New England Renewable Energy Zone Transmission Project

Application Number: **02449** Commencement Date: **11/06/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

New England Renewable Energy Zone Transmission Project

1.1.2 Project industry type *

Energy Generation and Supply (non-renewable)

1.1.3 Project industry sub-type

Transmission Line

1.1.4 Estimated start date *

01/08/2027

1.1.4 Estimated end date *

01/08/2127

1.2 Proposed Action details

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

Energy Corporation of NSW (EnergyCo) is seeking approval for the construction and operation of the New England Renewable Energy Zone (REZ) network infrastructure project (the proposed action). The proposed action involves the construction and operation of new high voltage electricity transmission infrastructure including around 290 kilometres (km) of 500 kilovolt (kV) transmission line, 25 km of 330 kV transmission line, five energy hubs and associated ancillary infrastructure that is required to connect renewable energy generation and storage projects within the New England REZ to the existing electricity network near Muswellbrook. The Project intersects seven local government areas (LGAs): Singleton, Muswellbrook Shire, Upper Hunter Shire, Tamworth Regional, Walcha Shire, Uralla Shire and Armidale Regional.

The proposed action comprises the following key features:

- new transmission infrastructure including new dual 500 kilovolt (kV) transmission lines and associated infrastructure to connect the New England REZ to the National Electricity Market (NEM) south of Muswellbrook NSW; and new single and dual 500 kV and 330 kV lines to connect to the proposed energy hubs within the New England REZ
- five energy hubs to connect future energy generation and storage projects within the New England REZ to the new 500 kV transmission infrastructure and a northern connection to link the North Hub with the existing 330 kV transmission line
- extension of the existing substation at Bayswater Power Station to connect the 500 kV transmission lines to the NEM
- ancillary infrastructure to support the proposed action, including:
    - establishment and / or upgrade of access tracks and public roads
    - upgrade and / or augmentation to existing electricity and utility infrastructure
    - installation and operation of communications infrastructure and facilities
    - other construction-related works and facilities, such as laydown and staging areas, earthwork material sites with crushing and screening plants, concrete batching plants, stringing sites, helicopter landing pads, site offices and workforce accommodation camps.

The proposed action is planned to be delivered in stages, enabling unlocking a transfer capacity of 6 gigawatts (GW) in the New England REZ, with Stage 1 to deliver 2.4 GW by 2032 and Stage 2 to deliver 3.6 GW by 2034. Additional capacity would be unlocked by 2043, however, this will be subject to a separate planning approval and does not form part of this proposed action.

EnergyCo is engaging with Transgrid as part of a joint planning process to confirm how the project would integrate with Transgrid's network. This will influence the configuration of the project including timing for construction of energy hubs and the power rating of certain transmission lines during each stage of the project.

Project area

The referral area, hereafter referred to as the 'project area', used for the purposes of scoping and conducting relevant searches for this EPBC Referral is approximately 63,000 hectares (ha) and includes a variable buffer around the proposed 500 kV and 330 kV transmission line alignments, as well as the energy hubs. This is generally a 3km wide corridor along the length of the proposed transmission lines (narrowing to 1km in the north and south). A buffer has also been established around energy hubs (3 km diameter).

The Project would require workforce accommodation camps, materials and plant delivery and distribution, and project management offices. These locations would likely be located within and/or adjacent to each energy hub, as well as at select locations near transmission lines and access roads. Additional locations may be required outside of the project area for specific uses (for example access tracks, compounds or accommodation camps). These will be identified and assessed in the EIS. This project area has been identified for preliminary assessment and scoping purposes and is considered highly conservative. The actual footprint required for the proposed action will be substantially smaller.

A figure showing the proposed action and project area is provided in Attachment A – Proposed action. Also refer to mapping provided in response to Section 2.1, Location Details, 'project area' of this referral.

For the purposes of calculating potential impacts and to complete a significance assessment for this EPBC referral, an 'indicative disturbance area' based on a conceptual design of the proposed action was used. The indicative disturbance area used is approximately 5,600 ha, and this is located within the project area (63,000 ha). The indicative disturbance area comprises the area needed to construct the transmission infrastructure, energy hubs, access roads and ancillary infrastructure for the project, and the area in which direct impacts may occur. This indicative disturbance area will be refined as the project is further developed.

For the purposes of this referral, direct impacts would involve the removal of native vegetation and habitat for threatened species, and may involve the loss of threatened flora species and fauna mortality. Indirect impacts may include habitat edge effects including noise, dust and light spill during construction, changes to water resources (e.g. changes to flows due to earthworks and infrastructure construction) and the introduction and spread of weeds. Further information regarding potential direct and indirect impacts is provided in Attachment B, page 2).

The proposed action is expected to involve the following activities and key components that may have a direct or indirect impact on the environment:

Construction

Construction of the proposed action is expected to commence in the second half of 2027 and take about 6 years. The construction methodology would be developed in more detail for the EIS. The proposed action is expected to involve the following construction activities that may have direct or indirect impacts on the environment:

- site establishment works including native vegetation clearing, establishment of ancillary infrastructure sites including construction ancillary sites, workers accommodation camps and construction access
- civil and construction works associated with transmission lines, upgrade and / or augmentation to existing electricity and utility infrastructure and installation of communications infrastructure and facilities
- civil works associated with the establishment or upgrade of access tracks and public roads
- civil, electrical and building works associated with the energy hubs
- pre-commissioning
- commissioning
- demobilisation and site rehabilitation.

Operation

Operation of Stage 1 is proposed to commence in 2032 and Stage 2 in 2034. The proposed action would be subject to inspections and maintenance on a regular basis throughout the operational life. This would include ongoing vegetation management within the transmission line easements, access track easements, asset protection zones and the testing, servicing and repairs of electrical infrastructure and equipment, including unplanned maintenance, and of other infrastructure (e.g. roads and structures).

The operation of the proposed action would have direct and indirect impacts on the environment as a result of operation of electrical infrastructure, vegetation management and maintenance activities.

Decommissioning & Rehabilitation

At the completion of construction, rehabilitation activities would be undertaken of areas impacted that are not required for operations. This would include demobilisation of ancillary infrastructure not required for operation activities. These areas would be reinstated to their former condition or as agreed with the relevant Council or landowner. These activities may have indirect impacts on the environment, such as minor noise and air quality impacts associated with plant, equipment and traffic movements.

No decommissioning works are proposed for operational components of the proposed action until final decommissioning at the end of asset life.

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

Yes

1.2.3 Is the proposed action the first stage of a staged development (or a larger project)?

No

1.2.4 Related referral(s)

EPBC Number	Project Title
2024/10071	Deeargee Solar and Battery Project
2024/09874	Hunter Transmission Project
2025/10282	Northern Tablelands Wind Farm

1.2.5 Provide information about the staged development (or relevant larger project).

Through the development of new high voltage electricity transmission infrastructure, the proposed action would facilitate the connection of renewable energy generation and storage projects within the New England REZ to the existing electricity network.

The proposed action is planned to be constructed in two stages, enabling EnergyCo to commit to unlocking a transfer capacity of 2.4 GW in the New England REZ by 2032 with an additional 3.6 GW to be delivered by 2034.

The proposed action is intended to encourage investment in renewable energy developments in the REZ by providing transmission infrastructure with increased capacity to enable renewable energy generation and storage projects to connect to the NEM. A range of proposed renewable energy generation and storage projects located in the New England REZ would connect to the proposed action, subject to the outcomes of the Consumer Trustee's competitive tender process for rights to access the new network infrastructure. The proposed or approved renewable energy generation and storage projects that would connect to the proposed action are subject to separate and independent planning and approval processes, which are solely the responsibility of the proponents of these private generators. Each proponent would carry out their respective developments independent of each other and the proposed action.

The transmission line connections from energy hubs to new generation and storage projects do not form part of the proposed action and will be subject to later planning and approval process once the scope of such connections is confirmed.

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

Commonwealth legislation

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a framework for protection of the Australian environment, including its biodiversity and its natural and culturally significant places. The EPBC Act requires approval to be obtained from the Commonwealth Minister for the Environment and Water for any action which will or is likely to have a significant impact on specified Matters of National Environmental Significance (MNES).

The proposed action has been referred to the Minister for the Environment and Water as a controlled action for approval under the EPBC Act as the proposed action is likely to have a significant impact on threatened ecological communities and threatened species listed on the EPBC Act. The threatened communities and species are discussed in response to section 4.1.

State legislation

The proposed action was declared Critical State Significant Infrastructure (CSSI) on 27 June 2024 and is specified in section 40 of Schedule 5 of State Environmental Planning Policy (Planning Systems) 2021. As CSSI the proposed action is deemed to be essential to the State for economic, social or environmental reasons The proposed action requires the approval of the NSW Minister for Planning and Public Spaces under Division 5.2 of the NSW *Environmental Planning and Assessment Act 1979 (*EP&A Act).

The proposed action may require other approvals to meet NSW legislative requirements. This may be dependent on design, consultation and construction methodology outcomes which are not currently confirmed. Potential approval requirements are identified below:

- consent under section 138 of the *Roads Act 1993* would be required to undertake work on classified roads
- depending on the construction methodology and materials volumes, certain construction activities may be classified as a scheduled activity triggering the requirement for an environment protection licence (EPL) under the *Protection of the Environment Operations Act 1997* (for example cement or lime handling, crushing, grinding or separating works, helicopter - related activities)
- establishment of easements in accordance with the *Crown Land Management Act 2016*
- a water access licence (WAL) and/or aquifer interference approval in accordance with the *Water Management Act 2000*
- the consent of the NSW Minister for the Environment for works in or changes to approved offset areas and/or wildlife refuges under the *Biodiversity Conservation Act 2016*.

