# Marulan Power Station

## Marulan Power Station Scoping Report

Revision: 3

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EnergyAustralia

LIGHT THE WAY

# Document control record

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# Abbreviations

| Acronym | Description |
|---|---|
| ACHAR | Aboriginal Cultural Heritage Assessment Report |
| AEMO | Australian Energy Market Operator |
| AEP | Annual Exceedance Probability |
| AHD | Australian Height Datum |
| AHIMS | Aboriginal Heritage Information Management System |
| AHIP | Aboriginal Heritage Impact Permit |
| B&C SEPP | State Environmental Planning Policy (Biodiversity and Conservation) 2021 |
| BAL | Bushfire Attack Level |
| BAM | Biodiversity Assessment Method |
| BCA | Biodiversity Constraints Analysis |
| BC Act | *Biodiversity Conservation Act 2016* |
| BDAR | Biodiversity Development Assessment Report |
| BESS | Battery Energy Storage System |
| BGoS | Botanic Gardens of Sydney |
| CASA | Civil Aviation Safety Authority |
| CCGT | Combined cycle gas turbine |
| CEMP | Construction environment management plan |
| CIS | Capacity Investment Scheme |
| CLM Act | *Contaminated Land Management Act 1997* |
| $CO_2$ | Carbon dioxide |
| $CO_2e$ | Carbon dioxide equivalent |
| CSP | Community Strategic Plan |
| CSSI | Critical State Significant Infrastructure |
| DCCEEW | Commonwealth Department of Climate Change, Energy, the Environment and Water |
| DISR | Department of Industry, Science and Resources |
| DLE | Dry Low Emission |
| DP | Deposited plan |
| DPE | Department of Planning and Environment |
| DPHI | NSW Department of Planning, Housing and Infrastructure |
| EIS | Environmental Impact Statement |
| EPA | NSW Environment Protection Authority |
| EP&A Act | *Environmental Planning and Assessment Act 1979* |
| EP&A Regulation | Environmental Planning and Assessment Regulation 2021 |
| EPBC Act | *Environment Protection Biodiversity and Conservation Act 1999* |
| EPIs | Environmental Planning Instruments |
| EPL | Environment Protection Licence |
| ESD | Ecologically sustainable development |
| FFA | Flood frequency analysis |
| FM Act | *Fisheries Management Act 1994* |

| Acronym | Description |
|---|---|
| GHG | Green House Gas |
| GW | Gigawatt |
| ha | Hectares |
| Heritage Act | *Heritage Act 1977* |
| HSP | Highlands Source Project |
| ISP | Integrated System Plan |
| KFH | Key fish habitat |
| km | Kilometres |
| kV | Kilovolts |
| LEPs | Local Environment Plans |
| LGA | Local Government Area |
| LSPS | Local Strategic Planning Statement |
| LTESA | Long Term Energy Storage Agreement |
| m | Metres |
| MNES | Matters of National Environmental Significance |
| MSP | Moomba to Sydney Pipeline |
| MW | Megawatt |
| NEM | National Electricity Market |
| NML | Noise management levels |
| $NO_x$ | Nitrogen oxides |
| NP&W Act | National Parks and Wildlife Act 1974 |
| NPfI | NSW Noise Policy for Industry |
| NSW | New South Wales |
| OCGT | Open cycle gas turbine |
| OSOM | Oversize over mass |
| PBP | *Planning for Bushfire Protection 2019* |
| PCT | Plant community type |
| PHA | Preliminary hazardous analysis |
| $PM_{10}$ | Particulate matter with a diameter of 10 micrometres or smaller |
| PMF | Probable maximum flood |
| PMST | Protected matters search tool |
| POEO Act | *Protection of the Environment Operations Act 1997* |
| SAII | Serious and Irreversible Impacts |
| SEPPs | State Environmental Planning Policies |
| SIA | Social Impact Assessment |
| $SO_x$ | Sulphur oxides |
| SSI | State Significant Infrastructure |
| SVTM | State Vegetation Type Mapping |
| T&I SEPP | State Environmental Planning Policy (Transport and Infrastructure) 2021 |
| TEC | Threatened ecological community |
| TfNSW | Transport for New South Wales |
| WM Act | *Water Management Act 2000* |

# Executive Summary

Energy Australia acknowledges that the site of the proposed Marulan Gas Fired Power Station project is on the traditional Country of the Gandangara People. We recognise their continued connection to land, waterways and community, and we pay our respects to Elders past and present.

## The project

EnergyAustralia is the proponent of the approved Marulan Gas Fired Power Station Project. The Marulan Gas Fired Power Station Project consists of two adjacent gas fired power stations which share common infrastructure and was originally approved as a 'critical infrastructure project' under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) by:

- Concept approval 07_0174 (Concept Approval) which authorised a concept only for the whole of the approved project (Concept Plan).
- Project approval 07_0175 (Station 1 Approval) which authorised the construction and operation of a 350 megawatt (MW) open cycle gas-fired power station for peak electricity generation (Station 1).
- Project approval 07_0176 (Station 2 Approval) which authorised the construction and operation of either a 250-350 MW open cycle gas-fired power station for peak electricity generation or a 400-450 MW combined cycle gas-fired power station for intermediate/ base load electricity generation (Station 2).
- Project approval 07_0174 (Common Infrastructure Approval) which authorised the earthworks, vegetation clearing, gas pipeline and internal access road as common infrastructure for both stations (Common Infrastructure).

Following the repeal of Part 3A of the EP&A Act, each of these four approvals were transitioned in line with the EP&A Act transitional provisions and are now deemed to be Critical State Significant Infrastructure (CSSI) approvals granted under Division 5.2 of the EP&A Act.

Together the four approvals (collectively referred to as the CSSI approvals) authorise the construction and operation of two gas fired open cycle gas turbine (OCGT) power stations with a combined capacity of up to 700 MW and associated common infrastructure (collectively referred to as the approved project). The approved project included:

- the option to convert one of the approved stations into a combined cycle gas turbine (CCGT) facility so as to increase the total capacity of the approved project to up to 800 MW
- a new high voltage transmission line connecting the power stations into Transgrid's Marulan 330kV substation
- a new gas supply lateral pipeline from the Moomba to Sydney gas pipeline (MSP) to be constructed in one of a number of approved corridors
- a new internal access road to service the power stations.

EnergyAustralia proposes to modify the CSSI approvals under section 5.25 of the EP&A Act. The proposed modifications to the approved project include:

- extend the project approvals lapse date by five years to 26 October 2031
- increase the combined capacity of the two power stations to up to 1.43 gigawatt (GW) in total and remove the option to convert one of the stations to CCGT
- update the configuration of gas turbines, operational plant, and ancillary operational equipment
- provide the option to include clutches between the gas turbines and generators to enable switching from power generation to synchronous condenser mode

- make provision for either diesel generators or onsite batteries to enable the power stations to start up and generate electricity without relying on an external power supply
- enable the power stations to operate using diesel as a backup fuel
- vary the operational water supply arrangements (subject to further design development)
- vary the location of the site access road
- vary the connection to Transgrid's Marulan 330kV substation (subject to further design development)
- confirmation of the route proposed for the gas pipeline (subject to further design development)
- update the location of construction phase ancillary infrastructure including storage areas, construction works areas, construction car parking, offices, amenities and workshop / storage areas (subject to further design development)
- authorise the establishment and use of temporary construction workers accommodation facilities (subject to further design development)
- authorise upgrades to the public roads to allow for heavy vehicle access to site, including for over size over mass (OSOM) vehicles (subject to further design development).

The final gas pipeline route, grid connection route, and operational water supply infrastructure along with the location of any offsite elements such as the temporary construction workers accommodation facilities, construction phase ancillary areas and road upgrades, will be confirmed as part of the modification applications and incorporated into the modified project disturbance footprint.

The changes proposed as part of the modified project will enable the use of larger, more efficient, OCGT technology to help ensure energy security as the clean energy transition continues and NSW's existing large coal fired power stations progressively close.

Consistently with the approved project, the modified project will operate during peak demand periods, when renewable energy sources and grid scale storages are not providing sufficient power, ensuring grid stability. Accordingly, like the approved project, the modified project will generate electricity during peak demand periods, when renewable energy sources and grid scale storages are not providing sufficient power, with no set limits on operational run time.

Much of the modified project remains generally consistent with the approved project, with the grid connection being into Transgrid's Marulan substation and the gas supply being from a new lateral off the Moomba to Sydney gas main. Additionally, like the approved project, the modified project would use contemporary dry low emission (DLE) technology to reduce $NO_x$ emissions and is likely to be configured generally with the following equipment: OCGT, air intake filter house and ducts, exhaust stacks, natural gas management equipment, fin fan coolers for lube oil and generator systems, motor control centre including all electronic control cabinets and battery rooms/compartments, lube oil and water injection modules, instrumentation, control, monitoring and protection equipment for the turbines, fire suppression facilities, operational water and wastewater management systems, reverse osmosis and electro-deionisation plant, stormwater management, fencing, and a site security guard house.

## Need for modification of the project

The modified project is required to align with the current needs of the national electricity market (NEM) which has evolved significantly since the project was first designed and approved. The NEM currently requires fast start firming capacity and enhanced grid stability. The modified project would play a crucial role in maintaining the reliability of the grid during the transition to renewable energy sources, providing vital support during periods of low renewable energy generation.

The 2024 Integrated System Plan (ISP) released by AEMO highlights that as coal-fired power stations retire, the transition to a net zero economy will rely on renewable energy supported by storage and flexible gas-powered generation, which is key for managing supply variability and peak demand. The ISP forecasts a need for 15 GW of gas generation to maintain grid security and reliability, replacing retiring assets and adding new flexible gas plants. To meet these requirements, an additional 12.8 GW of gas generation will be developed from new or existing sites. The

modified project's contribution of up to 1.43 GW of gas-fired capacity will support the ISP's firming capacity targets, enhancing electricity reliability and affordability during Australia's energy transition.

The primary benefits of the approved project would be maintained in the modified project. These include:

- increased reliability of electricity supply during peak demand periods
- improved security of electricity supply during system emergencies
- supporting the energy transition away from baseload coal generation to a renewable energy focus
- leveraging the project's strategic proximity to the Moomba to Sydney Gas Pipeline and existing substation infrastructure which enables efficient and reliable energy delivery to major demand centres across NSW
- economic benefits including increased economic activity during construction including the creation of up to 380 jobs, that will stimulate the local and regional economy, helping to build resilience and growth, boosting local employment and supporting nearby businesses
- economic benefits by providing for improvements in electricity affordability for consumers.

In addition, the modified project will provide the following additional or modified benefits:

- improved grid stability through functions such as frequency regulation
- support for coal retirement through firming of wind generation using highly efficient and responsive generation that does not emit greenhouse gases when sufficient renewables are available
- installation of current technologies that have reduced emissions outputs and noise profiles
- improved benefit sharing for the local community through meaningful and innovative support for local initiatives, exploring ways to address challenges such as housing supply and investing in projects that deliver long-term community value.

## Statutory framework

The approved projects were originally 'critical infrastructure projects' which were authorised by the approvals granted under the former Part 3A of the EP&A Act on 26 October 2009. Following the repeal of Part 3A of the EP&A Act, the approvals were transitioned by an order made on 20 November 2018 under the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*) and are now deemed to be CSSI approvals granted under Division 5.2 of the EP&A Act.

Section 5.25 of the EP&A Act enables a proponent to request the approval of the Minister to modify a state significant infrastructure approval. Section 5.25(3) provides that a request for the Minister's approval of a modification is to be lodged with the Planning Secretary, and that the Planning Secretary may notify the proponent of environmental assessment requirements that the proponent must comply with before the matter is considered by the Minister.

This scoping report has been prepared to assist the Planning Secretary to determine the environmental assessment requirements for the modification applications proposed for each of the CSSI approvals and outlines:

- the key changes proposed to the approved project as part of the modified project
- the manner in which these changes are proposed to be assessed as part of the proposed modification applications.

The Minister for Planning will be the consent authority for the modification applications.

## Engagement

EnergyAustralia is committed to working with the communities in which it operates and, as such, has been proactively working with the community and stakeholders. Various consultation and engagement has been undertaken for the modified project, including:

- consultation with government agencies to discuss pre-application matters and key potential impacts
- consultation with proposed pipeline stakeholders and neighbours to provide updates on the project

- consultation with the community through the Community Reference Group, pop-up meetings, community. newsletters, site tours and surveys
- outreach to the Pejar Land Council to provide project updates.

The main issues raised in consultation to date relate to:

- need for road upgrades to accommodate the construction traffic
- operational noise
- air emissions
- biodiversity impacts and management
- accommodation and local housing
- visual impacts from properties.

Community and stakeholder engagement will continue during preparation of the modification and throughout the future stages of the project.

## Environmental considerations

This scoping report has identified the potential for the modified project to result in environmental impacts and benefits during construction and operation. It describes the following impacts assessments as being required to be prepared as part of the modification applications:

- biodiversity assessment including consideration of Matters of National Environmental Significance
- noise and vibration assessment
- air quality assessment
- greenhouse gas assessment
- plume rise and aviation risk assessments
- surface water and groundwater assessments
- hydrology and flooding assessments
- soil and contamination assessments
- Aboriginal heritage assessment
- non-Aboriginal heritage assessment
- traffic and transport assessment
- landscape character and visual amenity assessment
- social impact assessment
- hazard and risk assessment
- waste assessment
- bushfire assessment
- cumulative impact assessment.

## Next steps

A consolidated modification report will be prepared to collectively assess the changes proposed to the CSSI approvals. Separate modification applications will be submitted for each CSSI approval under section 5.25 of the EP&A Act.

EnergyAustralia would continue to consult the community and project stakeholders throughout the preparation of the modification applications and through future project stages.

# 1 Introduction and background

## 1.1 Introduction

The Marulan Gas-Fired Power Station Project consists of two adjacent gas fired power stations which share common infrastructure (the approved project). The approved project was originally approved on 26 October 2009 under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) by the following Critical State Significant Infrastructure (CSSI) approvals:

- Concept approval 07_0174 (Concept Approval) which authorised a concept only for the whole of the approved project (Concept Plan).
- Project approval 07_0175 (Station 1 Approval) which authorised the construction and operation of a 350 megawatt (MW) open cycle gas-fired power station for peak electricity generation (Station 1).
- Project approval 07_0176 (Station 2 Approval) which authorised the construction and operation of either a 250-350 MW open cycle gas-fired power station for peak electricity generation or a 400-450 MW combined cycle gas-fired power station for intermediate/ base load electricity generation (Station 2).
- Project approval 07_0174 (Common Infrastructure Approval) which authorised the earthworks, vegetation clearing, gas pipeline and internal access road as common infrastructure for both stations (Common Infrastructure).

The approved project was declared to be critical infrastructure pursuant to the former section 75C of the EP&A Act as it was considered essential for NSW and would contribute to the State's power supply and complement increasing renewable energy generation over the medium and longer term.

The approved project was originally proposed to be carried out as a joint project between EnergyAustralia and Delta Electricity, with Station 1 and Station 2 to be operated independently by each party. Both stations would share a single gas pipeline, transmission line and access road, which were authorised as part of the Common Infrastructure Approval and would be jointly managed. EnergyAustralia acquired Delta Electricity's interest in the project in 2010 and EnergyAustralia is now the sole proponent of the project.

Since the CSSI approvals, EnergyAustralia has progressed design and development; however, construction of the project has not been commenced due to changes and uncertainties in the energy market, as well as EnergyAustralia's focus on delivering the Tallawarra B Power Station, which commenced commercial generation into the grid on 18 June 2024.

Following reforms to the EP&A Act which repealed Part 3A and inserted new State Significant Infrastructure (SSI) provisions, the approved project was transitioned to CSSI under Division 5.2 of the EP&A Act by order on 20 November 2018.

Since being granted, the CSSI approvals have been modified on two occasions to extend the lapsing date for the approvals. The most recent modification was approved on 16 October 2024 and extended the lapsing date to 26 October 2026 to enable EnergyAustralia additional time for further project development (including the proposed final turbine configuration) to address changes in energy market conditions and time to apply for a modification to the approvals under section 5.25 of the EP&A Act. The Concept Plan Approval was not subject to a lapsing date and so has not been modified under the EP&A Act.

EnergyAustralia has now further progressed the design of the project and confirmed the changes proposed to the CSSI approvals (collectively referred to as the modified project). The modified project will remain as two gas fired power stations and associated common infrastructure but is proposed to have a total generation capacity of up to 1.43 gigawatts (GW) in an open cycle gas turbine (OCGT) configuration in addition to a number of changes to each approval as further described in Section 5.

The modified project remains critical to the economic and social needs of NSW, by providing fast-start, dispatchable electricity generation that supports the clean energy transition away from coal-fired electricity generation while retaining energy security and affordability. The key objective of the modification is to contemporise the approved

project so that it is designed, constructed, and operated to best meet the current demands of the National Electricity Market (NEM). The overall purpose of the modified project is to supplement EnergyAustralia's generation portfolio with additional dispatchable capacity, servicing demand when our electricity customers most need it, and to provide dispatchable capacity and network stability services, which can be used by AEMO to maintain a secure NEM.

## 1.2 Background to the approved project

The approved project is located on Canyonleigh Road, Brayton, around 12 kilometres northeast of Marulan, within the Upper Lachlan and Goulburn-Mulwaree Local Government Areas (LGAs). The approved project is strategically located approximately 5.5 kilometres north of the Moomba to Sydney Pipeline (MSP) and adjacent to Transgrid's Marulan 330kV substation which connects into Bannaby substation to the north and Avon and Dapto substations to the east.

Key features of the approved project approvals included:

- Concept approval 07_0174 (Concept Approval) which authorised a concept only for the whole of the approved project (Concept Plan).
- Common Infrastructure Approval (MP 07_0174) – approval for common infrastructure to support the power stations including, a transmission line between the power stations and the adjacent TransGrid substation, a site access road between the power station site and Canyonleigh Road via University Road, and a gas pipeline route (with the final route yet to be selected) within an assessed gas pipeline corridor.
- Station 1 Approval (MP 07_0175) – approval for construction and operation of a 350 MW OCGT power station, inclusive of associated ancillary equipment, water management, fuel management and control systems, internal site roads, a workshop, administration facilities, and electrical equipment.
- Station 2 Approval (MP 07_0176) – approval for construction and operation of an up to 250 to 350 MW OCGT power station, inclusive of associated ancillary equipment, water management, fuel management and control systems, internal site roads, a workshop, administration facilities, and electrical equipment. The approval included an option for the proponent to convert the OCGT power station to a 400-450 MW CCGT power station.

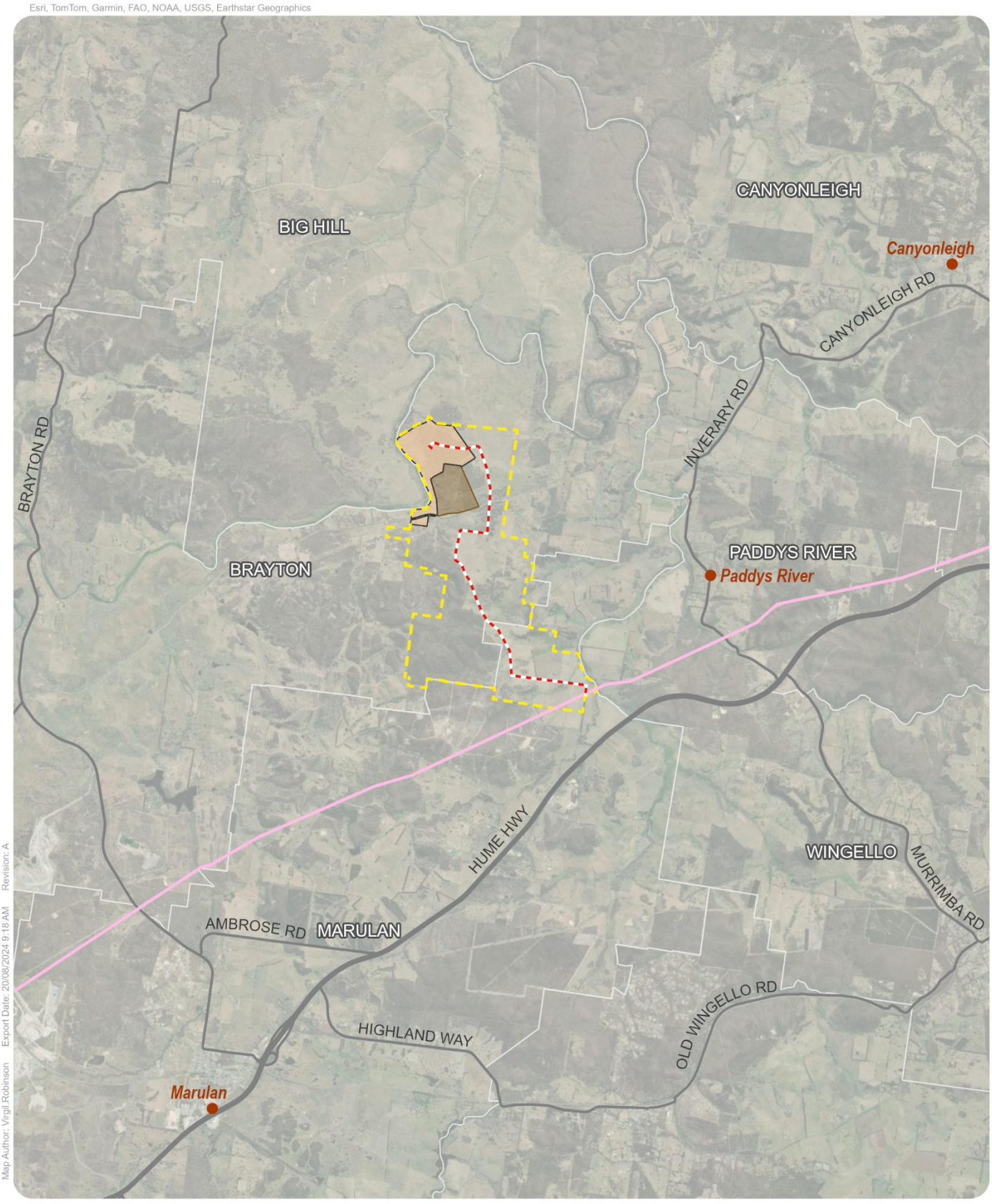
Together these four CSSI approvals allow for the construction and operation of two power stations and associated infrastructure with a combined capacity of up to 700MW of OCGT generation capacity and the potential to convert up to 350 MW of the OCGT capacity proposed for Station 2 to CCGT, resulting in a total potential generation capacity of the approved project of up to 800 MW.

