93 ha	Local extinction risk	High	Yes	Species credits – 655	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Rhizanthella slateri	3029, 3086, 3087, 3150,	Loss of subterranean orchid habitat	Permanent	4.27 ha	Severe local impact	Low	Yes	Species credits – 202	As above	RTS BDAR – Section 11, Table

	3230, 3237, 3241, 3242, 3244, 3250, 3263, 3581, 3599, 3617 & 3621									ES.1, Appendix E, Table 8.2
Rhodamnia rubescens (CE)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3446 & 3617.	Loss of individuals	Permanent	1,524 trees	Severe local loss	High	Yes	Species credits – 4,572	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Rhodomyrtus psidioides (CE)	3029, 3086, 3087, 3150, 3151, 3152, 3242, 3250, 3621 & 4072.	Habitat loss and disease risk	Permanent	17.87 ha	Regional decline	High	Yes	Species credits – 1,091	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Rutidosia heterogama	3244, 3250, 3315, 3433, 3444, 3446, 3581, 3582, 3583, 3605 & 4039.	Habitat loss	Permanent	0.66 ha	Local decline	low	Yes	Species credits – 14	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
Syzygium paniculatum	3029, 3087, 3150, 3241, 3242, 3244, 3250,	Loss of canopy trees	Permanent	61 trees	Local decline	low	Yes	Species credits – 122	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2

	3433, 4042 & 4044.									
<i>Tetratheca juncea</i>	3241, 3242, 3244, 3250, 3433, 3436, 3581, 3582, 3583 & 3617.	Known and assumed Habitat loss	Permanent	15.23 ha	Local decline	High	Yes	Species credits – 437	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Thelymitra adorata</i> (CE)	3244, 3433, 3436, 3582, 3583 & 4042.	assumed habitat loss	Permanent	0.79 ha	Local impact	Low	Yes	Species credits – 21	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Velleia perfoliata</i>	3152, 3239, 3605 & 3617.	Assumed habitat loss	Permanent	2.24 ha	Local impact	low	Yes	Species credits – 75	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Zieria involucrata</i>	3151, 3152, 3238, 3239, 3605 & 3617.	Assumed Habitat loss	Permanent	2.24 ha	Local impact	low	Yes	Species credits – 75	As above	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2

THREATENED FAUNA – EPBC ACT LISTED SPECIES (MNES)

EPBC MNES (Species)	PCTs associated with the ecosystem credit species / ecological community (if applicable)	Nature & Consequences of Impact	Duration	Area Impacted (ha)	Consequences (Local / State / National)	Impact Risk	Offset Required	Credit Type & Quantity	Offset Approach	RTS BDAR Ref
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<i>Heleioporus australiacus</i> Giant Burrowing Frog (E)	3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3263, 3436, 3438, 3439, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4039, 4044 & 4072.	Loss of confirmed and assumed breeding habitat	Permanent	73.62	Local population viability affected	High	Yes	Species credits – 2,124	Strategic Offset Delivery Agreement (SODA) with NSW DCCEEW a	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Litoria littlejohni</i> Littlejohn's Tree Frog (E)	3150, 3230, 3237, 3238, 3239, 3250, 3263, 3433, 3581, 3605, 3617, 3621 & 4039.	Loss of confirmed and assumed breeding habitat	Permanent	70.34	Local population viability affected/ decline	High	Yes	Species credits – 2,703	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Mixophyes balbus</i> Stuttering Frog (V)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3433, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4042, 4044 & 4072.	Loss of known breeding habitat and individuals	Permanent	191.99	Regional connectivity reduced	High	Yes	Species credits – 11,141	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Mixophyes iteratus</i> Giant Barred Frog (V)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3581, 3582, 3583, 3605, 3617, 3621, 4042, 4044 & 4072.	Loss of known and assumed breeding habitat and individuals /important population	Permanent	10.76	Local population impact	low	No	Species credits – 319	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2