Strategic framework

Australia’s energy system is undergoing its greatest transformation since the 1950s, driven by economic, engineering and environmental factors. By 2050, Australia’s energy system will transform into one that provides cleaner and more reliable energy sources. In September 2022, the Australian Government implemented the *Climate Change Act 2022* (CC Act), which sets out legislated commitments for achieving nation-wide greenhouse gas emissions reduction targets. These targets include:

- reducing Australia’s net greenhouse gas emissions to 43% below 2005 levels by 2030
- reducing Australia’s net greenhouse gas emissions to zero by 2050.

To achieve net-zero greenhouse gas emissions by 2050, the Australian Government developed the Long-Term Emissions Reduction Plan which details the proposed strategies to invest in low emissions technologies across the country, including renewable energy infrastructure. The Long-Term Emissions Reduction Plan identifies that the rapid pace and scale of developing renewable energy infrastructure is creating technical challenges for Australia’s existing electricity supply systems and that it is essential to develop renewable energy transmission networks that can support the growth of renewable energy infrastructure and ensure that Australia’s electricity supply is secure, reliable and affordable.

The Australian Energy Market Operator's (AEMO) 2024 Integrated Systems Plan (2024 ISP) identifies that the energy transition is well underway. Amongst other aspects, the 2024 ISP identifies that investment is needed to install around 10,000 km of new transmission infrastructure to connect low-cost renewable energy developments to consumers across Australia. The proposed action is identified in the 2024 ISP as an 'actionable NSW project' for delivery in 2031 to 2033, which is a project that optimises benefits for consumers and which should be progressed as urgently as possible.

In December 2025, AEMO released the Draft 2026 Integrated Systems Plan (Draft 2026 ISP) for consultation. The Draft ISP is expected to be finalised and published in June 2026. The Draft 2026 ISP identifies the Project as a project likely to remain actionable, with energisation by 2032.

As with the 2024 ISP, the Draft 2026 ISP notes that the Project will progress under the NSW EII Act framework rather than the ISP framework. The Draft 2026 ISP does not reference staging of the Project, noting that further stages (beyond 2032) may progress through the NSW EII Act framework.

1. Consistent with the national target, the NSW Government's objective is to achieve net zero emissions by 2050. To achieve this, the NSW Government has released the Climate Change (Net Zero Future) Act 2023, which sets out a clear path to deliver net zero by 2050 and the Electricity Infrastructure Investment Act (EII Act), which enables the State's 20-year plan to transform NSW's electricity system. Under the EII Act, the NSW Government is leading the planning and coordination of five Renewable Energy Zones (REZs) across NSW to deliver renewable energy generation and storage connected by new transmission infrastructure.
2. The proposed action will deliver new transmission infrastructure with an intended network capacity of 6 gigawatts (GW) by 2035, with stage 1 to deliver 2.4 GW by 2032 and stage 2 to deliver an additional 3.6 GW by 2034. The proposed action would improve energy security and reliability by connecting new large scale renewable energy generation and storage projects in the New England region to the existing electricity network at Bayswater Power Station substation.
3. The Commonwealth and NSW governments have developed a detailed policy framework that guides the transition to renewable energy, and for achieving net-zero emissions by 2050. The key strategic policies and plans that support the proposed action include:

- The **2024 Integrated Systems Plan**: The proposed action is identified in the 2024 ISP as an 'actionable NSW project' for delivery in 2031 to 2033, which is a project that optimises benefits for consumers and which should be progressed as urgently as possible (AEMO, 2024)
- **2025 Infrastructure Investment Objectives Report**: The proposed action is consistent with the Development Pathway prescribed in the report as it would provide the network infrastructure to connect renewable energy generation projects from the New England REZ, providing for the availability of at least 6 GW of energy to the NEM.
- **Net Zero Plan Stage 1: 2020–2030:** The proposed action is aligned with this plan, as it would provide transmission infrastructure that would enable the uptake of proven emissions reduction technologies that grow the economy, create new jobs and reduce the cost of living
- **NSW Electricity Infrastructure Roadmap (the Roadmap):** The proposed action is aligned with the Roadmap as it would facilitate the delivery of lower-cost renewable energy sources to the NEM. The proposed action would contribute to the Roadmap goal of 12 GW of new transmission capacity by providing 6 GW of transmission capacity in the New England REZ by 2035, with potential for additional capacity in the future which would be subject to separate planning approval.
- **Network Infrastructure Strategy** (NIS): As the proposed action would unlock at least 6 GW of network capacity by 2034 in the New England REZ, it is considered to meet the 'deliver now' objectives in the NIS.
- **NSW Transmission Infrastructure Strategy:** The proposed action would enable the connection of eligible renewable energy projects in the New England REZ to the NEM, providing certainty to private sectors investors and cost savings to energy consumers. The proposed action is consistent with the aims of the NSW Transmission Infrastructure Strategy.

- **NSW Electricity Strategy:** The proposed action would assist in delivering on this commitment, facilitating the delivery of renewable energy sources to the NEM.

Consideration of the Commonwealth Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (Department of the Environment, Water, Heritage and the Arts 2013) is provided in Attachment B MNES report, pages 7-15.

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

1. Since the beginning of the project's community engagement in May 2023, engagement activities have focused on landowners and host communities affected by the project. The following engagement activities have taken place in the lead up to November 2025:

- 599 individual and group landowner meetings
- 35 community sessions with 1,837 attendees
- 20 meetings and project briefings with Aboriginal representatives, organisations and community members
- project refinements or design changed informed by community feedback
- 344 email enquiries from members of the public and 226 calls to the project hotline
- Meetings with special interest groups and community groups
- 1,418 people registered for the project mailing list
- periodic and ongoing meetings with local councils and Members of Parliament
- establishment of two Community Reference Groups with representatives of local councils, Local Aboriginal Land Councils (LALC), community members and special interest groups.

Following the announcement of the new study area in October 2025, EnergyCo commenced engagement with affected landowners and host communities in line with the previous engagement approach.

This included direct engagement with landowners, including newly impacted landowners, landowners where the impact had changed, and those no longer impacted by the Project. Briefings were also provided to special interest and community groups, local councils and government agencies, alongside individual landowner meetings.

To ensure engagement with the wider community, a total of 12 community information sessions were held in October and November 2025 throughout the region. Further, EnergyCo publicly released the Bulk Corridor Design Refinement Report and hosted a webinar on the new study area in November 2025.

In addition to the direct engagement activities, EnergyCo invited feedback on the new study area from the wider community through a 'have your say' period, which extended from October to mid-December 2025.

Further consultation and engagement with landowners and other stakeholders will be undertaken throughout the preparation of the EIS including further specific engagement as part of the Social Impact Assessment (SIA).

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

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Alternatively, email us at privacy@dcceew.gov.au.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

Referring party details

Name	Kane Winwood
Job title	Planning & Environment Manager, New England Renewable Energy Zone
Phone	0434967285
Email	kane.winwood@dpie.nsw.gov.au
Address	GPO Box 5469 SYDNEY NSW 2001

1.3.2 Identity: Person proposing to take the action

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

No

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

Yes

Person proposing to take the action organisation details

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

Person proposing to take the action details

Name	David Koppers
Job title	Manager Planning
Phone	02 9373 2869
Email	david.koppers@energyco.nsw.gov.au
Address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

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

No

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

No

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

The Energy Corporation of NSW (EnergyCo) is a NSW Government statutory authority established under the Energy and Utilities Administration Act 1987 (NSW). The NSW Government has appointed EnergyCo in November 2021 as the Infrastructure Planner responsible for delivering the transmission network in Renewable Energy Zones (REZs) in NSW. EnergyCo operates under the direction of the NSW Minister for Energy. EnergyCo is committed to ensuring environmental commitments and conditions of approval applicable to proposed development activities are adhered to.

EnergyCo has several actions approved or proposed (separate to this proposed action) including the approved Central West Orana REZ Transmission Project which is currently in the construction phase and the Hunter Transmission Project, the EIS for which has been lodged with the NSW Government. As a statutory authority, EnergyCo is required to act in accordance with best practice environmental management standards and statutory obligations.

EnergyCo has engaged qualified environmental professionals to develop the environmental impact assessment for the proposed action, and to provide environmental input to design development. This process has enabled the proposed action to avoid and minimise environmental values. As part of the EIS, measures will be identified to avoid, minimise and mitigate impacts to the environment. Principles of avoidance and robust environmental management will also be an important component of tender selection, design, construction and operation.

There are no current or previous proceedings against EnergyCo under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

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

EnergyCo is in the process of finalising its Environmental Policy Statement. It states that EnergyCo is committed to conducting its activities and services in a manner that protects the environment, prevents pollution and meets compliance obligations.

To uphold this commitment, EnergyCo will:

- Conduct its activities in an environmentally responsible and competent manner so as to manage the potential for pollution and environmental impact
- Integrate environmental management considerations into the planning, design, siting, construction, maintenance and operation of its infrastructure
- Develop a sense of environmentally responsibility throughout all levels of EnergyCo
- Establish a program for periodical review of the environmental objectives and targets as identified by EnergyCo
- Promptly implement preventative and corrective actions wherever identified Liaise with and encourage our suppliers and subcontractors to achieve a high level of environmental performance
- Regularly monitor, assess and review its activities in relation to environmental performance to ensure compliance with environmental commitments
- Engage with the community, customers, employees, government and other stakeholders regarding potential environmental or cultural impacts associated with its plans and activities

EnergyCo will maintain a commitment to continual improvement in its environmental performance in the way it operates to support achievement of the objectives for the proposed action.