The CSSI approvals identified the option of providing the operational water requirements of the power stations via a direct water pipeline, to replace/supplement water trucking requirements onto site. The source of water was proposed to be either the Marulan Water Treatment Plant and Marulan Sewage Treatment Plant and/or the Moss Vale Sewage Treatment Plant.

A desktop constraints analysis conducted as part of the CSSI approvals indicated that the proposed water pipeline had the potential to traverse a number of environmentally sensitive areas, including land with the potential to contain endangered ecological communities and habitat for threatened species. Additionally, there had been no Aboriginal cultural heritage assessment undertaken for land within the water pipeline corridors. There were also uncertainties associated with land negotiations for easement use, construction requirements and land availability.

As a result, only concept approval was granted for the water pipeline and it was recommended that any further consideration of the pipeline proceed under separate planning approval.

The approved project location is show in Figure 1-1**.**

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**Sources:** Aurecon, Esri Basemap

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0 0.45 0.9 1.35 1.8 2.25 km

**Project:** P526737

**Projection:** GDA2020 MGA Zone 56



**Figure 1-1**: Location of the approved project

## 1.3 Prior modifications to the approved project

In 2011 modification application MP07_0176-Mod-1 was submitted and subsequently withdrawn.

On 11 October 2019, EnergyAustralia submitted a request to modify the three project approvals:

- Common Infrastructure Approval MP 07_0174-Mod-1
- Station 1 Approval MP 07_0175-Mod-1
- Station 2 Approval MP 07_0176- Mod-2.

The modification requests sought an extension of the lapsing date of the approvals for five (5) additional years and did not seek to change any other components of the approved project. The modification applications were approved on 08 October 2020 by the then NSW Department of Planning, Industry and Environment and authorised an extension of the lapsing date of each of the approvals (until 26 October 2024).

On 20 August 2024, EnergyAustralia submitted a request to further extend the lapsing date of each of the approvals by a further two (2) years to allow additional time for EnergyAustralia to finalise the updates to the design of the approved project and apply for a further modification to authorise the proposed updates. These modification requests were:

- Common Infrastructure Approval MP 07_0174-Mod-2
- Station 1 Approval MP 07_0175-Mod-2
- Station 2 Approval MP 07_0176- Mod-3.

The modification requests did not seek to change any other components of the approved project. The DPHI approved this modification on 16 October 2024, extending the approval lapsing date to 26 October 2026.

The Concept Approval was not granted subject to a lapsing condition and has not been modified to date.

## 1.4 The proponent

EnergyAustralia is one of Australia's largest energy companies, operating as both an energy retailer and energy generator. We are a purpose-led company, and that purpose is *"to lead and accelerate the clean energy transformation for all"*.

EnergyAustralia is a leading energy retailer and generator and supplies around 1.6 million customers across eastern Australia. EnergyAustralia's diverse energy portfolio is designed to ensure energy supply when our customers need it. As Australia continues to transition its energy sector and increasingly relies on electricity from renewable sources such as solar, wind and hydro, investment in energy storage and additional firm capacity is necessary to manage the intermittency of renewable generation and to ensure reliable, round-the-clock supply and security.

EnergyAustralia is transforming its generation portfolio, investing in cleaner forms of energy as it builds the new power system, while reducing the emissions from existing assets that are needed to avoid interruptions to the electricity supply to consumers. As part of this responsibility, EnergyAustralia has committed to transition out of coal assets by 2040 and to achieve net zero greenhouse gas emissions by 2050 across Scopes 1, 2 and 3 (see EnergyAustralia's **Climate Transition Action Plan**).

To continue the momentum and deliver the future energy system, EnergyAustralia is building a portfolio that enables it to operate its assets more flexibly to complement and support increasing development of cleaner forms of energy generation, while also ensuring that EnergyAustralia is there when its customers need it the most. Gas fired power stations already play an essential role in today's energy mix. Their importance is growing as they can provide crucial flexibility and resilience for an energy system that will be dominated by variable renewable energy.

## 1.5 Purpose of this report

EnergyAustralia proposes to modify the CSSI approvals under section 5.25 of the EP&A Act (collectively referred to as the modified project). This report has been prepared to assist the Planning Secretary to determine the environmental assessment requirements for the modification applications, in accordance with section 5.25(3) of the EP&A Act.

Once the Planning Secretary notifies EnergyAustralia of the environmental assessment requirements, a consolidated modification report will be prepared to collectively assess the changes proposed to the CSSI approvals, including:

- extend the project approvals lapse date by five years to 26 October 2031
- increase the combined capacity of the two power stations to up to 1.43 gigawatt (GW) in total and remove the option to convert one of the stations to CCGT
- update the configuration of gas turbines, operational plant, and ancillary operational equipment
- provide the option to include clutches between the gas turbines and generators to enable switching from power generation to synchronous condenser mode
- make provision for either diesel generators or onsite batteries to enable the power stations to start up and generate electricity without relying on an external power supply
- enable the power stations to operate using diesel as a backup fuel
- vary the operational water supply arrangements (subject to further design development)
- vary the location of the site access road
- vary the connection to Transgrid's Marulan 330kV substation (subject to further design development)
- confirmation of the route proposed for the gas pipeline (subject to further design development)
- update the location of construction phase ancillary infrastructure including storage areas, construction works areas, construction car parking, offices, amenities and workshop / storage areas (subject to further design development)
- authorise the establishment and use of temporary construction workers accommodation facilities (subject to further design development)
- authorise upgrades to the public roads to allow for heavy vehicle access to site, including for over size over mass (OSOM) vehicles (subject to further design development).

The final gas pipeline route, grid connection route, and operational water supply infrastructure along with the location of any offsite elements such as the temporary construction workers accommodation facilities, construction phase ancillary areas and road upgrades, will be confirmed as part of the modification applications and incorporated into the modified project disturbance footprint.

Section 5 of this report contains an overview of how these modifications would apply separately to each of the CSSI approvals as part of the modified project.

This report documents:

- a general overview of the proposed modifications to the approved project, including the justification and need for the modifications
- preliminary identification of potential environmental and social issues that would be associated with the modified project during construction and operation
- an outline of the relevant planning legislation and approvals pathway for the modification applications
- an outline of the community and stakeholder consultation that would be undertaken for the modification applications
- the scope of the impact assessments that would be presented in the consolidated modification report which is proposed to assess the modified project and submitted in support of the modification applications.

This scoping report has been prepared with regard to the DPHI's *Undertaking Engagement Guidelines for State Significant Projects* (2022), including Annexure A - *State Significant Infrastructure guidelines – preparing a Scoping Report* (2022), and the *Social Impact Assessment Guideline* (2025).

# 2 Strategic context

## 2.1 Project objectives

The overall purpose of the modified project is to supplement EnergyAustralia's generation portfolio with additional dispatchable capacity, servicing demand when our electricity customers most need it, and to provide dispatchable capacity and network stability services, which can be used by AEMO to maintain a secure NEM.

## 2.2 National policy and context

### 2.2.1 Powering Australia Plan

The Australian Government's *Powering Australia* plan is focused on reducing pressure on energy bills, reducing emissions by boosting renewable energy, and creating jobs. The 'Energy' aim under this plan is to build a more reliable, affordable and low-emissions energy system for all Australians (DCCEEW, 2024a).

One of the highlights of this plan is securing an agreement to establish a new National Energy Transformation Partnership. This will help to transform Australia's energy system to achieve net zero by 2050 and includes expanding the Capacity Investment Scheme (CIS) to target a total of 40 GW of new capacity by 2030 (DCCEEW, 2024a).

The CIS is an Australian Government revenue underwriting scheme to accelerate investment in:

- renewable energy generation
- clean dispatchable capacity (DCCEEW, 2025).

The modified project will support both the *Powering Australia* plan and CIS by providing dispatchable capacity to bolster renewable energy generation and contribute to the target 40 GW of new capacity. Dispatchable capacity will allow for higher integration of renewables into the grid by ensuring a continuous and reliable power supply during peak demand.

### 2.2.2 National Energy Performance Strategy

The Australian Government's *National Energy Performance Strategy* provides a long-term framework to manage energy demand so that the Australian community can enjoy the economic, climate and health benefits of improved energy performance. The framework contributes to Australia meeting the legislated emissions reduction and renewable energy targets. The Australian Government is investing $15.2 million until 2026 to develop, evolve and deliver this strategy (DCCEEW, 2024b).

The *National Energy Performance Strategy* intended outcomes are:

- affordable energy for Australians
- enabling the energy transformation
- lowering emissions towards reaching net zero
- improving comfort and health
- creating jobs
- providing equitable access to energy performance benefits.

The modified project will support this strategy and its intended outcomes by providing firm dispatchable power to complement the transformation of the energy sector to renewable sources whilst also safeguarding the stability of the national grid by ensuring there is enough supply to meet demand. By providing energy security and reliability during this

transition, the modified project benefits the community by reducing the risk of power outages. Additionally, the modified project will directly and indirectly create new employment opportunities across the region.

### 2.2.3 AEMO Integrated System Plan

The 2024 Integrated System Plan (ISP) was released by the AEMO on 26 June 2024. The ISP recognises that as coal-fired power stations retire, renewable energy connected with transmission and distribution, firmed with storage and backed up by gas-powered generation is the lowest-cost way to supply electricity to homes and businesses through Australia's transition to a net zero economy. It identifies the important role gas-powered generation must play in smoothing out energy supply peaks and filling the gaps from variable renewable energy generation sources.

The ISP notes that additional gas generation will be required to deliver essential power systems services to maintain grid security and stability and provide the necessary back up with critical power supply when its needed (e.g. during renewable droughts) and to meet peaks in consumer demand.

To ensure that the NEM continues to meet the reliability standard at the least forecast cost through Australia's energy transition, AEMO has selected an optimal development path (ODP) that sets out the capacity of new grid-scale generation, firming, storage and transmission needed in the NEM through to 2050. Under the 'Step Change' scenario in the ISP, which fulfils Australia's emission reduction commitments in a growing economy, the ODP calls for investment that would almost quadruple the firming capacity from sources alternative to coal, including gas generation. The ISP makes the following statement on the need for increased flexible gas-powered generation:

> "*In total, the NEM is forecast to need 15 GW of gas-powered generation to ensure the NEM remains resilient under a range of power system and extreme weather events. Of the existing 11.5 GW capacity, about 9.3 GW is forecast or announced to retire, so that capacity would be replaced and another 3.5 GW added*."

In summary, it is forecast that 12.8 GW of gas generation will need to be sourced from either greenfield or brownfield developments to ensure energy availability during renewable droughts. The modified project would provide up to 1.43 GW of generation capacity to the NEM from gas-fired generation, therefore, contributing to meeting the ISP firming capacity requirements. This would contribute to electricity reliability and affordability as the NEM transitions to net zero.

### 2.2.4 2015 Paris Agreement

On 12 December 2015, the Conference of the Parties adopted the Paris Agreement, made under the United Nations Framework Convention on Climate Change to strengthen the global response to climate change by:

- keeping the increase in global average temperature to well below 2°C above pre-industrial levels
- pursuing efforts to limit the temperature increase to 1.5°C.

Australia announced its ratification of the Paris Agreement on 10 November 2016. By 2030, the Australian Government is committed to reducing emissions by 43 per cent below 2005 levels. In 2022, the Australian Government released Australia's emissions projections 2022, outlining Australia's progress towards its Paris commitments. The report details how Australia is on track to reduce emissions by 32 per cent below 2005 levels by 2030, and how improved energy efficiency and renewable uptake, including through the target of 82 per cent renewable energy in Australia's electricity grids, will allow Australia to exceed its Paris commitments.

Electricity generation contributes to about one-third of total carbon emissions in Australia, and improved efficiency in energy generation is crucial to achieving a low-emissions future and delivering on the Paris Agreement. Gas fired powered stations typically emit less carbon dioxide per unit of electricity generated compared to coal-fired power plants and when operated as a peaking generator provide vital firming of intermittent renewable generation sources. In this context, the modified project would reduce overall greenhouse gas emissions while supporting the transition away from fossil fuels as renewable energy generation in Australia continues to be increased.

### 2.2.5 National Electricity Market

The NEM in Australia operates as a wholesale market across NSW, the Australian Capital Territory, Queensland, South Australia, Victoria, and Tasmania. It comprises a wholesale market for electricity sales and the physical system comprising transmission infrastructure. AEMO are responsible for monitoring electricity consumption and the flow of energy across the electricity network. The NEM includes around 40,000 km of transmission lines and cables and supplies a population exceeding 23 million people.

Consistent with global trends across developed nations, the NEM in Australia has experienced a notable increase in generation from renewable energy sources over the past decade. This includes increasing energy generation from wind and solar farms across a more distributed network, in a shift away from the high-capacity point generation provided by traditional power stations.

This rise in energy generation from renewable sources is driven by policies and agreements regarding climate change and targets to reduce greenhouse gas emissions, in addition to commercial drivers as renewable energy generation has become increasingly cost competitive. Whilst energy generation from renewable sources is rising, multiple coal-fired power stations are planned to be retired in Australia in the coming decades.

The modified project would provide an increase in dispatchable gas generation that would improve energy security in the context of reducing coal generation capacity as coal-fired assets continue to be retired in NSW. The modified project would respond quickly to fluctuations in electricity supply and demand, providing security of supply for large numbers of households and businesses across the NEM.

### 2.2.6 Future Gas Strategy

In 2024, the Department of Industry, Science and Resources (DISR) released the *Future Gas Strategy* which describes the Australian Government's plan for how gas will support the economy's transition to net zero. The Future Gas Strategy is built around the following principles:

- Getting to net zero emissions by 2050.
- Keeping gas affordable during the net zero transition.
- Finding new sources of gas to meet demand.
- Maintaining supply while the transition happens.
- Adapting the gas and electricity markets.
- Remaining a reliable trading partner for LNG and low-emissions gases.

The modified project would contribute to these principles by providing additional gas generation supply to the energy market, which would allow for continued energy security through the transition to net zero. The modified project would act to meet energy demand and would contribute to maintaining energy supply during the transition, including through periods of volatility surrounding renewable sources of energy.

## 2.3 NSW policy and context

### 2.3.1 NSW Electricity Infrastructure Roadmap

The purpose of the NSW Electricity Infrastructure Roadmap (DPE, 2020) is to deliver energy infrastructure and secure NSWs future as an energy superpower. The Electricity Infrastructure Roadmap is the NSW Government's 20-year plan to transform our electricity system into one that is cheap, clean, and reliable. As the world shifts towards a greener future in reducing its carbon emissions, the roadmap identifies NSW as one of the best renewable energy resources in the world which can attract huge investments. Long Term Energy Storage Agreement (LTESA) round 7 is planned to include gas projects alongside other energy storage solutions.

The roadmap recognises that power stations in NSW are retiring and that it is crucial that these power stations are replaced with new energy infrastructure to help support the network and protect consumers from substantial energy price rises.

It is expected that the roadmap will deliver $32 billion in private sector investment by 2030 and support 6,300 construction jobs and 2,800 ongoing jobs mostly in regional NSW in 2030. A number of these jobs will be delivered through the upgrade and futureproofing of existing energy infrastructure.

The modified project would play a vital role in ensuring a reliable energy supply, helping to mitigate wholesale energy price increases as the state transitions to renewable energy sources. By leveraging existing power transmission networks, the modified project would enhance efficiency and reduce infrastructure costs. Additionally, it would generate employment opportunities and stimulate local economic activity, aligning with the goals outlined in the NSW Electricity Infrastructure Roadmap.

### 2.3.2 NSW Electricity Strategy

The NSW Electricity Strategy (DPE, 2019) is the NSW Government's plan for a reliable, affordable, and sustainable electricity future. The purpose of the NSW Electricity Strategy is to improve the efficiency and competitiveness of the NSW electricity market and encourage investment in new lower cost generation and energy saving technology.

The NSW Government would meet the strategy objectives by:

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

The NSW Electricity Strategy identifies 'delivering more resilient electricity supplies' as a key action towards supporting a competitive and low-cost electricity market. It plans to do so through initiatives such as the setting of an energy security target and the avoidance of electricity emergencies. The modified project would enhance grid reliability by effectively addressing sudden spikes in electricity demand and providing support during periods of low renewable generation.

### 2.3.3 Future of Gas Statement

The NSW Government recognises that as part of the energy transition, gas from a mix of sources will play a critical role in supporting access to affordable energy and business growth within NSW. In 2021, the NSW Government released the *Future of Gas Statement*, which sets out the government's approach and action plan built around:

- improving certainty about future gas production and exploration
- enabling downstream users to access gas to unlock economic benefits
- using gas for firming capacity where it is the most economic option to ensure reliability
- enabling gas-related infrastructure.

The Statement outlines that renewables need to be backed by long duration storage and firming capacity to ensure secure and reliable electricity supply. The NSW Government supports investments in gas-fired electricity, as gas-fired power is especially well-suited to support demand during extended peak times, firm supply, and keep down wholesale energy prices as coal-fired power stations reach end of life (DPIRD, 2021). The modified project will contribute firming capacity to ensure that the NSW electricity supply will remain secure and reliable during the transition towards a sustainable energy future.

### 2.3.4 NSW Guide for Large Emitters

The NSW Environment Protection Authority (EPA) release the *NSW Guide for Large Emitters* in January 2025 (the Guide) to support and build on climate change legislation in NSW, including the *Climate Change (Net Zero Future) 2023 Act*. The purpose of the Guide is to support proponents of developments with significant greenhouse gas (GHG) emissions in the NSW planning process. It guides the assessment of emissions and development of mitigation opportunities so that robust and consistent information is provided to the NSW EPA and planning authorities.

The Guide (EPA, 2025) applies to all new planning applications but only to modifications which will increase the emissions of an existing approved project by 25,000 tonnes or more of scope 1 and 2 emissions (as defined under the *National Greenhouse and Energy Reporting Act 2007*) carbon dioxide equivalent in any financial year when the modified project becomes operational.

The modified project would utilise modern OCGT systems that incorporates advancements in design, materials, and combustion technology, leading to reduced emissions and greater efficiency when compared to older OCGT systems considered for approved project.

Notwithstanding, a Greenhouse Gas Assessment will be prepared to assess whether the modified project will increase the scope 1 and 2 emissions of the approved project by 25,000 tonnes or more and, if so, the modification application will be supported by further assessments prepared in accordance with the Guide. Further information is provided in Section 7.3.

## 2.4 Regional context

### 2.4.1 South East and Tablelands Regional Plan 2036

The South East and Tablelands Regional Plan 2036 is a 20-year blueprint for the future of the South East and Tablelands region in which the project is located. The plan guides the NSW Government's land use planning priorities and decisions over the next two decades. The overall vision for the region is to be '*a borderless region in Australia's most geographically diverse natural environment with the nation's capital at its heart*' (NSW Government, 2017).

This vision is supported by a range of goals, directions and actions. Relevant to the modified project is:

*Direction 6: position the region as a hub of renewable energy excellence*. This direction is primarily focussed on the development of renewable energy industries within the region (NSW Government, 2017). Gas-fired power will provide the necessary firming capacity required to successfully integrate these renewable projects and developments into the grid without disruptions during peak demand. As such, the modified project would support the South East and Tablelands Region becoming a hub of renewable energy excellence by facilitating the integration of renewables.

## 2.5 Local context

### 2.5.1 Local Strategic Planning Statements

Every Council in NSW is required to prepare a Local Strategic Planning Statement (LSPS) that sets out a 20-year vision and basis for strategic planning in its area having regard to economic, social and environmental matters. The Upper Lachlan and Goulburn Mulwaree LSPS support the objectives of the South East and Tableland Regional Plan 2036 and seek to position the region as a hub for renewable energy excellence and recognise that emerging technologies provide an opportunity to foster economic development opportunities.