<i>Anthochaera phrygia</i> Regent Honeyeater (CE)	3230, 3238, 3239, 3241, 3244, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3621, 4039, 4042, 4044, 4072 & 4089	Loss of known habitat /foraging woodland	Permanent	96.91	National recovery impact	High	Yes	Species credits – 5,203	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Botaurus poiciloptilus</i> Australasian Bittern (E)	4015, 4039, 4042, 4044, 4072 & 4089	Loss of assumed breeding and foraging habitat	Permanent	26.03	National recovery impact	Low	No	Ecosystem 529	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
South-eastern Glossy Black Cockatoo (V)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4044, 4072 & 4089	Loss of known and assumed breeding habitat - hollows	permanent	18.52	Regional impact	High	Yes	Species 685	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Climacteris picumnus victoriae</i> Brown Treecreeper (eastern subspecies) (V)	3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4044, 4072 & 4089	Loss of foraging and nesting woodland habitat	permanent	934.45	Regional impact	High	Yes	Ecosystem 20, 757	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1

	3489,3581, 3582,3583, 3599,3605, 3617,3621, 4015,4039, 4042,4044, 4072 and 4089,									
<i>Delma vescolineata</i> (Hunter Valley <i>Delma</i>) (V)	3241, 3244, 3314, 3315, 3431, 3438, 3444, 3605, 4015, 4039, 4072 & 4089	Loss and fragmentation of known habitat	uncertain	353.53	Local population impact	High	Yes	Species 6,530	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Gallinago hardwickii</i> Latham's Snipe (V)	4015	Loss of known foraging habitat	Permanent	10.59	National cumulative impact	low	No	Ecosystem 298	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Grantiella picta</i> Painted Honeyeater (V)	3151,3152, 3230,3242, 3244,3489, 3599,3605, 3617, 4015	Loss of known habitat- foraging woodland	Permanent	255.72	Regional population impact	low	No	Ecosystem 6,670	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Hirundapus caudacutus</i> White-throated Needletail (V, M ²)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4044, 4072 and 4089	Loss of foraging woodland known habitat	Permanent	945.24	Regional population impact	low	No	Ecosystem 21,097	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1

<i>Lathamus discolor</i> Swift Parrot (CE)	029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4044, 4072 & 4089.	Loss of known foraging habitat	Permanent	45.32	National cumulative impact	Low	Yes	Species credits – 2,397	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Melanodryas cucullata cucullata</i> South-eastern Hooded Robin (E)	3151, 3152, 3230, 3242, 3244, 3489, 3599, 3605, 3617 & 4015	Loss of known foraging and breeding woodland habitat	Permanent	255.72	Regional population impact	High	Yes	Ecosystem 6,670	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Pycnoptilus floccosus</i> Pilotbird (V)	3152, 3238, 3239, 3250, 3599, 3605, 3617 & 3621.	Loss of assumed habitat - foraging woodland	Permanent	227.91	Regional population impact	High	Yes	Ecosystem 5,739	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Rostratula australis</i> Australian Painted Snipe (E)	4015, 4039, 4042, 4044, 4072 & 4089.	Loss of assumed habitat - foraging	Permanent	26.03	National population impact	Low	No	Ecosystem 529	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Stagonopleura guttata</i> Diamond Firetail (V)	3239, 3244, 3250, 3314, 3315, 3431, 3433, 3446, 3489, 3605, 3617, 3621, 4042 & 4089.	Loss of assumed habitat - foraging and breeding	Permanent	571.85	Regional population impact	High	Yes	Ecosystem 11,237	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1

<i>Chalinolobus dwyeri</i> Large-eared Pied Bat (E)	3086, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621 & 4042	Loss of known roost and foraging habitat	Permanent	574.24	Regional population impact	High	Yes	Species credits – 28,615	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E Table 8.2
<i>Dasyurus maculatus</i> Spotted-tail Quoll (E)	3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4044, 4072 and 4089	Habitat fragmentation Loss of assumed foraging and breeding habitat	Permanent	943	Regional population impact	High	Yes	Species credits – 21,030	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Notamacropus parma</i> Parma Wallaby (V)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3242, 3244, 3250, 3263, 3433, 3489, 3581, 3582, 3605, 3617, 3621 & 4042.	Loss of known foraging and breeding habitat	Permanent	289.02	Local population impact	High	Yes	Species 9, 939	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Nyctophilus corbeni</i> Corben's Long-eared Bat (V)	3315, 3438, 4039	Loss of assumed foraging habitat	Permanent	36.94	Local population impact	Low	No	Ecosystem 812	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Petaurus volans</i> Southern	3029, 3086, 3087, 3150, 3151, 3152,	Loss of known breeding habitat / den resources	Permanent	560	Local population impact	High	Yes	Species 21,072	SODA	RTS BDAR – Section 11, Table ES.1,