1.3.3 Identity: Proposed designated proponent

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

Yes

Proposed designated proponent organisation details

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

Proposed designated proponent details

Name	David Koppers
Job title	Manager Planning
Phone	02 9373 2869
Email	david.koppers@energyco.nsw.gov.au
Address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

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

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS
Representative's name	Kane Winwood
Representative's job title	Planning & Environment Manager, New England Renewable Energy Zone
Phone	0434967285
Email	kane.winwood@dpie.nsw.gov.au
Address	GPO Box 5469 SYDNEY NSW 2001

Confirmed Person proposing to take the action's identity

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

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS
Representative's name	David Koppers
Representative's job title	Manager Planning
Phone	02 9373 2869
Email	david.koppers@energyco.nsw.gov.au
Address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

Confirmed Proposed designated proponent's identity

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

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

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

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

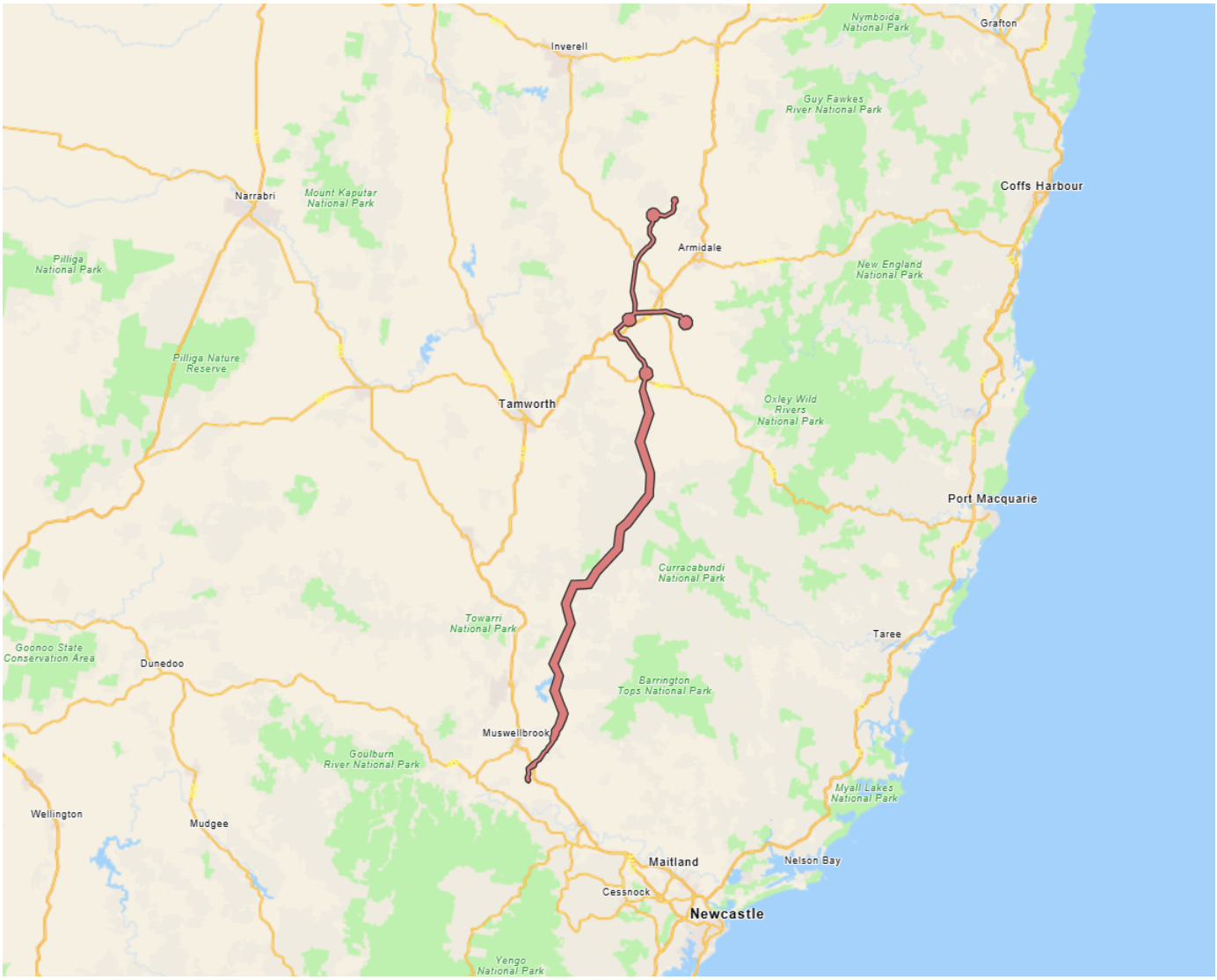
1.4 Payment details: Payment allocation

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

Person proposing to take the action

2. Location

2.1 Project footprint



Project Area: 67121.42 Ha **Disturbance Footprint:** 67121.42 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Bayswater Power Station (New England Hwy, Muswellbrook NSW, 2333) to NE REZ (Armidale,

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

New South Wales

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

No

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

Land tenure in the project area is predominantly freehold, with areas of NSW Government land at Lake Glenbawn, and Crown land, including NSW State Forests, road reserves, rail corridors, and travelling stock reserves.

There are several current mining and exploration titles within the project area. Exploration titles are predominantly located across the central and northern sections of the project area, with one mining title within the Muswellbrook Local Government Area (LGA) in the southern section of the corridor, being the Maxwell Mine.

Searches of the registers maintained by the National Native Title Tribunal identified one known native title claim under the Native Title Act 1993 in the project area, being the ‘NC2011/006 – Gomeroi People’. The status of this claim has not been determined as of October 2025 and will be further confirmed as part of the EIS. There are no Indigenous Land Use Agreements that apply to the project area.

3. Existing environment

3.1 Physical description

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

The project area transverses a diverse landscape across its length, with varying land use, topography and vegetation communities. With the extensive agricultural land use history of the land within and surrounding the project area, combined with other land use developments including townships and infrastructure (roads, dams, transmission lines etc.), a mosaic of different vegetation patterns exist from cleared grazing lands to heavily vegetated slopes and escarpment areas fringing the New England tablelands plateau.

The scenic and cultural landscapes of New England and Hunter regions contribute to the identity and culture of the regions. Within the broader New England region, there are several conservation reserves and native vegetation areas including the Oxley Wild Rivers National Park (that includes the World Heritage-listed Gondwana rainforest) which is located 30 km to the east of the project area and is home to important landscapes, plants and animals and is one of the largest tourism attractions of the region. The project area intersects four Interim Biogeographic Regionalisation for Australia (IBRA) regions: New England Tablelands, Nandewar, Sydney Basin and NSW North Coast.

The following State Reserves have been identified within a 10 km radius of the project area:

- Camerons Gorge Aboriginal Area
- Bulagaranda (Mt Yarrowyck) Nature Reserve
- Booroolong Nature Reserve
- Aberbaldie Nature Reserve
- Woolooma National Park
- Brushy Hill Nature Reserve
- Mother Of Ducks Lagoon Nature Reserve.
- Black River Nature Reserve
- Ben Halls Gap Nature Reserve
- Nowendoc National Park
- Curracabundi National Park
- Tomalla Nature Reserve
- Tuggolo Creek Nature Reserve

The project area intersects a wildlife refuge associated with WaterNSW land at Lake Glenbawn. This area will be further considered in the EIS.

The New England region is primarily situated within the Murray-Darling Basin and includes significant portions of the Border Rivers-Gwydir, Namoi and Northern Rivers catchment areas. The freshwater environment of the Namoi catchment area is particularly notable for its extensive range of aquatic habitats including floodplains, wetlands, streams and rivers. The main west-flowing river systems are the Namoi, Gwydir and Macintyre rivers and also contains the upper reaches of many coastal river systems, including the Clarence, Macleay and Manning. The project area crosses Glenbawn Dam on the Hunter River, along with a number of other rivers, including the Macdonald River, Namoi River and Gwydir River, and various named and unnamed creeks.

A search of the NSW Environment Protection Authority (EPA) Contaminated Land Record of Notices and list of notified sites was undertaken on 17 October 2025 for the seven LGAs within the project area, which identified no known contaminated sites within the project area or within 10km of the project area.

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

The proposed action is located within the New England and Hunter regions of NSW, with the key connection infrastructure for the New England REZ located in the New England region. Armidale and Tamworth town centres are the major service hubs for the New England region, hosting important educational, airport and health facilities that service the broader area, as well as residential populations outside the town centres.

The New England and Hunter regions are situated within a predominately agricultural landscape used for cropping, animal production and grazing land. The major towns of Tenterfield, Glen Innes, Inverell, Guyra, Armidale, Uralla and Walcha all support productive rural communities that predominantly produce beef, sheep and wool. Significant smaller industries within the New England region include forestry, apples and stone fruit, potatoes, glasshouse tomatoes, dairy farms, alpacas and cool climate wineries, while the Hunter region is well known for its coal mining, thoroughbred horse industry and vineyards.

The project area intersects seven LGAs, including LGAs outside the New England REZ. These LGAs include:

- Singleton
- Muswellbrook Shire
- Upper Hunter Shire
- Tamworth Regional
- Walcha Shire
- Uralla Shire
- Armidale Regional.

The majority of the project area comprises agricultural land used for livestock grazing and cropping activities. Other key land uses in the Study Corridor and its surrounds include:

- transport infrastructure, including a network of state, regional and local roads
- electrical infrastructure, including the existing Bayswater Power Station and several existing transmission lines
- renewable energy developments (generation and storage), that are either proposed or approved
- protected environments, including national parks and conservation areas such as Ben Halls Gap National Park and Tomalla Nature Reserve, which is located near Barry. The Project would be designed to avoid interacting with these areas.
- NSW State Forests, being Nundle State Forest,Terrible Billy State Forest, Tomalla State Forest and Tuggolo State Forest
- mining and exploration, several current mining and exploration titles within the Study Corridor. Exploration titles are predominantly located across the central and northern sections of the corridor, with one mining title within the Muswellbrook Shire LGA in the southern section of the corridor, being the Maxwell Mine
- wildlife refuge associated with WaterNSW land at Lake Glenbawn
- uncertified aerodromes.

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

The scenic and cultural landscapes of New England and Hunter regions contribute to the identity and culture of the regions. Within the broader New England region, there are several conservation reserves and native vegetation areas including the Oxley Wild Rivers National Park (that includes the World Heritage-listed Gondwana rainforest) which is located to the east of the Project area and is home to important landscapes, plants and animals and is one of the largest tourism attractions of the region.

