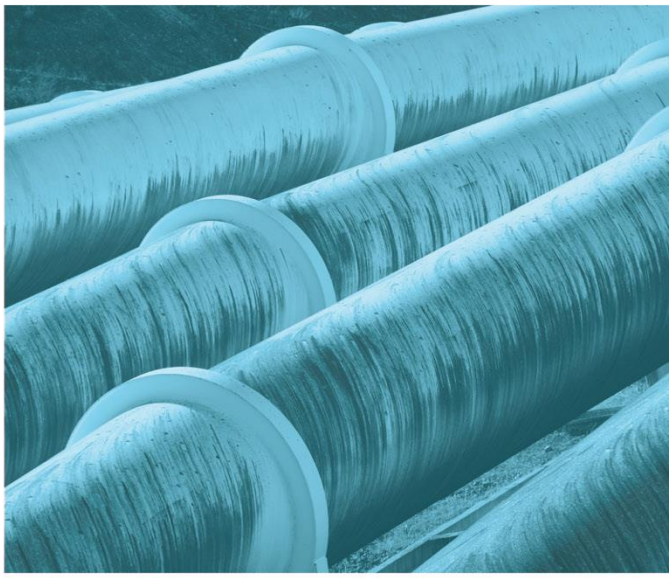



Angus Place West

Scoping report

Prepared for Centennial Angus Place Pty Limited
August 2021

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Angus Place West

Scoping report

Report Number

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Client

Centennial Angus Place Pty Limited

Date

16 August 2021

Version

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Prepared by	**Approved by**
	
David Richards	**Paul Freeman**
Senior Environmental Scientist	Associate Director
16 August 2021	16 August 2021

Executive Summary

Angus Place Colliery (Angus Place) is an underground thermal coal mining operation in the Western Coalfields of New South Wales (NSW). Angus Place is approximately 15 kilometres (km) west of Lithgow, in the Lithgow local government area (LGA). Angus Place is operated by Centennial Angus Pty Limited (Centennial Angus Place), a wholly-owned subsidiary of Centennial Coal Company Limited (Centennial).

Angus Place comprises a pit top, underground mining area, ventilation infrastructure and water management infrastructure. The mine is regulated under project approval 06_0021 which was granted in 2006, which has been modified six times and will expire in 2024. The approval allows underground mining at a rate of 4 million tonnes per annum (Mtpa), coal handling at the pit-top and transportation off-site via private haul roads. Angus Place has been in care and maintenance since 2015 and has not produced coal since this time.

Angus Place is one of Centennial's mines in the Western Coalfield and has the ability to supply coal to Mount Piper Power Station (MPPS), which supplies up to 15% of NSW's electricity supply. Therefore, Angus Place remains strategically important to the coal supply chain for the State's electricity generation.

Centennial Angus Place is proposing a new State significant development (SSD) project which will allow Angus Place to continue to supply coal to MPPS. The project is known as the Angus Place West Project.

The Angus Place West Project comprises the continued operation of the pit top and first workings bord and pillar mining in two new mining areas adjacent to existing approved mining areas, to an extraction rate of up to 2 Mtpa. The first workings mine design is anticipated to result in less than 20 millimetres (mm) of subsidence at the ground surface level.

The project is classified as SSD under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act 1979). Therefore, the Minister for Planning and Public Spaces or the Independent Planning Commission (IPC) will be the consent authority for the project.

Centennial Angus Place is seeking the NSW Department of Planning, Industry and Environment (DPIE) Secretary's Environmental Assessment Requirements (SEARs) for the environmental impact statement (EIS) being prepared for the project. This scoping report details the key issues that will be considered and assessed in the EIS.

A consultation stakeholder engagement strategy has been prepared and engagement with key stakeholders has commenced as part of the scoping phase. Current and proposed engagement activities are discussed in Chapter 6.

The project will continue Centennial's longstanding connection to the Lithgow area. The Lithgow community and surrounding townships have a long and proud industrial history of coal mining and energy generation. This industrial base represents the economic security of the area which in turn delivers significant local economic and social benefits.

The project will enable the efficient use of existing infrastructure to economically recover an additional 8.5 Mt of run-of-mine (ROM) coal reserves within existing mining tenements. The project will provide ongoing employment opportunities for approximately 200 full time equivalent workers, as well as continuing the ongoing significant contribution to the local, regional and State economies from this well-established mining operation. With MPPS scheduled to operate until 2042, Angus Place and this project are well-placed to meet MPPS's future coal supply needs in conjunction with Centennial's other established operations.

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1 Introduction

1.1 Background

Angus Place Colliery (Angus Place) is an underground thermal coal mining operation in the Western Coalfields of New South Wales (NSW). Angus Place is approximately 15 kilometres (km) west of Lithgow, in the Lithgow local government area (LGA) (Figure 1.1). Angus Place is operated by Centennial Angus Pty Limited (Centennial Angus Place), a wholly-owned subsidiary of Centennial Coal Company Limited (Centennial).

Angus Place has been operating in its current form since 1979. It is regulated under a Ministerial project approval (MP 06_0021) which was granted in September 2006 by the then Minister for Planning under the now repealed Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act 1979). MP 06_0021 has since been declared to be a SSD under Clause 6 of Schedule 2 of the NSW Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017.

Angus Place comprises a pit top, underground mining area, ventilation infrastructure and water management infrastructure. The existing underground workings are primarily beneath Newnes State Forest. Angus Place also includes supporting infrastructure in the Newnes State Forest, including a ventilation facility, dewatering boreholes, pipelines and underground cables.