Greater Glider (E)	3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3599, 3605, 3617, 3621, 4039, 4042, 4044, 4072									Appendix E, Table 8.2
<i>Petaurus australis</i> Yellow-bellied Glider (V)	3086, 3087, 3150, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3433, 3436, 3438, 3444, 3446, 3581, 3582, 3599, 3605, 3617, 3621, 4042 & 4044.	Loss of feed and den resources/ known habitat	Permanent	572.07	Regional population impact	High	Yes	Ecosystem 14,898	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Pseudomys novaehollandiae</i> New Holland Mouse	3244, 3250, 3315, 3433, 3436, 3446, 3581, 3582 & 3583.	Loss of assumed foraging and breeding habitat	Permanent	59.73	Regional population impact	High	Yes	Ecosystem 1,183	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1
<i>Pteropus poliocephalus</i> Grey-headed-Flying Fox	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3250, 3263, 3314, 3315, 3431, 3433, 3436, 3438,	Known Foraging habitat	Permanent	933.2	Regional population impact	High	Yes	Ecosystem 20,789	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.1

	3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4039, 4042, 4044 & 4089									
<i>Callocephalon fimbriatum</i> (Gang-gang Cockatoo)	3029, 3086, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3244, 3263, 3314, 3315, 3328, 3431, 3433, 3436, 3438, 3444, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4015, 4039, 4042, 4072 & 4089	Loss of known and assumed breeding habitat- hollows	Permanent	32.24	Regional population impact	High	Yes	Species 1,150	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E
<i>Petrogale penicillata</i> (Brush-tailed Rock Wallaby) (V)	3087, 3314, 3315, 3444, 3446, 4015, 4039, 3239, 3263 & 3605.	Loss of known habitat - foraging and breeding	Permanent	163.96	Regional population impact	High	Yes	Species 8,439	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E, Table 8.2
<i>Phascogale cinereus</i> (Koala)	3029, 3087, 3150, 3151, 3152, 3230, 3237, 3238, 3239, 3241, 3242, 3250, 3263, 3314, 3315, 3431, 3433, 3436, 3438, 3446, 3489, 3581, 3582, 3583, 3599, 3605, 3617, 3621, 4042, 4044 & 4089.	Loss of known - foraging and breeding habitat	Permanent	625.71	Regional population impact	High	Yes	Species 23,304	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E

Potorous tridactylus (Long-nosed Potoroo) (V)	3150, 3230, 3242, 3244, 3250, 3433, 3436, 3581, 3582, 3583, 3617, 4042 & 4044.	Loss of known foraging and breeding habitat	Permanent	123.72	Regional population impact	High	Yes	Species 4,394	SODA	RTS BDAR – Section 11, Table ES.1, Appendix E

Impact on Commonwealth Land

EnergyCo assessed the potential impacts on Commonwealth Land in accordance with the *Significant impact guidelines 1.2: Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies*, noting that the project would involve impacts within the Singleton Military Area.

The assessment focused on the key factors which AG DCCEEW identified in its advice on the project SEARs. This includes:

- impacts to landscapes and soils;
- pollutants, chemicals, and toxic substances;
- impacts on plants;
- impacts on animals; and
- impacts on heritage.