The following State Reserves have been identified within a 10 km radius of the project area:

- Camerons Gorge Aboriginal Area
- Bulagaranda (Mt Yarrowyck) Nature Reserve
- Booroolong Nature Reserve
- Aberbaldie Nature Reserve
- Woolooma National Park
- Brushy Hill Nature Reserve
- Mother Of Ducks Lagoon Nature Reserve.
- Back River Nature Reserve
- Ben Halls Gap Nature Reserve
- Curracabundi National Park
- Nowendoc National Park
- Tomalla Nature Reserve
- Tuggolo Creek Nature Reserve.

Timor Caves is a karst cave system located within the project area in the upper Hunter Valley. At least 80 caves have been recorded in association with limestone geology, which are of natural, cultural and recreational value. A focus of the project's design process is to avoid impacts on Timor Caves.

The protection of regionally significant agricultural land from incompatible land uses is identified as a regional strategic goal for the New England and Hunter regions, as reflected in Objective 2 of the New England North West Regional Plan 2041 and Objective 9 of the Hunter Regional Plan 2041. Parts of these regions have also been identified as Biophysical Strategic Agricultural Land (BSAL) and Critical Industry Cluster – Equine, including areas in and around Scone in the Hunter region. BSAL is land with high quality soil and water resources capable of sustaining high levels of productivity, which have been mapped by the NSW Government to provide increased protection from mining and petroleum development. Areas of BSAL are typically found along watercourses near the project area, primarily around Armidale, Uralla and Tamworth, as well as a large area within the Upper Hunter Shire LGA (see Figure A.2, Attachment A - Figures.)

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

The project area passes through a wide variety of terrains, starting on the broad floor of the Hunter Valley near Muswellbrook and traversing through the landscape up to the higher elevations of the New England tablelands plateau. Topographic heights along the project area range between 133 m elevation near Muswellbrook in the south and gradually increasing to 1360 m elevation near Nundle State Forest.

3.2 Flora and fauna

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

Flora

Database searches and preliminary results from field studies have identified 15 threatened flora species that are predicted to occur within the project area listed under the EPBC Act (detailed further in Attachment C, Section 4.2.1, page 11-12):

- Narrow-leaved Bertya (*Bertya ingramii*)
- Granite Boronia (*Boronia granitica*)
- White-flowered Wax Plant (*Cynanchum elegans*)
- Small Snake Orchid (*Diuris pedunculata*)
- Craven Grey Box (*Eucalyptus largeana*)
- Denman Pomaderris (*Pomaderris reperta*)
- Tarengo Leek Orchid (*Prasophyllum petilum*)
- Scrub Turpentine (*Rhodamnia rubescens*)
- Tylophora linearis (*Tylophora linearis*)
- Aromatic peppercress (*Lepidium hyssopifolium*)
- Illawarra greenhood (*Pterostylis gibbosa*)
- Bertya sp. Clouds Creek (*M.Fatemi 4*)
- *Euphrasia arguta*
- Dungowan starbush (*Asterolasia beckersii*)
- A leek-orchid (*Prasophyllum sp. Wybong* (C.Phelps ORG 5269))

Fauna

Database searches and preliminary results from field studies have identified 20 fauna species, listed as either critically endangered or endangered (excluding those with migratory listings), that are predicted or known to occur within the project area listed under the EPBC Act (detailed further in Attachment C, Section 4.2.1, page 11-12):

including:

- Terrestrial and aboral mammals
    - Spotted-tailed Quoll (*Dasyurus maculatus*)
    - Greater Glider (*Petauroides inimi*)
    - Koala (*Phascolarctos cinereus*)
    - Large-eared Pied Bat (*Chalinolobus dwyeri)*
- Reptiles
    - Western Sawshelled Turtle/ Bell's Turtle (*Myuchelys belli*)
    - Hunter Valley Delma (*Delma vescolineata*)
    -
    - Purvis' turtle (*Myuchelys purvisi*)
- Amphibians
    - Boorolong Frog (*Litoria booroolongensis*)
    - Yellow-spotted Tree Frog (*Litoria castanea*)
- Forest and woodland birds
    - Gang-gang Cockatoo (*Callocephalon fimbriatum*)
    - Hooded Robin (south-eastern form) (*Melanodryas cucullata cucullata)*
    - Regent honeyeater (*Anthochaera phrygia*)
    - Swift parrot (*Lathamus discolor*)
    - Curlew sandpiper (*Calidris ferruginea*)
    - Red goshawk (*Erythrotriorchis radiatus*)
    -
- Wetland birds
    - Australian painted snipe (*Rostratula australis*)

    - Australasian bittern (*Botaurus poiciloptilus*)
- Fish and Crayfish
    - Gamilaroi Crayfish (*Euastacus gamilaroi*)
    - Small crayfish (*Euastacus spinichelatus*)
    - Terrestrial crayfish (*Euastacus maccai*)

Database searches and preliminary results from field studies have identified 46 species, listed as vulnerable (excluding those with migratory listings), that are predicted or known to occur within the project area listed under the EPBC Act (detailed further in Attachment C, Section 4.3, page 14-15) including:

- Flora
    - *Callistemon pungens*
    - Bluegrass (*Dichanthium setosum*)
    - Slaty Red Gum (*Eucalyptus glaucina*)
    - McKie's Stringybark (*Eucalyptus mckieana*)
    - Narrow-leaved Black Peppermint (*Eucalyptus nicholii*)
    - Blackbutt Candlebark (*Eucalyptus rubida subsp. Barbigerorum*)
    - Tall Velvet Sea-berry (*Haloragis exalata subsp. velutina*)
    - *Ozothamnus tesselatus*
    - *Persicaria elatior*
    - Hawkweed (*Picris evae*)
    - Austral Toadflax (*Thesium australe*)
    - Velvet Wattle (*Acacia pubifolia*)
    - Ovenden’s ironbark (*Eucalyptus caleyi subsp. ovendenii*)
    - *Androcalva procumbens*
    - *Homoranthus prolixus*
    - Rufous Pomaderris (*Pomaderris brunnea*)
    - Ooline (*Cadellia pentastylis*)
    - Leafless tongue-orchid (*Cryptostylis hunteriana*)
    - Hairy-joint grass (*Arthraxon hispidus*)
    - Slender darling-pea (*Swainsona murrayana*)
    - Spiny peppercress (*Lepidium aschersonii*)
- Terrestrial and aboreal mammals
    - Corben's Long-eared Bat (*Nyctophilus corbeni*)
    - Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*)
    - Brush-tailed Rock-wallaby (*Petrogale penicillata*)
    - Grey-headed Flying-fox (*Pteropus poliocephalus*)
    - Northern long-nosed potoroo (*Potorous tridactylus tridactylus*)
    - Parma wallaby (*Notamacropus parma*)
    - New Holland mouse (*Pseudomys novaehollandiae*)
- Reptiles
    - Pink-tailed Legless Lizard (*Aprasia parapulchella*)
    - Striped Legless Lizard, Striped Snake-lizard (*Delma impar*)
    - Border Thick-tailed Gecko (*Uvidicolus sphyrurus*)
    - Alpine water skink (*Eulamprus kosciuskoi*)
    - Five-clawed worm-skink (*Anomalopus mackayi*)
- Fish and Crayfish
    - Murray cod (*Maccullochella peelii peeplii*)
- Amphibians
    - Green and Golden Bell Frog (*Litoria aurea*)
    - Davies' Tree Frog (*Litoria daviesae*)
    - Stuttering frog (*Mixophyes balbus*)
    - New England Tree Frog (*Litoria subglandulosa*)

- Forest and woodland birds
    - South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*)
    - Brown Treecreeper (south-eastern) (*Climacteris picumnus victoriae*)
    - Diamond Firetail (*Stagonopleura guttata*)
    - Southern whiteface (*Aphelocephala leucopsis*)
    - Blue-winged parrot (*Neophema chrysostoma*)
    - Painted honeyeater (*Grantiella picta*)
    - Grey falcon (*Falco hypoleucos*)
    - Superb parrot (*Polytelis swainsonii*)

14 migratory species listed under the EPBC Act with potential to occur in the project area have been identified by database searches and of these, all were considered to have a low likelihood of occurrence (detailed further in Attachment C, Section 4.4, page 17) including:

- Terrestrial birds
    - White-throated Needletail (*Hirundapus caudacutus*)
    - Black-faced Monarch (*Monarcha melanopsis*)
    - Yellow Wagtail (*Motacilla flava*)
    - Satin Flycatcher (*Myiagra cyanoleuca*)
    - Rufous Fantail (*Rhipidura rufifrons*)
    - Spectacled Monarch (*Symposiachrus trivirgatus*)
- Wetland birds
    - Common Sandpiper (*Actitis hypoleucos*)
    - Sharp-tailed Sandpiper (*Calidris acuminata*)
    - Curlew Sandpiper (*Calidris ferruginea*)
    - Pectoral Sandpiper (*Calidris melanotos*)
    - Latham's Snipe, Japanese Snipe (*Gallinago hardwickii*)
    - Osprey (*Pandion haliaetus*)
    - Common Greenshank, Greenshank (*Tringa nebularia*)
- Marine Birds
    - Fork-tailed Swift (*Apus pacificus*)

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

The project area traverses a broad and diverse landscape, spanning from the Hunter Valley floor to the New England Tablelands. The southern end of the project area is heavily disturbed land used for mining and coal fired power generation activities. Much of the central and northern portions of the project area has been extensively cleared for agricultural purposes, including broad acre cropping and grazing, however, there are large areas of remnant native vegetation amongst this agricultural land, typically found along roads, rivers and creek lines and stands of native vegetation within paddocks or upper slopes not suitable for agriculture. There are several large national parks in the broader area, particularly to the east of the alignment, containing large areas of intact native vegetation of high quality, with the project area avoiding all of these areas. The project area traverses large areas of NSW Government lands dedicated for water supply purposes which are a combination of cleared land and native vegetation. The project area also traverses an area of Nundle State Forest, which supports a mix of planted softwood and native hardwood vegetation.

