EnergyCo

Waratah Super Battery – Munmorah

Scoping Report

September 2022

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Acknowledgement of Country

The Energy Corporation of NSW acknowledges that it stands on Aboriginal land. We acknowledge the Traditional Custodians of the land and we show our respect for Elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

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Waratah Super Battery – Munmorah

First published: September 2022

Executive summary

Background

The NSW Government, through the Energy Corporation of NSW (EnergyCo), is developing the 'Waratah Super Battery', dedicated to ensuring a reliable energy future for NSW as coal-fired power stations, such as Eraring, bring forward their retirement dates.

The Waratah Super Battery project will include:

- a System Integrity Protection Scheme (SIPS), designed to reserve and deploy standby battery power to support the NSW electricity grid when required due to a contingency event
- an approximate 700-megawatt (MW) battery energy storage system (BESS)
- connecting transmission and related infrastructure to connect the BESS to the existing grid
- other ancillary infrastructure and services required for the project.

The project is designed to provide reserve transmission capacity and stability, rather than additional electricity storage capacity. In this regard, the Waratah Super Battery will allow consumers to access more energy from existing electricity generators while maintaining network security.

EnergyCo has launched a competitive procurement process to identify suitable battery developers (Service Providers) and sites for the development of the project. A final decision on the Service Provider and site(s) is expected to be made in late 2022.

Given the project's critical nature and timing imperatives, EnergyCo has identified and is progressing a potential site for the project within the former Munmorah Power Station. EnergyCo is seeking planning approval to allow for the potential development of the project on the Munmorah site, and this Scoping Report is specific to development of the project on the Munmorah Site.

On 2 September 2022, the Minister for Planning declared the potential development of the Waratah Super Battery on the Munmorah site as Critical State Significant Infrastructure (CSSI) under the *Environment Planning & Assessment Act 1979* (EP&A Act). As such, the Minister for Planning is the consent authority for the proposal, and the project is to be assessed in accordance with the provisions of Division 5.2 of the EP&A Act. An Environmental Impact Statement (EIS) would be prepared to support the application for project approval under the EP&A Act

The site

The Munmorah Power Station operated for approximately 50 years, before closing in June 2012. It has a total area of approximately 730 hectares and is owned by Generator Property Management Pty Ltd (GPM). GPM is a NSW government-owned company with responsibility for decommissioning, demolition, and remediation of power station sites remaining in public ownership.

GPM is managing the rehabilitation of the former power station lands, and is undertaking further rehabilitation, remediation, and maintenance works in accordance with its existing approvals.

The site of the proposed Waratah Super Battery at Munmorah has an area of approximately 15 hectares and was previously used as the coal stockpile area for the power station. As such, the site is largely cleared and disturbed from its previous use for the power station. GPM is currently undertaking additional rehabilitation and remediation on the proposed Waratah Super Battery site.

The project

If the Waratah Super Battery is developed on the Munmorah site, it would include:

- a BESS with a capacity of approximately 700 MW[1]
- transmission infrastructure to connect the battery to the existing Munmorah Substation within the former power station
- other ancillary infrastructure and services required for the project, such as internal access roads and utilities connections.

As the site is substantially cleared, the major construction works would involve earthworks and site re-grading for drainage, establishment of slabs to support battery modules, power conversion systems and transformer structures, delivery, installation and electrical fit-out of the battery modules, power conversion systems and transformers and installation of a 330kV overhead transmission line from the BESS substation to the existing Munmorah Substation.

Once operational, the SIPS would provide 24/7 reserve transmission capacity and assist network stability. The battery storage operation would respond to a SIPS signal and discharge based on network conditions as determined by the network operator.

The project would create up to 150 construction jobs during the approximate 18-month construction period, and approximately 10-15 jobs on site once operational.

Assessment of impacts

The identification of issues to be addressed in the EIS has been undertaken through a risk-based approach in accordance with the *State significant infrastructure guidelines – preparing a scoping report* (DPIE, 2021).

The following key environmental matters identified during the risk assessment would require assessment in the EIS:

- Biodiversity
- Land (soils, landform, and topography)
- Hazards and risk
- Amenity (noise and vibration)
- Water (hydrology and water quality).

Other matters that would require consideration include access (traffic); amenity (visual); heritage; air quality and greenhouse gases; and potential social impacts.

For each environmental matter, the potential impacts associated with the construction, operation, and decommissioning and rehabilitation of the project would be identified and mitigation measures would be provided to eliminate or reduce potential impacts associated with the Waratah Super Battery.

[1] The final battery capacity is yet to be determined

Purpose of this document

This document provides a description of the project and presents the strategic context of the project. It presents a preliminary environmental risk-based assessment undertaken during scoping of the project to identify matters to be addressed in the EIS.

This document has been prepared in support of an application for Secretary's Environmental Assessment Requirements (SEARs) for the Waratah Super Battery.

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1 Introduction

1.1 Overview of the project

To ensure NSW continues to have a reliable energy supply following the planned closure of the Eraring Power Station in 2025, the NSW Government is procuring a System Integrity Protection Scheme (SIPS) control and standby network battery system, dedicated to supporting the transmission grid.

The project, known as the 'Waratah Super Battery', will include:

- a SIPS system, designed to reserve and deploy battery power to support the NSW electricity grid when required due to a contingency event
- an approximate 700 MW battery energy storage system (BESS)
- connecting transmission and related infrastructure to connect the battery (or batteries) to the existing grid
- other infrastructure and services required for the project.

The battery component of the project is part of the SIPS and is designed to provide reserve transmission capacity and stability, rather than additional electricity storage capacity. In this regard, the Waratah Super Battery will allow consumers to access more energy from existing electricity generators while maintaining network security.

The Waratah Super Battery will be the largest standby network battery in the Southern Hemisphere and together with other minor transmission upgrades, will allow Sydney, Newcastle and Wollongong consumers to access more energy from existing electricity generation.

The Energy Corporation of NSW (EnergyCo) has launched a competitive procurement process to identify suitable battery developers (Service Providers) and sites for the development of the project.

Given the project's critical nature and timing imperatives, EnergyCo has identified and is progressing a potential site for the project within the former Munmorah Power Station (the Munmorah site) (refer Figure 1.1). EnergyCo is seeking planning approval to allow for the development of the project on the Munmorah site.

This application is specific to development of the project on the Munmorah site. Further information on the design, operation and construction of the project on the Munmorah site is provided in Section 3.

1.2 Project background

For many decades, energy generation in NSW has been powered by a fleet of large coal-fired power stations and has provided reliable and abundant energy distributed across NSW. Four of the States' five existing coal fired power stations are expected to close within the next fifteen years, starting with the Liddell Power Station in 2022-2023. These power stations currently provide around three quarters of NSW's electricity supply and two thirds of the capacity required to meet peak energy demand.

The NSW Electricity Infrastructure Roadmap (see Section 2.2), enabled under the *Electricity Infrastructure Investment Act 2020*, is the NSW Government's plan to transform the State's electricity system into one that is reliable, affordable and clean. The Act establishes an Energy Security Target to ensure sufficient capacity is available on a conservative basis to meet the State's energy needs at all times.

The first Energy Security Target Monitor (ESTM) Report was released in December 2021 , and identified a possible deficit of the target in 2028-29. In the report, the Australian Energy Market Operator (AEMO) identified that new transmission developments that increase transfer limits into the Sydney-Newcastle-Wollongong area would help alleviate major transmission constraints and avoid any target deficit in the next decade.

In February 2022, Origin Energy announced the planned closure of the Eraring Power Station in August 2025, some 7 years earlier than originally planned. Eraring is Australia's largest coal-fired power station with a capacity of 2.8 GW. In light of this announcement, the projected deficit of the Energy Security Target in 2028-29 has been brought forward to 2025-26.

In response to this, the NSW Government has developed a comprehensive plan to ensure NSW continues to have reliable and affordable electricity following the closure of the Eraring Power Station. The plan includes a range of measures developed to accelerate the implementation of the NSW Electricity Infrastructure Roadmap. This includes the 'Sydney Ring Project', designed to reinforce the electricity supply to Sydney, Newcastle and Wollongong. The Sydney Ring Project, which includes the Waratah Super Battery, will increase transfer capacity into the Sydney, Newcastle and Wollongong area by approximately 5 GW (see Section 2.2 for further detail).

AEMO has indicated that the planned additional transmission capacity provided by the Sydney Ring Project will give the State access to enough electricity generation to meet the Energy Security Target at the time of the planned closure of the Eraring Power Station in 2025.

1.3 The proponent

The Energy Corporation of NSW (EnergyCo) is a statutory authority established under the *Energy and Utilities Administration Act 1987* and the *Electricity Infrastructure Investment Act 2020.* EnergyCo is responsible for leading the delivery of Renewable Energy Zones (REZs) as part of the NSW Government's Electricity Infrastructure Roadmap (see Section 2.2).

In 2020, the *Electricity Infrastructure Investment Act 2020* identified that EnergyCo will be appointed as the Infrastructure Planner for the State's first five REZs in the Central-West Orana, New England, South-West, Hunter-Central Coast and Illawarra regions.

As the Infrastructure Planner for these REZs, EnergyCo will recommend network infrastructure projects and will work closely with communities, investors and industry to coordinate investment in renewable energy generation, electricity networks and storage infrastructure in REZs for the long-term benefit of energy consumers, local communities and industry in NSW.

1.4 Purpose of this report

EnergyCo is facilitating planning approval for the development of the Waratah Super Battery Project on the Munmorah site.

Given the critical nature of the project, the project has been declared Critical State Significant Infrastructure (CSSI) in accordance with Section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Schedule 5 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP). The Minister for Planning is the consent authority, and the project is to be assessed in accordance with the provisions of Division 5.2 of the EP&A Act.

The purpose of this report is to assist the Planning Secretary of the Department of Planning and Environment in the preparation of Secretary's Environmental Assessment Requirements (SEARs) in accordance with Section 5.16 of the. EP&A Act.

Paper Size ISO A4

0 2

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Project No. **12582669**
Revision No. **0**
Date **08/09/2022**

Project Location

FIGURE 1.1

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12582669_Scoping_001_ProjectLocation_final
Print date: 08 Sep 2022 - 16:31

Data source: NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; World Street Map: Esri, HERE, Garmin, Foursquare, METI/ NASA, USGS
World Street Map: Esri, HERE, Garmin, FAO, NOAA, USGS. Created by: mfredle

2 Strategic context

2.1 National policies

2.1.1 Australia's Long Term Emissions Reduction Plan, Australian Government 2021

Australia's whole-of-economy Long-Term Emissions Reduction Plan is focussed on technology and sets out how Australia will achieve net zero emissions by 2050. One of the key principles of the plan is keeping energy prices down with affordable and reliable power. The plan identifies low emissions technology solutions including battery storage as a priority technology to achieving clean, cheap electricity.

The Technology Investment Roadmap is the cornerstone of the Long-Term Emissions Reduction Plan and sets a process to develop and deploy low emissions technologies. By focusing government investment, it aims to make these technologies cost about the same as existing high emission technologies.

The Technology Investment Roadmap includes a requirement to prepare Low Emissions Technology Statements (LETS) which review, refine and evaluate the government's investments in low emission technologies. The current LETS (2021) includes energy storage as an existing priority technology for government investment.

LETS 2021 indicates that broad deployment of electrical energy storage will facilitate further integration of low-cost solar and wind electricity in the grid. Energy storage will provide system security services and be a source of reliable, dispatchable electricity, and reduce pressure on electricity prices by meeting peaks in consumer demand.

The project would be consistent with the high priority technologies outlined in the Long Term Emissions Reduction Plan which would provide increased transmission capacity and a reliable source of power at affordable prices for customers.

2.1.2 Integrated System Plan, AEMO 2022

The Integrated System Plan (ISP) is a whole-of-system plan that provides a coordinated generation and transmission investment plan to transition the National Electricity Market (NEM) over the next 30 years. The AEMO published the most recent ISP for the National Electricity Market in June 2022, and it will be updated every two years.

Under the 'Step Change' scenario, identified in the 2022 ISP as the most likely scenario, the National Electricity Market will need to cater for significant investment in generation capacity, storage, firming generation and transmission augmentation as coal generation withdraws through to 2050.

The 2022 ISP predicts under the Step Change scenario that withdrawal of 23 GW of coal capacity will occur (14 GW by 2030) and 45 GW/620 GWh of new battery and hydro storage (distributed and utility-scale), able to respond to a dispatch signal, will be required to help firm the renewable energy sources entering the market. There will also be an increased need for the network to shift electricity from where it is produced to where it is needed to maximise the value of geographic diversity and efficiently share resources across the NEM.

The 2022 ISP identifies the Waratah Super Battery Project as an actionable NSW project, as part of the Sydney Ring Project. Inclusion of the Waratah Super Battery Project in the Sydney Ring Project means that the AEMO considers this project to be critical to addressing energy cost, security and reliability issues.

The Sydney Ring Project is designed to reinforce electricity supply to Sydney, Newcastle and Wollongong, and includes:

- Northern Network Option – 500 kV link between the Eraring and Bayswater substations (also known as the Hunter Transmission Project)
- Southern Network Option – 500 kV link between Bannaby and a new substation in the locality of South Creek
- Virtual Transmission – a System Integrity Protection Scheme (SIPS) (ie. the Waratah Super Battery Project)
- Other Minor Network Upgrades – including, but not limited to, the uprating of relevant existing 330 kV lines (such as Bannaby – Sydney West 330 kV line).