### 2.5.2 Upper Lachlan Community Strategic Plan 2042

The Upper Lachlan Community Strategic Plan (CSP) 2042 outlines the Upper Lachlan Shire community's main priorities and vision for the future. The vision outlined within the CSP is '*to build and maintain sustainable communities while retaining the region's natural beauty*' (Upper Lachlan Shire Council, 2025).

During the CSP's preparation, the public was engaged to identify key challenges currently facing the Upper Lachlan community. One issue highlighted was the community struggling to retain and support young people due to limited employment opportunities (Upper Lachlan Shire Council, 2025). The development and operation of the Project will create numerous employment benefits to the Upper Lachlan Shire community. During the construction phase, there will be demand for skilled labour, such as engineers, construction workers, and other specialised roles. Once the power station is operational, the project would result in ongoing jobs for its maintenance and management, providing stable employment opportunities for local residents.

# 3 Statutory context

## 3.1 Commonwealth legislation

### 3.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places defined as 'Matters of National Environmental Significance' (MNES) including listed threatened species and ecological communities. Any proposed project or activity (referred to as an 'action') that has, will have, or is likely to have, a significant impact on MNES, must be referred to the DCCEEW. If the Minister determines the action has, will have, or is likely to have a significant impact on protected matters, the action is 'controlled action' that requires assessment under the EPBC Act.

The approved project was considered unlikely to have any significant impact on any MNES protected under the EPBC Act and so was not referred to the Commonwealth under the EPBC Act.

Recent biodiversity surveys conducted as part of planning for the modified project have identified the presence Gang-gang Cockatoo, which are listed as endangered under the EPBC Act and therefore considered MNES. Additionally, native vegetation identified in the project area is considered to provide suitable habitat for the Gang-gang Cockatoo, as well as several other EPBC listed species.

Further biodiversity surveys are planned. These surveys will identify any other MNES with the potential to be impacted by the modified project.

Once all elements of the modified project are confirmed so that the complete project footprint is known, the modified project will be referred to DCCEEW, to determine if it is a 'controlled action' which requires approval under the EPBC Act.

### 3.1.2 Climate Change Act 2022

The *Climate Change Act 2022* establishes a legal framework that enshrines Australia's national commitment to addressing climate change by reducing greenhouse gas emissions in line with international obligations, particularly the Paris Agreement. The *Climate Change Act 2022* sets out binding targets and requires reporting and accountability mechanisms to ensure transparent tracking of progress towards these goals. It aims to guide policy development for mitigating climate change impacts, improving environmental outcomes, and supporting Australia's transition to a low-carbon economy. The key emissions reduction targets under the Act are:

- **Net zero emissions by 2050:** Australia commits to achieving net zero greenhouse gas emissions by the year 2050.
- **Interim emissions reduction targets for 2030 and beyond:** The Act establishes interim targets for 2030 that align with Australia's Nationally Determined Contribution under the Paris Agreement. This typically includes reducing emissions by around 43% below 2005 levels by 2030 (as per recent government commitments).

The *Climate Change Act 2022* uses data reported under the *National Greenhouse and Energy Reporting Act 2007* to establish emissions targets and climate policies.

The modified project would support Australia's energy transition towards a low-carbon economy.

### 3.1.3 National Greenhouse and Energy Report Act 2007

The *National Greenhouse and Energy Reporting Act 2007* (NGER Act) is administered by DCCEEW and introduced the NGER scheme, which aims to improve transparency, ensure accurate emissions tracking, and help Australia meet its climate commitments. Under the NGER Scheme, companies that meet certain thresholds are obligated to report their

greenhouse gas emissions, energy production and energy consumption each financial year to the Clean Energy Regulator (CER). The thresholds are:

- 25,000 tonnes (t) CO2-e or more (Scope 1 and 2 emissions)
- production of 100 terajoules (TJ) or more of energy
- consumption of 100 TJ or more of energy.

The Safeguard Mechanism is also administered through the NGER Scheme. This requires facilities that emit 100,000t CO2-e or more of Scope 1 (direct) emissions per financial year to keep emissions at or below specified limits, known as baselines, or manage any excess emissions. A Greenhouse Gas Assessment will be prepared to provide a quantitative analysis of the greenhouse gas emissions associated with construction and operation of the modified project (refer Section 7.3).

### 3.1.4 Native Title Act 1993

The *Native Title Act 1993* provides for the recognition and protection of native title. Generally speaking, native title rights do not apply to freehold land but continue to apply to crown land which has not been dedicated for a public purpose. The modified project is located on freehold land; however, the gas pipeline route may intersect with crown land in the form of unformed road reserves which have been dedicated as public roads, and water infrastructure may be required to intersect the Wollondilly River that is a Crown Waterway.

A search of the registers maintained by the National Native Title Tribunal indicates there are no active native title claims within or surrounding the project site but that the project site is located within the broader 'agreement area' of an Indigenous Land Use Agreement (ILUA) being the Gundungurra Area Agreement (NI2014/001).

If any crown land in which native title subsists may be impacted, EnergyAustralia will comply with all relevant requirements of the *Native Title Act 1993*.

## 3.2 Environment Planning and Assessment Act 1979

The EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) provide the framework for land use planning and development in NSW. The EP&A Act and EP&A Regulation are supported by several Environmental Planning Instruments (EPIs), which include State Environmental Planning Policies (SEPPs) and Local Environment Plans (LEPs), described in the following sections.

Following the repeal of Part 3A of the EP&A Act, the Station 1 Approval, Station 2 Approval and Common Infrastructure Approval were transitioned in line with the EP&A Act transitional provisions and are now deemed to be CSSI approvals granted under Division 5.2 of the EP&A Act.

Under section 5.25 of the EP&A Act, the proponent may request the Minister to modify an approval for SSI. Section 5.25(3) provides that a request for the Minister's approval of a modification is to be lodged with the Planning Secretary, and that the Planning Secretary may notify the proponent of environmental assessment requirements that the proponent must comply with before the matter is considered by the Minister. The Minister for Planning would be the approval authority for the proposed modifications to the CSSI approvals.

## 3.3 Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017

The current project approvals are due to lapse on 26 October 2026.

Per Schedule 2, section 5B of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017,* a condition that causes the approval for a transitional Part 3A project (now declared SSI) to lapse does

not have effect, and the approval instead lapses 12 months after a request has been made to the Minister to modify the approval that requests a later day on which the approval would lapse.

To enable sufficient time to consult with the affected stakeholders, to further design the modified project, to procure long-lead time equipment and to plan for construction commencement, the modification applications seek to extend the lapse date in condition 1.5 of the planning approval by five years to 26 October 2031.

## 3.4 Environmental planning instruments

Section 5.22 of the EP&A Act provides that environmental planning instruments (EPIs) do not apply to SSI except in limited circumstances. Notwithstanding, the following EPIs will be considered in the consolidated Modification Report.

### 3.4.1 State Environmental Planning Policies

#### State Environmental Planning Policy (Transport and Infrastructure) 2021

*State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) provides an efficient planning framework for delivering infrastructure in NSW.

Part 2.3, Division 4, clause 2.36(1) states that:

*Development for the purpose of electricity generating works may be carried out by any person with consent on the following land –*

*(a) in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source – on any land,*

*(b) in any other case – any land in a prescribed non-residential zone.*

The Project area is zoned as RU2 Rural Landscape under both the *Upper Lachlan Local Environmental Plan 2010* (Upper Lachlan LEP) and the *Goulburn Mulwaree Local Environmental Plan 2009* (Goulburn Mulwaree LEP).

Per clause 2.35, *prescribed non-residential zone* includes the RU2 Rural Landscape Zone. Accordingly, the modified project is permissible with consent under the provisions of the T&I SEPP.

#### State Environmental Planning Policy (Biodiversity and Conservation) 2021

*State Environmental Planning Policy (Biodiversity and Conservation) 2021* (B&C SEPP) aims to protect and preserve biodiversity values in NSW. Chapter 3 of the B&C SEPP aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas and applies to land in the RU2 Rural Landscape Zone in the Upper Lachlan Shire and Goulburn Mulwaree LGA.

A Biodiversity Development Assessment Report (BDAR) will be prepared as part of the Modification Report supporting the modification applications and would consider if the project area is potential koala habitat.

#### State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021* (R&H SEPP) provides a State-wide planning approach to the remediation of contaminated land. In accordance with Section 4.6(1) of the R&H SEPP, a consent authority must not consent to the carrying out of development on any land unless:

- it has considered whether the land is contaminated, and
- if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

- if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.

Investigations carried out for the approved project concluded that there were no potential sources of soil or groundwater contamination within the approved project footprint, Notwithstanding, a Preliminary Site Investigation would be prepared to assess the potential impacts of the proposed modifications (refer Section 7.7).

### 3.4.2 Local Environmental Plans

The approved project is located within both the Upper Lachlan Shire and Goulburn Mulwaree LGA and is zoned RU2 Rural Landscape under the Upper Lachlan LEP and the Goulburn Mulwaree LEP.

The approved project is characterised as *electricity generating works* meaning,

> *a building or place used for the purpose of—*
>
> *(a) making or generating electricity, or*
>
> *(b) electricity storage*

Development for the purposes of electricity generating works is permitted with consent on land zoned RU2 Rural Landscape under both the Upper Lachlan LEP and the Goulburn Mulwaree LEP.

## 3.5 Other relevant NSW legislation

Other NSW legislation that may be applicable to the proposed modification is identified in **Table 3-1** Consideration of other NSW legislation. The applicability of all relevant legislation would be confirmed during preparation of the consolidated Modification Report.

In accordance with section 5.23 of the EP&A, the following authorisations are not required for approved SSI projects:

- a permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*
- an approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*
- an Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*
- a bush fire safety authority under section 100B of the *Rural Fires Act 1997*
- a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000.*

**Table 3-1 Consideration of other NSW legislation**

| Legislation | Requirement |
|---|---|
| *Biodiversity Conservation Act 2016* (BC Act) | The *Biodiversity Conservation Act 2016* (BC Act) seeks to conserve biological diversity, promote ecologically sustainable development (ESD), prevent extinction, and promote the recovery of threatened species, populations, and ecological communities and to protect areas of outstanding biodiversity value.<br><br>Section 7.9 and 7.17 of the BC Act operates so that an application to modify an approved SSI project is to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the consent authority is satisfied that the modification will not increase the impact on biodiversity values.<br><br>The consent authority when determining a modification application for SSI must take into consideration the impact of the proposed development on biodiversity values as assessed in the BDAR. |

| Legislation | Requirement |
|---|---|
| | A BDAR will be prepared in support of the proposed modification applications and new offsetting requirements relative to impacts of the proposed modifications will be calculated and determined in accordance with the BC Act as further discussed in Section 7.1. |
| *Fisheries Management Act 1994* | The Fisheries Management Act 1994 (FM Act) seeks to conserve, develop and share the fishery resources of the State for the benefit of present and future generations.<br><br>If the project would require disturbance to the bed or banks of the Wollondilly River, such as during construction of water pumping infrastructure, an assessment would be carried out to determine the potential for impacts to threatened species, populations and ecological communities listed in the FM Act. |
| *Roads Act 1993* | The *Roads Act 1993* regulates the carrying out of various activities on public roads and provides for the declaration of Transport for New South Wales (TfNSW) and other public authorities including Councils as a roads authority for different types of roads (classified and unclassified).<br><br>Under section 138(1)(a) of the *Roads Act 1993*, a person must not impact or carry out work on or over a public road otherwise than with the consent of the appropriate road authority. The requirement for works within public roads would be determined following further design development; however, it is likely the project would impact on the road network and approval from the appropriate road authority would be required.<br><br>Under section 5.24(f) of the EP&A Act, a consent under section 138 of the *Roads Act 1993* cannot be refused if it is necessary for carrying out approved SSI and is to be substantially consistent with the approval under Division 5.2 of the EP&A Act.<br><br>The modification would include preparation of a Traffic and Transport Assessment as further discussed in Section 7.10. |
| *Rural Fires Act 1997* | The *Rural Fires Act 1997* facilitates the prevention, mitigation and suppression of bush and other fires in local government areas and parts of the State considered to be rural fire districts.<br><br>The site is identified as bushfire prone land. However, a bush fire safety authority under section 100B of the *Rural Fires Act 1997* is not required for approved SSI.<br><br>Notwithstanding, the modification would include preparation of a Bushfire Assessment Report addressing the requirements of *Planning for Bushfire Protection 2019* (PBP) as further discussed in Section 7.15. |
| *Water Management Act 2000* (WM Act) | The *Water Management Act 2000* (WM Act) aims to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. The WM Act is based on the principles of ESD, aiming to ensure the fundamental health of rivers, groundwater systems and associated wetlands, floodplains, estuaries are protected.<br><br>EnergyAustralia are currently considering options for project water supply, which may include the use of surface water or groundwater sources. The water supply strategy will be assessed in the consolidated Modification Report. All required water access licences will be obtained to authorise the extraction of water from any water source subject to the WM Act.<br><br>Potential impacts to surface water and groundwater associated with the proposed modifications are discussed in Section 7.5. |
| *Pipelines Act 1967* | The *Pipelines Act 1967* provides a framework for the construction, maintenance and operation of pipelines.<br><br>Section 11 of the *Pipelines Act 1967* provides that a licence is required for construction, alteration and operation of certain pipelines. While the *Pipelines Act 1967* does not require pipeline licences to be obtained for gas pipelines of less than 10km in length, it is considered appropriate that the gas pipeline proposed be licenced under the *Pipelines Act 1967* to provide the community with additional assurance in relation to the design and operation of the pipeline. Accordingly, |

| Legislation | Requirement |
|---|---|
| | EnergyAustralia proposes to apply for and obtain a pipeline licence for the pipeline under section 5(1) of the *Pipelines Act 1967.*<br><br>Under section 5.24(g) of the EP&A Act, a licence under the *Pipelines Act 1967* cannot be refused if it is necessary for carrying out approved SSI and is to be substantially consistent with the approval under Division 5.2 of the EP&A Act. |
| *Heritage Act 1977* | The *Heritage Act 1977* is concerned with all aspects of conservation ranging from protection against indiscriminate damage and demolition of buildings and sites, through to restoration and enhancement. Matters protected under the *Heritage Act 1977* include items listed on the State Heritage Register and the conservation registers (or Section 170 Registers) of NSW State government agencies, as well as items subject to an Interim Heritage Order found to be of State or local heritage significance.<br><br>As above, the requirement for an approval under Part 4 of the *Heritage Act 1977* or an excavation permit under section 139 of the *Heritage Act 1977* does not apply with respect to an approval SSI. Further, no registered heritage items were identified within the original approvals.<br><br>The potential impacts of the modified project on any existing heritage sites or items will be assessed as part of the consolidated modification report as further discussed in Section 7.9. |
| *Protection of the Environment Operations Act 1997* (POEO Act) | The POEO Act is administered by the Environmental Protection Authority (EPA) (and, in certain respects, local authorities) and provides for the issuing of licences for environmental protection to authorise and control certain activities and work, such as waste, air, water and noise pollution. The owner or occupier of a premises engaged in scheduled activities is required to hold an environment protection licence (EPL) and comply with the conditions of that licence.<br><br>An EPL is required for scheduled activities listed under Schedule 1 of the POEO Act. Under Schedule 1, scheduled activities include 'general electricity works' with the capacity to generate more than 30MW of electrical power. 'General electricity works' means the generation of electricity by means of electricity plant that, wherever situated, is based on, or uses, any energy source other than wind power or solar power.<br><br>Under section 5.24(1)(e) of the EP&A Act, an EPL under the POEO Act cannot be refused if it is necessary for carrying out approved SSI and is to be substantially consistent with the approval under Division 5.2 of the EP&A Act.<br><br>The Modification Report will include updated assessments pertaining to air emissions, noise emissions and any discharges to water required as part of the modified project. |
| *National Parks and Wildlife Act 1974* (NP&W Act) | The *National Parks and Wildlife Act 1974* (NP&W Act) provides for the management and conservation of land declared as national parks and conservation areas, as well as regulating the management of Aboriginal cultural heritage objects.<br><br>Part 6 of the NPW Act concerns the protection of Aboriginal objects and Aboriginal places. Section 86 states that a person must not harm or desecrate an Aboriginal object or Aboriginal place while section 87 provides that such harm may be authorised by an Aboriginal heritage impact permit (AHIP), which provides a defence to an offence under section 86.<br><br>As above, the requirement for an AHIP does not apply with respect to an approved SSI project authorised under the EP&A Act. However, an Aboriginal Cultural Heritage Assessment Report (ACHAR) would be prepared to assess the potential impacts of the modified project on Aboriginal objects and places as further discussed in Section 7.8. |
| *Contaminated Land Management Act 1997* | The *Contaminated Land Management Act 1997* (CLM Act) establishes the process for investigating and if required, remediating land that the NSW EPA considers to be contaminated significantly enough to require regulation.<br><br>The project area does not contain land listed on the Contaminated Lands Register. Relevant mitigation and management measures would be incorporated as part of the modified project to address any potential contamination issues. |

| Legislation | Requirement |
|---|---|
| | Investigations carried out for the approved project concluded that there were no potential sources of soil or groundwater contamination within the approved project footprint. Notwithstanding, an updated Preliminary Site Investigation would be prepared to assess the potential impacts of the proposed modifications as further discussed in Section 7.7. |
| *Climate Change (Net Zero Future) Act 2023* | The *Climate Change (Net Zero Future) Act 2023* legislates the NSW State government approach to addressing climate change and includes:<br>■ guiding principles for action to address climate change that consider the impacts, opportunities and need for action in NSW<br>■ emission reduction targets for NSW<br>■ an objective for NSW to be more resilient to a changing climate.<br>The construction and operation of the modified project would present an opportunity to reduce the emissions intensity of energy generation in NSW whilst supporting the broader transition to renewables. In addition, unlike other existing fossil fuel generators, a gas fired power station offers the possibility to transition to use cleaner fuel types such as hydrogen in the future, subject to appropriate planning approvals. |

# 4 Project need and options considered

This section outlines the main decisions made in the selection of the preferred option for the modification. Further details will be provided in the consolidated modification report for each of the modification applications.

## 4.1 Limitations of the approved project

The approved project was originally designed and assessed in 2007 – 2008 and was approved in 2009. Many things have changed since the approved project was conceived including:

- Gas power station technology has improved. Modern OCGT systems incorporate advancements in design, materials and combustion technology. They have reduced start up emissions, improved efficiency, lower mass emissions and now have the potential for the use of alternative fuels such as hydrogen when compared to older OCGT systems available at the time of the approved project.
- Contemporary requirements of the NEM are different to when the approved project was being designed and approved. The NEM currently requires, and is forecast to increasingly require, additional fast start firming capacity and grid stability capabilities to support the renewable energy transition. Intermediate load facilities such as CCGT power stations are not as attractive options in the current market.
- Some environmental regulations have evolved, and more stringent emissions limits are now required to be achieved.
- Contemporary impact assessment guidelines for various environmental and heritage aspects have evolved and, in many cases, now require more detailed investigations and assessments.
- The existing environment has changed including native vegetation regrowth, and the establishment of new dwellings in the region surrounding the project area.

Addressing these limitations of the approved project in the modified project will ensure that the modified project meets the current demands of the NEM and addresses the potential environmental and social impacts in a modern context, thereby avoiding and minimising impacts to the greatest extent and optimising the considerable benefits of the project.

## 4.2 Design and operation options considered

The following design options are being considered in the development of the modified project:

- use of the approved project site by other types of energy projects such as battery storage
- need for and economic case for CCGT in the current market
- consideration of the use of reciprocating engines
- consideration of multiple different types, sizes and configurations of heavy duty OCGT units
- fuel options, including the need for diesel backup fuel
- potential for the use of future fuels including hydrogen (subject to separate planning approval)
- power island footprint options to avoid and minimise potential impacts to native vegetation
- gas pipeline easement options to avoid and minimise impacts, and with agreement of proposed pipeline stakeholders
- water supply options to assure operational supply and to reduce or avoid the impacts of trucking water to site
- stormwater management infrastructure options to achieve a Neutral or Beneficial Effect (NorBe), noting the project is in the Sydney drinking water catchment
- options to minimise noise and air emissions on sensitive receivers.

Further detail on these options will be provided in the consolidated Modification Report.

## 4.3 Construction options considered

The following construction options were considered in developing the modified project:

- Appropriate and beneficial mix of contributions and benefit sharing options, including the nature and extent of any upgrades needed to Canyonleigh Road
- Options for siting and sizing construction ancillary sites, including consideration of the potential for siting temporary construction facilities on private property in agreement with private landowners
- Options for managing the potential impacts of the expected construction workforce, including consideration of utilising local existing facilities, establishing temporary workers accommodation, and coordinating accommodation requirements with other major projects proposed in the area
- OSOM route options from different ports of origin to minimise potential impacts on the public road network.

Further detail on these options will be provided in the consolidated Modification Report.