A review of the State Vegetation Type Mapping, which is the best available regional scale vegetation mapping of NSW, was initially completed to understand the variety of vegetation assemblages likely to occur. This mapping, and project specific vegetation surveys, has determined that the corridor is approximately 50% grasslands. A review of the SVTM has also identified approximately 67 Plant Community Types (PCTs) within the potential area of impact within the project area.

Of the PCTs identified, there are three different Threatened Ecological Community (TEC) associations listed under the EPBC Act:

- Central Hunter Valley eucalypt forest and woodland
- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

It is important to note that the process of aligning PCTs to TECs is a complex process and requires substantial field data which is not available at this stage. As such, the TECs and the potential areas of impact are preliminary only and subject to substantial change throughout the assessment process as further survey work and design refinements are completed. EnergyCo will continue to focus on avoiding and minimising impacts to TECs where practicable through the evolution of the proposed action's design.

Eight additional Threatened Ecological Communities were identified by the MNES Search tool as predicted to occur however, vegetation mapping undertaken on the proposed action has progressed to identify and allocate Plant Community Types (PCT) across the project area. The current vegetation data collected in the field suggests that the predicted occurrence of these TEC's is low to moderate in likelihood. The eight additional TEC's include:

- Lowland Rainforest of Subtropical Australia
- Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
- Hunter Valley Weeping Myall (Acacia pendula) Woodland
- Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland
- River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
- Weeping Myall Woodlands.

3.3 Heritage

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

The search area allowed for a 1.5 km buffer extending from the boundaries of the project area in all directions. The search identified no items registered on the World Heritage List, National Heritage List or Commonwealth Heritage List. Two State and 15 local listed heritage items were identified within the search area. Figure A.3 of Attachment A – Figures provides an overview of the state and local heritage items identified within the search area and in proximity to the project area.

The majority of these relate to homesteads or residences and associated structures (such as woolsheds and barns), however, community facilities (e.g. Gostwick Memorial Chapel & Precinct) and rail infrastructure (Walcha Road Railway Station and yard group) of local heritage significance are also located in proximity to the project area. The two State listed heritage items near the project area relate to the history of Captain Thunderbolt as a famous bushranger.

The local listing ‘Timor Caves and geological site’ relates to a system of natural limestone caves that form part of a significant karst system. It also has a large listing curtilage and is not known to comprise any built heritage elements. The publicly available listing citations for these three items contain limited information regarding their history, physicality and heritage significance and these items will be further investigated as part of the EIS. This will include consideration of Timor Caves with the focus of the design process being to avoid impact.

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

The project area intersects with six Local Aboriginal Land Councils (LALCs) (Wanaruah, Nungaroo, Tamworth, Amaroo, Purfleet/Taree and Armidale) and several First Nations groups have connection to the land that the project area traverses. Based on traditional language group boundaries established by Tindale (1974) and the Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), the Project intersects with Wonnarua, Geawegal, Kamilaroi/Gomeroi, Biripi, Dainggatti/Daingati and Anaiwan/Nganyaywana) language groups.

A review of relevant public databases and literature was undertaken to identify known Aboriginal sites and Native Title Listings relevant to the identification of known Aboriginal Cultural Heritage (and listings) across the project area. The project area is not subject to any current Native Title Determinations (although there is an active claim: NC2011/006 – Gomeroi People), nor does the NSW Heritage Inventory have listings related to Aboriginal heritage.

A search of the AHIMS database was undertaken on 25 October 2025 to identify previously recorded Aboriginal heritage sites within the project area. The Aboriginal Heritage Information Management System (AHIMS) searches indicate that a total of 50 Aboriginal sites have been registered within the project area. These comprise 43 artefact sites (one of which has been previously destroyed), six culturally modified trees, and five Potential Archaeological Deposits (PADs) whereby the presence of archaeological material has not been verified. These sites are clustered around areas where previous archaeological investigations have taken place and do not represent an accurate record of the potential for Aboriginal sites to occur within the project area.

Identification of and consultation with registered Aboriginal stakeholders will be carried out for the proposed action to provide a means of communication and information exchange and identify areas and sites of known cultural significance to the Aboriginal community. An Aboriginal Cultural Heritage Assessment Report (ACHAR) will be prepared for the proposed action as part of the EIS and will detail the outcomes of Aboriginal stakeholder engagement and document an impact assessment of potential impact to Aboriginal heritage sites and values.

3.4 Hydrology

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

Surface Water

The project area extends across the Hunter – Central Rivers, Namoi, Border Rivers – Gwydir and Macleay River catchments. The project area crosses Glenbawn Dam on the Hunter River, along with a number of other rivers, including the Macdonald River, Namoi River and Gwydir River, and various named and unnamed creeks. Key fish habitat is present throughout the project area within both named and unnamed watercourses.

Surface water within the project area is regulated under a range of Water Sharing Plans, including:

- Water Sharing Plan for the Hunter Regulated River Water Source 2016
- Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2022
- Water Sharing Plan for the Gwydir Unregulated River Water Sources 2012
- Water Sharing Plan for the Macleay Unregulated and Alluvial Water Sources 2016
- Water Sharing Plan for the Namoi and Peel Unregulated Rivers Water Sources 2012
- Water Sharing Plan for the Lower North Coast Unregulated Alluvial Water Sources 2022

There is no mapped flood prone land identified within the project area, which likely reflects the lack of previous flood studies within the vicinity of the proposed action. However, as noted above, the project area intersects a number of rivers.

Groundwater

Groundwater resources within the Study Corridor include fractured rock and porous aquifers and as well as alluvial aquifers associated with the Hunter River, Peel River, Macdonald River and Gwydir River and various named and unnamed creeks. While fractured and porous rock aquifers within the Study Corridor are typically low yielding, with low to moderate connection with surface water (DPE, 2022h; DPI Water, 2016a), alluvial aquifers are of high value for local communities and agricultural production. In particular, the Tamworth Regional Council extracts groundwater from the Peel River alluvium for its town water supply. The project area avoids vulnerable groundwater resources identified under the Upper Hunter LEP 2013. These mapped vulnerable groundwater resources include areas of the Hunter and Pages River alluvium south, southeast and east of Scone (and in the vicinity of the Upper Hunter Equine CIC). No other mapped vulnerable groundwater resources are identified in the vicinity of the project area.

The project area contains areas that have been mapped as high, moderate or low potential for containing both aquatic and terrestrial Groundwater Dependent Ecosystems.

The assessment will also include consideration of the groundwater systems associated with Timor Caves. As noted above, the design process will seek to avoid impacts on Timor Caves and this will include consideration of any potential interactions with water systems associated with the caves.

4. Impacts and mitigation

4.1 Impact details

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

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

4.1.1 World Heritage

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

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

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

—

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

No

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

There are no listed World Heritage properties within a 4 km corridor centred around the project area. As such, there will be no direct or indirect impacts on World Heritage as a result of the proposed action.

4.1.2 National Heritage

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

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

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

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

No

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

There are no listed National Heritage properties within a 4 km corridor centred around the Preferred Study Corridor. As such, there will be no direct or indirect impacts on these properties as a result of the proposed action.

4.1.3 Ramsar Wetland

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

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

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

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Gwydir Wetlands: Gingham and Lower Gwydir (Big Leather) Watercourses
No	No	Hunter Estuary Wetlands
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

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

No

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

The Commonwealth Government’s Protected Matters Search Tool (PMST) does not identify any wetlands of international importance within the project area. The nearest Ramsar Wetland is located between 50 km and 100 km from the project area, being the Hunter Estuary Wetlands.

Direct or indirect impacts on Ramsar wetlands are not anticipated, as no Ramsar wetlands are located within proximity to the project area, and based on the nature of the proposed action adverse indirect impacts are not anticipated.

4.1.4 Threatened Species and Ecological Communities

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

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

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

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes		Acacia pubifolia	Velvet Wattle
Yes		Androcalva procumbens	
Yes		Anomalopus mackayi	Five-clawed Worm-skink, Long-legged Worm-skink
Yes		Anthochaera phrygia	Regent Honeyeater
Yes		Aphelocephala leucopsis	Southern Whiteface
Yes		Aprasia parapulchella	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard
Yes		Arthraxon hispidus	Hairy-joint Grass
Yes		Asterolasia beckersii	Dungowan Starbush
Yes		Bertya sp. Clouds Creek (M.Fatemi 4)	
Yes		Boronia granitica	Granite Boronia
Yes		Botaurus poiciloptilus	Australasian Bittern
Yes		Cadellia pentastylis	Ooline
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Callistemon pungens	
Yes		Callocephalon fimbriatum	Gang-gang Cockatoo
Yes		Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo
Yes		Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat
Yes		Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)
Yes		Cryptostylis hunteriana	Leafless Tongue-orchid

Direct impact	Indirect impact	Species	Common name
Yes		Cynanchum elegans	White-flowered Wax Plant
Yes		Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)
Yes		Delma vescolineata	Hunter Valley Delma
Yes		Dichanthium setosum	bluegrass
Yes		Diuris pedunculata	Small Snake Orchid, Two-leaved Golden Moths, Golden Moths, Cowslip Orchid, Snake Orchid
Yes		Erythrotriorchis radiatus	Red Goshawk
Yes		Euastacus gamilaroi	Gamilaroi Crayfish, Gamilaroi Spiny Crayfish, Hanging Rock Crayfish
Yes		Euastacus maccai	Terrestrial Crayfish
Yes		Euastacus spinichelatus	Small Crayfish
Yes		Eucalyptus caleyi subsp. ovendenii	Ovenden's Ironbark
Yes		Eucalyptus glaucina	Slaty Red Gum
Yes		Eucalyptus mckieana	McKie's Stringybark
Yes		Eucalyptus nicholii	Narrow-leaved Peppermint, Narrow-leaved Black Peppermint
Yes		Eulamprus kosciuskoi	Alpine Water Skink
Yes		Euphrasia arguta	
Yes		Falco hypoleucos	Grey Falcon
Yes		Galaxias sp. nov. 'Hunter'	Hunter Galaxias, Hunter Upland Galaxias
Yes		Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes		Grantiella picta	Painted Honeyeater
Yes		Haloragis exalata subsp. velutina	Tall Velvet Sea-berry
Yes		Hirundapus caudacutus	White-throated Needletail
Yes		Homoranthus prolixus	
Yes		Lampropholis elongata	Long Sunskink
Yes		Lathamus discolor	Swift Parrot