MP 06_0021 has been modified six times. MP 06_0021 as modified allows Centennial Angus Place to:

- extract up to 4 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal by longwall mining methods until 18 August 2024;
- operate 24 hours a day, 7 days a week;
- handle and process ROM coal at Angus Place's pit-top;
- develop limited underground main headings and longwall headings within an area east of the current mine layout; and
- transfer water to the Springvale Water Treatment Project (SWTP) for subsequent treatment and reuse within the MPPS.

The local context of the mine and its infrastructure is shown in Figure 1.2.

1.2 Care and maintenance

In response to a prolonged downturn in coal markets, Angus Place was placed into care and maintenance in March 2015. Angus Place continues to meet safety and environmental regulations and the site is appropriately maintained to enable operations to recommence.

1.3 Angus Place Mine Extension Project

In 2016, Centennial Angus Place lodged an SSD application (SSD-5602) to introduce a new area of longwall mining, at Angus Place mine which was on care and maintenance, beneath the Newnes Plateau to facilitate the extraction of up to 4.5 Mtpa of ROM coal. This project is known as the Angus Place Mine Extension Project (APMEP). In 2019, an amended project application for the APMEP was submitted to DPIE.

In response to the changing needs of its customer (MPPS), the proposed Angus Place West project now represents a more immediate and suitable coal supply option. Therefore, Centennial Angus Place will prioritise this project while the proposed APMEP will be relegated for consideration in the future if required.

1.4 Project overview

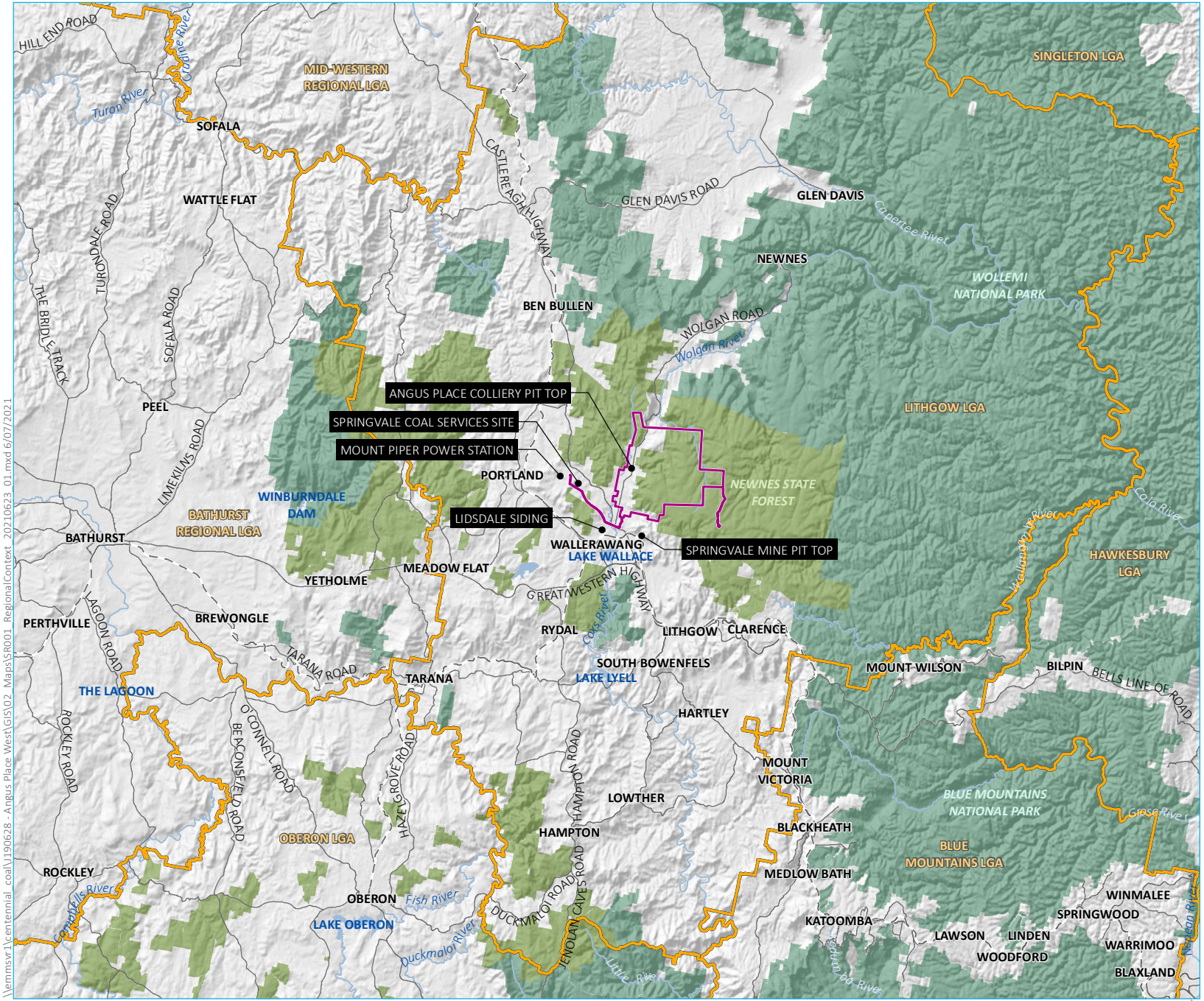
MP 06_0021 will expire on 18 August 2024 and a new SSD consent is required to enable Angus Place to operate beyond this date. Significant coal resources remain within Centennial Angus Place's existing Mining Leases (ML) (ML 1424; ML 1699; and ML 1720) and Consolidated Coal Lease (CCL) (CCL 704).