The Sydney Ring Project will increase transfer capacity into the Sydney, Newcastle and Wollongong area by approximately 5,000 MW. The ISP states that the project should commence immediately, to support REZ development and maintain reliability of supply for New South Wales consumers.

The Sydney Ring Project, including the Waratah Super Battery Project, is predicted to contribute roughly $3.4 billion in net market benefits, and will assist in maintaining reliability of supply for NSW consumers following the closure of coal power stations in the Newcastle area. The ISP notes that alternative solutions may be available, but would come at a much higher cost for consumers.

2.2 NSW policies

2.2.1 NSW Electricity Strategy, NSW Government, 2019

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable and sustainable electricity future. Meeting these objectives involves a three-layered approach:

- supporting the market to deliver reliable electricity at the lowest price, while protecting the environment
- setting an Energy Security Target to ensure that NSW has sufficient generation capacity to cope with unexpected generator outages during periods of peak demand, such as during heat waves
- ensuring NSW has sufficient powers to deal with an electricity emergency, if one arises.

The strategy notes that four of the State's five remaining coal-fired generators are set to reach the end of their technical lives and close by 2035, starting with the Liddell Power Station in 2022- 23. As these generators get older, they also become more fragile and more susceptible to outages, making the electricity system less reliable.

The strategy acknowledges that firmed renewables i.e. including batteries are now the most cost-competitive form of new generation and cost less than the current wholesale electricity price.

The strategy is underwritten by a Memorandum of Understanding with the Australian Government to jointly fund over $2 billion in energy and emission reduction activities, aligned with the NSW Electricity Strategy, to ensure NSW has a reliable and affordable energy system.

The project is consistent with the objectives of the strategy to ensure a reliable electricity supply, able to meet periods of peak demand and with the ability to cope with unexpected generator outages.

2.2.2 NSW Electricity Infrastructure Roadmap, NSW Government 2020

The NSW Electricity Infrastructure Roadmap (the Roadmap) is the NSW Government's plan to transition the electricity sector and deliver the major infrastructure needed to modernise our electricity system and power the economy. Under the roadmap, consumers will benefit from low cost, clean electricity generation backed up by 24-hour power sources.

The Roadmap is a coordinated framework to modernise the electricity system and deliver new generation, transmission, long duration storage and firming that will also deliver on the ambition of net zero emissions by 2050.

The modernisation of the electricity system will be built on five pillars:

1. driving investment in regional NSW
2. delivering energy storage infrastructure
3. delivering Renewable Energy Zones
4. keeping the grid secure and reliable
5. harnessing opportunities for industry.

As the electricity market moves towards more generation that rely on variable conditions, like weather, generators need to be backed up by long duration storage to ensure power is available at all times when it is needed. Energy storage infrastructure — such as batteries and pumped hydro — allows renewable energy to be stored and then released on demand when it is needed, creating stability and reliability in the electricity system.

In response to the February 2022 announcement of the early closure of the Liddell Power Station by Origin Energy, the NSW Government has developed a range of measures to accelerate the implementation of the Roadmap, including the Sydney Ring Project. The Sydney Ring Project, including the Waratah Super Battery is designed to reinforce the electricity supply to Sydney, Newcastle and Wollongong.

The project is consistent with Pillar 2 of the roadmap to provide additional energy storage infrastructure that can quickly stabilise the electricity system and reliably meet peak demand.

2.3 Site setting

As outlined in Section 1, EnergyCo has identified and is seeking planning approval for the development of the Waratah Super Battery on a site within the former Munmorah Power Station at Colongra, in the Central Coast Local Government Area (the project site).

The former Munmorah Power Station comprises multiple land parcels, with a total combined land area of approximately 727.2 hectares. The former power station operated for a period of approximately fifty years prior to its closure in June 2012. In 2016, the former power station and its surrounding land area was transferred to Generator Property Management Pty Ltd (GPM). GPM is a NSW government-owned company with, amongst other things, responsibility for decommissioning, demolition and remediation of power station sites remaining in public ownership.

GPM has previously managed the demolition and rehabilitation of the former power station, and is undertaking further rehabilitation, remediation and maintenance works in accordance with its existing approvals.

The proposed site for the Waratah Super Battery within the broader Munmorah site is shown in Figure 2.1, and comprises part of Lot 10 in DP120141 (ie. the project site). The project site has an area of approximately 15 hectares and was previously used as a coal stockpile area for the power station. As a result of the previous use, the project site is largely cleared and disturbed.

GPM has removed most of the coal stockpile infrastructure, however, some infrastructure remains and GPM is in the process of undertaking further rehabilitation on the project site under its existing approvals. These works will include removal of remaining infrastructure (including the coal bunker and some stormwater detention and drainage infrastructure), surface ripping to mix soils, removing the remaining coal residue, contouring the landscape, installing erosion control measures and weed management including exotic Slash Pine trees. The site will then be revegetated with stabilising grasses.

2.3.1 Community and infrastructure

Land use and infrastructure immediately surrounding the project site includes (refer Figure 2.1):

- telecommunications tower immediately north-west of the project site,
- Colongra Power Station approximately 250 metres to the north-east,
- transmission lines and electrical distribution infrastructure to the north, including Munmorah Substation
- former Munmorah Power Station and associated lands to the north-west and north.

Within the locality of the site are the residential suburbs of Doyalson, San Remo, Buff Point, Budgewoi and Halekulani with the latter being approximately 600 metres distant (and the others farther away).

Koala Park is situated approximately 400 metres north-west of the project site and comprises two tennis courts, disc golf and a football oval.

To the south of the project site are the neighbouring suburbs of San Remo and Buff Point. East of the project site is Colongra Swamp Nature Reserve and the residential area of Halekulani. To the west of the project site are smaller parcels of industrial land and residential areas.

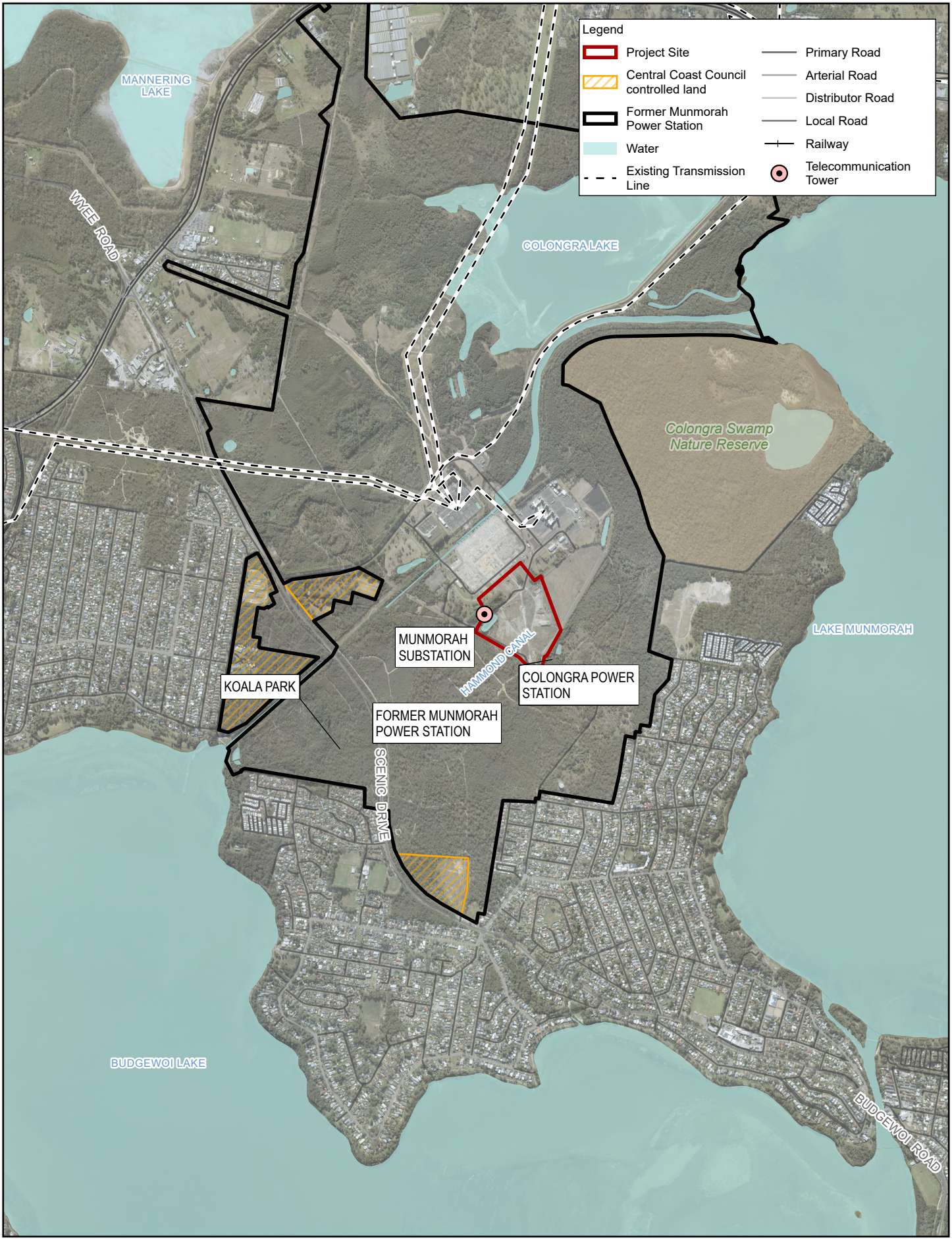
2.3.2 Natural environment

The project site has an elevation of approximately 10 to greater than 15 metres AHD and is relatively flat and slopes gradually to the north. Land within the project site is mostly cleared with disturbed soils. The project site boundary is surrounded by vegetation that provides screening of the site from nearby residential suburbs.

About 650 metres to the north-east of the project site is Colongra Swamp Nature Reserve (refer Figure 2.1). The broader area includes the coastal lakes of Lake Munmorah, approximately 1.2 kilometres to the south-east and Budgewoi Lake approximately two kilometres to the south-west.

There are a number of land parcels located within the broader Munmorah site that are leased to Central Coast Council (Council) for open space and recreational purposes.

Approximately 300 metres north-west of the project site is Hammond Canal which is a man-made canal that links Lake Munmorah to Budgewoi Lake.



Paper Size ISO A4

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Kilometres

Map Projection: Transverse Mercator
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Site Location

FIGURE 2.1

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Data source: Fibre Optic Easement - Energy Co; NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; Metromap Tile Service: .
Created by: mfredle

2.3.3 Key risks and natural hazards

The project site was selected due to it possessing a number inherent advantages, being that it is:

- a former industrial site containing disturbed land, mostly clear of vegetation and relatively flat
- remote from sensitive receivers (nearest residential receiver is about 600 metres away)
- well screened by vegetation on most sides and is free from flooding constraints.

Key risks associated with the project site include:

- Contamination – the historical use of the site for coal stockpiling may have resulted in contaminated of soils and groundwater. Section 6.3 provides further information about potential contamination risks at the project site.
- Bushfire – the project is located on bushfire prone land as mapped by Wyong Local Environment Plan 2013. Section 6.4 provides further information about potential bushfire risks at the project site.

2.4 Project justification

The Sydney, Newcastle and Wollongong area uses around three quarters of the electricity consumed in NSW. It has a maximum demand of 10.5 GW currently supplied by:

- 4.2 GW coal-fired baseload generation in the area, at Eraring and Vales Point
- 2.6 GW gas-fired and hydro peaking generation at Kurri Kurri, Colongra, Tallawarra A, Tallawarra B and Shoalhaven
- 6 to 7 GW transmission capacity to generation outside the area.

The power transfer limits on the main transmission paths are shown in Figure 2.2.

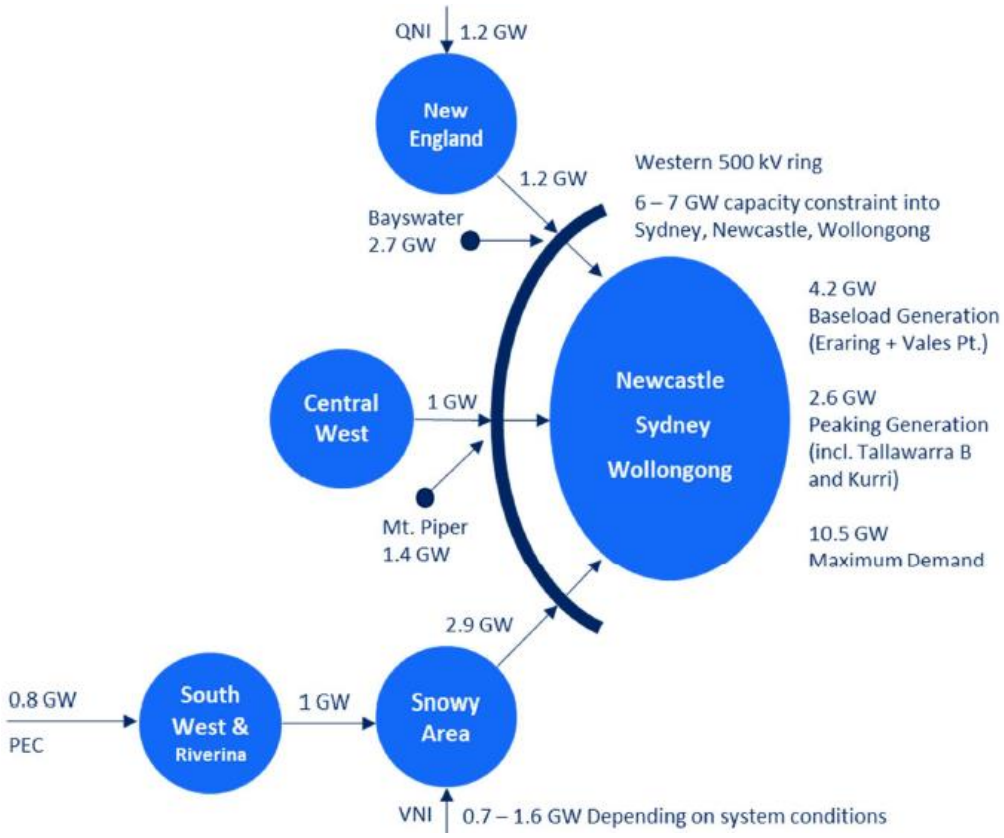


Figure 2.2 Existing grid capacity constraints

In order to avoid a forecast deficit of the Energy Security Target in 202425 (refer Sections 1.2 and 2.2), the NSW Government is taking action to coordinate and unlock investment in replacement generation before the State's existing coal-fired power stations close.