Direct impact	Indirect impact	Species	Common name
Yes		Lepidium aschersonii	Spiny Peppercress
Yes		Lepidium hyssopifolium	Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed
Yes		Litoria aurea	Green and Golden Bell Frog
Yes		Litoria booroolongensis	Booroolong Frog
Yes		Litoria castanea	Yellow-spotted Tree Frog, Yellow-spotted Bell Frog
Yes		Litoria daviesae	Davies' Tree Frog
Yes		Litoria subglandulosa	New England Tree Frog, Glandular Frog
Yes		Maccullochella peelii	Murray Cod
Yes		Melanodryas cucullata cucullata	South-eastern Hooded Robin, Hooded Robin (south-eastern)
Yes		Mixophyes balbus	Stuttering Frog, Southern Barred Frog (in Victoria)
Yes		Myuchelys belli	Western Sawshelled Turtle
Yes		Myuchelys purvisi	Purvis' Turtle
Yes		Neophema chrysostoma	Blue-winged Parrot
Yes		Notamacropus parma	Parma Wallaby
Yes		Nyctophilus corbeni	Corben's Long-eared Bat, South-eastern Long-eared Bat
Yes		Ozothamnus tesselatus	
Yes		Petauroides volans	Greater Glider (southern and central)
Yes		Petaurus australis australis	Yellow-bellied Glider (south-eastern)
Yes		Petrogale penicillata	Brush-tailed Rock-wallaby
Yes		Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
Yes		Picris evae	Hawkweed
Yes		Polytelis swainsonii	Superb Parrot

Direct impact	Indirect impact	Species	Common name
Yes		Pomaderris brunnea	Rufous Pomaderris, Brown Pomaderris
Yes		Potorous tridactylus tridactylus	Long-nosed Potoroo (northern)
Yes		Prasophyllum sp. Wybong (C.Phelps ORG 5269)	a leek-orchid
Yes		Pseudomys novaehollandiae	New Holland Mouse, Pookila
Yes		Pteropus poliocephalus	Grey-headed Flying-fox
Yes		Pterostylis gibbosa	Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood
Yes		Pterostylis metcalfei	Metcalfe's Greenhood
Yes		Rhodamnia rubescens	Scrub Turpentine, Brown Malletwood
Yes		Rostratula australis	Australian Painted Snipe
Yes		Stagonopleura guttata	Diamond Firetail
Yes		Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea
Yes		Thesium australe	Austral Toadflax, Toadflax
Yes		Tringa nebularia	Common Greenshank, Greenshank
Yes		Uvidicolus sphyrurus	Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko
Yes		Vincetoxicum forsteri	

Ecological communities

Direct impact	Indirect impact	Ecological community
Yes		Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest
Yes		Central Hunter Valley eucalypt forest and woodland
Yes		Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
Yes		Hunter Valley Weeping Myall (Acacia pendula) Woodland
Yes		Lowland Rainforest of Subtropical Australia

Direct impact	Indirect impact	Ecological community
Yes		Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland
Yes		New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands
Yes		River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
Yes		Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
Yes		Weeping Myall Woodlands
Yes		White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

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

Yes

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

Threatened Ecological Communities

Six threatened ecological communities (TECs) listed under the EPBC Act are predicted to occur within the indicative disturbance area due to associated PCT mapping from the State Vegetation Type Mapping (SVTM), including:

- Central Hunter Valley eucalypt forest and woodland – approximately 193.2ha.
- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands – approximately 477.6ha.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – approximately 306.7ha.
- Lowland Rainforest of Subtropical Australia – approximately 2.6ha.
- Coastal Swamp Oak (Casuarina glauca) Forst of New South Wales and South East Queensland ecological community – approximately 5.4ha.
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions – approximately 5.2 ha.

The proposed action is likely to directly impact these TECs through native vegetation clearing. The indicative area of potential impact for each TEC is outlined in Section 4.1 of Attachment C, refer to page 8.

Threatened Species

The threatened species listed under the EPBC Act with potential to occur in the Project area are identified in Appendix B of Attachment B. Of these threatened species identified as having potential to occur, there are 19 flora and 26 fauna that have a moderate to high likelihood of occurrence or have known presence in the Project area. These include:

Flora

- Dungowan Starbush (*Asterolasia beckersii*)
- Narrow-leaved Bertya (*Bertya ingramii*)
- Granite Boronia (*Boronia granitica*)
- White-flowered Wax Plant (*Cynanchum elegans*)
- Small Snake Orchid (*Diuris pedunculata*)
- Craven Grey Box (*Eucalyptus largeana*)
- Denman Pomaderris (*Pomaderris reperta*)
- *Euphrasia arguta*
- Tarengo Leek Orchid (*Prasophyllum petilum*)
- Tylophora linearis (*Tylophora linearis*)
- Slaty Red Gum (*Eucalyptus glaucina*)
- Blackbutt Candlebark (*Eucalyptus rubida* subsp*. barbigerorum*)
- Hawkweed (*Picris evae*)
- *Callistemon pungens*
- McKie's Stringybark (*Eucalyptus mckieana*)
- *Ozothamnus tesselatus*
- Austral Toadflax (*Thesium australe*)
- Bluegrass (*Dichanthium setosum*)

Fauna

- Terrestrial and arboreal mammals
    - Spotted-tailed Quoll (*Dasyurus maculatus*)
    - Greater Glider (*Petauroides volans*)
    - Koala (*Phascolarctos cinereus*)
    - Large-eared Pied Bat (*Chalinolobus dwyeri)*
    - Corben's Long-eared Bat (*Nyctophilus corbeni*)
    - Brush-tailed Rock-wallaby (*Petrogale penicillata*)

    - Grey-headed Flying-fox (*Pteropus poliocephalus*)
- Reptiles
    - Pink-tailed Legless Lizard (*Aprasia parapulchella*)
    - Western Sawshelled Turtle/ Bell's Turtle (Myuchelys *belli*)
    - Border Thick-tailed Gecko (*Uvidicolus sphyrurus*)
    - Hunter Valley Delma (*Delma vescolineata*)
    - Purvis' turtle (*Myuchelys purvisi*)
- Amphibians
    - Boorolong Frog (*Litoria booroolongensis*)
    - Green and Golden Bell Frog (*Litoria aurea*)
    - Davies' Tree Frog (*Litoria daviesae*)
- Forest and woodland birds
    - Regent Honeyeater (*Anthochaera phrygia*)
    - Swift Parrot (*Lathamus discolor*)
    - Gang-gang Cockatoo (*Callocephalon fimbriatum*)
    - Hooded Robin (south-eastern form) (*Melanodryas cucullata cucullata*)
    - South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*)
    - Brown Treecreeper (south-eastern) (*Climacteris picumnus victoriae*)
    - Diamond Firetail (*Stagonopleura guttata*)
- Fish and Crayfish
    - Small crayfish (*Euastacus spinichelatus*)
    - Gamilaroi Crayfish (*Euastacus gamilaroi*)
    - Terrestrial crayfish (*Euastacus maccai*)

There is potential for direct impacts to these threatened species due to clearing of native vegetation and suitable habitat. Additionally, there is potential for indirect impacts due to inadvertent disturbance to native vegetation/habitat, habitat edge effects, reduced habitat quality due to noise, dust and light spill during construction, reduced habitat quality due to noise during operation, weed dispersal, alterations to the flow regimes of rivers and streams and changes to fire regimes.

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

Yes

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

Threatened Ecological Communities

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- reduce the extent of an ecological community
- fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines
- adversely affect habitat critical to the survival of an ecological community
- modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns
- cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting
- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
    - assisting invasive species, that are harmful to the listed ecological community, to become established, or
    - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community.
- interfere with the recovery of an ecological community.

Based on the preliminary information collected in Attachment C and the assessment considerations listed above, and applying the precautionary principle as the design is preliminary at this stage and further survey and assessment work is required, there is potential for significant impacts within the indicative disturbance area on:

- Central Hunter Valley eucalypt forest and woodland – approximately 193.2ha
- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands – approximately 477.6ha
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – approximately 306.7ha as a result of the proposed action.

Threatened Species

An action is likely to have a significant impact on a threatened species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

The proposed action is unlikely to have a significant impact on threatened species, due to the following:

- **Flora species:** Above ground clearance work is unlikely to have a long-term impact on localised populations. Mitigation measures will ensure that if individuals or populations of these species are located, the Project will seek to avoid and minimise impacts through design changes and the

implementation of impact mitigation strategies and therefore the proposed action is unlikely to modify, destroy, remove or isolate the availability of suitable habitat to the extent that the species is likely to decline.

- **Terrestrial and aboreal mammals:** There is potential for a significant impact on the koala, due to the extent of habitat clearing, and increased fragmentation in areas of intact woodland. In relation to the other potentially affected terrestrial and arboreal mammals, due to the linear nature of the proposed action, the proposed action would not involve removing all of the limiting breeding or, foraging habitat, within a region for the species' and the mobile nature of these species and remaining availability of suitable habitat surrounding the proposed action it is unlikely to have a significant impact on these species.
- **Reptiles:** The proposed action would include areas of ground disturbance during construction. This would not involve removing all limiting breeding, foraging or rocky habitat within a region. Due to the remaining availability of potential suitable habitat surrounding the proposed action it is unlikely to have a significant impact.
- **Amphibians and aquatic species (turtles and crayfish):** There may be habitat within the locality however direct impacts to all major creeks and waterways through waterway crossings will be avoided by the proposed action where practicable and where crossing structures in waterways are required, they will be subject to strict mitigations such that a significant impact on these species is unlikely.
- **Forest and woodland birds:** The proposed action will result in the removal of trees and the modification of native vegetation/habitats for these species. Due to the linear nature of the proposed action, the proposed action would not involve removing all of the limiting breeding or, foraging habitat, within a region for the species and the mobile nature of these species and remaining availability of suitable habitat surrounding the proposed action it is unlikely to have a significant impact on these species.