Extensive investigations have been undertaken into a long-term plan for Angus Place beyond the approved mine life to meet the future coal supply demands of the MPPS while balancing social, environmental and economic outcomes. Based on the outcomes of these investigations, Centennial Angus Place will be seeking approval for the Angus Place West Project (the project).

The project involves:

- first-workings mining adjacent to existing approved mining areas and close to Angus Place's pit-top;
- the continued operation of the pit-top and existing ancillary mining infrastructure (including ventilation and water management infrastructure);
- continued transfer of water to the SWTP for treatment and subsequent reuse in the MPPS;
- transfer of water to the SCSS for reuse in accordance with the Western Coal Services Project (SSD 5597) and subject to approval;
- construction of a transfer pipeline between the Angus Place pit top and the McPhillamys Gold Project (SSD-9505) water pipeline Pumping Station Facility No.1;
- transfer of water to the McPhillamys Gold Project subject to approval and construction; and
- receipt of surplus SCSS stormwater utilising the McPhillamys Gold Project infrastructure from the McPhillamys Gold Project (SSD-9505), subject to approval and construction, for temporary storage in the underground water storage areas.

To enable the project to be developed, a new SSD consent is required under Part 4, Division 4.1 of the EP&A Act.



KEY

- Project area
- Rail line
- Major road
- River
- Named waterbody
- NPWS reserve
- State forest
- Local government area

INSET KEY

- Major road
- NPWS reserve
- State forest

Source: EMM (2021); Centennial Coal (2021); DFSI (2017); GA (2011); ASGC (2006)

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Regional context

Angus Place West
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Figure 1.1

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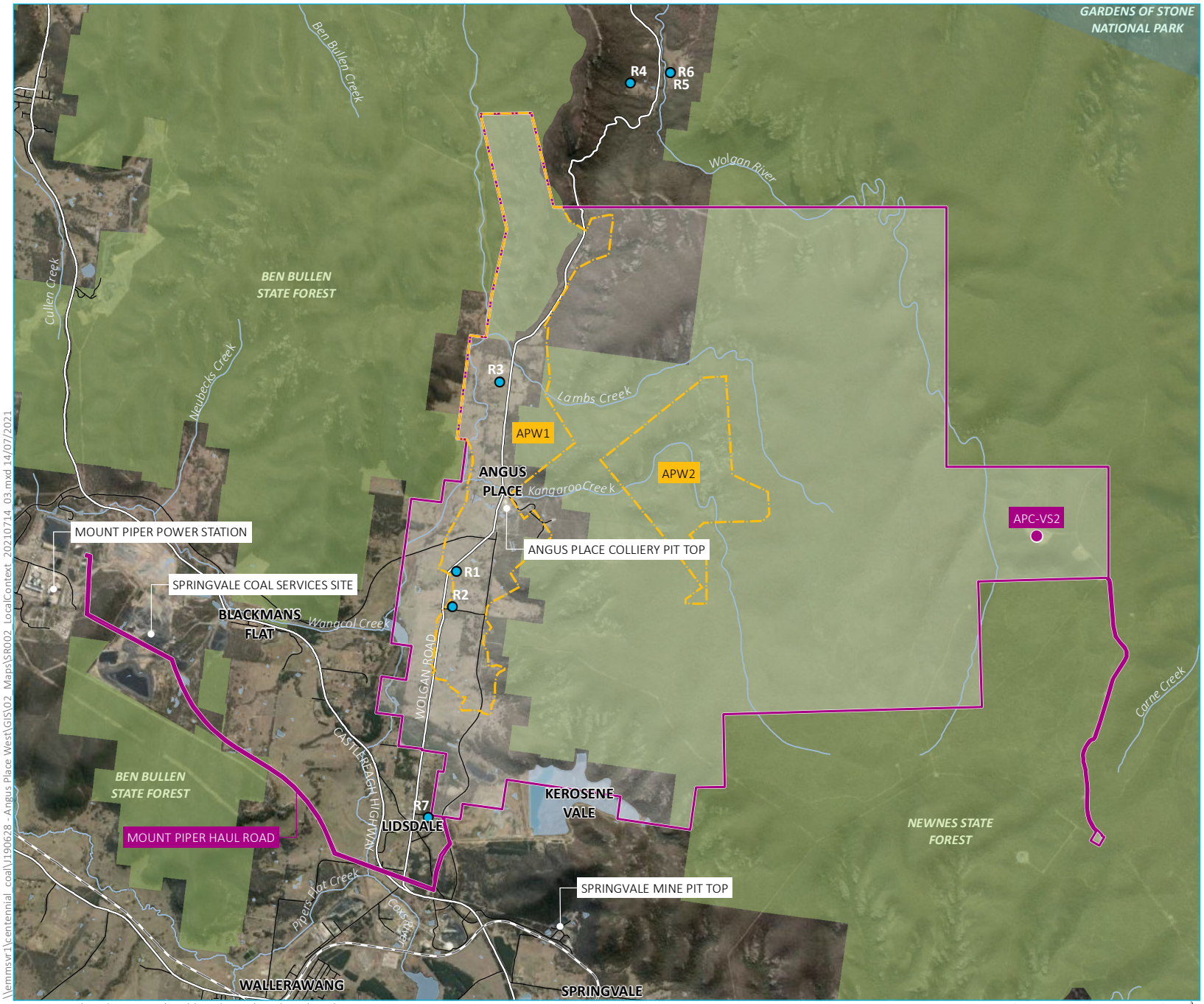