The Sydney Ring Project, including the Waratah Super Battery Project, is designed to reinforce electricity supply to Sydney, Newcastle and Wollongong by providing increased transfer capacity of approximately 5 GW.

AEMO has indicated in the 2022 ISP that the planned additional transmission capacity provided by the Sydney Ring Project will give the State access to enough electricity generation to meet the Energy Security Target at the time of closure of the Eraring Power Station in 2025.

The Waratah Super Battery project is needed as a critical priority to maintain energy supply, security and affordability for NSW consumers. The development of a SIPS-enabled battery will allow the storage of energy and then the return of the respective energy into the network based on either commercial or network support considerations.

3 The project

3.1 Key project characteristics

The key project characteristics are summarised in Table 3.1, and an indicative preliminary layout of the project is shown on Figure 3.1.

Table 3.1 Key project characteristics

Feature	Description
Project Summary	Development of the Waratah Super Battery Project on the Munmorah site, involving: • approximate 700 MW BESS • connecting transmission (approximately 900 metres) and related infrastructure to connect the battery (or batteries) to the existing Munmorah Substation • a SIPS system, designed to reserve and deploy battery power to support the grid when required, and • ancillary infrastructure and services required for the project.
Project site	Part of Lot 10/ DP120141 of the former Munmorah Power Station
Subdivision	Subdivision of the Munmorah Site to create a lot(s) for the project site
SIPS operator/ NEM connection	Transgrid/ Munmorah Substation
Service Provider (on behalf of EnergyCo)	Selected via competitive tender process to develop and operate the project
BESS capacity	Approximate 700 MW (capacity to be confirmed, subject to final design)
Availability	24 hours a day / 7 days a week/ 365 days per year
Ancillary facilities	Switchyard, transmission line connections, access roads (approximately 850m), site services, administration and maintenance buildings
Estimated employment	Up to 150 construction (peak), 10-15 during operation

3.2 Construction

Construction of the project is subject to the methods proposed by the service provider but is expected to involve the following:

- upgrading of the construction access road from the existing internal access road to the project site
- clearing of remnant vegetation
- earthworks and site re-grading
- development of ancillary infrastructure and buildings
- establishment of a hardstand and construction laydown areas

- works including establishment of slabs to support battery modules, power conversion systems and transformer structures
- delivery, installation and electrical fit-out of the battery modules, power conversion systems and transformers
- installation of 330kV overhead transmission line from the BESS substation to the existing Munmorah Substation
- testing and commissioning activities
- rehabilitation of construction areas
- establishment of asset protection zones or other design solutions for bushfire protection.

The majority of construction activities would be carried out during the following hours, consistent with the recommended standard hours of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009):

- 7am-6pm Monday to Friday
- 8am-1pm Saturdays
- No work on Sundays or Public Holidays.

Work that would be carried out outside of the above recommended standard construction hours may include:

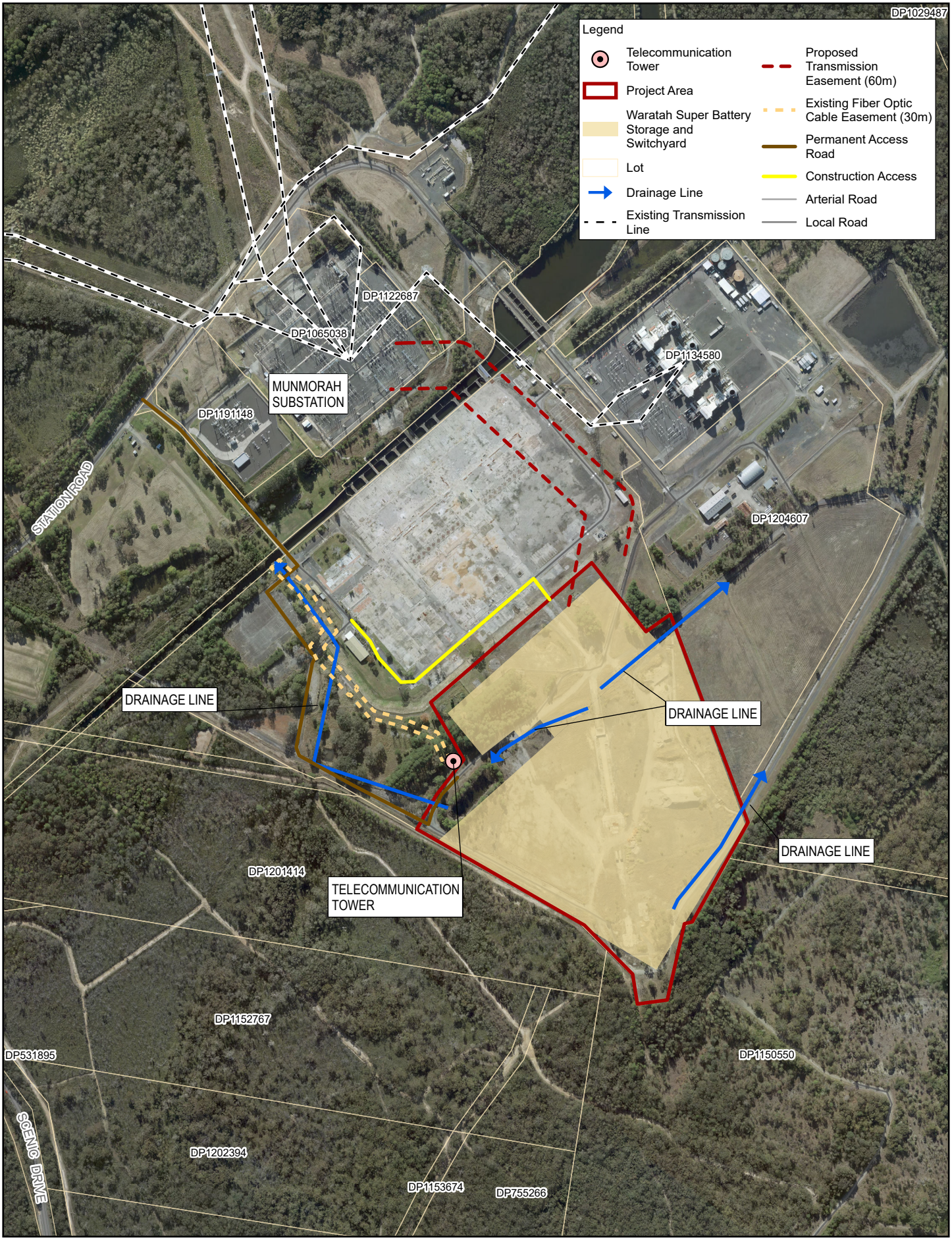
- work determined to comply with the relevant noise management level at the nearest sensitive receiver
- the delivery of materials and heavy equipment – for instance power transformers outside approved hours as required by the NSW Police or other authorities for safety reasons.

3.3 Operation

The battery component of the project is part of the SIPS control and is designed to provide 24/7 reserve transmission capacity and assist network stability.

The battery storage operation will respond to a SIPS signal and discharge based on network conditions as determined by the network operator. In this respect, the battery will have the capability to:

- reduce potential network constraints and improve intra-network energy flow by avoiding potential overloading of transmission assets and reducing potential generating constraints
- discharge when the network would require additional generation to maintain load balance e.g. when a substantial amount of generation may be lost due to a network contingency event or due to large generators becoming unavailable
- the SIPS will be operated by Transgrid
- operation of the project will largely be undertaken remotely, however up to ten maintenance personnel are likely to be required to attend the site on a regular basis to perform a variety of maintenance and operational activities.



Paper Size ISO A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
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Preliminary Key Features of the Project

Project No. **12582669**
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Date **08/09/2022**

FIGURE 3.1

Data source: Fibre Optic Easement - Energy Co; NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; Metromap Tile Service: .
Created by: mfredle

3.4 Decommissioning

At the end of its design life or agreed timetable, the batteries would either be disposed of and recycled at approved disposal facilities, or subject to confirmation, could be returned to the original equipment manufacturer for refurbishment and recycling. The land would be rehabilitated to a standard agreed with the landowner, which may include pre-development conditions or other arrangements.

3.5 Alternatives considered

Alternatives to the project are considered at a site level and overall project level and would continue to be developed through the design stages to ensure the design meets best practice requirements and can avoid or minimise identified environmental, social and economic impacts.

The following alternatives have been assessed:

- the “do nothing” approach
- site location alternatives
- battery energy storage technology and provider alternatives.

3.5.1 The “do nothing” approach

The “do nothing” approach would involve not constructing and operating the project at the Munmorah site. Not developing the project at Munmorah (or any alternative site) would not fill the gap in the NEM left by the upcoming closure of Eraring Power Station and therefore not provide the required system security and reliability. The “do nothing” option is therefore considered unacceptable as it would not be consistent with the various Australian and NSW Government policy documents (refer Section 2).

3.5.2 Site location

EnergyCo identified three sites within the former Munmorah Power Station that could be used for development of the project (refer Figure 3.2). The sites considered were:

- Option A, located to the north of the Munmorah Substation
- Option B, located to the west of the Munmorah Substation
- Option C, located to the south of the Munmorah Substation.

Of the three options considered, the chosen project site (i.e. Option C) was selected as the preferred site based on the following considerations:

- The site is relatively flat, cleared and available, has good proximity to existing transmission infrastructure and other key infrastructure, lack of significant environmental constraints (notably heritage and biodiversity), has suitable screening potential and buffer distances to sensitive receivers and land uses and is free from flooding constraints.
- The Option A and Option B sites were both less suitable from a location or a land suitability perspective, considered to have greater flooding, biodiversity, heritage and potential contamination constraints.

EnergyCo is progressing more detailed investigations of the Option C site (preferred site at Munmorah), including commencing environmental impact assessment for development of the project.

3.5.3 BESS technology

EnergyCo is reviewing options for the most suitable battery technology for the project and to meet capacity and other requirements. EnergyCo has commenced a tender process from which the preferred technologies will be selected.

Currently the most feasible option consists of lithium-ion batteries offered in the form of containerised or otherwise enclosed battery arrangements. The layout of the battery energy storage units would be confirmed during the design process.

3.5.4 Site layout

A number of site configuration options are being investigated to determine an optimal layout and taking into consideration areas of existing vegetation, site constraints, adjacent land use and other factors. A preliminary project layout is shown in Figure 3.1. The site configuration options investigated, and the preferred site layout will be documented in the EIS.