Refer to Section 4, pages 18 to 29 of Attachment C for more information.

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

Yes

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

Three TECs and the koala are considered likely to be significantly impacted by the proposed action, as discussed above.

Consequently, the proposed action for these TECs and the koala is likely to be a controlled action. The provisions of Part 3, Division1, Subdivision C are likely to be the controlling provisions for the proposed action.

Refer to Attachment C for a detailed assessment for each TEC and threatened species likely to be impacted against the Matters of National Environmental Significance Significant Impact Guidelines 1.1 EPBC Act.

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

Avoiding and minimising impacts to biodiversity is one of the key planning principles which has guided the route selection and refinement process for the Proposed Action. As a result of this refinement process, the Project Area avoids national park estates and the corridor selected has sought to minimise impacts to biodiversity where practicable. Recent changes to the alignment have been implemented that have reduced the overall impact on biodiversity, with the proposed route approximately 50km shorter than the previous alignment. This has reduced the direct and potential indirect impacts on vegetation and habitat.
Further avoidance and minimisation work will be completed as part of the Environmental Impact Statement (EIS) phase, however, due to the scale of the Project and the need to traverse generally south to north through the landscape, full avoidance of biodiversity impacts is not possible and residual biodiversity impacts will remain.

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

Biodiversity offsets are proposed for the residual biodiversity impacts following the application of avoidance and minimisation measures. EnergyCo proposed to enter into a Strategic Offset Delivery Agreement (SODA) with the NSW Environment Agency Head to deliver offsets either through like for like biodiversity credits or funding conservation actions consistent with the NSW Biodiversity Offset Scheme. EnergyCo will publish a notice of intention to enter a SODA and intends to deliver the biodiversity offsets for the Project through this pathway.

4.1.5 Migratory Species

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

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

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

Direct impact	Indirect impact	Species	Common name
Yes		Actitis hypoleucos	Common Sandpiper
Yes		Apus pacificus	Fork-tailed Swift
Yes		Calidris acuminata	Sharp-tailed Sandpiper
Yes		Calidris ferruginea	Curlew Sandpiper
Yes		Calidris melanotos	Pectoral Sandpiper
Yes		Gallinago hardwickii	Latham's Snipe, Japanese Snipe
Yes		Hirundapus caudacutus	White-throated Needletail
Yes		Motacilla flava	Yellow Wagtail
Yes		Pandion haliaetus	Osprey
Yes		Tringa nebularia	Common Greenshank, Greenshank

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

Yes

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

Migratory species listed under the EPBC Act with potential to occur in the project area include:

- Terrestrial birds
    - *Hirundapus caudacutus* (White-throated Needletail)
    - Monarcha melanopsis (Black-faced Monarch)
    - *Motacilla flava* (Yellow Wagtail)
    - Myiagra cyanoleuca (Satin Flycatcher)
    - Rhipidura rufifrons (Rufous Fantail)
    - Symposiachrus trivirgatus (Spectacled Monarch)
- Wetland birds
    - Actitis hypoleucos (Common Sandpiper)
    - *Calidris acuminata* (Sharp-tailed Sandpiper)
    - *Calidris ferruginea* (Curlew Sandpiper)
    - *Calidris melanotos* (Pectoral Sandpiper)
    - *Gallinago hardwickii* (Latham's Snipe, Japanese Snipe)
    - Pandion haliaetus (Osprey)
    - *Tringa nebularia* (Common Greenshank, Greenshank)
- Marine birds
    - *Apus pacificus* (Fork-tailed Swift)

None of the species listed above were assessed as having moderate to high likelihood of occurrence. However, there is potential for indirect impacts due to inadvertent disturbance to native vegetation/habitat, habitat edge effects, reduced habitat quality due to noise, dust and light spill during construction, reduced habitat quality due to noise during operation, weed dispersal, alterations to the flow regimes to rivers and streams and changes to fire regimes.

Refer to Section 4.4 of Attachment C for more information.

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

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

- substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species
- result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or
- seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

The proposed action is unlikely to significant impact migratory species as it would not remove a substantial area of breeding or foraging habitat, disrupt the lifecycle of migratory species or result in the establishment of invasive species such that would result in a significant impact.

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

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

There are no anticipated significant impacts on migratory species, therefore the proposed action is not considered a controlled action due to significant impacts on migratory species.

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

Avoiding and minimising impacts to biodiversity is one of the key planning principles which has guided the route selection and refinement process for the Proposed Action. As a result of this refinement process, the Project Area avoids national park estates and the corridor selected has sought to minimise impacts to biodiversity where practicable. Recent changes to the alignment have been implemented that have reduced the overall impact on biodiversity, with the proposed route approximately 50km shorter than the previous alignment. This has reduced the direct and potential indirect impacts on vegetation and habitat.
Further avoidance and minimisation work will be completed as part of the Environmental Impact Statement (EIS) phase, however, due to the scale of the Project and the need to traverse generally south to north through the landscape, full avoidance of biodiversity impacts is not possible and residual biodiversity impacts will remain.

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

Biodiversity offsets are proposed for the residual biodiversity impacts following the application of avoidance and minimisation measures. EnergyCo proposed to enter into a Strategic Offset Delivery Agreement (SODA) with the NSW Environment Agency Head to deliver offsets either through like for like biodiversity credits or funding conservation actions consistent with the NSW Biodiversity Offset Scheme. EnergyCo will publish a notice of intention to enter a SODA and intends to deliver the biodiversity offsets for the Project through this pathway.

4.1.6 Nuclear

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

No

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

The proposed action is not a nuclear action and will not involve any nuclear activities. As such, there will be no impact as a result of nuclear action.

4.1.7 Commonwealth Marine Area

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

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

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

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

No

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

The project area is located over 100 km from the nearest coastline. As such, and considering the nature of the proposed action and its potential impacts, there will be no direct or indirect impacts on Commonwealth Marine Areas as a result of the proposed action.

4.1.8 Great Barrier Reef

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

No

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

The project area is located over 500 km from the Great Barrier Reef. As such, and considering the nature of the proposed action and its potential impacts, there will be no direct or indirect impacts on the Great Barrier Reef as a result of the proposed action.

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

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

No

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

The proposed action is not a coal seam gas or large coal mining development.

4.1.10 Commonwealth Land

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

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

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

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

No

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

The project area is not within Commonwealth Land. However, 34 areas of Commonwealth Land were identified within 10 km of the project area.

As all the identified areas of Commonwealth Land are outside of the project area, direct or indirect impacts on Commonwealth Land are not anticipated as a result of the proposed action.

4.1.11 Commonwealth Heritage Places Overseas

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

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

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

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

No

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

The project area is located over 100 km from the nearest coastline. There will be no direct or indirect impacts on Commonwealth heritage places overseas as a result of the proposed action.

4.1.12 Commonwealth or Commonwealth Agency

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

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

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

- Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

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

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

4.3 Alternatives

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

Yes

4.3.2 Do you have an alternative timeline you are proposing for your proposed action? *

No

4.3.3 Briefly describe why an alternate timeline for your proposed action was not possible. *

Australia is moving towards net zero greenhouse gas emissions by 2050, with an accelerating transition of Australia's energy generation market to renewable energy. Energy supply in NSW is transitioning from a system dominated by a small number of large coal-fired generators located close to metropolitan centres to one of diverse renewable energy generation and storage located where the renewable resource and environmental constraints permit.

The development REZs is a key component of the NSW government's strategy to deliver cheap, reliable, and clean electricity for homes and businesses in NSW. New transmission infrastructure is required to connect the REZs to the existing transmission network and is critical to achieving the energy security, cost and sustainability objectives of the Commonwealth and NSW governments.

A key element of the NSW Electricity Strategy and Electricity Infrastructure Roadmap, and the 2024 Integrated Systems Plan, is to deliver the proposed action before the retirement of key coal-fired power stations over the next 10 years. Based on the current design and preliminary construction staging, construction of the proposed action would commence in the second half of 2028, subject to NSW Government and Commonwealth planning approvals, and is estimated to take about 5 to 7 years to construct. Stage 1 of the proposed action is expected to be commissioned/energised (i.e. become operational) in 2033 (2.4 GW) with Stage 2 to deliver an additional 3.6 GW by 2035.

Due to the required timing to meet the needs of the energy transition process and NSW and Commonwealth government planned transition timeframes, and to meet the timeframes associated with existing power station closures, an alternative timeframe is not proposed.

4.3.4 Do you have an alternative location you are proposing for your proposed action? *

No

4.3.5 Briefly describe why an alternative location for your proposed action was not possible. *

Following the declaration of the New England REZ in December 2021, EnergyCo commenced an initial options analysis process to identify potential energy hub and transmission line route options for further assessment. The various options considered in the initial options analysis process were refined through initial power system analysis, constraint and optionality mapping, and targeted consultation with prospective generators. A preliminary options assessment and options feasibility assessment was also undertaken. This process refined down the list of options and resulted in a short-list of transmission corridor options and energy hub locations being identified for further detailed assessment.

Once the short list of corridor options was determined, detailed assessments of each option were undertaken using a defined list of planning principles to select a preliminary study corridor. Once this preliminary corridor was selected, landowner, community and stakeholder engagement commenced (starting in June 2023), along with biodiversity field studies and further desktop environmental assessments. Based on the feedback and outcomes of these studies, a number of revisions were made to the preliminary study corridor to avoid and minimise impacts.

A revised study corridor was announced in October 2025. This revised corridor resulted in reduced impacts when compared to the preliminary study corridor, affecting fewer landholders and reduced the length of transmission easement and overall project footprint.