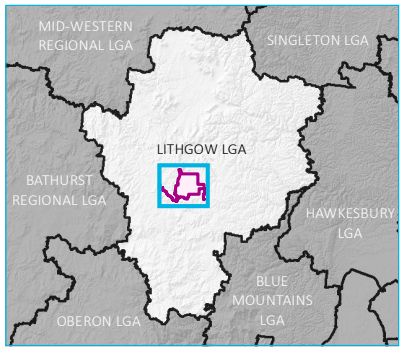

KEY

- Residential receptor
- Vent shaft
- Project area
- Proposed mining area
- Rail line
- Major road
- Minor road
- Named watercourse
- Waterbody
- NPWS reserve
- State forest

Source: EMM (2021); Centennial Coal (2021); DFSI (2017); GA (2011)

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Local context

Angus Place West
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Figure 1.2

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1.5 Applicant details

Key details of the applicant for the project, the persons who prepared this scoping report and the site owner are presented in Table 1.1.

Table 1.1 Applicant details

Requirement	Detail
Applicant	Centennial Angus Place Pty Limited
Head office	1 Market Street Sydney NSW 2000 Australia
Postal address	As above
ABN	30 003 714 538
Nominated contact	Mr James Wearne, Group Manager Approvals/Environment
Name of person preparing the scoping report	Paul Freeman, Associate Director, EMM Consulting 0407 102 898 pfreeman@emmconsulting.com.au

1.6 Purpose of this document

This scoping report has been prepared by EMM Consulting Pty Limited (EMM) on behalf of the applicant, Centennial Angus Place. It has been prepared in accordance with the draft *Preparing a Scoping Report – State Significant Development Guide* (DPIE 2020a). The purpose of this scoping report is to request and inform the content of the Secretary's Environmental Assessment Requirements (SEARs) for the environmental impact statement (EIS).

2 Existing operations

2.1 Approval history

Mining commenced at Angus Place in 1949. Initially known as Newcom Mine, it produced coal for domestic power generation using bord and pillar mining techniques. In 1976, the then Blaxland Shire Council (now Lithgow City Council) approved the construction and operation of an underground coal mine and associated ancillary facilities at Newcom Mine, Kerosene Vale.

The current Angus Place mine was developed as an extension to Newcom Mine. Mining commenced in 1979 using longwall mining techniques. At that time, the approved extraction limit was 1.3 Mtpa and this coal was supplied directly to the Wallerawang Power Station.

A further expansion of Angus Place was approved in 1984. This increased production to 2.3 Mtpa and expanded the mining area. It also allowed coal to be supplied to MPPS, while still supplying Wallerawang Power Station.

Mining operations are currently regulated under project approval MP 06_0021, which was granted in 2006 by the then Minister for Planning. This approval allowed the consolidation of previous development consents, a further extension to the approved mining area and for an increase in the production limit to 3.5 Mtpa. Mining operations are allowed under MP 06_0021 until 18 August 2024.

MP 06_0021 has been modified six times. A summary of the current approvals held by Angus Place is provided in Table 2.1, including modifications to MP 06_0021, the environment protection licence for the site and Commonwealth approvals.

Table 2.1 Current approvals and licences

Reference	Issue date	Summary of approved/licensed activity
MP 06_0021	13 September 2006	Extraction of 3.5 Mtpa of ROM coal a year until 2024. Operating the pit top to handle and process coal.
MP 06_0021 (Mod 1)	29 August 2011	Development of two new longwall panels - Longwall 910 and Longwall 900W. Increase extraction rate to 4 Mtpa.
MP 06_0021 (Mod 2)	22 April 2013	Development of a ventilation facility and supporting infrastructure. Approval for trial mining, to support the existing and approved surface exploration programme and pre-feasibility assessment for the available resource within the Angus Place mining lease.
MP 06_0021 (Mod 3)	9 December 2013	Extend the length of Longwall 980 and Longwall 900W and increase the extraction height.
MP 06_0021 (Mod 4)	4 August 2014	Development of nominated roadways and headings within the project application area (associated with Longwall 1001 and Longwall 1003).
MP 06_0021 (Mod 5)	14 September 2018	Temporary treatment and discharge of mine water to the Coxs River catchment.
MP 06_0021 (Mod 6)	19 March 2021	Transfer water to MPPS for treatment. Construction and operation of a water softening plant at the pit top. Transfer treated mine water to SWTP. Underground storage of treated mine water.
EPBC 2011/5952	17 April 2012	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval for the development and extraction of longwall panels LW910 and 900W.

Table 2.1 Current approvals and licences

Reference	Issue date	Summary of approved/licensed activity
Environment Protection Licence (EPL 467)	23 February 2000	Coal works greater than 2,000,000–5,000,000 t annual handing capacity. Mining for coal greater than 3,500,000–5,000,000 t annual production capacity.

2.2 Mining methods

Mining methods used at Angus Place have been a combination of bord and pillar and longwall mining methods. The most recent mining at Angus Place took place in 2013 using longwall mining methods.

2.3 Coal processing

Coal is processed at Angus Place's pit top. It does not require to be washed, and instead is crushed and sized to MPPS specifications

2.4 Coal transport

All coal is transported off-site by truck in accordance with the conditions of consent for Centennial's Western Coal Services Project (SSD-5579). In accordance with SSD-5579, up to 4 Mtpa of ROM coal from Angus Place can be transported from Angus Place's existing pit top to:

- MPPS;
- Wallerawang Power Station (now closed);
- Kerosene Vale stockpile area; or
- SCSS for processing and transfer to MPPS or Lidsdale Siding rail loading facility for transfer into the export market.