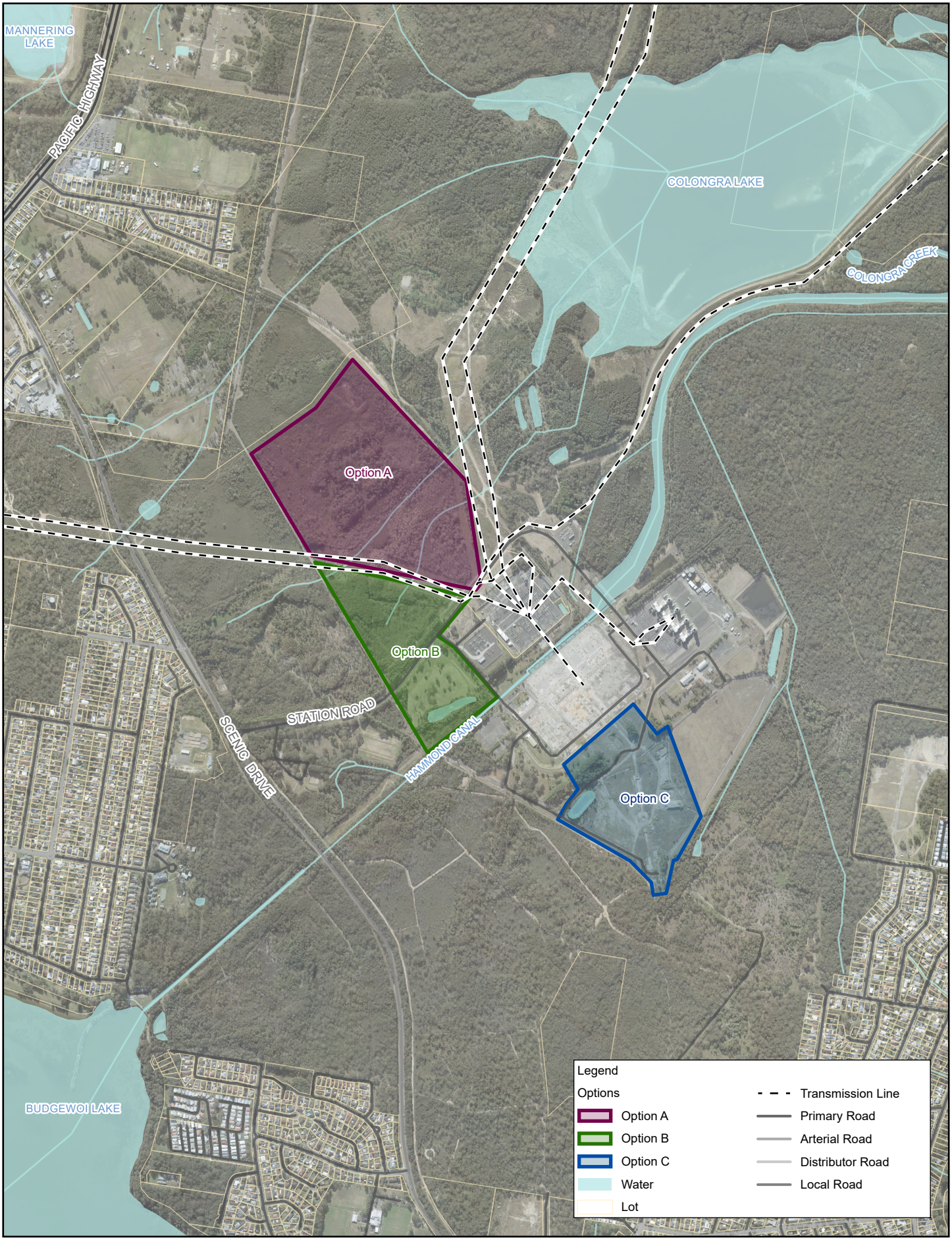
3.6 Project timing

The project is required to be operational in 2024 prior to the closure of the Eraring Power Station. Following attainment of planning approval, construction would commence in early 2023 and take approximately 18 months to complete. The indicative peak construction period for civil works is early to mid-2023 (4-6 months) with noise and dust the most significant impacts. Equipment delivery (and therefore vehicle movements) is expected to peak mid-late 2023 for a period of 4-6 months.

3.7 Strategies to avoid or minimise impacts

The key strategy to avoid or minimise potential impacts principally includes selecting a ‘brownfield’ site which is largely clear of vegetation and other environmental constraints. The strategic location of the project site within the former Munmorah Power Station and the ready availability of existing electricity transmission infrastructure also assist in achieving this strategy.

Being the site of a former power station, remote from adjacent communities and screened by vegetation, the project site also offers advantages in terms of avoiding a number of amenity and social impacts such as visual intrusion, noise, etc.



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Grid: GDA 1994 MGA Zone 56

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Site Location Alternatives

FIGURE 3.2

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Data source: NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; Metromap Tile Service: . Created by: mfredle

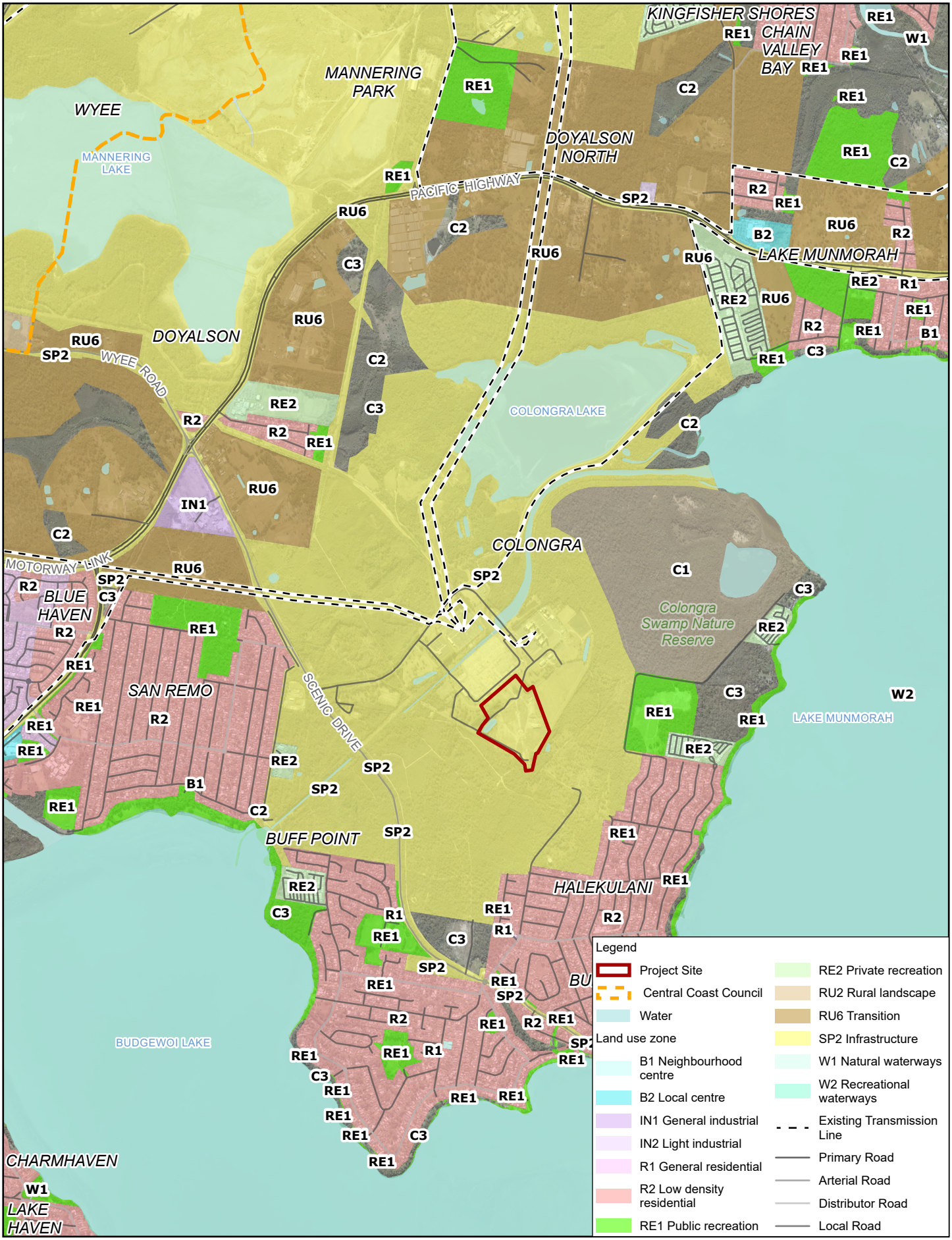
4 Statutory context

The key requirements of the EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (the EP&A Regulation) in relation to the approval and assessment of the project are summarised in Table 4.1.

Table 4.1 Summary of statutory requirements for the project

Matter	Comment
Land use zoning	The project site, and the majority of the wider Munmorah site, is zoned SP2 Infrastructure under Central Coast Local Environmental Plan 2022 (Central Coast LEP) (see Figure 4.1), and *State Environmental Planning Policy (Transport and Infrastructure) 2021* also applies to the site. The identified purpose for the SP2 zone on the Munmorah site is 'electricity generating works', which are permissible with consent under the Central Coast LEP.
Power to grant approval	Given the critical nature of the project in maintaining energy security, supply and affordability for NSW consumers and supporting the delivery of the Roadmap and AEMO's 2022 ISP, EnergyCo has requested that the Minister for Planning declare the project on the Munmorah site to be Critical State Significant Infrastructure (CSSI) in accordance with Division 5.2 of the EP&A Act. The project has been declared Critical State Significant Infrastructure (CSSI) in accordance with Section 5.13 of the EP&A Act and Schedule 5 of the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP). The Minister for Planning is the consent authority, and the project is to be assessed in accordance with the provisions of Division 5.2 of the EP&A Act.
Approvals that should be substantially consistent with approved SSI	Any authorisations under certain legislation, identified in Section 5.24 of the EP&A Act, cannot be refused if it is necessary for carrying out an approved SSI project and is to be substantially consistent with the SSI approval. In relation to the project, these authorisations could include: • an approval under section 15 of the *Mine Subsidence Compensation Act 1961* (repealed by the *Coal Mine Subsidence Compensation Act 2017*) • an environment protection licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* • a consent under section 138 of the *Roads Act 1993*.
Approvals that are not required for approved SSI	An authorisation under certain other legislation, identified in Section 5.23 of the EP&A Act, is not required for approved State significant infrastructure. In relation to the project, these authorisations could include: • a permit under section 201, 205 or 219 of the *Fisheries Management Act 1994* • an approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977* • an Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974* • a bush fire safety authority under section 100B of the *Rural Fires Act 1997* • a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000*.

Matter	Comment
EPBC Act approval	The project is not anticipated to result in a significant impact on any Matters of National Environmental Significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). A referral under the EPBC Act is not expected to be required for the project.
Other approvals	• *Contaminated Land Management Act 1997* • *Biodiversity Conservation Act 2016*
Pre-conditions to exercising the power to grant approval	Critical State significant infrastructure declaration
Mandatory matters for consideration	Section 7.9 of the *Biodiversity Conservation Act 2016* (BC Act) provides that any application under Division 5.2 of the EP&A Act for SSI must be accompanied by a biodiversity development assessment report, unless the Planning Agency Head or the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values. Further information is provided in Section 6.2.



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Land Use

FIGURE 4.1

Data source: Fibre Optic Easement - Energy Co; NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; Metromap Tile Service: .
Created by: mfredle

5 Engagement

5.1 Interest groups identified

EnergyCo has undertaken an initial stakeholder scoping exercise and has identified a number of key interest groups. These include the following:

- State and federal members
- Central Coast Council
- NSW Government authorities including:
  - Department of Premier and Cabinet
  - Subsidence Advisory NSW
  - Department of Planning and Environment (DPE), comprising:
    - Environment Protection Authority
    - Environment and Heritage
    - DPE Water and the Natural Resources Access Regulator
  - Heritage NSW
  - Transport for NSW
  - Rural Fire Service
  - Fire and Rescue NSW
- Energy industry bodies and infrastructure service providers
- Local landowners
- Indigenous groups
- Community groups.

5.2 Early engagement carried out

EnergyCo has commenced stakeholder consultation following the public announcement of the project by the NSW Government. General media releases to date regarding plans to develop the project include the following:

- March 2022 Waratah Super Battery EOI attracts global interest | Energy NSW
- May 2022 Charging up the Waratah Super Battery | Energy NSW.

EnergyCo has established a project website portal which provides information on the project, including progress to date and the next steps Waratah Super Battery | Energy NSW. EnergyCo has also prepared a project information newsletter for distribution to the local community.

EnergyCo has launched a competitive procurement process to identify suitable battery developers (service providers) for the development of the project.

Feedback received by EnergyCo to date has been positive and supportive of the need for the project.

Contact details for 32 registered Aboriginal parties was received via correspondence from the Department of Premier and Cabinet. Newspaper advertisements were placed in local and regional newspapers during July inviting traditional owners to register an interest in the project for the purposes of future consultation.

5.3 Engagement to be carried out

5.3.1 Community and Stakeholder Engagement Plan

A Community and Stakeholder Engagement Plan will be developed for the project which will outline the activities that EnergyCo will undertake to inform and consult the community and other identified key stakeholders. EnergyCo will notify neighbouring property owners and the surrounding community of the lodgement of this Scoping Report and provide a project newsletter and invitation to comment. EnergyCo will also provide project related information on its website.

5.3.2 Potential issues from community and stakeholders

Due to the location and nature of the project, the following concerns are anticipated:

- potential for community impacts or benefits, e.g. employment and economic development, community identity associated with coal fired power and transition to renewable energy sources
- curiosity about how batteries function, concern around safety, emissions and operations
- possible community benefits, lower energy bills
- potential for increased traffic movements during construction and how that could impact the local road network and cause access issues, particularly for residents San Remo, Halekulani and Buff Point accessed off Scenic Drive.

5.3.3 Agency consultation

Agency consultation will be undertaken with the interest groups identified in Section 5.1 and in accordance with the project's Community and Stakeholder Engagement Plan that will be prepared for the EIS. Details of the engagement carried out, and the outcomes of the consultation will be included in the EIS.

6 Proposed assessment of impacts

6.1 Introduction

The identification of issues to be addressed in the EIS has been undertaken through a risk-based approach in accordance with the *State significant infrastructure guidelines – preparing a scoping report* (DPIE, 2021). This process involved reviewing previous reports, undertaking limited investigations (such as site inspections), and desktop searches of proprietary environmental databases to identify key issues and sensitive areas throughout May and June 2022.

A summary of the key environmental matters identified during the risk assessment is provided in Section 6.2 through Section 6.6. Other matters for consideration are identified in Section 6.7. A copy of DPE's Scoping Worksheet is provided in Appendix A. The intent of the discussion is to demonstrate an understanding of the matters and the need for further environmental assessment and mitigation measures for these matters.