## 4.4 Project justification

The modified project is aligned with the current needs of the NEM which have evolved significantly since the project was first designed and approved. The NEM currently requires fast start firming capacity and enhanced grid stability to support the integration of renewable energy sources at a time when large thermal generators are being progressively retired. Notably, AEMO is forecasting that energy reliability standards in NSW will be at risk of being breached following the upcoming closure of baseload coal fired power stations, and AEMO has forecast a need for up to 15 GW of new gas generation capacity to be required. This project helps to meet that need.

By introducing gas-fired power generation, the modified project would play a crucial role in maintaining the reliability of the grid during the transition to renewable energy sources. The modified project would deliver dispatchable energy, which is essential for addressing sudden spikes in electricity demand and providing vital support during periods of low renewable energy generation. This capability is becoming increasingly critical as the share of variable renewable sources, such as wind and solar, increases in the energy mix.

In this context, the appeal of new intermediate load facilities like CCGT power stations has decreased, making the modified project's emphasis on OCGT technology especially pertinent. OCGT units can start up and reach full capacity much faster than CCGT units, providing the flexibility needed to respond rapidly to fluctuations in electricity demand. The modification will support this transition from a CCGT approval to an OCGT-only approval.

The modified project would also incorporate black start capability, using either diesel generators or onsite batteries. Black start refers to the ability to start up and energise the grid independently without relying on external electricity supply, enabling restoration of the grid after a complete or partial blackout. As such, the modified project enhances grid resilience and reliability by enabling a rapid and controlled restart of the power system following large scale outages.

Furthermore, the modified project would utilise contemporary generation technology, as well as considering alterations to the existing environment, such as the regrowth of native vegetation and the establishment of new dwellings in the local community area. This would allow for compliance with contemporary environmental regulations and potentially avoid and minimise environmental, social, and economic impacts compared to the approved project.

The primary benefits of the approved project that would be maintained in the modified project include:

- increased reliability of electricity supply during peak demand periods
- improved security of electricity supply during system emergencies
- supporting the energy transition away from baseload coal generation to a renewable energy focus
- leveraging the project's strategic proximity to the Moomba to Sydney Gas Pipeline and existing substation infrastructure which enables efficient and reliable energy delivery to major demand centres across NSW

- economic benefits including increased economic activity during construction including the creation of up to 380 jobs, that will stimulate the local and regional economy, helping to build resilience and growth, boosting local employment and supporting nearby businesses
- economic benefits by providing for improvements in electricity affordability for consumers.
- In addition, the modified project will provide the following additional or modified benefits:
- improved grid stability through functions such as frequency regulation
- improved benefit sharing for the local community through meaningful and innovative support for local initiatives, exploring ways to address challenges such as housing supply and investing in projects that deliver long-term community value.

In addition, the modified project utilises technology that is compatible with alternative fuels such as renewable energy derived hydrogen or biofuels, which may become cost-effective to use as fuel in the future. This potential future development would require separate planning approval and is not considered a direct benefit of the modified project; however, it would enable the project to further contribute to decarbonisation of the NEM.

## 4.5 Proposed modifications

Section 5 describes the preferred options for the modified project which remain subject to ongoing design reviews and will be confirmed in the consolidated Modification Report.

# 5 Description of the modified project

This section provides an overview of the proposed modified project, including the changes proposed to the overall approved project as well as the specific changes proposed to the Station 1, Station 2 and the Common Infrastructure approvals. The details of the modified project are being further refined and assessed by EnergyAustralia and will be confirmed in the consolidated Modification Report.

## 5.1 Overview of the proposed modified project

The proposed modifications to the approved project include:

- extend the project approvals lapse date by five years to 26 October 2031
- increase the combined capacity of the two power stations to up to 1.43 gigawatt (GW) in total and remove the option to convert one of the stations to CCGT
- update the configuration of gas turbines, operational plant, and ancillary operational equipment
- provide the option to include clutches between the gas turbines and generators to enable switching from power generation to synchronous condenser mode
- make provision for either diesel generators or onsite batteries to enable the power stations to start up and generate electricity without relying on an external power supply
- enable the power stations to operate using diesel as a backup fuel
- vary the operational water supply arrangements (subject to further design development)
- vary the location of the site access road
- vary the connection to Transgrid's Marulan 330kV substation (subject to further design development)
- confirmation of the route proposed for the gas pipeline (subject to further design development)
- update the location of construction phase ancillary infrastructure including storage areas, construction works areas, construction car parking, offices, amenities and workshop / storage areas (subject to further design development)
- authorise the establishment and use of temporary construction workers accommodation facilities (subject to further design development)
- authorise upgrades to the public roads to allow for heavy vehicle access to site, including for over size over mass (OSOM) vehicles (subject to further design development).

The final gas pipeline route, grid connection route, and operational water supply infrastructure along with the location of any offsite elements such as the temporary construction workers accommodation facilities, construction phase ancillary areas and road upgrades, will be confirmed as part of the modification applications and incorporated into the modified project disturbance footprint.

Error! Reference source not found. details how these modifications would apply separately to each of the CSSI approvals.

**Table 5-1 Summary of potential modifications compared with the approved project**

| Project approval | Project element | Approved project | Modified project |
|---|---|---|---|
| Power Station 1 | Lapse date | The consent lapses 26 October 2026. | The consent would lapse on 26 October 2031. |

| Project approval | Project element | Approved project | Modified project |
|---|---|---|---|
| (MP 07_175) | Generation technology and layout | The layout would include two OCGT units. The power station layout would include compressor, combustion, and turbine stages housed in sound attenuating enclosures approximately 8m high. It would include air inlet structures and ducting for each unit at approximately 24m high, and gas turbine exhaust stacks for each unit at 30m high. | Different (likely larger generation capacity) OCGT units would be used. The choice of OCGT unit is still being considered.<br>The layout of operational plant and ancillary operational facilities is still being considered.<br>These changes will be confirmed during preparation of the modification report. |
| | Generation capacity | The power station would generate up to 350 MW. It would comprise two OCGT units with a capacity of up to 175 MW each. | Able to generate up to 1.43 GW using OCGT units, in combination with Station 2. |
| | Fuel supply | The approved project would be solely fuelled by natural gas. | The modified project would be designed to use natural gas or diesel as fuel. |
| | Operational water demand | The operational water demand for the project was estimated at 20.6 Megalitres per annum. It was considered that water would be sourced from captured stormwater runoff or delivered via truck. | The modified project would have an estimated maximum operational water demand of up to 140 Megalitres per annum (in combination with Station 2). Additional options for water sourcing are currently being considered. These changes will be confirmed during preparation of the modification report. |
| Power Station 2<br>(MP 07_176) | Lapse date | The consent lapses 26 October 2026. | The consent would lapse on 26 October 2031. |
| | Generation technology and layout | The power station would include two OCGT units with the ability to be converted into a CCGT facility.<br>The power station layout would include compressor, combustion, and turbine stages housed in sound attenuating enclosures approximately 8m high. It would include air inlet structures and ducting for each unit at approximately 24m high, and gas turbine exhaust stacks for each unit at 30m high. The layout proved space for potential future conversion to CCGT. | Different (likely larger generation capacity) OCGT units would be used. The choice of OCGT unit is still being considered.<br>The modification would remove the option to convert any of the generation capacity to CCGT.<br>The layout of operational plant and ancillary operational facilities is still being considered.<br>These changes will be confirmed during preparation of the modification report. |
| | Generation capacity | The power station would generate up to 350 MW using two OCGT units with a capacity of up to 175 MW each. Conversion of the facility to CCGT would provide for a generation capacity of up to 450 MW. | Able to generate up to 1.43 GW using OCGT units, in combination with Station 1. |

| Project approval | Project element | Approved project | Modified project |
|---|---|---|---|
| | Fuel supply | The approved project would be solely fuelled by natural gas. | The modified project would be designed to use natural gas or diesel as fuel. |
| | Operational water demand | The operational water demand for the project was estimated at 20.6 Megalitres per annum. It was considered that water would be sourced from captured stormwater runoff or delivered via truck. | The modified project would have an estimated maximum operational water demand of up to 140 Megalitres per annum (in combination with Station 1). Additional options for water sourcing are currently being considered. These changes will be confirmed during preparation of the modification report. |
| Common Infrastructure<br>(MP 07_174) | Lapse date | The consent lapses 26 October 2026. | The consent would lapse on 26 October 2031. |
| | Gas pipeline | Multiple potential routes for the gas pipeline from the Moomba to Sydney Gas Pipeline to the site, within an approved gas pipeline corridor. The approved preferred gas pipeline route passed through Lot 3 DP1120270 and entered the power station lot from the east | A selected gas pipeline route within the approved gas pipeline corridor from the Moomba to Sydney Gas Pipeline to the site. The selected gas pipeline route would enter the power station lot from the south off Canyonleigh Road.<br>These changes are subject to further proposed pipeline stakeholder consultation and will be confirmed during preparation of the modification report. |
| | Grid connection | An overhead 330 kV transmission line, 1.2km long connecting the power station to the Marulan substation. | An overhead 330 kV transmission line, that would have a slightly different footprint connecting the power station to the Marulan substation. These changes will be confirmed during preparation of the modification report. |
| | Site access road | An access road off Canyonleigh Road, through Lot 3 DP1120270 entering the power station lot from the east. | An access road off of Canyonleigh Road, through the power station lot that is owned by EnergyAustralia, alongside the proposed modified gas pipeline route. |
| | Site preparation | Bulk earthworks and vegetation clearing for both facilities. | Changes to site preparation works such as bulk earthworks and vegetation clearing to facilitate updates to layout. |
| | Substation works | No upgrade work to Transgrid's existing Marulan substation was proposed. | Works may be required at Transgrid's existing Marulan substation to facilitate the grid connection. This is subject to further consultation with Transgrid and will be confirmed during preparation of the modification report. |

The consolidated modification report would include an updated project description for each CSSI approval. Elements of the approved and modified project are shown in **Figure 5-1**.

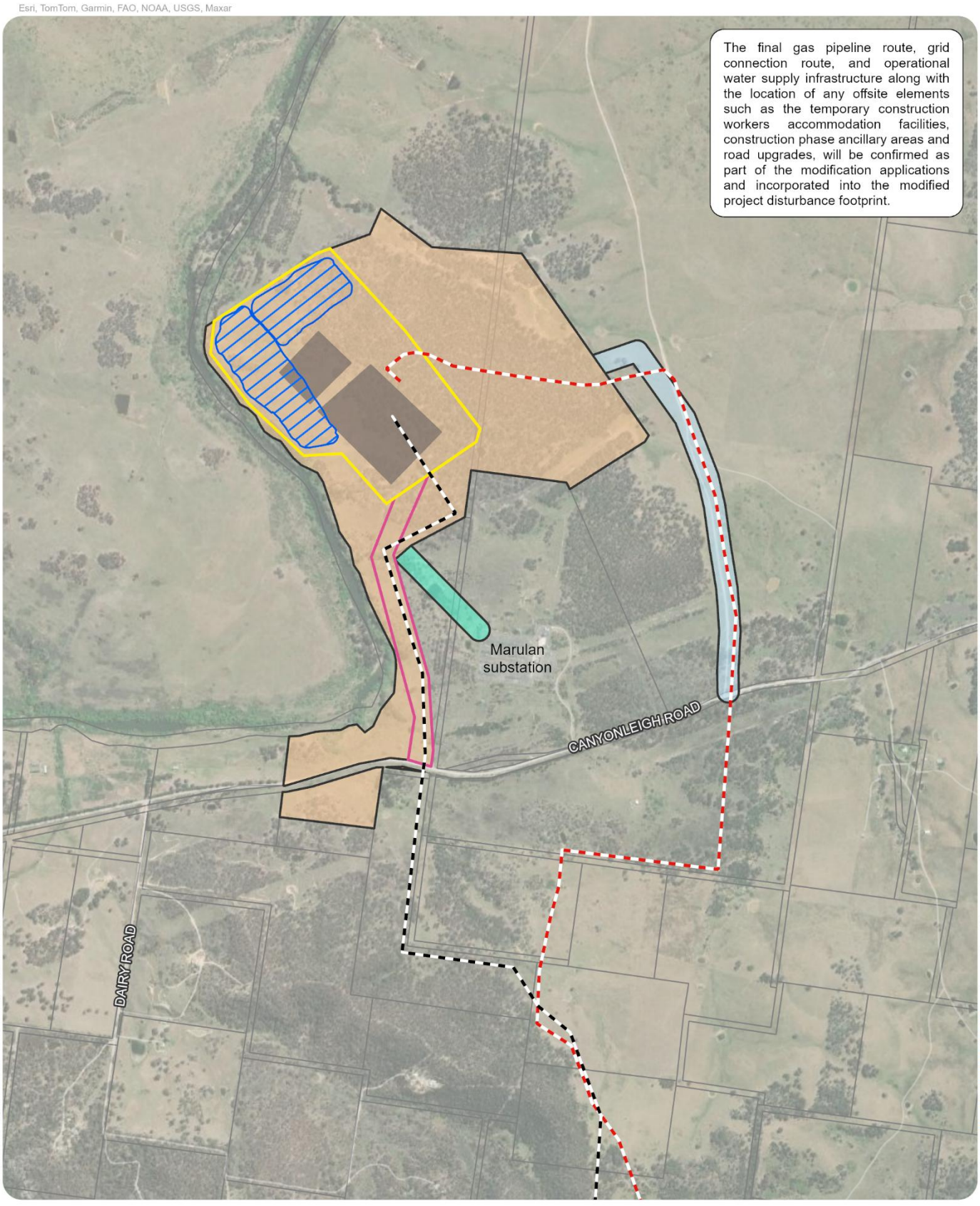





**Figure 5-1**: Approved and modified project layout

## 5.2 Lapse date extension

To enable sufficient time to consult with the affected stakeholders, to further design the modified project, to procure long-lead time equipment and to plan for construction commencement, the modification applications seek to extend the lapse date in condition 1.5 of the planning approval by five years to 26 October 2031.

## 5.3 Power station design

### 5.3.1 Approved project

The approved project allows for construction and operation of two power stations. The Station 1 approval allows for the construction and operation of a 350 MW OCGT power station. The Station 2 approval allows for the construction and operation of an up to 250 to 350 MW OCGT power station and the potential for conversion into a CCGT facility with an approximate capacity up to 450 MW.

Overall, the approved project comprises up to 700 MW of OCGT capacity with the potential to convert up to half of this OCGT capacity into CCGT. Assuming CCGT conversion, the approved project would be able to generate a maximum of 800 MW.

Key elements of the approved power station design included:

- evaporative cooling of gas turbine intake air
- the approved project had no specific limits applied to operational run time (capacity factor)
- dry low emission (DLE) technology was included to reduce the concentration of nitrogen oxide (NOx) emissions.

### 5.3.2 Modified project

The modified project would comprise the construction and operation of two gas fired power stations with a combined capacity of up to 1.43 GW of OCGT. The option to convert some of the generation capacity to CCGT is no longer proposed. A final turbine supplier has not yet been selected for the modified project and it remains possible that a number of different turbine models may be utilised.

The modified project will have evaporative inlet air cooling systems installed on all of the installed gas turbines to maximise generation output. Direct combustion water injection systems will be installed for $NO_x$ control to support the combustion of distillate fuel. These systems will create a greater operational water demand compared to the approved project and is discussed further in Section 5.5.

Depending on the generation equipment selected, the modified project would also consider the option to install clutches between the gas turbines and generators to enable switching from power generation to synchronous condenser mode of operation to provide rotating inertia and grid support.

The modified project would also incorporate the ability to start up during an electricity blackout (black start capability), using either diesel generators or onsite batteries. Black start capability will allow the power station to start up and energise the grid independently without relying on external electricity supply. This capability would enabling restoration of the grid after a complete or partial blackout. As such, the modified project enhances grid resilience and reliability by enabling a rapid and controlled restart of the power system following large scale outages.

Whilst the proposed layout of the plant and equipment would be constructed within an amended power island footprint to the approved project, many aspects of project would remain generally consistent with the approved project. These include:

- The modified project would be designed to provide electricity during peak demand periods, when renewable energy sources and grid scale storages are not providing sufficient power.

- The modified project would be able to provide important electricity grid stabilisation benefits.
- The modified project does not propose to limit operational run time which will remain determined by market conditions and demand.
- The modified project would continue to utilise DLE technology to reduce NOx emissions.
- The modified project would be configured with the following equipment: Turbines and generators, air intake filter house and ducts, exhaust stack(s), natural gas management equipment, fin fan coolers for lube oil and generator systems, motor control centre including all electronic control cabinets and battery rooms/compartments, lube oil and water injection modules, all instrumentation, control, monitoring and protection equipment for the turbines, fire suppression facilities, operational water and wastewater management systems, reverse osmosis and electro-deionisation plant, stormwater management, fencing, and a site security guard house.

No operational limit on annual run time (capacity factor) is specified for the modified project, which, as with the approved project, would typically operate during periods of peak electricity demand, such as during hot summer days and cold winter nights, as well as when renewable energy generation is low or during emergencies (such as large-scale power outages).

Current requirements of the NEM differ from those in place at the time of the approved project. The NEM now requires, and is expected to increasingly require, additional fast-start firming capacity and enhanced grid stability capabilities to support the transition to renewable energy. Consequently, the modified project may operate more frequently than the approved project to meet the evolving needs of the NEM. However, the modification would remove the approved option to partially convert the power station to CCGT, which would be expected to result in a reduction in overall operational run time compared to the approved project.

An estimate of actual annual run time (capacity factor) for the modified project is subject to considerable uncertainty. Based on current NEM conditions, the power station would be most likely to operate between 10 per cent and 20 per cent of the year.

The conceptual layout of the modified project is still being developed; however the indicative power island footprint is presented in **Figure 5-1**. The details of the conceptual layout will be confirmed as part of the modification applications.

## 5.4 Fuel

### 5.4.1 Approved project

The approved project identified natural gas as the only approved fuel. As outlined in Section 5.3, the approved project had no specific limits applied to operational run time (capacity factor)

### 5.4.2 Modified project

The modified project would use natural gas as the primary fuel in the power stations and would also seek approval to use diesel as a backup fuel supply. It is expected that the modified project would operate using diesel only when required for operational security purposes. This is likely to require no more than 120 hours of diesel firing to be undertaken per annum but may vary depending on market conditions and electricity demand profiles.

Up to 40 hours (up to 13 Megalitres) of diesel storage would be established within the footprint of the power island shown in **Figure 5-1**. Periodic deliveries to the project by fuel tankers would be required to resupply diesel.

Like the approved project, as outlined in Section 5.3, the modified project would not specify a limit to operational run time (capacity factor) when using either fuel source. An estimate of actual annual run time (capacity factor) for the modified project is subject to considerable uncertainty. Based on current NEM conditions, the power station would be most likely to operate between 10 per cent and 20 per cent of the year.

## 5.5 Operational water

### 5.5.1 Approved project

The operational water demand for the approved project using OCGTs was estimated at 20.6 Megalitres per annum. This estimate was based on a capacity factor of 10 percent, significant onsite recycling of wastewater, and included no gas turbine evaporative inlet air cooling. The approved project did not specify a runtime limit so the approved operational water demand may potentially be higher than 20.6 Megalitres per annum.

The approved project considered that operational water would be obtained from one or more of the following sources and included concept plan approval for a water pipeline if required (but not project approval):

- Captured site stormwater runoff in a new dam on site
- Delivered to the site via truck from the:
  - Marulan water supply network
  - Marulan sewage treatment plant
  - Moss Vale sewage treatment plant.

The approved project was designed to capture all water discharges from the operational project area with any sediment, sludge, brine, oils or chemicals in captured water to be transported by truck for off-site disposal at authorised waste facilities.

### 5.5.2 Modified project

The operational water demand for the modified project will depend on the power station capacity factor, which is variable. The operational water demand for the modified project would be greater than for the approved project because of the larger turbines proposed, and because gas turbine air inlet evaporative cooling system is proposed to improve the output and efficiency of the gas turbines, particularly when diesel fuel is being used.

Typical operational water demand has been estimated based on a 15 per cent capacity factor. Under this scenario, the maximum operational water demand would be up to 140 Megalitres per annum. During periods of drought or low water availability, EnergyAustralia could consider water security and may be able to reduce water usage, however this would reduce the maximum generating capacity of the power station.

Options for sourcing operational water for the modified project are currently being investigated and will be confirmed as part of the modification applications. It is likely that one or more of the following operational water supply sources will be utilised, in addition to the approved water supply options:

- a new water pipeline that would be constructed in a shared easement with the lateral gas pipeline to enable the modified project to be supplied via the Highland Source Project (HSP) water pipeline
- surface water extracted under licence from the Wollondilly River
- groundwater extracted under licence from new wells constructed on the project site.

The additional operational water supply options, and related water supply infrastructure that may be required for the modified project is still being considered. Once determined, this will be assessed in the modification applications as part of the modified project.

EnergyAustralia is also investigating updated options for the management of water discharges as part of the modified project to identify the most efficient and environmentally acceptable methods of treatment and disposal for each wastewater stream generated by the modified project. The following wastewater management options are being considered for different wastewater streams as part of the modified project and will be confirmed in the modification applications:

- evaporation
- on site wastewater treatment with treated water reused, spray irrigated, or discharged
- offsite trucking to Goulburn or Marulan wastewater treatment plants
- other solutions as may be available.