Limits on the number of coal haulage trucks apply under Table 2 of Condition 6 of SSD-5579. Specifically, for coal transportation using the Mount Piper haul road, truck movements are restricted to the day period only prior to longwall extraction. During longwall extraction a maximum of eight trucks are allowed to operate in the evening period. Two trucks can operate during the night period unless there are adverse meteorological conditions.

It is also noted that the transfer of coal to the SCSS for processing is subject to the construction of a new haul road to link the Mt Piper Haul Road to the SCSS. This link road has yet to be constructed.

2.5 Surface infrastructure

2.5.1 Pit-top

Surface infrastructure at Angus Place's pit top includes:

- coal handling, preparation and transport infrastructure;
- coal conveyor;
- coal stockpile;
- mine portal and associated infrastructure;
- workshop, services, bathhouse and administration facilities;
- water management infrastructure;
- pollution control infrastructure; and
- access road and car park.

2.5.2 Off-site infrastructure

Angus Place also operates a water transfer pipeline to the MPPS Pond D, a water transfer pipeline to the Springvale Water Treatment Facility and remote infrastructure within Newnes State Forest on the Newnes Plateau, including mine dewatering boreholes, ventilation facilities, dewatering pipelines and underground cables.

3 The project

3.1 Overview

The project seeks to re-commence underground mining at Angus Place in two new mining areas ('proposed mining area' on Figure 3.1). The project will generally involve:

- underground mining using first workings bord and pillar mining methods;
- extraction up to 2 Mtpa of ROM coal;
- crushing and sizing of this coal at Angus Place's existing pit top;
- continued operation of existing ancillary mining infrastructure;
- employment of up to 200 full-time equivalent (FTE) personnel;
- construction of a transfer pipeline between the Angus Place pit top and the McPhillamys Gold Project water pipeline Pumping Station Facility No.1 (Figure 3.1);
- transfer of water to the SWTP, the SCSS (subject to approvals under the Western Coal Services Project (SSD 5597)) and the McPhillamys Gold Project subject to approval and construction (SSD-9505);
- receipt and temporary storage of surplus stormwater from the SCSS via infrastructure subject to approval and construction as part of the McPhillamys Gold Project (SSD-9505); and
- rehabilitation of Angus Place's pit top and associated disturbed areas.

3.2 Project elements

3.2.1 Resource definition

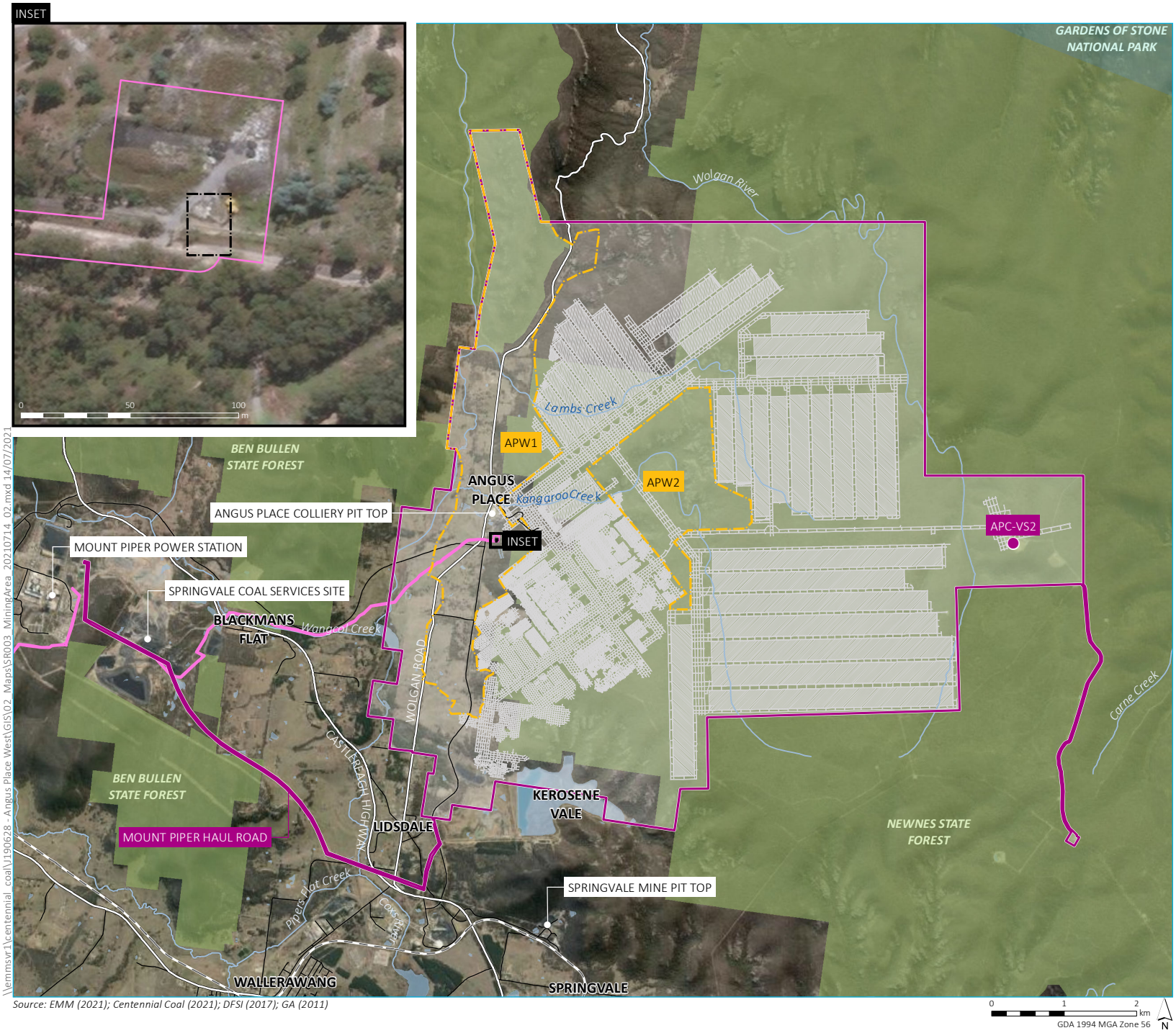
Angus Place lies in the south-western part of the Western Coalfield of the Sydney Basin. The project will target the Lithgow Seam, which has a thickness between 2.8 m and 3.4 m. Given the long history of mining at Angus Place, there is a good understanding of the geology, geotechnical and coal quality characteristics of the Lithgow Seam within the proposed mining area.