Following the completion of further stakeholder engagement, environmental and social studies, and technical design work, EnergyCo selected the project area as presented in this referral.

4.3.6 Do you have alternative activities you are proposing for your proposed action? *

No

4.3.7 Briefly describe why an alternative activity for your proposed action was not possible. *

The proposed action was determined through a series of options assessments undertaken by EnergyCo where alternative alignments were considered, including:

- Option 1: base case ('do nothing') option
- Option 2: optimisation and modification of existing transmission line infrastructure
- Option 3: provision of new underground transmission infrastructure
- Option 4: provision of new overhead transmission infrastructure (the proposed action)
- Option 5: Alternative power sources

Option 1: base case ('do nothing') option

The base case option is to 'do nothing' and rely on continued coal-fired power generation, supplemented by current and planned development of renewable energy projects, where these can connect to the existing transmission network.

As outlined in Section 2.1, AEMO's 2024 ISP highlights that ten large coal-fired power stations have closed since 2012, and projects that 90% of today's capacity will be closed by 2035, and all before 2040. Future energy demands will not be met using existing energy generating infrastructure and will instead rely on new low emission energy generation sources to supply energy across the State. The 'do nothing' option would mean that the New England REZ objectives would not be achieved and therefore this option has been rejected.

Option 2: optimisation and modification of existing transmission line infrastructure

Use existing power lines

The existing 330 kV transmission lines that currently transfer power between Bayswater, Tamworth and Armidale, and between Armidale, Kempsey and Newcastle, do not have sufficient available capacity to carry the extra power needed to be delivered by the New England REZ.

Upgrade existing power lines

Whilst the option to upgrade existing power lines was investigated, it was not considered feasible due to the need for lengthy system outages and for the existing lines to be taken down, easements widened and new structures built. Additionally, this option would take much longer to construct and materially delay the delivery of first power for the New England REZ. Even with these upgrades, additional lines would still need to be built as the incremental capacity provided by these upgrades would be insufficient to meet the network capacity requirements of the REZ.

Follow the existing 330 kV power line further west

Transgrid currently operates two 330 kV transmission lines that run from Bayswater to Tamworth and on to Armidale. Opportunities to co-locate with either of these lines have been considered. However, the western line is closer to the regional centres of Tamworth and Scone, regional centres that have undergone significant development and urban growth since the existing transmission line was first built in the 1960s. Given the proximity of these major regional centres, co-location with those lines would have substantial impacts to private properties, townships and amenity.

Option 3: provision of new underground transmission infrastructure

- As part of the development of the proposed action, EnergyCo has considered installing the transmission lines underground. There are a number of constraints to underground transmission lines, including:
- Physical constraints when traversing steep terrain such as ravines and escarpments
- Extensive trenching and earthworks, which may not be suitable in certain geology and areas of high biodiversity or cultural value
- Restrictions on vegetation growth over the entire easement, meaning agricultural cropping would not be permitted within the easement

- Underground cables cost approximately four times more than the overhead equivalent for 330 kV lines, and eight times more for 500 kV lines
- The construction timeframe is substantially longer compared to the overhead equivalent, which extends construction amenity impacts
- Fault-finding and repair for underground systems is more challenging and time consuming than for overhead systems, requiring substantial excavation. This can result in prolonged outages and interruptions to the power supply.

A Select Committee was established by the NSW Government on 13 September 2023 to inquire into and report on the feasibility of undergrounding the transmission infrastructure for renewable energy projects. The report, released in March 2024 found that available evidence generally supports that undergrounding electricity infrastructure is more costly, and that there are concerns from some stakeholders that the cost of undergrounding electricity transmission projects will negatively impact the price of electricity to consumers through flow on effects (NSW Parliament, 2024).

Overhead transmission was selected as it best balances the considerations of cost to consumers, project delivery schedule, construction risk, environmental impact, reliability and transfer capacity.

Option 4: provision of new overhead transmission infrastructure (the proposed action)

Provision of new overhead transmission infrastructure has been identified as the preferred option through the Project development process undertaken by EnergyCo. Overhead transmission infrastructure avoids the longer time frames, greater costs and constructability constraints of underground infrastructure (Option 3) and the potential impacts, and network outages and delays, associated with modifying existing infrastructure (Option 2).

Option 5: alternative power sources

EnergyCo has received some community feedback suggesting alternative power sources instead of the Project. Potential alternative power sources that have been raised include coal-fired power stations and nuclear power stations.

NSW's electricity supply has traditionally been heavily reliant on coal-fired power stations, however, many of these are now reaching the end of their technical life. The Commonwealth and NSW governments have committed to net zero emissions by 2050 and the commissioning of new coal-fired power stations would not contribute towards the achievement of net zero emissions. Furthermore, wind and solar electricity generation can provider cheaper and cleaner energy for the people of NSW while contributing to the achievement of net zero emissions by 2050.

Nuclear power development is currently prohibited under both Commonwealth and NSW legislation, however, EnergyCo recognises there is a conversation about the possibility of nuclear energy contributing to future energy supply in the broader community.

The CSIRO's GenCost 2024-25 Final Report (Gramham, Hayward and Foster, 2025) considered a range of generation options including nuclear small modular reactors (SMRs) and large-scale nuclear production. The report identified that:

- A range of social, political, regulatory and technical factors would contribute to a long lead time before any nuclear generation could occur, with a likely 15 years to first production from a decision to build nuclear SMR in Australia, and given the longer construction time of large-scale nuclear plant, the total development time would be a few years longer. A 15 year plausible development time would mean that if a decision to pursue nuclear in Australia were made in 2025, with political and community support for the required legislative changes, then the first full operation would be no sooner than 2040. This timing would not meet the timing objectives of the New England REZ to which this Project is related.
- Nuclear has several additional steps in its pre-construction timeline that other technologies do not have. Nuclear technologies need to undergo more extensive safety and security permitting, nuclear

prohibitions would need to be removed at the state and commonwealth level and safety authorities need to be established.
- Levelised cost of electricity (LCOE) (an electricity generation technology comparison metric) cost range for variable renewables (solar and wind) with integration costs was the lowest of all new-build technologies (approximately 116 – 1760 $/MWh) when considering costs in 2024. Nuclear SMRs had significantly higher costs (approximately 456 – 757 $/MWh) than all other alternatives with large-scale nuclear costs (approximately 180 -293 $/MWh) being less than SMRs but more than solar and wind.

Given these constraints and timeframes, the proposed action is consistent with the 2024 ISP lowest cost path and based on timing, is required irrespective of whether or not nuclear energy may become a component of Australia's energy mix in the future.

Other alternatives such as offshore wind would not be available in the timeframe needed for the 12 GW of renewable generation required by 2030 under the Roadmap. While offshore wind may be an important component of NSW's future energy mix, the GenCost 2024-25 report identified that offshore wind is higher cost than onshore wind (Gramham, Hayward and Foster 2024).

In 2021 the NSW Government released the NSW Hydrogen Strategy (DPIE 2021b) which provides a framework to support the development of a commercial hydrogen industry in NSW. By supporting industry to rapidly achieve scale and increase the competitiveness of hydrogen against existing emissions intensive fuels and technologies it is anticipated that hydrogen could play a major role in the renewable energy transition. Together with REZs, hydrogen hubs and refuelling networks will seek to unlock decarbonisation of the heavy transport sector and support the emergence of new decarbonised industries, such as green steel and ammonia.

4.3.4 Alternatives: Impact and mitigation

4.3.4.1 Do these alternatives have a different impact, avoidance, or mitigation measure compared to what you have already provided? *

No

4.3.5 Alternatives: Considered alternatives

4.3.5.1 Do you have any other alternative actions, including not taking the action, that you have considered but are not proposing as part of this referral? *

No

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A-Proposed Action location.pdf A figure showing the proposed action and project area	22/12/2025	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att B-land zoning in project area.pdf A figure showing the various land zonings in the project area	22/12/2025	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C-Biodiversity Assessment of MNES.pdf Presents the key biodiversity findings relevant to the Proposed Action, based on preliminary desktop assessments and preliminary fieldwork results	22/12/2025	No	High

3.3.1 Commonwealth heritage places overseas or other places that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att D-Heritage Values.pdf Figures showing the location of heritage items within and near the project area	22/12/2025	No	High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C-Biodiversity Assessment of MNES.pdf Presents the key biodiversity findings relevant to the Proposed Action, based on preliminary desktop assessments and preliminary fieldwork results	22/12/2025		High

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

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C-Biodiversity Assessment of MNES.pdf Presents the key biodiversity findings	22/12/2025		High

relevant to the Proposed Action, based on preliminary desktop assessments and preliminary fieldwork results

4.1.4.8 (Threatened Species and Ecological Communities) Why you think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C-Biodiversity Assessment of MNES.pdf Presents the key biodiversity findings relevant to the Proposed Action, based on preliminary desktop assessments and preliminary fieldwork results	22/12/2025		High

5.2 Declarations

Completed Referring party's declaration

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

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS
Representative's name	Kane Winwood
Representative's job title	Planning & Environment Manager, New England Renewable Energy Zone
Phone	0434967285
Email	kane.winwood@dpie.nsw.gov.au
Address	GPO Box 5469 SYDNEY NSW 2001

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

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

☑ By checking this box, I, **Kane Winwood of Energy Corporation Of New South Wales**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

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

Completed Person proposing to take the action's declaration

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

ABN/ACN	13495767706
Organisation name	Energy Corporation Of New South Wales
Organisation address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS
Representative's name	David Koppers

Representative's job title	Manager Planning
Phone	02 9373 2869
Email	david.koppers@energyco.nsw.gov.au
Address	Level 7, 255 George Street, Sydney, New South Wales, 2000 AUS

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

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

☑ I, **David Koppers of Energy Corporation Of New South Wales**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

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

✔ Completed Proposed designated proponent's declaration

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

Same as Person proposing to take the action information.

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

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

☑ I, **David Koppers of Energy Corporation Of New South Wales**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

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