6.2 Biodiversity

6.2.1 Existing environment

The project site is predominantly cleared and heavily disturbed from its previous use as the coal stockpile for the former Munmorah Power Station, however small patches of native vegetation are present as well as Slash Pine (*Pinus elliottii*) trees planted by the former owners of the power station.

The project site adjoins Colongra Swamp Nature Reserve to the north-east, which is also listed as a Coastal Wetland under Chapter 2 of the *State Environmental Planning Policy (Resilience and Hazards) 2021.*

Desktop review

A desktop review was undertaken in June and August 2022 to identify potential threatened flora and fauna, populations and ecological communities (threatened biota) listed under the BC Act and EPBC Act. Records of previous studies of the project site undertaken between 2019 and 2021 were also reviewed (Niche, 2020; 2021).

Threatened species database searches

A search of the BioNet Atlas and EPBC protected matters search tool (PMST) was undertaken in June 2022 for the project site using a 5-kilometre radius surrounding the project site. The search of the BioNet Atlas identified 21 threatened ecological communities (TECs) and 61 threatened species known to occur within 5-kilometre of the project site. The search using the PMST identified four TECs, 72 threatened species and 63 migratory species likely or known to occur within 5 kilometres of the project site (refer Appendix B).

Previous studies

Targeted flora and fauna surveys were undertaken for GPM between August 2019 and May 2021 (Niche, 2020; 2021). The surveys were undertaken in accordance with the BC Act and the Biodiversity Assessment Method (BAM) and covered about 183 hectares of the power station site with survey effort largely concentrated on the southern portion of the project site.

The surveys did not identify any threatened flora in the project site. Mapped plant community types (PCTs) in the vicinity of the project site, included (Niche, 2020; 2021):

- PCT 1636: Scribbly Gum - Red Bloodwood – *Angophora inopina* heathy woodland on lowlands of the Central Coast.
- PCT 1724: Broad-leaved Paperbark Swamp Oak - Saw edge swamp forest on coastal lowlands of the Central Coast and Lower North Coast, Sydney Basin and South East Corner bioregions. This PCT is commensurate with the:
  - *Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions,* which is listed as endangered under the BC Act
  - *River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria,* which is listed as critically endangered under the EPBC Act.
- PCT 1737: Typha rushland. This PCT is commensurate *Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*, which is listed as the endangered under the BC Act.
- Three threatened micro-bat species were identified within the project site including (Niche, 2020; 2021):
- East Coast free-tailed Bat (*Micronomus norfolkensis*), listed as a vulnerable species under the BC Act. Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures. Usually solitary but also recorded roosting communally, probably insectivorous.
- Little Bent-winged Bat (*Miniopterus australis*), listed as a vulnerable species under the BC Act. Breeding habitat for this species is a species credit, and any impacts on breeding habitat could be considered potentially serious and irreversible. Breeding habitat may include caves, tunnels, mines or other structures, and the species polygon encompasses the area within 100 metres of identified breeding habitat.
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*), listed as a vulnerable species under the BC Act. Breeding habitat for this species is a species credit, and any impacts on breeding habitat could be considered potentially serious and irreversible. Breeding habitat may include caves, tunnels, mines or other structures, and the species polygon encompasses the area within 100 metres of identified breeding habitat.

Preliminary site inspection

Highly disturbed areas with few native species and high exotic species cover dominate the majority of the project site. However, a preliminary site inspection conducted at the project site on 22 June 2022 and more details surveys during 3 August 2022, identified small patches of native dry and wet sclerophyll vegetation communities. This includes a patch of native vegetation dominated by Smooth-barked Apple (*Angophora costata*) with a low abundance of planted Slash Pine (*Pinus Elliottii*) trees. This patch of vegetation is largely positioned within the far north-western extent of the project site, and directly adjoins onto a wet sclerophyll community. Here, common native species include Sheoak (*Allocasuarina littoralis*), *Xanthorrhoea latifolia*, and Large-leaf Hop-bush (*Dodonaea triquetra*), however mature planted Slash Pine trees dominate canopy stratum. Additionally, the far south-western extent of the project site contains a patch of remnant dry-sclerophyll vegetation dominated by Scribbly Gum (*Eucalyptus haemastoma*), Smooth-barked Apple (*Angophora costata*) and Red Bloodwood (*Corymbia gummifera*). This community may be representative of a less managed example of previously mentioned dry-sclerophyll community. It retains an open canopy structure

and dense understorey comprised of grasses and graminoids. One specimen of Charmhaven Apple (*Angophora inopina*), which is listed as vulnerable under the BC Act and EPBC Act. This specimen was located at the southern end of the project site within a small patch of the above-mentioned native vegetation.

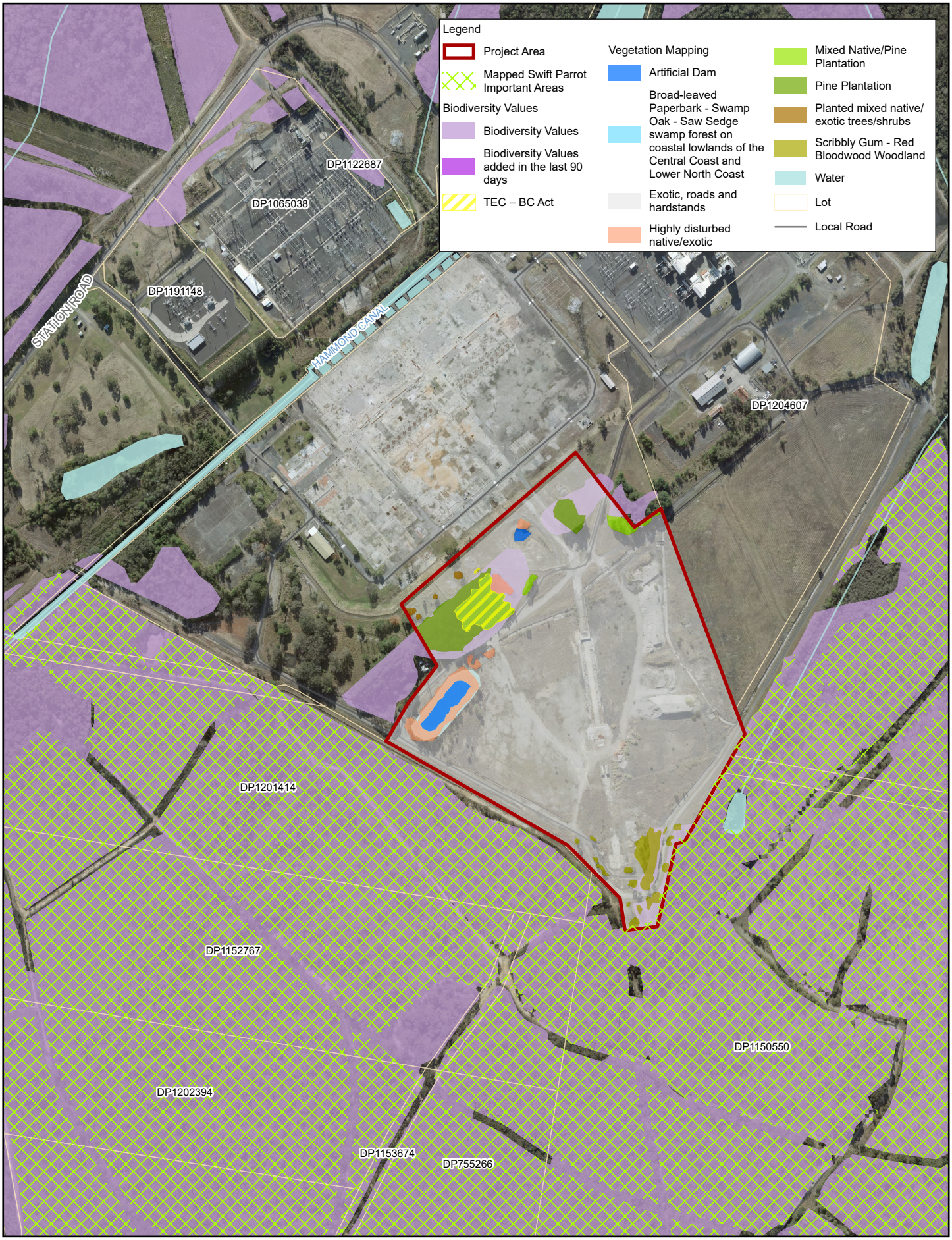
The communities all retain a moderately diverse assemblage of native plant species, particularly in the understorey, and may be representative of regrowth that has established following the cessation of historical management actions. Two patches of low-condition vegetation occurred to the far north of the project site. Planted mature Slash Pine dominate the canopy in either community, however, one patch retains a predominantly native mid and understorey. The secondary patch retains some native species, albeit at a lower abundance. Two of the patches (0.27 hectares) are considered to be commensurate with the *Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*, which is listed as endangered under the BC Act due this the presence of *Melaleuca quinquenervia* (Broad-leaved Paperbark), Cabbage Tree Palm (*Livistona australis*), Black She-Oak (*Allocasuarina littoralis*) and Blady Grass (*Imperata cylindrica* var. *major*), which are considered to be positive indicators of this TEC (Figure 4; DECC, 2007). However, this vegetation is considered to not be commensurate with the threatened ecological community (TEC) *River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria*, which is listed as critically endangered under the EPBC Act, as it does not meet the minimum condition threshold as it is a small patch (<0.5 ha) (DAWE, 2020).

Native vegetation within the project site has the potential to provide habitat for a range of threatened fauna species. This includes foraging habitat for the threatened microbats noted above.

Two small detention basins surrounded by vegetation occurs at the project site. This may provide habitat for fauna species, however, are considered to be highly disturbed with low ecological value.

Areas of remaining vegetation and their type are presented in Figure 6.1 ((approximately 0.59 hectares of native vegetation). The area of each of the mapping units includes approximately:

- 0.16 hectares: Artificial Dam (Non-native vegetation)
- <0.01 hectares: Broad-leaved Paperbark - Swamp Oak - Saw Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast (TEC) (Native vegetation)
- 12.18 hectares: Exotic, roads and hardstands (Non-native vegetation)
- 0.31 hectares: Highly disturbed native/exotic (Non-native vegetation)
- 0.35 hectares: Mixed Native/Pine Plantation (TEC in patches) (Native vegetation)
- 0.43 hectares: Pine Plantation (Non-native vegetation)
- 0.02 hectares: Planted mixed native/exotic trees/shrubs (Non-native vegetation)
- 0.25 hectares: Scribbly Gum - Red Bloodwood Woodland (Native vegetation).



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Map Projection: Transverse Mercator
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Preliminary Ecology Constraints Map

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FIGURE 6.1

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Data source: Swift Parrot - BioNET; NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; Metromap Tile Service: . Created by: mfredle

6.2.2 Potential impacts

Construction

Construction of the project would be on land that is largely cleared of native vegetation, however some small areas of native vegetation would be removed (approximately 0.59 hectares of native vegetation). This would also include 0.27 hectares of *Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*, which is listed as endangered under the BC Act, and one specimen of Charmhaven Apple (*Angophora inopina*), which is listed as vulnerable under the BC Act and EPBC Act.

The removal of vegetation would result in the loss of a small area of foraging habitat for threatened fauna and floras species and a TEC. This, however, no longer includes the loss of an area mapped as important habitat for the Swift Parrot. Impacts to fauna associated with noise and lighting during construction activities have the potential to occur. Noise mitigation measures would be addressed in the EIS.

Being the site of the former power station, it is likely that access to the site is sufficient for heavy vehicle access without any new clearing or construction of access roads being required.

Operation

Operation of the project including the introduction of artificial lighting would be unlikely to have significant impact on biodiversity as lighting would be limited to key areas i.e. administration buildings and be sufficient for security purposes in accordance with relevant Australian Standards.

Decommissioning

It is unlikely that vegetation would be removed during decommissioning of the project. Impacts to fauna associated with noise and lighting during decommissioning would be similar to those during construction. Mitigation measures to reduce noise would be outlined in the EIS. In addition, an environmental management plan would be developed prior to decommissioning that would contain measures to avoid or minimise impacts to biodiversity during decommissioning of the project.

6.2.3 Assessment approach

The biodiversity impacts will be assessed in accordance with section 7.9 of the BC Act and the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR).

The biodiversity assessment will include the following:

- additional site survey, as required, to meet the requirements of the BAM (DPIE, 2020). Where surveys are not able to be conducted in a suitable season, species credit matters would be assumed to be present
- identification and description of the flora and fauna species, habitat, populations and ecological communities that occur, or are likely to occur
- assessment of any direct and indirect impacts of the project on flora and fauna species, populations, ecological communities and their habitats, and groundwater dependent ecosystems
- assessment of impacts prescribed by the Biodiversity Conservation Regulation 2017, and assessment of the potential for serious and irreversible impacts
- assessment of the significance of the impacts of the project on species, ecological communities and populations, and any groundwater dependent ecosystems listed under the Commonwealth EPBC Act and the Fisheries Management Act that occur, or are considered likely to occur

- identification of measures to avoid, minimise and mitigate impacts
- calculation of the number and type of ecosystem and species credits required to offset residual impacts of the project in accordance with the BAM.

6.3 Land – Soils, landform and topography

6.3.1 Existing environment

Soils

The project site is located on the former coal stockpiling area of Munmorah Power Station and has been highly modified from the original landform. The terrain is mostly flat and low lying at an elevation between ten and fifteen metres AHD, slopes are between ten and fifteen percent. There are no significant waterbodies within the project site.