The project expects to extract an additional 8.5 Mt of ROM coal from two additional mining areas.

3.2.2 Project area

The project area as shown on Figure 3.1 covers an area of 5,624 hectares (ha) and comprises:

- existing mine workings used for access, ventilation and water storage;
- two proposed first workings mining areas;
- Angus Place's pit top; and
- mine ventilation (Section 3.2.9) and water management (Section 3.2.8) infrastructure.



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Source: EMM (2021); Centennial Coal (2021); DFSI (2017); GA (2011)

Proposed mining area

Angus Place West
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Figure 3.1

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3.2.3 Mining method

The project will only use first workings bord and pillar mining methods. First workings bord and pillar mining involves the formation of roadways and pillars that are designed to be geotechnically long-term stable.

Using this mining method at Angus Place is expected to result in negligible vertical subsidence (ie ≤20 mm). First workings bord and pillar mining will occur within the proposed mining areas (Figure 3.1).

Subsidence of this magnitude or less is widely adopted as being imperceptible for all practical purposes because the natural, seasonal variations in ground level is commonly 20 mm or more. Bord and pillar mining is a reliable and consistent mining method that will provide operational flexibility at Angus Place in order to navigate geological structures, adverse geotechnical conditions and sensitive surface features. It will also provide flexibility in coal extraction rates to meet changes in coal demand requirements from the MPPS.

The proposed mining method will leave behind a significant amount of the coal resource during resource recovery to function as supporting pillars to the above strata.

3.2.4 Mine design

The proposed mine design will leave behind pillars that are to the full height of the coal seam (ie 2.8 m–3.4 m).

The mine planning and design process has considered various alternatives, substitution measures and engineering controls with the ultimate goal being to minimise and manage potential adverse environmental impacts associated with the project while maintaining a productive and safe mine. In these respects, the mine design selected for the project has considered:

- feasibility of mine development (ie practical considerations associated with access to and extraction of the coal resource);
- geotechnical conditions;
- maximising extractable reserves;
- coal quality; and
- avoidance of sensitive surface features.

As noted above, a first workings mine design will be implemented for this project. As well as limiting the potential for vertical subsidence greater than 20 mm, the mine design will also limit the risk of impacts to a number of sensitive surface features including:

- Coxs River – direct undermining will be avoided;
- Long Swamp – a buffer will be established using a 26.5˚ angle of draw (AOD) of the proposed first workings and the known extent of Long Swamp; and
- Maiyingu Marragu (Black Fellows Hands Reserve) – direct undermining will be avoided.

3.2.5 Coal handling and processing

All ROM coal extracted from the project will be delivered to the surface for handling and processing at Angus Place's existing pit top. ROM coal will be stockpiled at the 90,000 t capacity ROM coal stockpile before being conveyed to the coal preparation plant for crushing and sizing. Coal will then be conveyed to the product coal bin for loading into trucks via the product coal conveyor. Coal extracted as part of the project will not require washing on-site.

Existing coal processing infrastructure including conveying, crushing and sizing will continue to be operated under the project.

3.2.6 Coal transportation

All coal will be transported off-site by truck using existing private haul roads. The impact of coal transportation will continue to be regulated under the conditions of consent for the Western Coal Services Project (SSD-5579). In accordance with SSD-5579, up to 4 Mtpa of ROM coal from Angus Place can be transported from Angus Place to:

- MPPS;
- Kerosene Vale stockpile area; or
- SCSS for processing and transfer via conveyor to MPPS or the Lidsdale Siding rail loading facility for transfer to export markets.

The existing strict coal transport hours of operation in place under SSD 5579 will continue to be applied to coal haulage from the project. As no coal will be extracted using longwall mining methods, there will be no haulage of coal from the project during the evening and night time periods.

3.2.7 Waste and rejects management

No coarse or fine coal reject material will be generated by the project.

General waste will be taken off-site by licensed waste contractors. Recyclable materials will be recycled whenever possible. Used oil drums and filters will be recycled with other waste metals and removed from site by a metal recycling company. Waste oil and oily water will be disposed of by licensed waste transporters at a suitably licensed waste treatment plant.