The significant impact assessments prepared each conclude that, while impacts on these matters would occur, they can be appropriately managed by EnergyCo through implementation of mitigation measures and project approval conditions. Each of these matters, including the relevant mitigation measures and approval conditions which the Department has recommended, are discussed in further detail in the main text of this report as follows:

- soils and land use (Section 6.7);
- pollutants, chemicals, and toxic substances (Section 6.7);
- biodiversity (Section 6.4); and
- heritage (Section 6.7).

Subject to the recommended conditions, the Department considers that the project's impacts on Commonwealth Land can be managed through implementation of mitigation measures and project approval conditions. Importantly, the Department has consulted with AG DCCEEW and Department of Defence during the assessment process, and neither party has raised any residual concerns.

Additional EPBC Act Considerations

Table J-2 contains the additional mandatory considerations, factors to be taken into account, and factors to have regard to under the EPBC Act that are in addition to those already discussed.

Table J-2 | Additional Considerations for the Commonwealth Minister under the EPBC Act

EPBC Act Section	Considerations	Conclusion
Mandatory Considerations		
136(1)b	Economic and social matters are discussed in Section 6.7 of this report.	The project would provide benefits for the local and regional economy and is of public benefit. Up to 830 workers would be required during the construction period. Up to 10 ongoing jobs would be required for operation of the project. Impacts on the local community would primarily occur during the construction period, which has been considered in the assessment report. The recommended conditions require EnergyCo to minimise potential traffic and amenity impacts including noise, dust and visual impacts. Social impacts will also be managed through a Social Impact Management Plan.
3A, 391(2)	Principles of ecologically sustainable development (ESD), including the precautionary principle, have been taken into account, in particular: • the long term and short term economic, environmental, social and equitable considerations that are relevant to this decision; • conditions that restrict environmental impacts and impose monitoring and adaptive management, reduce any lack of certainty related to the potential impacts of the project; • conditions requiring the project to be delivered and operated in a sustainable way to protect the environment for future generations and conserving the relevant matters of national environmental significance; • advice provided within this report reflects the importance of conserving biological diversity, ecological and cultural integrity in	The Department considers that the project, if undertaken in accordance with the recommended conditions of approval, would be consistent with the principles of ESD.

EPBC Act Section	Considerations	Conclusion
	relation to all of the controlling provisions for this project; and mitigation measures to be implemented which reflect improved valuation, pricing and incentive mechanisms are promoted by placing a financial cost on the proponent to mitigate the environmental impacts of the project.	
136(2)(e)	Other information on the relevant impacts of the action.	The Department considers that all information relevant to the impacts of the project has been taken into account in its assessment.
139(1)	Requirements for decisions about threatened species and endangered communities	Recovery plans and threat abatement plans are addressed above. Australia's obligations under the Convention on Biological Diversity (Biodiversity Convention) include the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding. The recommendations of this assessment report are consistent with the Biodiversity Convention, which promotes environmental impact assessment (such as this process) to avoid and minimise adverse impacts on biological diversity. Accordingly, the recommended project approval requires avoidance, mitigation and management measures for listed threatened species, and all information related to the project is required to be publicly available to ensure equitable sharing of information and improved knowledge relating to biodiversity. There are no additional requirements for decisions about threatened species and endangered communities that apply to the project. The Apia convention and CITES are not relevant to the project.

EPBC Act Section	Considerations	Conclusion
Factors to have regard to		
176(5)	Bioregional plans	There is no approved bioregional plan related to the activity.
Consideration on deciding conditions		
134(4)	Must consider: - Information provided by the person proposing to take the action or by the designated Applicant of the action; and - The desirability of ensuring as far as practicable that the condition is a cost effective means for the Commonwealth and the person taking the action to achieve the object of the condition.	All project related documentation is available on the NSW Planning Portal - www.planningportal.nsw.gov.au. The Department considers that the recommended conditions at Appendix G are a cost effective means of achieving their purpose. The conditions are based on material provided by the Applicant that was prepared in consultation with the Department, CPHR and other government agencies.

Conclusions on Controlling Provisions

For the reasons set out in this Appendix, the Department considers that the impacts of the action would be acceptable, subject to the avoidance and mitigation measures described in the EIS, Amendment Report and the recommended instrument of approval in **Appendix G**.