Soils at the site typically comprise of imported fill materials and underlying soils up to three metres deep containing clay, silt, sand, gravel and residual coal.

The north of the project site is mapped as land with potential Class 5 acid sulfate soils (low risk). Development consent is required for the carrying out of works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metre AHD. The project site is more than 1300 metres from any adjacent mapped acid sulfate soils of Class 1, 2, 3 or 4 and therefore development consent is not required.

Mine subsidence district

The project site is located in a designated Mine Subsidence District (Swansea North Entrance). Mining at the site as part of the Munmorah Colliery ceased in 2005. Subsidence Advisory NSW is an approval authority under Part 3 of the *Coal Mine Subsidence Compensation Act 2017*.

Contamination

As well as the former use as the coal stockpile area for the Munmorah Power Station, the project site was also used as a laydown area during the demolition of the power station.

Targeted investigations undertaken at the project site in 2019 identified the presence of potential contaminants of concern associated with above ground hydrocarbon fuel storage to the south of the coal stockpile area. Across the wider Munmorah Power Station site, there is considered to be widespread impact of per- and polyfluoroalkyl substances (PFAS) arising from the use of Aqueous Film Forming Foam within the former Colongra Power Station's firefighting training area. Generally, the concentrations detected in soil, sediment and groundwater were not above screening criteria, with the exception of in the immediate vicinity of the former fire training area (CES 2019). No significant PFAS substances have been identified within the project site.

Areas of potential environmental concern within the project site include:

- western settling basin – A constructed waterbody used for sediment control of the former coal stockpile area
- former coal handling area
- former coal stack area.

The following areas outside the project site may also comprise contaminants of concern:

- former firefighting area to the north of the site
- Munmorah State coal mine site.

Detailed site investigation works are in progress in consultation with the Contaminated Land Site Auditor (appointed by GPM) to further characterise the site and identify any management measures that may be required.

6.3.2 Potential impacts

Construction

There is expected to be limited disturbance of soils during site establishment and excavation for construction of concrete slabs and ancillary buildings. Movement of construction plant over exposed surfaces may lead to erosion and compaction of soils. Stockpiled materials during construction could become mobilised by wind or rain.

It is unlikely that acid sulfate soils would be encountered due to the extent of disturbance and imported fill present at the site. There is the potential to encounter contaminated soils during excavation relating to the sites former use as a coal stockpile area.

There is potential for further contamination of soils during construction from spills of hydrocarbon fuels and chemicals used in construction, although these can be adequately managed through application of standard mitigation measures.

Operation

During operation, there is potential for localised contamination of soils due to maintenance activities or spills which would be addressed via a site operational environmental management plan.

Decommissioning

Impacts to land during decommissioning would be similar to those during construction (e.g. disturbance, erosion and compaction of soils; the potential to encounter contaminated soils; and the potential for localised contamination of soils from spills, etc.). Mitigation measures to avoid or reduce impacts to land would be outlined in the EIS. In addition, an environmental management plan would be developed prior to decommissioning that would contain measures to avoid or minimise impacts to land during decommissioning of the project.

6.3.3 Assessment approach

Investigations conducted to date have identified the presence of contaminants of potential concern both within and adjacent to the project site. For those contaminants tested, they are of acceptable levels for an industrial facility (consistent with the project proposed by EnergyCo), however there are data gaps in the investigations conducted to date.

Following rehabilitation works at the project site to be undertaken by GPM, further characterisation of PFAS and other contaminants of concern such as asbestos, heavy metals and polycyclic aromatic hydrocarbons to support satisfactory management of the site will be undertaken. Groundwater at the site has been previously detected at between four and eight metres below ground level but requires further investigation from a quality perspective to understand whether any impacts from construction are likely in relation to observed hydrocarbon odours (see Section 6.6.1).

As part of a suite of design investigations proposed to be undertaken concurrently with the EIS, a detailed site investigation would be undertaken to inform the potential risks of existing contaminants migrating as a result of construction and operation of the project. The investigation would be carried out in accordance with the *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (NSW EPA 2020), and the *National Environment Protection Measure* (Assessment of Site Contamination) (NEPC 2013). Relevant details of the investigations which relate to existing environmental conditions or have the potential to affect receivers will be documented in the EIS.

Consultation with Subsidence Advisory NSW would be undertaken to confirm any limitations for the project. Approval would be needed from SA NSW to ensure that future infrastructure developed on the site meets appropriate subsidence design criteria.

6.4 Hazards and risks

6.4.1 Existing environment/ potential impacts

Bushfire

The project site is located in a bushfire prone area included in the Wyong LEP (Figure 6.2). The site contains areas mapped both as Vegetation Category 1 and Vegetation Category 2. As such due consideration must be given to the provision of adequate asset protection zones on the site layout to minimise the risk of fire through spatial separation of vegetation and battery infrastructure.

Consultation will be undertaken with all relevant authorities during the EIS stage.

Flooding

The project is not in an area identified by Central Coast Council as within a flood precinct (refer Section 6.6.1). Potential flooding impacts at the project site would be localised and limited to low lying areas and as such, are not expected to require additional investigation in the EIS.

BESS risks

Installation, commissioning, and operation of battery energy storage can present increased hazards associated with overheating, fire, hazardous chemicals and gas emissions.

The design and installation of the battery system will be undertaken in accordance with relevant Australian Standards and guidelines and will be operated in accordance with the manufacturers requirements. Appropriate fire suppression apparatus and installations would be incorporated into the design.

A site operational management plan will be prepared by the service provider detailing information regarding procedures to be implemented in the event of a fire. Consultation will be undertaken with relevant authorities during the EIS stage.

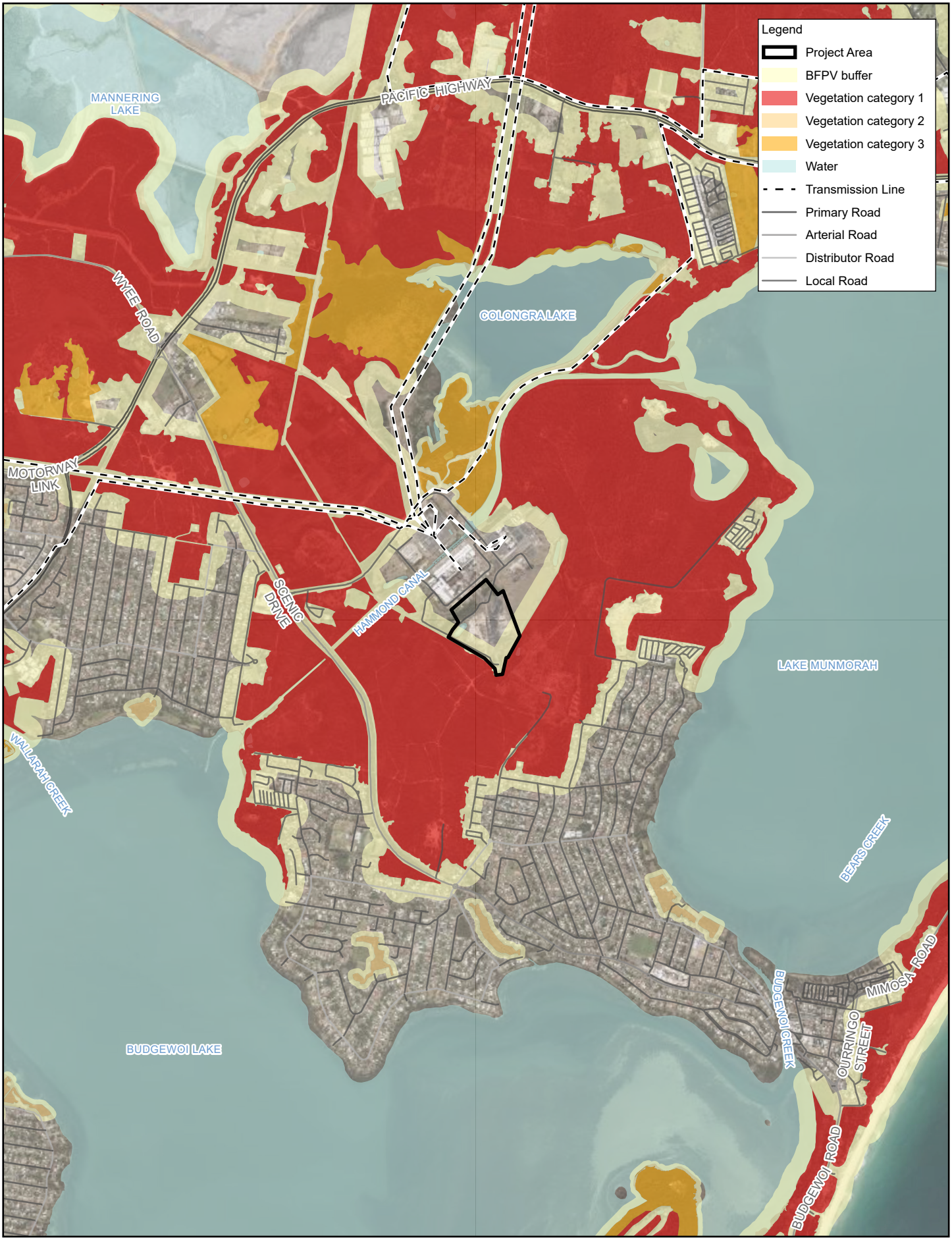
Electromagnetic radiation

Electricity powerlines, substations, transformers and other electrical sources such as common electrical appliances and wiring, all emit electric and magnetic fields (EMF). The Australian Radiation Protection and Nuclear Safety Agency (ARPNSA) considers that for substations and transformers, the magnetic fields at distances of five to ten metres away are generally indistinguishable from typical background levels in the home.

Overhead transmission line connections from the project to the switchyard would generate EMF. However as the project site is a controlled site and entry would be limited to authorised personnel trained in these hazards and hazard avoidance, human health risks from EMF are unlikely.

Waste management and disposal

The project is not expected to generate a large volume of surplus spoil requiring disposal during construction and other construction waste streams are likely to be standard with well-known management options. Appropriate storage, handling and management of wastes will be important to minimise potential impacts to the environment. Opportunities for reuse and recovery of key waste streams would be identified and documented in the Construction and Operational Environmental Management Plans for the project.



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Map Projection: Transverse Mercator
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Bushfire Prone Land

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FIGURE 6.2

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12582669_Scoping_005_Bushfire_final
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Data source: Waterways - DFSI, 2022; Roads, Railways - DCS, 2022; Bushfire Prone Land - RFS, 2022; NSW_Imagery: © Department of Customer Service 2020.
Created by: mfredle

Decommissioning

Hazards and risks during decommissioning would be similar to those during construction and may include an increased potential for bushfire and the generation of waste. Mitigation measures to avoid or reduce hazards and risks would be outlined in the EIS. In addition, an environmental management plan would be developed prior to decommissioning that would contain measures to avoid or minimise hazards and risks during decommissioning of the project.

6.4.2 Assessment approach

A preliminary hazard assessment and a bushfire risk assessment would provide sufficient information and assessment of identified risks to conclude that the residual risk levels are acceptable in relation to the surrounding land use and that risks can be appropriately managed.

6.5 Amenity – Noise and vibration

6.5.1 Existing environment

The area surrounding the project site has ambient noise levels typical of a suburban area. The nearest residential sensitive receivers are located about 600 metres southeast of the project site in the suburb of Halekulani. Other nearby residential suburbs include:

- Buff Point located about one kilometre to the southwest of the project site
- San Remo located about 1.2 kilometres west of the project site
- Doyalson located about two kilometres northwest of the project site.

A previous noise assessment undertaken in the area (Wilkinson Murray 2005) indicated the dominant noise sources within the surrounding suburbs include road traffic and local fauna.

Existing noise sources at the project site include the operation of the Colongra Power Station located directly north-east of the project site.

6.5.2 Potential impacts

Construction

During construction, the project has the potential to generate noise from a variety of sources including:

- Site establishment and earthworks
- Movement of heavy and light vehicles to and from the project site (construction traffic)
- Loading and unloading of materials and waste
- Construction of ancillary facilities
- Concrete pouring activities.

Noise and vibration impacts would be short-term and temporary during construction and limited to within the proposed working hours (see Section 3.2).

Operation

Key noise generating sources would include:

- Battery enclosures with associated cooling fans and inverters.
- Transformers.
- A singular battery unit is relatively quiet however when a significant number of units are required, then cumulatively the noise generated can become significant. As the requirement for battery cooling increases so too does the noise emissions from the cooling fans.

There are also existing noise emissions from the Colongra Power Station that would need to be considered cumulatively as per the requirements of the Noise Policy for Industry (EPA, 2017).

Decommissioning

Noise generated during decommissioning would be similar to noise generated during construction (e.g. movement of heavy and light vehicles, loading and unloading of materials and waste, removal of facilities, etc.) and would be short-term and temporary, and limited to within the proposed working hours. Mitigation measures to avoid or reduce noise impacts would be outlined in the EIS. In addition, an environmental management plan would be developed prior to decommissioning that would contain measures to minimise noise during decommissioning of the project.

6.5.3 Assessment approach

The EIS will include an assessment of the potential noise and vibration impacts of the project with reference to the *Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline (Department of Environment, Climate Change and Water 2019)* and NSW *Road Noise Policy* (DECCW, 2011).