3.2.8 Water management

i Underground water management

Groundwater inflows to the mine workings will be initially managed through transfers to the existing underground water management system. From there, water inflows will either be transferred to:

- the pit top for storage and reuse;
- the SWTP for treatment and subsequent reuse in the MPPS via existing infrastructure;
- the SCSS for reuse in accordance with the Western Coal Services Project (SSD 5597), subject to approval;
- the McPhillamys Gold Project (SSD-9505), subject to approval and construction; and
- the receipt and temporary storage of surplus stormwater from the SCSS via infrastructure subject to approval and construction as part of the McPhillamys Gold Project (SSD-9505).

ii Surface water management

The project will continue to use the surface water management system at Angus Place, which separates clean and dirty water. The clean water management system consists of a series of diversion bunds and drains around the pit top that intercept clean surface runoff before it can enter disturbed areas. Clean water is directed off-site and into Kangaroo Creek and Coxs River. The dirty water management system comprises a series of on-site storages which are designed to capture water within the site and prevent off-site discharges.

Additional surface water management infrastructure is responsible for managing dirty water at the Angus Place Ventilation Facility (APC-VS2) on Newnes Plateau. Dirty water is captured within surface storage dams prior to being transferred via existing pipelines for temporary storage within the Springvale Mine underground water storage areas.

iii Wastewater management

Prior to the recommencement of mining operations, a wastewater pipeline will be constructed and connected to Lithgow City Council's mains to replace the existing on-site sewage management system.

A separate development application will be submitted to Lithgow City Council to facilitate the construction and operation of the wastewater pipeline.

iv McPhillamys Gold Project water supply

To supply water to the McPhillamys Gold Project (SSD-9505) near Blayney in the Central West of NSW, the project includes the:

- construction and operation of a pipeline and associated infrastructure to connect the Angus Place pit top to the McPhillamys Gold Project water pipeline Pumping Station Facility No.1;
- transfer of up to 15.6 megalitres (ML)/day of water to Pumping Station Facility No. 1; and
- receipt and temporary storage of surplus stormwater from the SCSS (via infrastructure included in the application for the McPhillamys Gold Project) to the Angus Place underground water management system.

Construction activities associated with the installation of the pipeline and associated infrastructure will occur within the pipeline disturbance footprint (Figure 3.1).

v Transfer to SCSS

The project also includes transferring up to 2.6 ML/day of water from Angus Place to SCSS for use in coal handling and preparation activities. The infrastructure required to facilitate the transfer of water from Angus Place to SCSS forms part of a proposed modification (MOD 4) to the Western Coal Services Project (SSD 5579).

vi Transfer to Springvale Water Treatment Project

The project includes the continued transfer of mine water to the SWTP for treatment and subsequent reuse at the MPPS. Transfers to the SWTP can occur:

- via pipelines direct to the SWTP with a total combined maximum capacity of up to 42 ML/day (inclusive of water from the Springvale Mine); or
- to the MPPS Pond D for treatment within the MPPS brine concentrators and subsequent reuse at the MPPS at a rate of up to 2.6 ML/day.

3.2.9 Mine ventilation

The project includes the continued use of three drifts at Angus Place's pit top, which are all used to facilitate intake air connections to the workings. There is also an upcast shaft with electric fan and diesel back-up fan at the pit top.

Two ventilation shafts (3.5 m and 4.5 m) are approved for construction at APC-VS2 (Figure 3.1), on the Newnes Plateau. Ventilation fans will be installed on the upcast shaft. To date, only the 3.5 m shaft has been constructed, which once connected to the underground workings will operate as a fresh air intake shaft to the existing mine workings below as well as a means of emergency egress from the underground mine should the need arise. The construction of the 4.5 m shaft and installation and operation of ventilation fans are not proposed and do not form part of this project.

Existing approved ventilation infrastructure at Angus Place will provide adequate ventilation for the project. No changes to the existing ventilation management system are required.

3.2.10 Rehabilitation

The project will include the rehabilitation of disturbed areas, in the same way as is currently approved under MP 06_0021. The general principle will be to rehabilitate the Angus Place pit top and previously disturbed areas back to woodland commensurate with nearby remnant vegetation at the completion of mining. However, water management structures may be retained in the post-mining landform. Final land use options will be considered closer to mine closure and will be subject to future approvals.

Angus Place has an existing *Care and Maintenance Mining Operations Plan* (MOP) (Centennial 2019) that covers rehabilitation activities on-site between May 2016 and April 2023. A new MOP or similar plan will be prepared for the project in accordance with relevant guidelines.

3.2.11 Mine life

Reflecting the changes in the energy mix and its impact on energy demand from domestic generators, Centennial needs to adapt to the changing needs of our customers. The project is seeking approval for Angus Place to operate until 31 December 2042 aligning the project with the planned operational life of MPPS. The coal proposed from Angus Place will supply MPSS in conjunction with Centennial's Clarence Colliery and Airly Mine. This portfolio of mines plays an essential role in ensuring the fuel supply requirements of MPPS are met. Angus Place needs the operational flexibility to replace or supplement coal from Centennial's other western mines to meet the needs of its customer (ie MPPS). Therefore, Angus Place will be a flexible operation with the ability to flex coal production, in any 12-month period, up or down in response to the changing coal supply requirements of MPPS.

Water transfers will also continue throughout this period to 2042.

Rehabilitation activities will continue following this period.

3.2.12 Hours of operation

Angus Place will continue to operate 24 hours a day, 7 days a week. Transport of coal from the project on the Mount Piper haul road will be restricted to the day period only consistent with the Western Coal Services development consent (SSD 5579).

3.2.13 Workforce

The project will provide employment opportunities for up to 200 FTE personnel.