## 5.6 Site access road

### 5.6.1 Approved project

The approved project included a new site access road off Canyonleigh Road. The new site access road was designed to be a sealed, seven-metre-wide road following an existing track on Lot 3 of DP1120270, which is land owned by the University of Sydney

### 5.6.2 Modified project

To avoid and minimise impacts on biodiversity and adjacent landowners, the modified project would vary the location of the new access road and construct a new, sealed, site access road from Canyonleigh Road through Lot 2 of DP1120270, which is owned by EnergyAustralia. The modified project would not impact on land owned by the University of Sydney. The location of the proposed access road is shown in **Figure 5-1**.

## 5.7 High voltage grid connection

### 5.7.1 Approved project

The approved project would require the construction and operation of a new overhead double circuit 330kV transmission line about 1.2 kilometres long between the power station and the nearby existing Marulan 330kV substation which is owned and operated by Transgrid.

### 5.7.2 Modified project

Consistent with the approved project, the modified project would require a new overhead double circuit 330kV transmission line about 1.2 kilometres long between the power stations and Transgrid's existing Marulan 330kV substation. The proposed transmission line easement footprint may slightly differ to the approved footprint due to an amended layout of electrical infrastructure in the modified project power island and due to the need to microsite towers to avoid and minimise environmental impacts.

Minor upgrade works within the existing 330kV Marulan substation may be required to connect the new transmission lines and this may include the installation of new circuit breakers and the relocation or 'shuffling' of existing substation assets. Further consultation and planning with Transgrid will be conducted to finalise the scope of work required for the modified project.

The final modified high voltage grid connection footprint and the extent of work, if any, within the 330kV substation will be confirmed as part of the modification applications and will be incorporated and assessed as part of the modified project disturbance footprint.

## 5.8 Gas pipeline

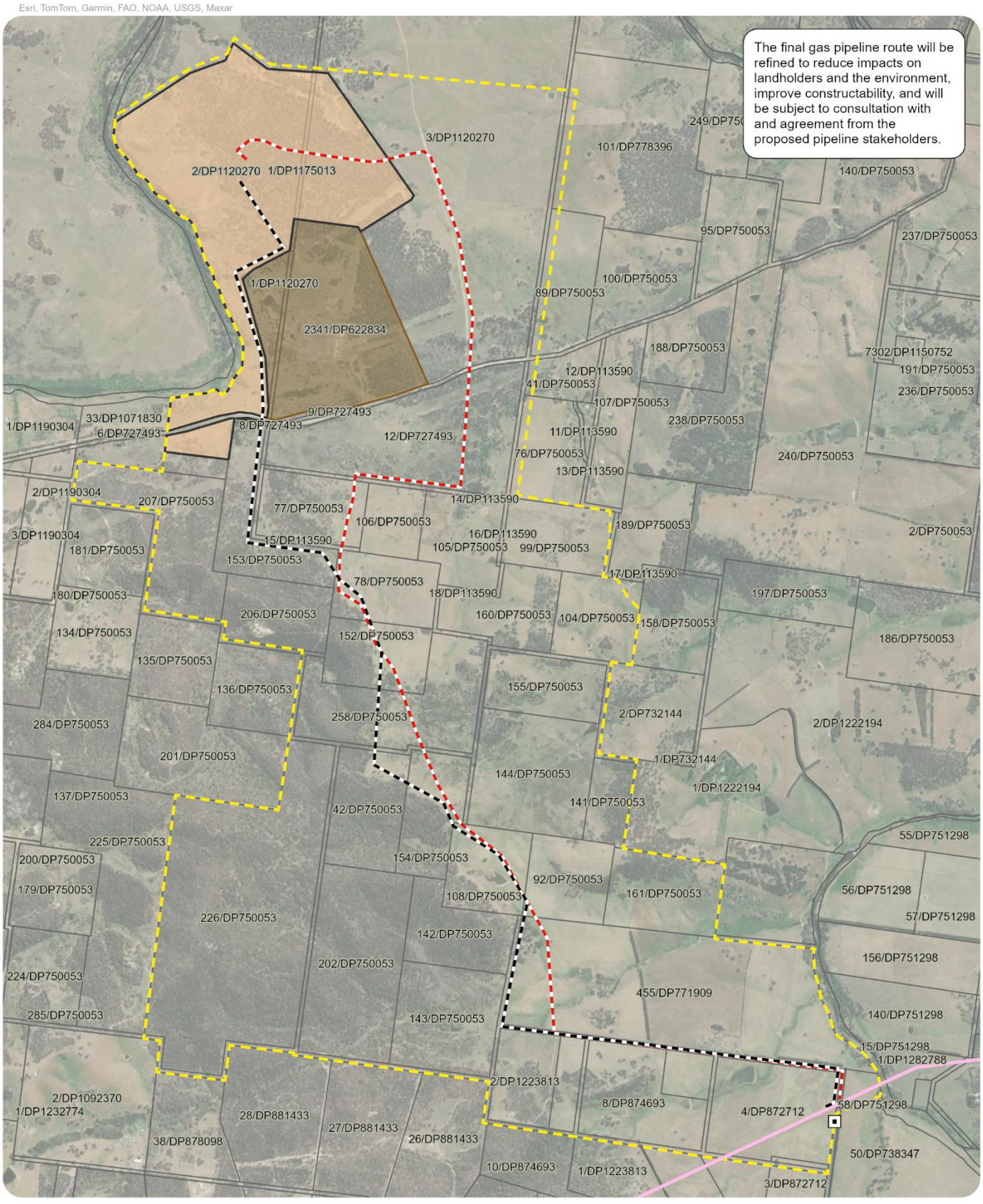
### 5.8.1 Approved project

The approved project included construction and operation of a new lateral gas supply from the Moomba to Sydney natural gas pipeline, to the project site. Eight approved new gas pipeline potential routes were identified in the approved project within a broader 'gas pipeline corridor'. Of the eight options, the route that was preferred for the approved project is shown in **Figure 5-2**.

### 5.8.2 Modified project

Consistent with the approved project, the modified project would include a new gas pipeline within the approved gas pipeline corridor area, within an easement width of approximately 20 metres. The gas pipeline would be designed and constructed in accordance with the appropriate standards, e.g. buried to below 750 mm to top of pipe and below 1200 mm to top of pipe at road crossings. Above ground pipeline markers would be located at pipeline transitions, fence lines and road crossings.

The gas pipeline route (approximately 7km) for the modified project is shown in **Figure 5-2**. The alignment will be refined to reduce impacts on landholders and the environment, improve constructability, and will be subject to consultation with and agreement from the proposed pipeline stakeholders. The final gas pipeline route will be confirmed as part of the modification applications and incorporated and assessed as part of the modified project disturbance footprint.




Approved gas pipeline corridor
Approved power station lot
Existing Transgrid substation
Modified gas pipeline route
Approved gas pipeline route
Moomba to Sydney Pipeline
Lot boundary
Offtake station


**Sources:** Aurecon, Esri Basemap

1:26,000 @ A4
0 130 260 390 520 650 m

**Project:** P526737
**Projection:** GDA2020 MGA Zone 56



**Figure 5-2**: Approved and modified gas pipeline route

## 5.9 Temporary construction workers accommodation facilities

### 5.9.1 Approved project

The approved project would provide employment for up to 500 people (full-time equivalent positions) over the construction period for the two power stations. Construction personnel sourced from outside the region would be accommodated locally within:

- the Marulan township
- Goulburn and surrounding areas
- Moss Vale and surrounding areas.

### 5.9.2 Modified project

The modified project is anticipated to employ up to 400 people, many from outside the region, over the construction period. The modified project would construct and use temporary construction workers accommodation facilities to accommodate up to 400 workers, to minimise impacts on local housing and infrastructure. The location of the temporary construction workers accommodation facilities is subject to determining a suitable site and the size of the facility would be subject to design. It would be expected to have a footprint of less than 50 hectares.

EnergyAustralia are currently seeking expressions of interest (EOI) from interested parties, including Councils, companies and private landowners that may have an interest in hosting the temporary construction workers accommodation facilities. Key criteria for site suitability include proximity to the project site, flat and development-ready land, access to infrastructure, road accessibility, and minimal impact on nearby residents. The final location and design of the facilities will be confirmed as part of the modification applications and will be incorporated and assessed as part of the modified project disturbance footprint.

## 5.10 Construction phase ancillary areas

### 5.10.1 Approved project

The approved project included one construction laydown area covering about four hectares, located east of and directly adjacent to the proposed power island.

### 5.10.2 Modified project

The modified project would require a range of areas for construction phase ancillary activities, including:

- equipment storage areas
- rock and earth storage areas
- construction works areas and workshops
- construction car parking
- offices
- worker's amenities
- one or more concrete batch plants.

EnergyAustralia is currently investigating and consulting on a range of potentially suitable construction ancillary areas as part of the modified project including the approved construction laydown area, new onsite construction areas and new

off-site construction area options. The final location of any facilities will be confirmed as part of the modification applications and incorporated and assessed as part of the modified project disturbance footprint.

## 5.11 Public road upgrades

### 5.11.1 Approved project

The Common Infrastructure Approval includes a condition requiring upgrades to 12 kilometres of Canyonleigh Road between Brayton Road and the project access road. Canyonleigh Road is currently an unsealed road. The approved project would upgrade the unsealed road to provide for a seven-metre-wide spray seal surface.

The approved project did not include provision for any public road upgrades to accommodate OSOM vehicles.

### 5.11.2 Modified project

Further consultation with Goulburn Mulwaree Council would be undertaken by EnergyAustralia to determine the most effective contemporary approach to the Canyonleigh Road upgrade to support the modified project. This may potentially include road sealing, additional works to improve the flood immunity of Canyonleigh Road, or other forms of contribution or benefit sharing as agreed with Goulburn Mulwaree Council.

The modified project would require OSOM vehicle movements to deliver equipment including generators, and turbines to site. The size and weight of these OSOM vehicle movements may require public road upgrades to be undertaken at discrete locations between the port of origin and the project site. Currently the preferred port of origin or OSOM transport route has not been determined. Further investigations and consultation with Transport for NSW and Goulburn Mulwaree Council are being conducted to determine any public road upgrades that may be required.

The proposed road upgrades required for the modified project will be confirmed as part of the modification applications and incorporated and assessed as part of the modified project disturbance footprint.

# 6 Consultation and engagement

## 6.1 Overview

The community and stakeholder engagement objectives for the modified project are informed by EnergyAustralia's commitment to respect the rights and interests of the communities in which it operates, by working safely and being mindful of, and attentive to, the environmental and social impact of the resources, products and services it uses or provides to others. In light of this commitment, EnergyAustralia has engagement objectives for the modified project which are set out in further detail below.

The following terms are used throughout Chapter 6 to describe the relevant stakeholders:

- **Proposed pipeline stakeholders**: Individuals or entities who own property on which the modified gas pipeline is located or hosted. These stakeholders directly accommodate project components on their land and may have specific agreements or obligations related to the development or operation of the project.
- **Neighbours**: People or entities residing or operating in close proximity to the project footprint who are likely to experience direct or indirect impacts from the project's development or operations. This includes potential changes to their environment, lifestyle, or property use.
- **Community**: The broader population living in or around the area where a project is developed or operates. This group may not be directly impacted like neighbours but may still be influenced by social, economic, or environmental aspects of the project.

## 6.2 New potential receivers

Aerial imagery analysis has been carried out within five kilometres of the power station and one kilometre of the preferred common infrastructure route to determine any changes to the surrounding environment since the original project approvals, including any potential additional residential receivers. The analysis suggests that, since the original approvals, new structures have been built that are potentially sensitive receivers and are shown in Figure 6-1.

Receivers assessed as part of the original project approvals and new potential residential receivers will be validated and assessed by EnergyAustralia in preparation of the consolidated Modification Report.

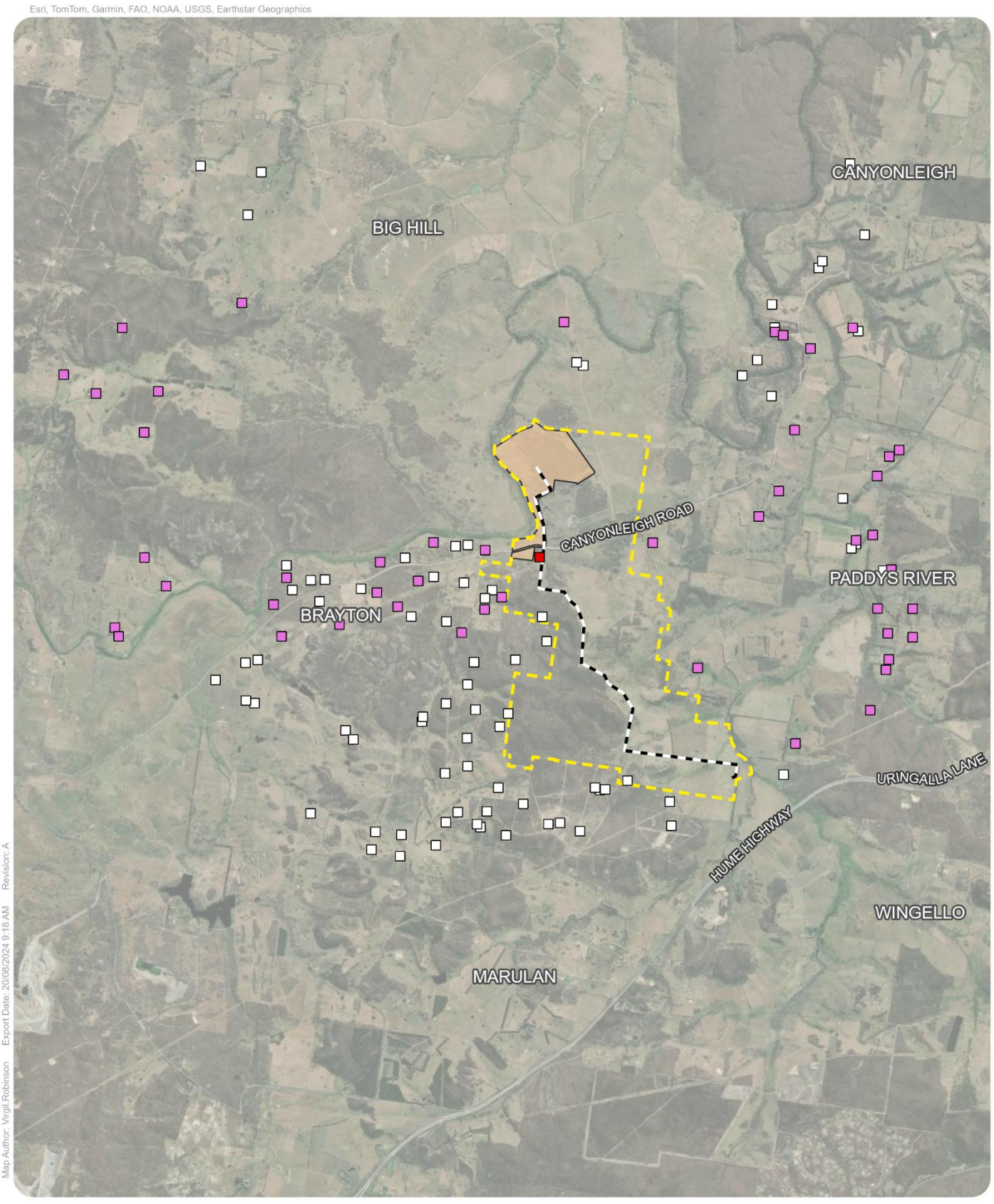



**Figure 6-1**: New receivers identified since the approved project

## 6.3 Consultation to date

EnergyAustralia is committed to working with the communities in which it operates and, as such, has been proactively working with the community and stakeholders to advise them about the modified project, provide opportunities to input into the project's development and build community relationships.

The community and stakeholder engagement objectives for the modified project are informed by EnergyAustralia's commitment to respect the rights and interests of the communities in which it operates, by working safely and being mindful of, and attentive to, the environmental and social impact of the resources, products and services it uses or provides to others. In light of this commitment, EnergyAustralia's engagement objectives for the modified project are to:

- ensure the community is fully informed about the modified project
- provide opportunities to meet with EnergyAustralia representatives, ask questions and provide feedback
- incorporate community feedback into the modified project design, where possible
- build positive relationships with the local community through open and transparent communication.

Key groups and individuals who may have an interest in the modified project have been identified through:

- desktop research
- stakeholder mapping of the local community
- capturing those in geographical proximity to the proposed Project area
- door knocking.

Regulatory stakeholders have also been identified.

### 6.3.1 Engagement carried out

Community and regulatory stakeholders and the nature of engagement with them to date (direct or broad) are shown in **Table 6-1**. Direct and broad engagement are defined as follows:

- Direct - personal engagement between EnergyAustralia and a specific stakeholder or stakeholder group, such as a meeting, phone call or correspondence.
- Broad - engagement between EnergyAustralia and a large non-specific audience, such as editorial or advertising in the local newspaper or social media content.

**Table 6-1 Stakeholder consultation undertaken to date**

| Stakeholder group | Stakeholder | Engagement undertaken to date |
|---|---|---|
| Traditional owners | Registered Aboriginal Parties; Land Council; Traditional Custodians/Owners; Elders | ■ 12 April 2025 – Pejar Land Council project update via correspondence<br>■ 17 April 2025 – Pejar Land Council briefing scheduled and information pack provided<br>■ 12 April 2025 – Pejar Land Council correspondence<br>■ February 2025 – Review of Goulburn Mulwaree Aboriginal Heritage Study (2012) |
| Proposed pipeline stakeholders | People or organisations that own land where the planned pipeline may go. | Ongoing |
| | Private landowner 1 | ■ 31 July 2025 – Project update, request to connect<br>■ 12 June 2025 – Project update, proposed changes to alignment, landowner information pack and request for meeting |

| Stakeholder group | Stakeholder | Engagement undertaken to date |
|---|---|---|
| | | ▪ 19 May 2025 – Request for meeting to discuss changes to alignment<br>▪ 15 April 2025 – Letter via registered post, landowner information pack and request for meeting<br>▪ 15 March 2025 – Letter, proposed pipeline stakeholder information pack, updated alignment maps with proposed changes provided and request for meeting<br>▪ 18 February 2025 – Briefing and discussion including pipeline alignment maps<br>▪ 12 February 2025 – Proposed pipeline stakeholder information pack provided |
| | Private landowner 2 | ▪ 12 February 2025 – Door knock and proposed pipeline stakeholder information pack provided<br>▪ 2019-2020 – requests for consent to survey and a voluntary easement agreement<br>▪ 2015 – Multiple interactions and requests for consent to survey and a voluntary easement agreement |
| | Xeilo (Canyonleigh BESS, neighbouring project proponents for project application SSD-78247462) | ▪ 12 June 2025 – follow up and issues the Expression of Interest to workers accommodation site<br>▪ 2 May 2025 – Briefing and adjustment of alignment with requests for consent to survey<br>▪ 14 April 2025 – Briefing and adjustment to alignment<br>▪ 24 March 2025 – Follow up note with alignment maps provided<br>▪ 17 March 2025 – Briefing and proposed pipeline stakeholder information pack provided |
| | University of Sydney / Spark Renewables (Wattle Creek Energy Hub, neighbouring project proponents for project application SSD-63345458 and SSD-63344210) | ▪ 12 June 2025 – Syd Uni Project update and submission to Watte Farm Environmental Impact Statement provided<br>▪ 4 June 2025 – Spark Briefing and discussion<br>▪ 17 April 2025 – SydUni Briefing and detailed review of the project, pipeline alignment and close the loop letter<br>▪ 6 February 2025 – Syd Uni Briefing and proposed pipeline stakeholder information pack provided |
| Neighbours | People or organisations that own land near the project who are likely to experience impacts | ▪ 30 -31 July 2025 – Door knock and follow up engagement along Canyonleigh and Brayton Roads<br>▪ 4 July 2025 – Follow up letters to all neighbours who participated in discussions<br>▪ 24-26 June 2025 – Door knock and letterbox drop of an information pack with contact details to neighbours along Canyonleigh and Brayton Road – approximately 28 properties and direct contact with 18 |
| Community | People living in a specific geographic area that may experience social, economic, or environmental changes because of the project | ▪ 30 July 2025 – Pop-up information stall at the Meridian Café<br>▪ 18 July 2025 – Community members tour Tallawarra Gas Fired Power Station<br>▪ 17 July 2025 – Project website and social media live |