The EIS would include an assessment of operational noise from all sources on the site, including a cumulative assessment of noise from the Colongra Power Station.

6.6 Water – Hydrology and water quality

6.6.1 Existing environment

Surface water and flooding

Located about 320 metres to the north of the project site is Hammond Canal, a constructed channel that drains into Lake Munmorah from Budgewoi Lake (Figure 6.3). Sections of the canal are identified as high flooding hazard, flood storage and flood planning areas and floodway, as are the lakes themselves. No flooding constraints are identified as being nearby or occupying any part of the project site. Colongra swamp is located about 650 metres north-east of the project site. It is listed as an important coastal wetland under Chapter 2 of the *State Environmental Planning Policy (Resilience and Hazards) 2021.*

To the north-west of the project site is a settling basin, constructed as a sediment control structure for the former coal stockpile area. This settling basin discharges into a constructed drainage channel that runs east to the perimeter of the site. There is an unnamed natural drainage line that runs to the southeast boundary of the project site which is reported to be generally dry.

Groundwater

A search of the Bureau of Meteorology Australian groundwater explorer database identified 42 groundwater bores located within the project site. Investigation of these groundwater bores indicates that groundwater levels were recorded at levels between four and eight metres below ground level. It was also noted that hydrocarbon fuel odours were present in groundwater samples (CES, 2019).

6.6.2 Potential impacts

Construction

Construction activities such as excavation for services and installation of ground slabs have the potential to impact surface water flow patterns across the project site. Temporary stockpiling of materials and spoil could result in mobilised sediments into drainage lines impacting water quality.

Excavation is considered unlikely to reach the depth of recorded groundwater levels and therefore impacts from construction of the project is also unlikely. Excavation could encounter contaminated soils or materials which have the potential to become mobilised.

Both existing infrastructure and proposed construction sediment controls are likely to be satisfactory to control potential movements of surface water and soils such that impacts beyond the project site are unlikely.

Operation

Infrastructure for the project would include the BESS system and ancillary facility buildings and would likely increase the area of impermeable surfaces on the project site. While this has potential to result in increased surface flows, existing water management infrastructure is expected to be sufficient to manage these increases in surface flows.

Decommissioning

Impacts to water quality during decommissioning would be similar to those during construction (e.g., potential to impact surface water flow patterns across the project site, temporary stockpiling of materials and spoil could result in mobilised sediments into drainage lines impacting water quality, excavation could encounter contaminated soils or materials which have the potential to become mobilised, etc.). Mitigation measures to avoid or reduce water quality impacts would be outlined in the EIS. In addition, an environmental management plan would be developed prior to decommissioning that would contain measures to avoid or minimise water quality impacts during decommissioning of the project.

6.6.3 Assessment approach

Assessment of the potential impacts to surface water and groundwater would require assessment in the EIS and would include:

- sampling of groundwater (as part of design investigations) and assessment of the potential for contaminant mobilisation either as part of the groundwater or associated with disturbance of contaminated soils
- a general strategy for the collection and management of stormwater, including connection to the existing stormwater drainage system
- identification of appropriate water quality controls to address potential pollutants mobilised from site.

Paper Size ISO A4

0 1

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD

Energy Co
Waratah Super Battery Technical Advisor
Scoping Report

Water Features

Project No. **12582669**
Revision No. **0**
Date **08/09/2022**

FIGURE 6.3

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12582669_Scoping_004_Water_final
Print date: 08 Sep 2022 - 16:15

Data source: NPWS Reserves, Waterways - DFSI, 2022; Crown Land, Roads, Railways - DCS, 2022; NSW_Imagery: © Department of Customer Service 2020
World Street Map: Esri, HERE, Garmin, NGA, USGS. Created by: mfredle

6.7 Other matters

This section provides an overview of other environmental matters for those environmental aspects that, based on existing information and description of the project, would require limited or no further assessment in the EIS.

Table 6.1 Summary of relevant information for issues other than key issues for the project

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
Access – Traffic	Access to the project site is via Station Road which is a local road controlled by Central Coast Council providing access only to Munmorah Power Station. Station Road is accessed from Scenic Drive (Central Coast Highway) which is a single carriageway undivided state road with a speed limit of 70 kilometres per hour.	Construction of the project would require the transport of construction materials, plant and heavy equipment to the site by road, although the nature of the development would not require a large workforce. By virtue of the former activities at the site, wide roads suitable for navigation by heavy vehicles is also likely to exist. Operation of the project (operational and maintenance aspects) would be unlikely to require a large number of site workers and would not impact the capacity of local roads.	Standard. The EIS would provide additional details on the proposed size of the construction workforce, forecast construction traffic volumes and a qualitative assessment of the impacts of these additional movements during construction and operation. Where required, consultation with Transport for NSW, key stakeholders and Central Coast Council will be undertaken as part of the traffic and transport assessment for the EIS.
Amenity – Visual	The project site is surrounded on all sides by land associated with the former power station. The landscape character of the area is defined by its bushland setting. The wider area surrounding the project site is primarily residential with areas of conservation to the northeast comprising bushland and wetlands. Smaller recreational areas are scattered within nearby residential areas. The elevation of the site ranges from about ten metres to fifteen metres AHD. The project site is screened by the perimeter vegetation.	The surrounding suburbs of Halekulani, Budgewoi, Buff Point and San Remo are between 600 metres and 1200 metres distant at an elevation ranging between 19 metres to 34 metres AHD. It is assumed that the trees/bushland that surround the project site are between 20 metres to 30 metres tall and it is therefore unlikely that the project (including associated transmission infrastructure at a maximum assumed height of either 35 metres or 45 metres) would be visible from nearby residences. Construction of the project is therefore unlikely to result in impacts to the landscape character and visual amenity of	Standard. The EIS would include a viewshed map confirming that the project would not be visible from surrounding areas. Commentary would also be provided regarding the potential impact from night lighting along with details of measures to mitigate and/or manage potential impacts.

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
		sensitive receivers within the suburbs of Halekulani, Budgewoi, Buff Point and San Remo. Similarly, operation of the project is unlikely to result in impacts to the landscape character and visual amenity of sensitive receivers within the suburbs of Halekulani, Budgewoi, Buff Point and San Remo.	
Aboriginal cultural heritage	The project site is located on land of the Darkinjung Local Aboriginal Land Council area. A preliminary search of the Aboriginal Heritage Information System (AHIMS) database was undertaken on 3 June 2022 to identify known areas of Aboriginal significance in proximity to the project site. The search identified no items of Aboriginal heritage listed within 200 metres of the project site. Previous investigation undertaken (Heritage Concepts 2005) confirmed two previously listed artefact scatters 1.6 kilometres to the north-west of the project site and an additional three isolated artifacts.	The site is heavily disturbed and comprises imported fill materials. Prior to approval being granted for the project, Generator Property Management would also be further disturbing the site (ripping and mixing the soils) as part of approved rehabilitation activities. Therefore, the likelihood of occurrence of Aboriginal items is considered minimal. No impact to items or places of Aboriginal significance is anticipated during operation of the project.	Standard. A due diligence assessment would be provided in the EIS in accordance with the standards outlined by Heritage NSW and the standards and protocols defined in the ICOMOS 'Burra Charter' The Darkinjung Local Aboriginal Land Council would be notified and consulted. . These details would be documented in the consultation chapter of the EIS. Consultation would continue with the Darkinjung Local Aboriginal Land Council during the EIS.
Historic heritage	A desktop search of the relevant NSW and Commonwealth heritage databases, and the Central Coast Local Environment Plan was undertaken in June 2022 for items of historic heritage. The search did not identify any heritage items within two kilometres of the project site.	Owing to the historical usage of the site, construction and operation of the project would not result in direct or indirect impact to known items of historic heritage	NA
Air quality and greenhouse gases	The air quality in the central coast is generally good. Sources of air pollutants are likely to be from two facilities located within a two-kilometre radius from the project.	Excavation has the potential to generate dust resulting in short term, localised impacts to air quality during construction. The operation of construction machinery has the potential to generate emissions to air from vehicle, plant, and equipment exhausts. These emissions are considered to be negligible. Greenhouse gas would be limited to emissions associated with construction.	Standard. A qualitative air quality and greenhouse gas assessment would be undertaken.

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
Social	The project site is located within the former Munmorah Power Station and adjacent to the existing Colongra Power Station in the suburb of Colongra. The closest residential areas are in the western portion of Halekulani approximately 600 metres from the project site. There is also a retirement village located approximately 700 metres from the site area on the shore of Lake Munmorah. There are two recreational facilities located close to the project site. This includes the Koala Park recreational area which includes a sports field, two tennis courts and a disc golf course, located approximately 400 metres southwest of the project site. Colongra Swamp Nature Reserve offers bushwalking, fishing and birdwatching, it is located approximately 650 metres from the project site on the north-eastern edge of the suburb along Lake Munmorah. Nearby waterways include Hammond Canal, Lake Munmorah, Colongra Creek, and Lake Colongra.	The initial evaluation of social impacts (refer Appendix B for details) found there would be minor or no social impacts that have the potential to occur during the construction of the project. This is because the site is located more than 600 metres from the nearest residential areas and 400 metres from the Koala Park recreation area. The site is separated from these areas by vegetation; therefore construction and operation activities are unlikely to disturb most community members.	Standard. A social impact assessment (commensurate with the nature and location of the project) would be prepared in accordance with the Social Impact Assessment Guideline for State Significant Projects (DPIE 2021).

6.8 Cumulative impacts

Cumulative impacts of the project would be assessed in the EIS. The assessment would focus on the projects key issues that have the potential to generate cumulative impacts with other projects in the vicinity which are likely to have concurrent construction and/or operational timeframes.

A search of the DPE Major Projects database was undertaken on 5 September 2022 to identify SSD and SSI projects within the vicinity of the project that may be relevant for the EIS cumulative impact assessment. These projects are outlined in Table 6.2.

Table 6.2 Relevant existing/future projects for cumulative impact assessment

Project	Assessment stage	Relevance
St Philip's Christian College Charmhaven (SSD-14082938)	Prepare EIS	The St Philip's Christian College project is about 5.6 kilometres southwest of the project site and proposes the construction of a new school for 1,500 students. There is potential for the two projects to be constructed concurrently.
Chain Valley Colliery Consolidation Project (SSD-17017460)	Prepare EIS	The Chain Valley Colliery Consolidation project is about 5.6 kilometres north of the project site and proposes to consolidate the Chain Valley Colliery and Mannering Colliery consents, align extraction and production rates and extend the approved mining area. There is potential for the two projects to be constructed concurrently
Colongra Power Station Mod 4	Determination	The Colongra Power station is about 490 metres northeast of the project site. It was approved in 2006 with four modifications approved since, modification 4 the most recent approval in July 2022. The modification approved the amendment for emergency exceedance of air emission limits.

The project may generate cumulative noise and traffic impacts with the St Phillip's Christian College Charmhaven Project (SSD-14082938) and the Chain Valley Colliery Consolidation Project (SSD-17017460) identified in Table 6.2. The noise and traffic assessments would include consideration of cumulative impacts, and these would be summarised in the EIS in accordance with the Cumulative Impacts Assessment Guidelines for State Significant Projects (DPIE, 2021).

7 References

AEMO 2022, *Integrated System Plan*, Australian Energy Market Operator, 30 June 2022

CES 2019, Preliminary Site Investigation Former Munmorah Power Station 301 Scenic Drive, Doyalson, NSW, Consulting Earth Scientists

DAWE 2020, *Conservation Advice for the River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria*. Dec 2020. Canberra: Department of Agriculture, Water and the Environment. Department of Agriculture, Water and the Environment

DECC 2007, *Swamp Sclerophyll Forest on Coastal Floodplains*, Department of Environment and Climate Change

DECCW 2009, *Interim Construction Noise Guideline*, Department of Environment and Climate Change and Water

DECCW 2011, *NSW Road Noise Policy*, Department of Environment, Climate Change and Water

Delta Electricity 2013, Review of Environmental Factors Munmorah Power Station Coal Stockpile Rehabilitation, Delta Electricity

DPIE 2020, *Biodiversity Assessment Method*, Department of Planning, Industry and Environment

DPE 2021, Social Impact Assessment Guideline for State Significant Projects, Department of Planning and Environment

DPIE 2021*, Scoping an Environmental Impact Statement Guideline* (DPIE, 2021).

DPIE 2021, *State Significant Infrastructure Guidelines*, Department of Planning, Industry and Environment

EPA 2017, *Noise Policy for Industry*, Environment Protection Authority

Niche 2020, *Targeted flora and fauna survey. Munmorah Power Station*. July 2020. Report prepared for Generator Property Management Pty Ltd.

Niche 2021, *Targeted flora and fauna surveys of conservation area. Munmorah Power Station*. May 2021. Report prepared for Generator Property Management Pty Ltd.