| Stakeholder group | Stakeholder | Engagement undertaken to date |
|---|---|---|
| | General public<br>Community Reference Group<br>Community interest groups | ■ 25 June 2025 – Pop-up information stall at the Meridian Café<br>■ 25 June 2025 – Meeting1 – Community Reference Group<br>■ 23 June 2025 – Community Newsletter distributed to over 3000 homes<br>■ 23 June 2025 – Published summary of 'What was heard' 2015 to 2020<br>■ 30 May 2025 – Appointment of Community Reference Group<br>■ 2 May 2025 – Expressions of Interest for Community Reference Group<br>■ 14 – 30 April 2025 – Community survey over 300 residents<br>■ 12 February 2025 – Briefing for Marulan Progress Association |
| Local Government | Goulburn Mulwaree Shire Council | ■ 30 July 2025 – Participate in Council led coordination meeting for Canyonleigh Road<br>■ 17 June 2025 – Update briefing to Council administrators<br>■ 11 June 2025 – Update on project and request to brief<br>■ 4 March 2025 - Briefing to Council and information pack published with Council minutes |
| | Upper Lachlan Shire Council | ■ 18 July 2025 – Community members tour Tallawarra Gas Fired Power Station<br>■ 11 June 2025 – Project update letter provided and request to brief<br>■ 20 March 2025 – Briefing to Council and information pack published with Council minutes |
| | Wingecarribee Shire Council | ■ 30 July 2025 – Information pack provided<br>■ 6 August 2025 - Meeting on potential use of recycled water with agreement to develop a formal expression of interest |
| Media | ABC Illawarra | ■ 2 July 2025 – News story adapted to ABC online and social media attaining 300 comments<br>■ 1 July 2025 – Interview with Head of Community Engagement on the project, circulated to ABC Sydney/Canberra |
| | Goulburn Post | 2 July 2025 – Article in Goulburn Post on the project and the engagement activities underway |
| State Government representatives and agencies | Relevant Ministers | EnergyAustralia have maintained updates to the NSW Government as appropriate. |
| | Department of Planning, Housing and Infrastructure | ■ 10 December 2024 – Early consultation meeting to discuss new modification requirements<br>■ 18 March 2025 – Project Update<br>■ 17 April 2025 – Project Update<br>■ 3 June 2025 – Project Update<br>■ 2 July 2025 – Scoping Report Briefing and project progress update |
| | NSW Environmental Protection Authority | ■ 16 December 2024 – Project introduction and discussion of modification assessments |

| Stakeholder group | Stakeholder | Engagement undertaken to date |
|---|---|---|
| | | ■ 8 July 2025 – Briefing on Scoping Report |
| | NSW Health | ■ 30 January 2025 – Project briefing<br>■ 3 July 2025 – Briefing on Scoping Report |
| | Transport for NSW | 12 February 2025 – Project overview and discussion of technical review |
| | Water NSW | ■ 4 March 2025 – Project introductory briefing<br>■ 7 July 2025 – Circulation of Briefing pack on Scoping Report |
| | NSW DCCEEW | ■ 31 January 2025 – Project introductory briefing<br>■ 30 May 2025 – Project update<br>■ 30 June 2025 – Project update |
| | NSW DCCEEW Water | ■ 4 July 2025 – Circulation of Briefing pack on Scoping Report<br>■ 24 July 2025 - Project introductory briefing |
| | NSW Crown Lands | ■ 17 March 2025 – Project introductory briefing<br>■ 2 July 2025 - Briefing on Scoping Report and discussion on pipeline alignment options |
| Commonwealth Government representatives and agencies | Relevant Ministers | EnergyAustralia have maintained updates to the NSW Government as appropriate. |
| | Department of Climate Change, Energy, the Environment and Water | Project introductory briefing was provided |
| Utilities | Transgrid | 24 March 2025 – Pre-connection enquiry |
| | APA | ■ 11 February 2025 – meeting to discuss Marulan project and preliminary discussions regarding MSP connection and capacity requirements<br>■ 14 April 2025 – Meeting to discuss preliminary high level desktop pipeline connection and capacity assessment |
| Industry | Australian Energy Market Operator (AEMO) | 2 July 2025 – Project introduction and discussion on planned electrical grid expansion options. |

### 6.3.2 Traditional owner feedback

EnergyAustralia is committed to ongoing engagement with representative Traditional Owner organisations in relation to the modified project. To date, there have been constraints on the availability of Traditional Owner organisations which are managing multiple priorities simultaneously, reducing their capacity to respond to new consultation requests.

EnergyAustralia is committed to continuing consultation efforts with Traditional Owners and will include details of any consultation outcomes in the modification applications.

### 6.3.3 Proposed pipeline stakeholder feedback

Proposed pipeline stakeholders have provided the following feedback during consultation:

- where possible minimise impact and use of private land
- thoroughly explore alternative alignment routes

- explore use of Crown Lands and easements particularly for private land and to mitigate cumulative impacts for developer landowners
- offer voluntary agreements to access land for technical and environmental studies and/or to establish a pipeline easement.

### 6.3.4 Neighbour feedback

Preliminary one-on-one discussions have occurred with more than 60 per cent of neighbours. These have indicated that neighbours are interested or concerned about the following issues regarding the modified project:

- cumulative impacts and greater coordination between energy development projects
- road upgrades to accommodate truck movements during construction and to ensure reliable access to projects and the substation; designing and upgrading once for multiple projects
- access for emergency services to projects and substation as well as provision of a dedicated fire response team to alleviate reliance on the Brayton Fire and Rescue
- visual impact, specifically individual viewpoints from their residences and what the power station will look like at night
- noise during operations and times of operations
- air quality how the power station will manage air quality and what the regulations are
- impacts to property values from proximity to multiple projects
- accommodation specifically where the workers will live, work and play and the proximity of a workers accommodation village to project and neighbours
- biodiversity and environmental impacts and how this will be protected and managed.

### 6.3.5 Community feedback

EnergyAustralia has been engaging and listening to community feedback for several years, producing a consultation report for the initial scoping (2015) and an additional consultation report for the updated scoping (2020). Through the Community Reference Group, community survey, pop-up engagement and circulation of the Community Newsletter, community members were invited to reflect on what has been heard to date and discuss or add to the matters identified. This validated and updated feedback includes:

- Energy type – we think batteries would be better than gas to provide stored energy from renewables.
- More consultation – we need more time and opportunities to understand the project.
- Greater commitment – you have taken a long-time to develop the project and we are not sure it will go ahead.
- Visual – we would like to understand what we will see in the landscape, particularly the height of the stacks.
- Air quality– air is important to us as a rural community, and we need to know how a power station manages air quality.
- Noise – our rural community is peaceful, and we need to see noise modelling for construction and operations.
- Traffic – construction would need reliable roads and create a lot of truck movements – we would like to understand safety, maintenance and road upgrades required.
- Accommodation – our community is growing fast, and housing is a challenge. We need assurance that the workforce won't impact rent or motel availability.
- Managing biodiversity – we enjoy the wildlife and the Wollondilly River and need to understand how these would be protected and how any impacts would be managed.

- Economics – we want to understand potential jobs, employment and economic impact from the project during construction and operations.

### 6.3.6 Council feedback

Consultation with Upper Lachlan Shire Council has raised the following points for consideration:

- upgrade to Canyonleigh Road and how this can be coordinated across multiple projects
- water usage, water licences and how recycled wastewater can be used
- waste management, specifically the cumulative impacts on existing waste management facilities in the area
- operational noise and visual impact to neighbours and residents
- where the accommodation camp may be located and how this site could be used for future projects or community needs.

Where appropriate and relevant, EnergyAustralia intends to form planning agreements with Councils addressing various aspects of the project. These agreements will be subject to further investigation and consultation with local Councils during preparation of the modification applications.

## 6.4 Further engagement planned for the Modification

EnergyAustralia will continue engaging with the community and key stakeholders throughout the preparation of the modification applications and as more detailed information about the modified project becomes available. The engagement approach may be refined as the modified project evolves if needed (e.g. in response to community feedback, identification of new issues or changes to the modified project design). Where additional stakeholders and community groups are identified either through engagement with existing stakeholders, or where stakeholders self-identify to express an interest, they will also be engaged.

Feedback received from consultation and engagement sessions would be used to guide the environmental assessment of the consolidated modification project.

A range of engagement activities will be implemented to continue to inform and consult stakeholders and the community about the project, which may include the following:

- Establishing a project headquarters in Marulan with an accessible community liaison officer, project information as well as contact points through 1800 574 947, dedicated email and PO Box.
- Direct engagement with proposed pipeline stakeholders.
- Direct engagement with neighbours through a dedicated neighbour engagement team.
- Quarterly Community Reference Group meetings with local representatives as well as briefings for local community groups.
- Regular opportunities for community members to participate in community benefit sharing workshops, citizen science, tour the Tallawarra Gas Fired Power Station and/or benefit from EnergyAustralia's STEM schools' program.
- Regular engagement with Traditional Owners/Custodians, Land Councils and self-determined involvement in Aboriginal and Cultural heritage studies.
- Ongoing six weekly updates and meetings with Goulburn Mulwaree Shire Council and Upper Lachlan Shire Council. Regular communications and always-on information including – a hardcopy Community Newsletter delivered at least quarterly coinciding with pop-up engagements and an active project website (**www.marulangasfiredpower.com.au**) and social media channel, with regular local media engagement and announcements.
- Ongoing briefings and correspondence with local, State and federal agencies and representatives.

Following submission of the modification applications, DPHI will publicly exhibit the modification applications, providing an opportunity for anyone to make a submission during that time. During exhibition, EnergyAustralia would inform interested parties of the public exhibition, indicating where people can view the modification applications, and advertise any additional consultation activities.

# 7 Proposed assessment of impacts

A review of the environmental, social and economic matters relevant to the modified project has been carried out to determine the issues that need to be assessed as part of the consolidated modification report proposed to be prepared in support of the modification applications. A scoping summary table prepared in accordance with *State Significant Infrastructure guidelines – preparing a Scoping Report* (DPIE, 2022) is provided at Appendix A.

The final assessment approach will be further informed by any requirements issued by DPHI in response to this report.

## 7.1 Biodiversity

### 7.1.1 Existing environment

A preliminary Biodiversity Constraints Analysis (BCA) was undertaken by Arcadis (2025) to inform the design, location and positioning for the modified project. Preparation of the BCA included an initial survey in February and March 2025 to understand any changes in the site conditions since the Common Infrastructure Approval was granted, which authorises all clearing required for the approved project, and to refine the seasonal targeted species surveys that will be undertaken to support the preparation of a Biodiversity Development Assessment Report (BDAR) for the modification applications.

#### Desktop findings

A current review of State Vegetation Type Mapping (SVTM) identified eight Plant Community Types (PCTs) as being mapped to occur within the study area for the modified project:

- PCT 3373 – Goulburn Tableland Box-Gum Grassy Forest
- PCT 3415 – Southern Tableland Red Grass-Spear Grass Grassland
- PCT 3416 – Southern Tableland Valley Flats Damp Grassland (potentially occurs)
- PCT 3486 – Wollondilly-Shoalhaven Slopes Grassy Open Forest
- PCT 3492 – Wollondilly-Shoalhaven Quartz Hills Forest
- PCT 3738 – Goulburn-Lithgow Tableland Hills Grassy Forest
- PCT 3746 – Southern Tableland Snow Gum-Candle bark Shrub Forest
- PCT 4063 – Central and Southern Tableland River Oak Forest.

Database searches of the NSW BioNet Wildlife Atlas and Commonwealth Protected Matters Search Tool (PMST), for a 10 kilometres radius of the project site identified:

- 51 threatened fauna species, of which 42 are listed under the BC Act and 39 are listed under the EPBC Act
- 37 threatened flora species, of which 34 are listed under the BC Act and all are listed under the EPBC Act
- Nine migratory species, of which three are listed under the BC act and all are listed under the EPBC Act.

PCTs identified from the SVTM were entered into the Biodiversity Assessment Method (BAM) Calculator (BAM-C) to generate candidate and predicted species lists. A total 54 threatened species (candidate, predicted and dual species) was returned by the BAMC, including 19 candidate flora species, 27 candidate and dual fauna species and 8 predicted species. Of these, eight threatened species are listed as being at risk of serious and irreversible impacts (SAII). These are:

- *Bossiaea bombayensis* (Bombay Bossiaea)
- *Callitris oblonga* subsp. *parva*
- *Chalinolobus dwyeri* (Large-eared Pied Bat)

- *Genoplesium superbum* (Superb Midge Orchid)
- *Miniopterus orianae oceanensis* (Large Bent-winged Bat)
- *Mixophyes balbus* (Stuttering Frog)
- *Petrogale penicillata* (Brush-tailed Rock-wallaby)
- *Solanum armourense.*

## Threatened ecological communities (TECs)

Of the eight PCTs identified from SVTM, four were field verified to occur and one was determined to potentially occur. These are:

- PCT 3416 – Southern Tableland Valley Flats Damp Grassland (potentially occurs)
- PCT 3486 – Wollondilly-Shoalhaven Slopes Grassy Open Forest
- PCT 3738 – Goulburn-Lithgow Tableland Hills Grassy Forest
- PCT 3746 – Southern Tableland Snow Gum-Candle bark Shrub Forest
- PCT 4063 – Central and Southern Tableland River Oak Forest.

The other three PCTs (3373, 3415 and 3492) identified from SVTM were not verified during field surveys, as they were inaccessible, due to land access restrictions.

Three of the PCTs which potentially occur are associated TECs. These PCTs and their corresponding TECs are summarised in **Table 7-1** below.

**Table 7-1 TECs associated with PCTs field verified or identified on SVTM**

| PCT | TEC (BC Act) | TEC (EPBC Act) |
|---|---|---|
| 3373 - Goulburn Tableland Box-Gum Grassy Forest | ■ White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered) | ■ White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered) |
| 3415 - Southern Tableland Red Grass-Spear Grass Grassland | ■ White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)<br>■ Werriwa Tablelands Cool Temperate Grassy Woodland in the South Eastern Highlands and South East Corner Bioregions (Critically Endangered) | ■ White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered)<br>■ Natural Temperate Grassland of the South Eastern Highlands (Critically Endangered) |
| 3416 - Southern Tableland Valley Flats Damp Grassland | ■ Not associated with a BC Act listed TEC | ■ Natural Temperate Grassland of the South Eastern Highlands (Critically Endangered) |

## Threatened species

During field surveys, Gang-gang Cockatoo (*Callocephalon fimbriatum*) were observed and heard foraging and flying within areas mapped on site as PCT 3746 and 4063. This species is listed as Endangered under the BC Act and EPBC Act. No other listed threatened species were observed.

Native vegetation identified is considered to provide suitable habitat for a suite of candidate threatened species as identified by the BAM-C.

An unknown *Genoplesium* (orchid) species was also identified within the study area, associated with PCT 3738 and PCT 3486. These PCTs occur within the approved pipeline route/access road; however, would be avoided by the modified project disturbance footprint. The unknown species was sampled and taken to the Identifications Team at the Botanic Gardens of Sydney (BGoS) on 28 February 2025.

The BGoS confirmed that the unknown Genoplesium species could not be attributed to a currently described species within the NSW Herbarium, and as such is likely to be an 'undescribed species'. The BGoS attended the project site on 13 March 2025 to collect additional specimens of the undescribed *Genoplesium* species to compare against the initial specimen, and other *Genoplesium* species described in various Southern Tablelands field guides which are currently not accepted by the NSW Herbarium. The BGoS will use the collected specimen, the descriptions from authors of unofficial field guides in the region, and their own expertise to confirm the species identification. This work is currently ongoing.

### Aquatic habitat

The project site abuts the Wollondilly River and contains several ephemeral creeks and drainage lines acting as tributaries of the Wollondilly River as well as multiple farm dams. The Wollondilly River is mapped as key fish habitat (KFH) within the Hawkesbury-Nepean region. These aquatic areas may provide suitable habitat for threatened aquatic fauna species.

The operational water supply strategy for the modified project is still subject to design development however it may include the need to construct infrastructure to pump water from the Wollondilly River.

### Approved project offsets

The Common Infrastructure Approval included the requirements to offset the biodiversity impacts of the approved project. The approved project required the following areas be conserved as biodiversity offsets in perpetuity:

- 35.5 hectares of native vegetation within the power station site
- 9 hectares of riparian vegetation within the power station sites
- 13 hectares of native vegetation within Lot 153 DP750053
- 2.75 hectares of native vegetation within Lot 31 DP750053 (now part of Lot 2 DP1120270 south of Canyonleigh Road)
- Any cleared hollow bearing trees would be offset on an at least 1:1 basis.

Conservation agreements for the areas listed above have not been progressed.

## 7.1.2 Potential impacts

### Construction

Like the approved project, the modified project may result in potential impacts to biodiversity during construction including:

- Direct impacts, including the potential for:
  - removal of native vegetation
  - removal of habitat for threatened species.
- Indirect impacts, including the potential for:
  - inadvertent impacts on adjacent vegetation and reduced viability of habitat due to edge effects
  - noise, vibration, dust and light impacts
  - weed invasion and risk of pathogens
  - risk of contaminant pollution.

- Prescribed impacts, including the potential for:
  - impacts on habitat connectivity for threatened entities
  - impacts on watercourses or hydrological processes that sustain threatened entities
  - vehicle strike.

### Operation

Potential indirect impacts on biodiversity during operation of the modified project would remain largely consistent with the approved project. As was the case for the approved project, noise and lighting associated with operation of the modified project may potentially discourage habitat use in surrounding areas.

The modified project may include a need for works affecting the bed and banks of the Wollondilly River. Depending on the need for these works, the modified project would have the potential for aquatic habitat impacts.

## 7.1.3 Assessment approach

Based on the findings of the BCA, a BDAR will be prepared to support the modification applications under the BC Act by an accredited assessor in accordance with the BAM. The BDAR assessment area will encompass the entire project footprint, including the aspects of the modified project that are still subject to design development or a final location, including the final gas pipeline route, grid connection route, operational water supply infrastructure, temporary construction workers accommodation facilities, construction phase ancillary areas and road upgrades.

The BDAR would be prepared to meet the requirements of the BAM which include, but are not limited to:

- Threatened species and TEC impact assessment including:
  - Biodiversity Values Mapping
  - Seasonal flora and fauna surveys for candidate species
  - Targeted surveys for threatened species that have the potential to be impacted by the modified project
  - Recommendations for avoiding, limiting and mitigating impacts to threatened species and TECs
  - Biodiversity offset credit calculations to determine the credit obligations of the modified project.
- Considerations for SAII of the modified project on biodiversity.

If any modified project operational water supply infrastructure would disturb the Wollondilly River, a desktop assessment will be prepared to assess any potential impacts to key fish habitats or threatened species listed under the FM Act.

The modified project may alter the biodiversity offsetting requirements of the approved project (refer Section 7.1.1). Contemporary biodiversity offsetting requirements relative to the potential impacts of the proposed modifications will be calculated and determined in accordance with the BC Act.

Once all elements of the modified project are confirmed so that the complete project footprint is known, the modified project will be referred to the Commonwealth, to determine if it is a 'controlled action' which requires approval under the EPBC Act.

## 7.2 Noise and vibration

### 7.2.1 Existing environment

Background noise monitoring was conducted as part of the approved project at four locations considered to be representative of residential receivers surrounding the site. The existing noise environment was found to be typical of a quiet rural area, with little exposure from existing traffic noise and no exposure from any existing industrial noise.

New structures have been built since the approved project was determined that are potentially sensitive receivers. These are shown in **Figure 6-1**.

### 7.2.2 Potential impacts

#### Construction

Like the approved project, the potential noise and vibration impact during construction of the modified project would be associated with construction activities such as:

- clearing and grubbing
- earthworks and excavation
- rock hammering and crushing
- concrete batching
- hauling material
- transporting equipment
- parts assembly
- concrete formwork and associated activities
- building of permanent structures
- maintenance and refuelling.

It is possible that receivers in proximity of the modified project may experience adverse construction noise and vibration impacts. In addition, sensitive receivers near the proposed Canyonleigh Road upgrade and other public road upgrades required along the OSOM route between the port of origin and project site may experience construction noise and vibration impacts.

Construction traffic associated with the modified project, including to and from for the temporary workers accommodation facilities, and to and from any off-site construction ancillary areas, may contribute to additional traffic noise.

Like the approved project, it is likely that some construction works would exceed relevant noise guidelines at some sensitive receivers; however, the works would generally be of short duration and would typically be undertaken during standard construction hours.

#### Operation

Consistent with the approved project, operational noise impacts for the modified project are likely to be associated with mechanical noise from the generator, gas turbines, cooling equipment and exhaust systems, which can all contribute to increased ambient noise. The magnitude of operational noise generated by the modified project may be greater than the approved project.

Consistent with the approved project, the modified project is most likely to operate during peak electricity demand periods. In NSW these are generally 2:00 pm to 8:00 pm during the summer and 5:00 pm to 7:00 pm during the winter; however, the modified project would have the potential to operate at any time.

### 7.2.3 Assessment approach

A detailed noise and vibration impact assessment (NVIA) would be prepared to assess the impacts of the proposed modifications with reference to the requirements and procedures outlined in the following guidelines:

- *NSW Noise Policy for Industry* (NPfI) (EPA, 2017)
- *NSW Interim Construction Guideline* (DECC, 2009)
- *Draft Construction Noise Guideline* (EPA, 2020)
- *Assessing Vibration: a technical guideline* (DEC, 2006).

Key aspects of the proposed methodology to assess the potential noise and vibration impacts of the modified project include:

- consideration of operational noise limits specified in the Conditions of Approval (CoA) for the approved project and development of updated noise management levels (NML) for construction and operation of the modified project, with reference to contemporary guidelines (such as the NPfI)
- assessment of construction noise and vibration representative of the worst-case noise emissions generated by construction activities associated with the modified project
- assessment of operational noise and vibration at relevant noise-sensitive receiver locations under standard and noise-enhancing weather conditions (e.g. noise enhancing winds)
- cumulative noise and vibration impact assessment considering the existing Transgrid Marulan Substation and other potential future industrial developments, such as nearby proposed Wattle Creek Energy Hub
- identification of feasible and reasonable noise mitigation strategies where project specific noise management levels (NMLs) are predicted to be exceeded.

## 7.3 Air quality and greenhouse gas

### 7.3.1 Existing environment

Since the project was approved, the National Environment Protection Measure (NEPM) for ambient air quality has undergone several revisions and the *Protection of the Environment Operations (Clean Air) Regulation 2022* has also been reviewed and remade.

New ambient air quality monitoring stations have been established closer to the project area since the approved project was determined. The ambient air quality results from the newer stations closer to the project site are expected to demonstrate generally lower background concentrations of $NO_2$.

The environment surrounding the approved project has undergone changes that could potentially affect the ambient air quality, including increased traffic on nearby roads, proposals for the construction and operation of new developments. The establishment of new structures that are potentially sensitive receivers has also occurred around the project area since the approved project was determined. These new structures require further investigation to be able to categorise them as sensitive receivers (refer to **Figure 6-1**).

### 7.3.2 Potential impacts

#### Construction

Like the approved project, potential air quality impacts during the construction of the modified project may include dust generation, resulting from soil excavation and handling, site grading activities, and vehicle movements, as well as exhaust emissions from construction machinery and equipment. Dust emissions can vary substantially from day to day depending on the level of activity, the specific operations being undertaken, and the weather conditions.

Any construction phase air quality impacts are expected to be temporary and relatively short-lived, likely occurring during dry weather conditions when the wind is blowing towards a receiver. These impacts would typically be well managed through the implementation of mitigation measures at the point of emission.

#### Operation

Like the approved project, the modified project would produce emissions to air from the combustion of fuels. These emissions would have the potential to affect local and regional air quality. Air emissions from the modified project would include:

- Greenhouse gas (GHG) emissions
- Oxides of nitrogen ($NO_x$)
- Particulate matter (PM)
- Sulphur Dioxide ($SO_2$)
- Carbon Monoxide (CO)
- A range of other emissions may also be produced from the turbines at low levels including benzene and Polycyclic Aromatic Hydrocarbons.

Other potential sources of emissions on site may include:

- retention pond
- waste water treatment plant
- evaporative cooler
- oil waste pit.

### 7.3.3 Assessment approach

An Air Quality Impact Assessment (AQIA) would be prepared to assess the impacts of the modified project in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA 2022). The AQIA will determine the modified project's ability to comply with the relevant regulatory framework, including the POEO Act and the *Protection of the Environment Operations (Clean Air) Regulation 2021* which sets the maximum permitted emissions limits for key air emissions.

Additionally, a GHG Assessment will be prepared in accordance with the NSW EPA Guide for Large Emitters (NSW EPA, 2024) to estimate emissions, identify and assess potential mitigations, and set long term and interim emission goals for the modified project.

The assessments of air quality and GHG emissions will consider multiple operational scenarios across all seasonal parameters, including a reasonable worst-case scenario (all units online and operating at their current rated capacity), and for start-up conditions.

## 7.4 Plume rise and aviation risk

### 7.4.1 Existing environment

The nearest major airports to the modified project are Goulburn Airport (approximately 37 km to the south west) and Mittagong Airport (approximately 45 km east). A range of small airfields in the region were identified as part of the approved project, the closest of which is Highland Farm, located approximately five kilometres to the east.

The Department of Defence submission on the approved project advised that the plume rise impacts of the project would not impact on military flight operations. Similarly, the Civil Aviation Safety Authority (CASA) expressed satisfaction that the aviation hazard impacts of the approved project could be managed through the declaration of a danger areas around the air space above the site. For the modified project, the continuation and implementation of this measure will be sought in consultation with CASA.

### 7.4.2 Potential impacts

The CASA defines a critical plume velocity limit for exhaust plumes at the Obstacle Limitation Surface (OLS). Plumes with a velocity above this limit at the OLS may represent a potential hazard to aircraft stability.

The modified project would include exhaust stacks with a nominal height of 40 metres and potentially higher following detailed design and ground concentration modelling. The exhaust stacks could constitute a physical impact hazard to low flying aircraft.

### 7.4.3 Assessment approach

A screening plume rise assessment would be prepared to assess the impacts of the proposed modifications. It would determine the critical stack emission parameters to satisfy Civil Aviation Safety Authority (CASA) requirements. Consultation would be undertaken with appropriate aviation stakeholders including CASA and airport operators.

## 7.5 Surface water and groundwater

### 7.5.1 Existing environment

The project site is located within the Sydney Water drinking water catchment adjacent to the Wollondilly River and contains several ephemeral creeks and drainage lines that drain to the Wollondilly River. There are three dams located on the project site, two small dams within the woodland on the eastern portion of the project site and a larger dam, located near Transgrid's Marulan 330kV Substation.

Several tributaries of Paddy's River and Uringalla Creek traverse the gas pipeline route.

Groundwater in the Goulburn Mulwaree Council area is dominated by the fractured rocks of the Lachlan Fold Belt which are generally poor aquifers. Preliminary geological investigations conducted as part of the approved project did not encounter any groundwater to the depth limit of the investigation (5.5 m).

An updated search found no registered groundwater bores within the project site.

The Groundwater Dependent Ecosystem (GDE) High Ecological Value Aquatic Ecosystems (HEVAE) Atlas (NSW DCCEEW, 2025) was reviewed to determine the occurrence of GDEs within and surrounding the approved project. Areas within the project site, specifically in proximity of the Wollondilly River have a medium – high score on the HEVAE framework.

### 7.5.2 Potential impacts

#### Surface Water

The modified project would have a higher operational water demand than the approved project. The operational water sourcing strategy is still being considered. If operational water is sourced from surface water sources such as from the Wollondilly River under licence, or from harvestable rights on the site, then the project would potentially impact the availability of surface water in the downstream environment.

Works may be required to install infrastructure used for the extraction of operational water. This could potentially impact the bed and banks of the Wollondilly River.

Potable water will also need to be sourced for the temporary workers accommodation facility. This may be sourced from a reticulated water system or from alternative sources.

The potential impacts of the modified project on surface water would be generally consistent with the potential impacts of the approved project, including:

- potential for erosion and sediments mobilised to receiving environments associated with construction earthworks and disturbed area runoff
- potential for pollutants from accidental spills of fuel, chemicals or other contaminants reaching receiving environments
- altered stormwater drainage flow paths, peak flow velocities and flow volumes because of new structures and new hardstand areas.

#### Groundwater

As outlined above, the modified project would have a higher operational water demand than the approved project and the operational water sourcing strategy is still being considered. If operational water is sourced from groundwater, then the modified project would extract water which may be used by groundwater dependent ecosystems and could potentially impact on water availability for other groundwater users.

Subject to the higher operational water demands expected, the potential impacts of the modified project on groundwater would be generally consistent with the potential impacts of the approved project, including the potential for pollutants from accidental spills of fuel, chemicals or other contaminants to contaminate groundwater resources.

### 7.5.3 Assessment approach

A surface water and groundwater assessment would be prepared to assess the impacts of the proposed modifications referencing the following guidelines:

- NSW Water Quality and River Flow Objectives (DECCW, 2006)
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)
- ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)
- Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Volume 2 (DECC, 2008)
- NSW Aquifer Interference Policy (DPI, 2012)
- *Water Management Act 2000*

Key aspects of the proposed methodology to assess the potential surface water and groundwater impacts of the modified project include:

- further characterisation of waterways with the potential to be impacted by the modified project

- identification of potential indicators of concern based on proposed activities
- identification of relevant NSW Water Quality Objectives and their nominated environmental values for waterways within the assessment study area as well as water quality indicators and the guideline trigger values outlined in ANZC (2018)
- surface water quality will be assessed under existing conditions based on available data, and potential sources of contamination will be identified for comparison against the ANZG (2018) water quality objectives and nominated environmental values to determine if they are currently being achieved
- identification of potential impacts of the project on water quality and determining if relevant water quality objectives are likely to be achieved during construction and operation
- conceptual strategies to mitigate identified impacts would be developed such as erosion and sediment controls, and water quality management measures recommendations
- as the project is located in the Sydney drinking water catchment a Neutral or Beneficial Effect (NorBe) assessment would be prepared
- if water access licences are required, consultation with relevant stakeholders and licence holders would be undertaken.

## 7.6 Hydrology and flooding

### 7.6.1 Existing environment

The project is located alongside the Wollondilly River. There is an upstream catchment of approximately 2,700 square kilometres. Several existing flood studies have been undertaken for the Wollondilly River including WMA Water (2016), and a wider Hawksbury Nepean study WMA (2018) and updated in 2024 (CSS, 2024).

EnergyAustralia has engaged Harc (2025) to prepare flood modelling for the modified project identifying the annual exceedance Probabilities (AEP) of 20 per cent, 10 per cent, one per cent and probable maximum flood (PMF) events. This has been used to inform design levels for the power station and access road to the site. The modelling shows that during a one percent AEP flood event, sections of Canyonleigh Road, as well as a small portion of the proposed site access road, are likely to experience inundation. During a PMF event, a large portion of the project site is likely to be inundated.

### 7.6.2 Potential impacts

Like the approved project, during construction of the modified project any facilities, stockpiles or works areas which are established within flood-prone areas, due to site constraints or required proximity to work areas, may result in pollution from the mobilisation of sediments, or chemicals to the receiving environment.

Like the approved project, the modified project would be designed above the one per cent AEP flood level. The project could potentially alter the flooding characteristics of the local area during flood events above the one per cent AEP flood level.

### 7.6.3 Assessment approach

A flood impact assessment would be prepared to assess the impacts of the proposed modifications. It would include:

- existing condition flood modelling for the local catchment to determine flood risk, inform construction planning and to inform the modified project design
- developed case flood modelling to assess the likely change in local catchment flood impacts resulting from the modified project, including consideration of changes to peak flood levels, velocities and flood hazard classification

- identification of reasonable and feasible mitigations to minimise the flood impacts of the modified project prepared in consultation with Upper Lachlan Shire Council, Goulburn Mulwaree Council and local stakeholders.

## 7.7 Soils and contamination

### 7.7.1 Existing environment

An assessment of soils and geology was conducted for the approved project.

The project area comprises of agricultural land and uncleared remnant vegetation. The project site slopes gently west from 625m AHD to the Wollondilly River at around 590m AHD. The gas pipeline corridor generally consists of land previously cleared for agricultural purposes. The 1:250,000 Wollongong geological map shows the general area to be underlain by granite, granodionite or porphyry of Devonian age.

The project site falls within the Marulan Soil Landscape (Hazelton and Tille, 1990). The soils within this landscape are dominated by colluvial processes. Cliffs, scarps, and steep slopes are dominant features in upper parts of the landscapes with undulating hills and broad benches in lower catchment areas. Alluvial processes are likely to dominate in downslope areas adjacent to the Wollondilly River. Red Podzolic soils occur on hillcrests and upper slopes, grading into Yellow Podzolic soils on the lower slopes. Gleyed Podzolic soils are found in drainage depressions (Hazelton and Tille, 1990).

The project site and surrounding area is unlikely to be an area of potential acid sulfate soils (ASS). No potential sources of soil or groundwater contamination were identified within the approved project footprint.

An updated search of the NSW EPA contaminated land register (NSW EPA, 2025) revealed no listed contaminated sites within or near the project site.

### 7.7.2 Potential impacts

#### Construction

The potential construction impacts of the modified project on soils and contamination would be largely consistent with those of the approved project.

Excavations and bulk earthworks would be undertaken for construction of the facilities pad, access roads, transmission lines and gas pipeline. As the project site is located adjacent to the Wollondilly River, there is the potential for erosion leading to sediment runoff reaching the river.

Potential contamination impacts during construction of the modified project may include accidental spills of fuels, chemicals or other contaminants.

#### Operation

The potential operation impacts of the modified project on soils and contamination are largely consistent with those of the approved project.

Operation of the modified project would involve minimal soil disturbance. There is potential for contamination during operation from spills of fuel, oil or chemicals.

### 7.7.3 Assessment approach

A Preliminary Site Investigation (PSI) would be prepared to assess the impacts of the proposed modifications. It would include:

- Natural soils review, including describing soil mapping information available on the NSW Government SEED/eSPADE geoportals, including land and soil capability, inherent soil fertility, hydrologic soil groups, modelled soil cation exchange capacity, high value agricultural soils and biophysical strategic agricultural land, soil profiles, Australian Soil Classification, and dryland salinity risk mapping.
- Contaminated land review, including review of:
  - any previous contamination investigations and hazardous materials surveys or management plans (as available)
  - publicly available historical aerial imagery
  - naturally occurring asbestos risk mapping
  - acid sulfate soil (ASS) risk maps and potential for acid sulfate rock presence. The focus here will be inland ASS which can occur when in drought within wetlands, oxbows, and where sulfate is available in the landscape
  - Department of Defence unexploded ordnance risk mapping
  - NSW EPA priority per- and polyfluoroalkyl substances (PFAS) investigation risk sites
  - public register for environment protection licenses, applications for new licenses or transfer of existing licenses, environment protection notices, penalty notices issued by the EPA, convictions under the POEO Act, exemptions and review of existing contaminated land records.

## 7.8 Aboriginal heritage

### 7.8.1 Existing environment

Aboriginal and European heritage assessments completed for the approved project, within the facilities footprint and gas pipeline routes, found that overall, the diverse environments within the project site would have provided a range of resources for the Aboriginal people who inhabited the region, including geological, plant and animal resources.

11 Aboriginal objects, and approximately four general areas of potential subsurface deposits were identified in the broader study area. Of the total 11 objects identified:

- three objects would be impacted by the approved power station sites
- two objects would have the potential to be impacted by the construction corridor for the transmission line
- two objects would have the potential to be impacted by the access road and gas pipeline.

The remainder of the study area was considered to have moderate Aboriginal archaeological potential for subsurface material. These areas have generally been disturbed by farming practices.

Conditions of the Common Infrastructure Approval provided that:

- The proponent shall design and construct the project so as to avoid Aboriginal objects and potential archaeological deposit (PAD) sites as far as practicable, including the implementation of adequate buffer distances and construction practices to minimise potential for indirect impacts.
- Where disturbance of a PAD site is considered unavoidable, the Proponent would undertake further archaeological investigations prior to the commencement of construction and in consultation with Aboriginal stakeholders to determine:
  - the extent and significance (archaeological and cultural) of the site and of any objects uncovered
  - appropriate management measures for the sites and any objects.
- Where disturbance of Aboriginal objects is unavoidable, the Proponent shall ensure that all reasonable and feasible measures are implemented to minimise the extent of physical disturbance and to manage and mitigate any residual impact, in consultation with Aboriginal stakeholders.

An updated search of the Aboriginal Heritage Information Management System (AHIMS) database (July 2025) identified a total of 86 recorded Aboriginal heritage sites within 5 kilometres of the project site.

### 7.8.2 Potential impacts

Like the approved project, due to the relatively low levels of ground disturbance across large areas of the project site and deep nature of alluvial deposits associated with the landform, there is potential for the modified project to disturb Aboriginal objects and archaeological sites, particularly when undertaking earthworks.

### 7.8.3 Assessment approach

An Aboriginal Cultural Heritage Assessment Report (ACHAR) would be prepared to assess the impacts of the proposed modifications with reference to the requirements and procedures outlined in the following guidelines:

- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b)
- *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011)
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010a).

The ACHAR will determine the presence and nature of any Aboriginal objects, Potential Archaeological Deposits (Pads) and cultural values likely to be impacted by the modified project. Archaeological surveys will be completed and will include the involvement of a site officer representing the Pejar Local Aboriginal Land Council (LALC). The ACHAR will identify practical measures to protect and conserve any Aboriginal objects and places identified within the study area.

## 7.9 Non-Aboriginal heritage

### 7.9.1 Existing environment

An assessment of historical cultural heritage values was conducted as part of the approved project. No historic sites were identified within the approved project footprint.

An updated search of relevant historic heritage registers was undertaken on 3 July 2025 for the modified project, and included:

- State Heritage Register
- National Heritage List
- Commonwealth Heritage List
- Upper Lachlan and Goulburn Mulwaree LEP.

The search indicated that there are no registered historic heritage items in the vicinity of the project area.

### 7.9.2 Potential impacts

Consistent with the approved project, the modified project would not be likely to result in any non-Aboriginal heritage impacts. Notwithstanding, ground disturbance works have the potential to expose or impact on previously unidentified heritage items or sites.

### 7.9.3 Assessment approach

A non-Aboriginal Heritage Memo would be prepared to assess the impacts of the proposed modifications. The non-Aboriginal Heritage Memo will collate the following information:

- extensive searches of relevant statutory and non-statutory heritage registers
- a review of available online historical aerial imagery
- a review of existing historical and archaeological literature
- identification of existing non-Aboriginal heritage values within and surrounding the project site
- identification of archaeological potential within the project site
- recommendation for further assessment (if required) including a protocol for managing unexpected finds during construction.

## 7.10 Traffic and transport

### 7.10.1 Existing environment

The roads identified for use by the approved project were the Hume Highway, Brayton Road, and Canyonleigh Road. The project site would be accessed from Canyonleigh Road which traverses the southern boundary in an east to west direction and is connected to Brayton Road, which provides a north to south link from the Hume Highway and the village of Marulan.

The Hume Highway is a classified arterial road that provides inland connection between Sydney and Melbourne. The Hume Highway also forms part of the NSW OSOM load carrying vehicle network. The Hume Highway is a two-way, four lane divided highway.

Brayton Road is a rural collector road managed by Goulburn Mulwaree Council and is a two-way, two-lane sealed road.

Canyonleigh Road is a rural access road managed by Goulburn Mulwaree Council. The section of Canyonleigh Road between Brayton Road and the project site is initially a two-way sealed road, before transitioning to a two-way unsealed road. The approved project includes a commitment to upgrade Canyonleigh Road between the project site and Brayton Road to a 7-metre-wide spray sealed road.

Due to the rural nature of the project site, there is currently no active or public transport infrastructure on the surrounding road network.

### 7.10.2 Potential impacts

#### Construction

Construction traffic associated with the modified project, for the temporary workers accommodation camp (location to be identified), and the off-site construction ancillary areas (location to be identified), may contribute to local road network volumes, congestion and traffic noise. Construction traffic may also cause road safety issues for other road users, pedestrians and cyclists. These potential impacts could be exacerbated by nearby developments if they are constructed at the same time.

Like the approved project, the modified project would require OSOM vehicles to deliver equipment to the project site. The size and weight of these OSOM vehicle movements may require public road upgrades to be undertaken at discrete locations between the port of origin and the project site. Currently the preferred port of origin and any pinch point upgrades required, have not been determined. It is possible that OSOM movements, or associated road pinch point upgrades (if required) may impact on local road users due to closures or delays.

Site access for the modified project is proposed off Canyonleigh Road, just to the west of Transgrid's Marulan 330kV Substation, through EnergyAustralia owned land. An unnamed track is currently established at this location, which would require intersection and road upgrades to ensure it is suitable for construction vehicle access.

No offsite parking is proposed or required for construction of the modified project, except at the site of temporary workers accommodation and for any off-site construction ancillary sites.

### Operation

Like the approved project, the modified project during operation and maintenance would require site-based staff, which would result in an increase in vehicles utilising the surrounding road network. Trucks would be required during operation to transport wastewater from the project site to the Goulburn or Marulan wastewater treatment plants. These truck movements may result in an increased traffic volume on the routes used, particularly on Brayton Road and Canyonleigh Road.

Like the approved project, if operational water demand for the modified project needed to be provided or supplemented from recycled water, then additional trucks would be required on the selected route. These truck movements may result in an increased traffic volume on the routes used, particularly on Brayton Road and Canyonleigh Road, and depending on the volume of movements required, may add to dilapidation of the road infrastructure.

The modified project would require truck movements for fuel deliveries that were not required for the approved project.

### 7.10.3 Assessment approach

A traffic and transport impact assessment (TTIA) would be prepared to assess the impacts of the proposed modifications. It would include a review of the existing traffic conditions and road network around the project and an updated assessment of the traffic impacts of the modified project.

Construction and operational impacts would be assessed by reviewing expected construction activities and generated traffic volumes, haulage routes and distribution of construction traffic, and the impact of activities on road network performance, road access and safety, and public and active transport. This would include consideration of potential cumulative traffic impacts as a result of concurrent projects.

The TTIA would assess the suitability of selected OSOM routes, and the need for and impacts of any pinch point upgrades required.

## 7.11 Landscape character and visual amenity

### 7.11.1 Existing environment

The project area comprises predominantly of agricultural land and uncleared remnant vegetation. Land immediately surrounding the project site is characterised by a series of ridges, gullies and the Wollondilly River.

The landscape character surrounding the project site contains several built elements that contribute to the local visual character, including:

- Transgrid's Marulan 330kV substation
- transmission towers and high voltage transmission lines
- local sealed and unsealed roads
- residential dwellings and agricultural structures.