NEPC 1999, National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council

Wilkinson-Murray 2005, *Munmorah Gas Turbine Facility Noise Assessment*, Wilkinson Murray Pty. Limited

Appendix A

Scoping summary table

Level of assessment	Matter	Cumulative impact assessment?	Engagement	Relevant government plans, policies, and guidelines	Scoping report reference
Standard	Biodiversity	No	General	• Biodiversity Assessment Method (Department of Planning, Industry and Environment 2020) • Developments adjacent to NPWS lands: Guidelines for consent and planning authorities (National Parks and Wildlife Service, Department of Planning Industry and Environment 2020)	Section 6.2
Standard	Land - Soils, landform and topography	No	General	• National Environment Protection (Assessment of Site contamination) Measure (National Environment Protection Council 2011) • Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (Environment Protection Authority 2015) • Surface Development Guideline 2 – Potential subsidence risk non-active workings (Subsidence Advisory NSW, 2018)	Section 6.3
Standard	Hazards and risks	No	General	• Planning For Bushfire Protection (NSW Rural Fire Service 2019) • Assessment Guideline: Multi-Level Risk Assessment (Department of Planning and Infrastructure, 2011). • Waste Classification Guidelines Part 1: Classifying Waste (NSW Environment Protection Authority, 2014) • Guidelines for the Assessment and Management of Groundwater Contamination (NSW Environment Protection Authority 2007) • NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (NSW Environment Protection Authority, 2014)	Section 6.4
Standard	Amenity – Noise and vibration	Yes	General	• Noise Policy for Industry (Environment Protection Authority 2017) • Interim Construction Noise Guideline (Department of Environment, Climate Change and Water 2019) • NSW Road Noise Policy (Guideline (Department of Environment, Climate Change and Water 2011) • Assessing vibration: A technical guideline (Department of Environment, Climate Change and Water 2006)	Section 6.5

Level of assessment	Matter	Cumulative impact assessment?	Engagement	Relevant government plans, policies, and guidelines	Scoping report reference
Standard	Water – Hydrology and water quality	No	General	• Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom 2004) • Australian and New Zealand guidelines for fresh and marine water quality (ANZECC & ARMCANZ 2000) • Acid Sulfate Soils Assessment Guidelines (Acid Sulfate Soils Management Advisory Committee, 1998) • Guidelines for Groundwater Protection in Australia	Section 6.6
Standard	Access –Traffic	Yes	General	• Guide to traffic management Part 12: Integrated Transport Assessments for Developments (Austroads 2020)	Section 6.7
Standard	Amenity – Visual	No	General	• Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (Institute of Environmental Management and Assessment 2013)	Section 6.7
Standard	Aboriginal cultural heritage	No	Specific (with LALC)	• Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (Office of Environment and Heritage 2011) • Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water 2010)	Section 6.7
No further assessment	Historic heritage	No	General	• Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Branch of the Department of Planning 2009)	Section 6.7
No further assessment	Air quality	No	General	• Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2016)	Section 6.7
Standard	Social	No	General	• Social Impact Assessment Guideline and the Social impact Assessment Guideline: State Significant projects (Department of Planning, Industry and Environment 2021)	Section 6.7

Appendix B

Supporting information

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 08-Sep-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	94
Listed Migratory Species:	80

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	13
Commonwealth Heritage Places:	None
Listed Marine Species:	103
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	5
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	20
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche eremita			
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
FISH			
Epinephelus daemelii			
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Hippocampus whitei			
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Prototroctes maraena			
Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Seriolella brama			
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii			
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heleioporus australiacus			
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Litoria aurea			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes balbus			
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Uperoleia mahonyi			
Mahony's Toadlet [89189]	Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Acacia bynoeana			
Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat known to occur within area	In feature area
Angophora inopina			
Charmhaven Apple [64832]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caladenia tessellata			
Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat known to occur within area	In feature area
Corunastylis insignis			
Wyong Midge Orchid 1, Variable Midge Orchid 1 [84692]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Corunastylis sp. Charmhaven (NSW 896673)			
Wyong Midge Orchid 2 [86263]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cynanchum elegans			
White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus parramattensis subsp. decadens Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area	In buffer area only
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat known to occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area	In feature area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Rhodomyrtus psidioides](#) Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Rutidosis heterogama](#) Heath Wrinklewort [13132]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Syzygium paniculatum](#) Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Tetratheca juncea](#) Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Thelymitra adorata](#) Wyong Sun Orchid [84724]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
[Thesium australe](#) Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus			
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea			
Sooty Shearwater [82651]		Breeding known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In buffer area only
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Breeding likely to occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
[Carcharhinus longimanus](#) Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dugong dugon](#) Dugong [28]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In buffer area only
Migratory Terrestrial Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
[Calidris alba](#) Sanderling [875]		Roosting known to occur within area	In buffer area only
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
[Charadrius bicinctus](#) Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Charadrius mongolus](#) Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
[Gallinago megala](#) Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
[Gallinago stenura](#) Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
[Limosa limosa](#) Black-tailed Godwit [845]		Roosting known to occur within area	In buffer area only
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [16105]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [11715]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11714]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [11718]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11719]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11716]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11731]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11757]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [12246]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11713]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11717]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11749]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Director of War Service Homes [11712]	NSW	In buffer area only

Listed Marine Species

[Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Breeding known to occur within area	In buffer area only
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area	In buffer area only
Ardenna tenuirostris as Puffinus tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris alba Sanderling [875]		Roosting known to occur within area	In buffer area only
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Thalassarche bulleri			
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov.			
Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri			
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta			
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita			
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Tringa brevipes as Heteroscelus brevipes](#) Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In feature area
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
[Xenus cinereus](#) Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area	In buffer area only
Fish			
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
[Festucalex cinctus](#) Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
[Filicampus tigris](#) Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
[Hippichthys penicillus](#) Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
[Hippocampus abdominalis](#) Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
[Hippocampus whitei](#) White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Trachyrhamphus bicoarctatus](#) Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
[Urocampus carinirostris](#) Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
[Vanacampus margaritifer](#) Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
[Arctocephalus forsteri](#) Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
[Arctocephalus pusillus](#) Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
[Dugong dugon](#) Dugong [28]		Species or species habitat may occur within area	In buffer area only
Reptile			
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Sousa sahulensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Bird Island	Nature Reserve	NSW	In buffer area only
Colongra Swamp	Nature Reserve	NSW	In buffer area only
Lake Macquarie	State Conservation Area	NSW	In buffer area only
Munmorah	State Conservation Area	NSW	In buffer area only
Wyrrabalong	National Park	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status

Wetland Name	State	Buffer Status
Budgewoi Lake Sand Mass	NSW	In buffer area only
Colongra Swamp	NSW	In buffer area only
Tuggerah Lake	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Caravan Park & Lifestyle Living	2022/09220		Assessment	In buffer area only
Controlled action				
Residential subdivision	2007/3411	Controlled Action	Post-Approval	In buffer area only
Subdivide and Develop	2008/4419	Controlled Action	Post-Approval	In buffer area only
Subdivision and Urban Development at Gwandalan and Catherine Hill Bay	2012/6382	Controlled Action	Post-Approval	In buffer area only
Wallarah 2 Coal Project	2012/6388	Controlled Action	Post-Approval	In buffer area only
Wallarah 2 Coal Project	2007/3881	Controlled Action	Completed	In buffer area only
Not controlled action				
construction of additional coal handling facilities at the Wyee Rail Unloader	2004/1364	Not Controlled Action	Completed	In buffer area only
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Magenta Shores Integrated Tourist Facility and golf course	2003/995	Not Controlled Action	Completed	In buffer area only
Mandalong Mine Power Line, Mandalong, NSW	2018/8321	Not Controlled Action	Completed	In buffer area only
Myuna Colliery extension of underground mining	2011/5956	Not Controlled Action	Completed	In buffer area only
Wallarah Peninsula Residential development	2004/1490	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Magenta Shared Pathway Stage 2, NSW	2017/7926	Not Controlled Action (Particular	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
		Manner)		
Multipurpose Centre Dora St Lot 122 DP 881828 Morisset	2003/1084	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Residential Development Subdivision	2011/5953	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only
Mine Modification	2010/5442	Referral Decision	Completed	In buffer area only
Morisset Event Space BDAR	2022/9173	Referral Decision	Referral Publication	In buffer area only
Residential Subdivision Dickson Road Lots 231 & 233 DP755271	2003/1105	Referral Decision	Completed	In buffer area only

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In buffer area only
Seabirds			
Ardenna grisea			
Sooty Shearwater [82651]	Foraging	Likely to occur	In buffer area only
Ardenna pacifica			
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur	In buffer area only
Ardenna tenuirostris			
Short-tailed Shearwater [82652]	Foraging	Likely to occur	In buffer area only
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Foraging	Known to occur	In buffer area only

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Hunter	Northern Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

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Social Impact Assessment (SIA) Worksheet

Project name: Waratah Super Battery

Date:

CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
							Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its:						What methods and data sources will be used to investigate this impact?				
what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	**extent** i.e. number of people potentially affected?	**duration** of expected impacts? **(i.e. construction vs** operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?	Level of assessment for each social impact	Secondary data	Primary Data - Consultation	Primary Data - Research	Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
Categories in SIA guideline	Free text	Positive Negative	Yes - this project, Yes - other project, No	Free text	Combined Cumulative Combined and Cumulative No Unknown N/A		Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Yes No Unknown	Detailed, Standard, Minor, Nothing further on this impact	Free Text			Yes No	Free Text
way of life	Potential for changes to local amenity (e.g. noise, dust, vibration and visual changes) that may result from construction activities. However the site is more than 500m from residential areas, which reduces the likelihood that most local residents would be impacted during construction. While residents of a nearby retirement village would be considered more vulunerable to changes such as noise, vibration, and dust, the retirement village is located approximately 700m from the proposal site, reducing the likelihood that residents would be affected. Koala Park recreation area is located around 400 metres of the proposal site on Koala Street which is off Station Road, the main access road to the proposal site. Some users may hear construction activities at times however this is not expected to deter most users.	Negative	Yes - other project	Potential impacts to local amenity resulting from construciton activities and resulting impacts to communities' way of life are generally well understood due to investigations on the majority of major projects.	Unknown	N/A	No	No	No	No	No	Not relevant	Required	Limited - if required	Not required	No	Changes to local amenity during construction are expected to be relatively localised and would be assessed in the EIS by studies such as noise and vibration, air quality, and landscape and visual assessments. These studies are all expected to recommend appropriate mitigation impacts to local communities way of life. The Construction Environemnt Management Plan (CEMP) would include a communication management plan to manage impacts to local communities.
access	Increased construction traffic and changed access to the proposal site may lead to minor delays for people travelling along haulage routes (e.g. Scenic Drive). These changes are not expected to be noticable to most road users. Increased construction traffic may be noticeable for users of Koala Park recreation area however this is not expected to deter most users.	Negative	Yes - other project	Potential traffic and access changes resulting from construciton activities and resulting impacts to communities' access are generally well understood due to investigations on the majority of major projects.	Unknown	N/A	No	No	No	No	No	Not relevant	Required	Limited - if required	Not required	No	Changes to access and connectivity are expected to be relatively localised and would be assessed in the traffic and transport assessment prepared for the project. This study would recommend appropriate mitigation measures which are expected to manage impacts to access and connectivity for local communities.
livelihoods	Potential for local and regional businesses to participate in procurement opportunities during construction. Local businesses may also benefit from construction workers spending money at local businesses, such as food outlets located in nearby suburbs such as Budgewoi. Potential procurement opportunities may be viewed as important to regional businesses.	Positive	Yes - other project	Potential economic benefits of construction projects are generally well understood and qualitatively assessed in investigations for most major projects.	Unknown	N/A	No	No	No	No	Unknown	Minor	Required	Limited - if required	Unknown	No	Impact will not be assessed in other studies, and will be assessed at a high level in an SIA if required. Local communities may be interested in local business opportunities.
livelihoods	Increased demand for skilled and unskilled workforce during construction and operation of the proposal, which may lead to increased temporary employment opportunities for local and regional workforce during construction. Broader community members and stakeholders are likely to have a minor to moderate level of interest in local employment opportunities.	Positive	Yes - other project	Potential employment benefits of construction projects are generally well understood and qualitatively assessed in investigations for most major projects.	Unknown	N/A	No	No	No	No	Unknown	Minor	Required	Limited - if required	Unknown	No	Impact will not be assessed in other studies, and will be assessed at a high level in an SIA if required. Local communities may be interested in local employment opportunities.
way of life	There would be visual changes for some surrounding communites with views of the existing infrastructure, however this is likely to be considered an improvement for most community members. Operational noise and vibration impacts are not expected to be noticeable or disturb most community members.	Negative	Yes - other project	Potential impacts to local amenity resulting from operation activities and resulting impacts to communities' way of life are generally well understood due to investigations on the majority of major projects.	No	N/A	No	Yes	No	No	No	Not relevant	Required	Limited - if required	Not required	No	Changes to local amenity during operation such as visual, noise and vibration changes are expected to be relatively localised and would be assessed in the EIS by studies such as noise and vibration, and landscape and visual assessments. These studies are expected to recommend appropriate mitigation measures which would assist to manage impacts to local communities way of life. A stakeholder engagement strategy would assist to communicate to local communities how potential impacts would be managed.
access	There may be minor traffic generated by operation of the proposal but this is not expected to be noticeable.	Negative	Yes - other project	Potential traffic and access changes resulting from operation activities and resulting impacts to communities' access are generally well understood due to investigations on the majority of major projects.	No	N/A	No	Yes	No	No	No	Not relevant	Required	Limited - if required	Not required	No	Changes to access and connectivity are expected to be relatively localised and would be assessed in the traffic and transport assessment prepared for the EIS, which would recommend appropriate mitigation measures.
INSERT NEW ROWS ABOVE THIS ROW																	

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