### 7.11.2 Potential impacts

Construction impacts to landscape character and visual amenity from the modified project would be broadly consistent with the approved project. Since the modified project is mostly isolated from major roads and other public areas, the potential impacts on views are expected to be consistent with the approved project assessment.

Any new offsite construction ancillary facilities and the temporary workers accommodation facilities would require assessment for potential landscape character and visual impacts.

Once operational, the landscape character and visual impacts of the modified project would be generally consistent with the approved project assessment. The majority of the modified project is anticipated to wholly or partially screened by vegetation and landform or would appear generally consistent with existing built elements of the locality, including Transgrid's Marulan 330kV Substation, transmission towers and high voltage transmission lines. Like the approved project, the exhaust stacks from the modified project would be the tallest structures associated with the project and may be visible from some surrounding properties. No visible emissions are anticipated to be discharged from the exhaust stacks.

The modified project has the potential to contribute to cumulative impacts on landscape character and visual amenity, when considered alongside the proposed neighbouring projects with active development applications, including the Wattle Creek Energy Hub and Canyonleigh BESS projects.

### 7.11.3 Assessment approach

A landscape character and visual impact assessment (LCVIA) would be prepared to assess the impacts of the proposed modifications with reference to the requirements and procedures outlined in the following guidelines:

- *Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4*, (TfNSW, 2020)
- *Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (DPHI, 2022)
- *Transmission Guideline Technical Supplement for Landscape Character and Visual Impact Assessment* (DPHI, 2024a)

The LCVIA would involve ground truthing of potential sensitive visual receivers and viewpoint locations that may have views of the modified project, assessing the magnitude of any visual changes proposed as part of the modified project relative to the approved project, and the determination of potential mitigations measures to reduce any additional impacts on landscape character and visual amenity.

## 7.12 Socio-economic

### 7.12.1 Existing environment

The project is located within the Goulburn Mulwaree LGA and the Upper Lachlan Shire LGA.

The Goulburn Mulwaree LGA has a population of 32,053 as of the 2021 Census, with median age of 41. The 2021 census data records the main employment industries within the LGA as hospitals, aged care residential services, supermarket and grocery stores, takeaway food services, and other social assistance services. The most common occupations are community and personal service workers, technicians and trades workers, professionals, labourers, managers, clerical and administrative workers, sales workers, and machinery operators and drivers.

The Lachlan Shire LGA has a population of 8,514 as of the 2021 Census, with a median age of 49 (ABS, 2021). The 2021 census data records the main employment industries within the LGA as sheep farming, beef cattle farming, sheep-beef cattle farming, local government administration and primary education. The most common occupations in the Upper Lachlan Shire LGA are managers, professionals, technicians/trades workers, clerical/administration works, community and personal service workers, labourers, machinery operators and drivers, and sales workers.

The project area is located approximately 10 km northeast of the town of Marulan and is rural in character. The project area is surrounded by areas used mainly for agricultural purposes.

The nearest sensitive receivers to the project are shown in **Figure 6-1**.

### 7.12.2 Potential impacts

Key potential social and economic impacts of the modified project remain largely consistent with the approved project, and may include:

- amenity impacts associated with construction and operation of the modified project such as noise and vibration, air quality, traffic and visual amenity
- increased demand on local community infrastructure, which may result in shortages
- competition for local workers and loss of workers in existing businesses and industries
- potential impacts on community cohesion, wellbeing and safety and population composition due to influx of construction workers.

The modified project may reduce demand on local accommodation by including a temporary workforce accommodation facility to accommodate workers during the construction period.

Potential social and economic benefits of the approved project would be maintained and include:

- the creation of local employment and training opportunities
- an increase in localised business opportunities through procurement of local suppliers, services and contractors
- improvement in local roads
- support for the NEM by providing dispatchable power supply during periods of peak energy demand, improving the resilience and stability of the NEM
- an increase in gas-fired capacity with the potential to exert downward pressure on wholesale electricity prices
- support for broader State and national objectives, including the transition away from coal-fire power generation
- investment in community benefit sharing programs.

### 7.12.3 Assessment approach

A detailed SIA report would be prepared to assess the social and economic impacts of the modified project, in accordance with the *Social Impact Assessment Guideline for State significant projects* (DPHI, 2025) and *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2025). The assessment will review background information and identify key social issues, establish a baseline of social and economic characteristics and values in the study area, incorporate findings from community and stakeholder consultation, and evaluate the significance of identified impacts.

A separate economic impact assessment to assess the potential direct, indirect and cumulative economic impacts associated with construction, operation and decommissioning of the modified project on the region and NSW economy would not be required.

### 7.12.4 Benefit sharing approach

While the *Benefit-Sharing Guideline* (DPHI, 2024) does not apply to gas fired power stations, a co-designed benefit sharing program would also be developed in parallel with the SIA. This activity would be undertaken in recognition of the CSSI status of the project and to align with best practice benefit sharing approaches for host communities.

EnergyAustralia includes community benefit sharing as a core part of all our major projects, tailoring sustainable investment into initiatives that matter locally. In the Marulan region, where multiple benefit sharing programs are already active or proposed, we recognise the need for a coordinated and targeted approach—working alongside other developers and stakeholders to maximise impact and avoid duplication or competition.

## 7.13 Hazards and risk

### 7.13.1 Existing environment

Due to the undeveloped nature of the project site, there are currently no hazards and risks associated with the handling of potentially hazardous materials for the modified project.

### 7.13.2 Potential impacts

Potential hazards and risks for the modified project are considered to remain largely unchanged from those of the approved project and may include:

- storage and handling of dangerous goods and hazardous chemicals
- risks associated with liquid fuel including leaks, fire/explosion and transportation
- discharge from the project site
- fire originating from onsite activities
- isolated major incidents (e.g. onsite/offsite emergencies, equipment failures)
- quantities of other dangerous goods and hazardous chemicals delivered to the project site and used in the facility's operations.

### 7.13.3 Assessment approach

A Preliminary Hazard Analysis (PHA) would be prepared to assess the impacts of the proposed modifications in accordance with *State Environmental Planning Policy (Resilience and Hazards)* and associated guidelines, including:

- *Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning* (DPE, 2011a)
- *Hazardous Industry Planning Advisory Paper No. 6 – Hazard Analysis* (DPE, 2011b)
- *SEPP 33 Assessment Guideline: Multi-Level Risk Assessment* (DPE, 2011c)

The PHA will carry out a risk screening process that reviews the project design, operating characteristics, land use, environmental factors, and potential environmental impacts, and will provide recommendations for risk reduction measures as appropriate.

Additionally, a Fire Safety Study (FSS) would be prepared in accordance with *Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines* (DPE, 2011). The FSS will identify potential fire scenarios and conduct consequence analysis, assess fire prevention strategies, and provide recommendations for fire detection and protection measures as well as guidance on the containment of contaminated firewater to prevent run-off to the surrounding environmental.

## 7.14 Waste

### 7.14.1 Existing environment

Due to the undeveloped nature of the project site, there is currently no waste generated from the site. The local Councils surrounding the project area own and operate waste management facilities.

### 7.14.2 Potential impacts

Like the approved project, several waste streams would be generated by the modified project during both construction and operation, including (but not limited to):

- construction waste (e.g. concrete, steel, plastics, scrap metal)
- excavated materials (e.g. soils)
- green waste from vegetation clearing
- general rubbish during operation and construction
- wastewater.

The potential impacts related to waste may include:

- increased waste generation during construction and operational phases
- inappropriate disposal of waste during construction and/or operation
- lack of waste segregation
- disposal of fuel, lubricant, or chemical containers
- generation of wastewater during project operation
- wastewater runoff from the site during heavy rainfall events.

These potential impacts are expected to be consistent with the potential impacts from the approved project, subject to confirmation of the final options for wastewater management. The following wastewater management options are being considered for different wastewater streams:

- evaporation
- on site wastewater treatment with treated water reused, spray irrigated, or discharged
- offsite trucking to Goulburn or Marulan wastewater treatment plants.

### 7.14.3 Assessment approach

A waste impact assessment would be prepared to assess the impacts of the proposed modifications. The assessment would assess the likely waste streams that would be generated by the construction, operation and decommissioning of the modified project. This would include classifying and quantifying anticipated waste. Appropriate management measures for waste generated by the modified project would also be determined including the reuse, recycling and disposal of waste as appropriate and in accordance with the *Waste Avoidance and Resource Recovery Act* 2001 and other relevant guidelines.

Further consultation with Goulburn Mulwaree Council is planned to address the concerns raised by Council regarding project waste management and the cumulative impact on existing waste management facilities in the local government area.

## 7.15 Bushfire

### 7.15.1 Existing environment

The modified project would be constructed and operated on land mapped as bush fire prone land.

The western section of the project site adjacent to the Wollondilly River has previously been modified and is predominantly cleared of vegetation. However, the rest of the project site contains remnant native vegetation, including likely flammable species. A bush fire assessment was completed for the approved project, which described the vegetation

surrounding the eastern boundary as 'grassy woodland', which was considered the main fire hazard. Woodland vegetation occupies the terrain upslope of the footprint and in a gully to the south. Fuel loads in the ground layer of the vegetation were considered to be moderate.

The Wollondilly River can serve as a natural buffer, helping to prevent bush fires from spreading west of the project site and protecting the native vegetation in that area if a fire were to occur at the site. The efficiency of this buffer would be dependent on the size and intensity of the fire.

### 7.15.2 Potential impacts

Like the approved project, construction and operation of the modified project may increase the risk of causing or perpetuating bushfires. Potential bush fire hazards during construction and operation of the modified project may include residual vegetation fuel loads within and surrounding the project site, construction activities (ignition from vehicles or equipment), equipment failure during operation, and poor bush fire management and preparedness.

Development on bush fire prone land is required to satisfy the aims and objectives of *Planning for Bush Fire Protection 2019* (PBP) through a combination of bush fire protection measures (BPMs). The application of BPMs vary depending on the site circumstances and nature of the proposed use; however, may include:

- asset protection zones (APZ)
- building construction, siting and design
- design, implementation and maintenance of safe access and egress
- suitable water supply arrangements
- bush fire emergency evacuation and management plans.

In addition, if the proposed construction workers temporary accommodation facility is proposed to be sited on bush fire prone land, the facility would be assessed as a *Special Fire Protection Purpose* (SFPP) as defined under the *Rural Fires Act 1997*. Due to the nature of SFPP developments, additional APZ and emergency management procedures will be required if the proposed construction workers temporary accommodation facility is sited on bush fire prone land.

### 7.15.3 Assessment approach

A bush fire impact assessment report would be prepared to assess the impacts of the proposed modifications. It would include an assessment of the existing environment and key bush fire influential factors (i.e. slope, and vegetation formations) and an assessment against the performance outcomes of the PBP. The report would identify appropriate management measures including definition of appropriate APZs.

## 7.16 Cumulative impacts

### 7.16.1 Existing environment

The proposed Wattle Creek Energy Hub is located directly north of the project site at 1001 Canyonleigh Road, Brayton and comprises two State Significant Development (SSD) applications, being:

- SSD-63345458 – Wattle Creek Battery Energy Storage System (BESS)
- SSD-63344210 – Wattle Creek Solar Farm.

Both applications are currently in the 'response to submissions' phase. The Wattle Creek Energy Hub is a hybrid energy facility which includes a hybrid solar farm with generation capacity of up to 265 MW combined with a 100 MW BESS as well as a standalone BESS with a 350 MW capacity.

The Canyonleigh BESS is a proposed SSD project (SSD-78247462) at 'prepare EIS stage' neighbouring the project site.

Additional relevant current and proposed future projects within the Upper Lachlan Shire and Goulburn Mulwaree LGAs that may also have cumulative impacts when considered with the modified project are identified in **Table 7-2**. The modification assessment will include consideration of any cumulative impacts arising from the modified project and these existing and proposed developments:

**Table 7-2 Cumulative impact projects**

| Project | Description | LGA | Status |
|---|---|---|---|
| Various | Multiple active and proposed Community Benefit Sharing programs | Upper Lachlan Shire/ Goulburn Mulwaree | |
| Hanworth BESS | Development of a 1.2GW / 4.8GWh BESS and ancillary infrastructure | Upper Lachlan Shire | Prepare EIS |
| Swallow Tail BESS | Development of a 375 MW / 1500 MWh BESS and associated infrastructure and connection works | Upper Lachlan Shire | Prepare EIS |
| Bannaby BESS | Development of a 750MW / 3000MWh BESS and ancillary infrastructure | Upper Lachlan Shire | Prepare EIS |
| Humelink | Development of new transmission lines between the existing substations at Wagga Wagga and Bannaby and the proposed Maragle substation, and a new substation at Gugaa | Upper Lachlan Shire / Goulburn Mulwaree | Approved |
| Woodlawn Advanced Energy Recovery Centre | Development of an energy recovery facility with a capacity to thermally treat up to 380,000 tonnes per annum of residual municipal solid waste and commercial & industrial waste and to generate 30 MW of electrical energy | Goulburn Mulwaree | Response to submissions |
| Gundary Solar Farm | Development of a 400 MW solar farm with energy storage and associated infrastructure | Goulburn Mulwaree | Response to submissions |
| Canyonleigh BESS | Development of a 300MW / 1200MWh BESS and ancillary infrastructure | Goulburn Mulwaree | Prepare EIS |
| Cleary Bros Marulan Quarry | Hard rock quarry to extract up to 1 million tonnes per annum of hard rock aggregate products | Goulburn Mulwaree | Prepare EIS |
| Willavale Park BESS | Development of a 300 MW / 1200 BESS and associated infrastructure and connection works | Goulburn Mulwaree | Prepare EIS |
| Marulan Quarry | Hard rock quarry to extract up to 500,000 tonnes per annum of hard rock aggregate products | Goulburn Mulwaree | Under Assessment |
| Gunlake Quarry | Hard rock quarry granted 30 year continuation and dispatch of up to 4.2 million tonnes per annum of Quarry materials (2023).<br>Current modification under assessment to increase the maximum daily truck movements. | Goulburn Mulwaree | Various |
| Crookwell Wind Farm | Development of a wind farm with up to 16 wind turbines and associated infrastructure | Upper Lachlan Shire | Approved |
| Green Valley Quarry | Sand quarry and associated infrastructure to extract up to 1.3 million tonnes of extractive materials per annum | Wingecarribee Shire | Approved |

| Project | Description | LGA | Status |
|---|---|---|---|
| Berrima Coal Mine | Coal mine and associated infrastructure to extract up to 460,000 tonnes of coal per annum | Wingecarribee Shire | Approved |
| Lynwood Quarry | Hard rock quarry and associated infrastructure | Goulburn Mulwaree | Approved |
| Marulan South Limestone Mine Continued Operations Project | Continuation and expansion of open cut limestone mining operations | Goulburn Mulwaree | Approved |
| Peppertree Quarry | Hard rock quarry and associated infrastructure | Goulburn Mulwaree | Approved |

### 7.16.2 Potential impacts

Given the location of the Wattle Creek Energy Hub directly north of the project site, and the proposed Canyonleigh BESS development neighbouring the project, there is the potential for several localised cumulative impacts with the modified project. This may include potential cumulative impacts related to biodiversity, noise and vibration, visual amenity and landscape character, Aboriginal and historic heritage, traffic and transport, and social and economic factors.

The locality may also experience positive cumulative socio-economic benefits due to greater employment opportunities and increased commercial activity in surrounding townships.

### 7.16.3 Assessment approach

A cumulative impact assessment would be prepared to assess the impacts of the proposed modifications in reference to the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2022b).

# 8 Next steps

EnergyAustralia will prepare modification applications in accordance with the *State Significant Infrastructure Guidelines* (DPHI, 2024). The modification applications would be supported by a Consolidated Modification Report.

EnergyAustralia would continue to consult the community and stakeholders about the modified project throughout the preparation of the modification applications and through future project stages.

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# Appendix A – Scoping summary table

| Level of assessment | Matter | Cumulative Impact Assessment | Engagement | Relevant government plans, policies and guidelines | Scoping report reference |
|---|---|---|---|---|---|
| Detailed | Biodiversity | Yes | Targeted | *Biodiversity Conservation Act 2016*<br>*Environment Protection and Biodiversity Conservation Act 1999*<br>*Biodiversity Assessment Method*<br>*State Environmental Planning Policy (Biodiversity and Conservation) 2021*<br>*Fisheries Management Act 1994* | Section 7.1 |
| Detailed | Amenity – noise and Vibration | Yes | Targeted | *NSW Noise Policy for Industry* (EPA, 2017)<br>*NSW Interim Construction Guideline* (DECC, 2009)<br>*Draft Construction Noise Guideline* (EPA, 2020)<br>*Assessing Vibration: a technical guideline* (DEC, 2006). | Section 7.2 |
| Detailed | Air quality | Yes | Targeted | *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA 2022)<br>*Protection of the Environment Operations Act 1997*<br>*Protection of the Environment Operations (Clean Air) Regulation 2021* | Section 7.3 |
| Standard | Air – greenhouse gas | Yes | General | *NSW EPA Guide for Large Emitters* (EPA, 2024)<br>*ISO 14064-2:2019 – Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements* | Section 7.3 |
| Detailed | Aviation and plume rise | Yes | Targeted | *Civil Aviation Safety Authority circular AC139-05v3.0 – Plume rise assessments* (CASA, 2019) | Section 7.4 |

| Level of assessment | Matter | Cumulative Impact Assessment | Engagement | Relevant government plans, policies and guidelines | Scoping report reference |
|---|---|---|---|---|---|
| Detailed | Water – surface water and groundwater | Yes | General | *NSW Water Quality and River Flow Objectives* (DECCW, 2006)<br>*Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018)<br>*ANZECC Guidelines and Water Quality Objectives in NSW* (DEC, 2006)<br>*Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and Volume 2* (DECC, 2008)<br>*NSW Aquifer Interference Policy* (DPI, 2012)<br>*Water Management Act 2000*<br>*Neutral or Beneficial Effect on Water Quality Assessment Guideline* (WaterNSW, 2022) | Section 7.5 |
| Detailed | Water – hydrology and flooding | Yes | General | Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia (Geoscience Australia), Version 4.2, 2019. | Section 7.6 |
| Detailed | Land – soils and contamination | No | General | *State Environmental Planning Policy (Resilience and Hazards) 2021*<br>*Contaminated Land Management Act 1997*<br>*Protection of the Environment Operations Act 1997*<br>*Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998) | Section 7.7 |
| Detailed | Heritage – Aboriginal | No | Targeted (representatives from Registered Aboriginal Parties and the Local Aboriginal Land Council) | *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b)<br>*Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011)<br>*Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW, 2010a) | Section 7.8 |
| Standard | Heritage – historic | No | N/A | *Heritage Act 1977*<br>*Upper Lachlan Local Environmental Plan 2010*<br>*Goulburn Mulwaree Local Environmental Plan 2009* | Section 7.9 |

| Level of assessment | Matter | Cumulative Impact Assessment | Engagement | Relevant government plans, policies and guidelines | Scoping report reference |
|---|---|---|---|---|---|
| Detailed | Access – traffic and transport | Yes | Targeted | *Roads Act 1993*<br>*Guide to Traffic Management Part 3: Traffic Studies and Analysis* (Austroads, 2017)<br>*Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management* (Austroads, 2020)<br>*Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments* (Austroads, 2020a)<br>*Austroads Design Vehicles and Turning Path Templates* (Austroads, 2023)<br>*NSW Heavy Vehicle Access Policy Framework 2018* (TfNSW, 2018) | Section 7.10 |
| Detailed | Amenity – landscape character and visual amenity | Yes | Targeted | *Guideline for Landscape Character and Visual Assessment - Environmental Impact Assessment Practice Note EIA-NO4* (TfNSW, 2020)<br>*Technical Supplement – Landscape and Visual Impact Assessment, Large-Scale Solar Energy Guideline* (DPHI, 2022)<br>*Transmission Guideline Technical Supplement for Landscape Character and Visual Impact Assessment* (DPHI, 2024a) | Section 7.11 |
| Detailed | Social impacts | Yes | Targeted | *Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2025)<br>*Undertaking Engagement Guidelines for State Significant Projects* (DPHI, 2024) | Section 7.12 |
| Standard | Hazards and risks – hazardous materials and dangerous goods | No | General | *State Environmental Planning Policy (Resilience and Hazards) 2021*<br>*Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning* (DPE, 2011a)<br>*Hazardous Industry Planning Advisory Paper No. 6 – Hazard Analysis* (DPE, 2011b)<br>*Hazardous Industry Planning Advisory Paper No. 2 – Fire Safety Study Guidelines* (DPE, 2011)<br>*SEPP 33 Assessment Guideline: Multi-Level Risk Assessment* (DPE, 2011c) | Section 7.13 |
| Standard | Hazards and risks – bushfire | No | General | *Planning for Bushfire Protection* (NSW RFS, 2019) | Section 7.15 |

| Level of assessment | Matter | Cumulative Impact Assessment | Engagement | Relevant government plans, policies and guidelines | Scoping report reference |
|---|---|---|---|---|---|
| Standard | Hazards and risks – waste | Yes | Targeted | *Waste Avoidance and Resource Recovery Act 2001* | Section 7.14 |
| Detailed | Cumulative impacts | N/A | General | *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2022b) | Section 7.16 |

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