3.2.14 Site access

Angus Place's pit top will continue to be accessed from Wolgan Road. Sufficient car parking exists on-site to handle traffic associated with the project. The proposed mining areas can be accessed via the existing underground portal at Angus Place's pit top.

Access to existing infrastructure in Newnes State Forest is via a designated access route at the intersection of Chifley Road and Old Bells Line of Road (for heavy or light vehicles) or via the State Mine Gully Road (light vehicles only).

3.3 Summary

A comparison between existing approved operations under MP 06_0021 and the project is provided in Table 3.1.

Table 3.1 Comparison between existing approved operations and the project

Aspect	As approved under MP 06_0021	Angus Place West Project
Project life	Until 18 September 2024.	Until 31 December 2042.
Development consent boundary	10,460 ha as defined in Appendix 2 of MP 06_0021 (including colliery holding boundary and project application area).	5,624 ha as defined by the project area presented in Figure 1.2.
Hours of operation	24 hours per day, 7 days per week.	No change.
Employment	450 FTE personnel.	Up to 200 FTE personnel.
Mining method	Underground mining using continuous miner and longwall mining methods.	Underground mining using first workings bord and pillar mining methods.
Mining area	As shown in Figure 3.1	APW1 and APW2 as defined in Figure 3.1.
Annual coal production limit	4 Mtpa of ROM coal.	2 Mtpa of ROM coal.
Coal handling and preparation	Up to 4 Mtpa of ROM coal can be handled and processed at Angus Place's pit top.	No change.
Coal stockpile	ROM coal: 90,000 t capacity.	No change.
Coal transport	Coal transported off-site by truck in accordance with the development consent for Western Coal Services Project (SSD-5579).	No change.
Waste and rejects management	As product coal is not washed at Angus Place, coarse and fine reject material is not generated. General waste, recyclable materials, oil drums and filters, waste oil and oily water are transported off-site and disposed of at appropriately licensed facilities. Sewage is treated at the on-site sewage treatment plant and applied to land at the pit top via licensed discharge point (LDP) 005.	No change. Note: A separate development application will be submitted to Lithgow City Council to facilitate the construction and operation of the proposed sewage pipeline.
Site access	Angus Place's pit top is accessible from Wolgan Road. Infrastructure in Newnes State Forest is accessible via a designated access route.	No change.
Supporting infrastructure	Mine supporting surface infrastructure designed to control and manage water, ventilation, materials delivery and equipment maintenance is situated at the pit top or on Newnes Plateau.	No change.

Table 3.1 Comparison between existing approved operations and the project

Aspect	As approved under MP 06_0021	Angus Place West Project
Underground water management	Mine inflows during mining operations are: • transferred to the 1 ML fire tank at Angus Place's pit top for reuse; or • transferred to SWTP for treatment and subsequent reuse in the MPPS with a combined total of 42ML/day from Springvale and Angus Place transferred to the Springvale Water Treatment Facility and up to 2.6 ML/day transferred to the MPPS Pond D.	Continued transfer of up to 42 ML/day to the Springvale Water Treatment Facility as authorised by the SWTP (SSD 7592). Continued transfer of up to 2.6ML/day as authorised by the SWTP (SSD 7592). Transfer of up to 2.6 ML/day to the SCSS as authorised by the Western Coal Services Project (SSD 5597). Construction of a transfer pipeline between the Angus Place pit top and the McPhillamys Gold Project water pipeline Pumping Station Facility No.1 and the transfer of up to 15.6 ML/day to the McPhillamys Gold Project as authorised by SSD-9505. Receipt and temporary storage of surplus stormwater from SCSS via the McPhillamys Gold Project pipeline as authorised by SSD-9505.
Surface water management	Undertaken in accordance with the *Angus Place Colliery Water Management Plan* (WMP). Transfer of water from ventilation shaft APC-VS2 to Springvale Mine. Construction and operation of a water softening plant at Angus Place pit top (if required).	No change. Note: The water softening plant at the Angus Place pit top is no longer proposed to be constructed or operated and does not form part of this project.
Mine ventilation	Existing ventilation infrastructure at the Angus Place pit top and APC-VS2.	No change. Note: The construction of the 4.5m shaft and installation and operation of ventilation fans are not proposed and do not form part of this project.
Rehabilitation and closure	Undertaken in accordance with the *Care and Maintenance Mining Operations Plan* (Centennial 2019).	A new Rehabilitation Management Plan will be prepared following project approval and in accordance with relevant guidelines.

4 Strategic context

4.1 Site and surrounds

The project is within the Western Coalfield of NSW where coal mining activities have taken place for over 150 years. The region has also been the site of coal-fired power generation for over 50 years. The general area surrounding Angus Place is comprised of underground coal mining operations and supporting infrastructure. MPPS and the former Wallerawang Power Station are to the south-west of Angus Place. The EIS will include consideration of neighbouring mining operations in assessing potential cumulative impacts.

Newnes State Forest comprises approximately 25,000 ha of pine plantation and native hardwood forest that is selectively logged under Forestry Corporation of NSW tenure and management. In addition to the timber industry, Newnes State Forest supports a number of recreational land uses. A small portion of land within the project area is cleared and used for agriculture.

There are a small number of private residences in close proximity to Angus Place's pit top, the closest, R1, is approximately 800 m south-west of the existing pit top (Figure 1.2). The closest small lot urban development is Lidsdale, approximately 3.5 km south of Angus Place's pit top (Figure 1.2). Other residential localities are shown on Figure 1.1 and include Wallerawang, Portland and Ben Bullen.

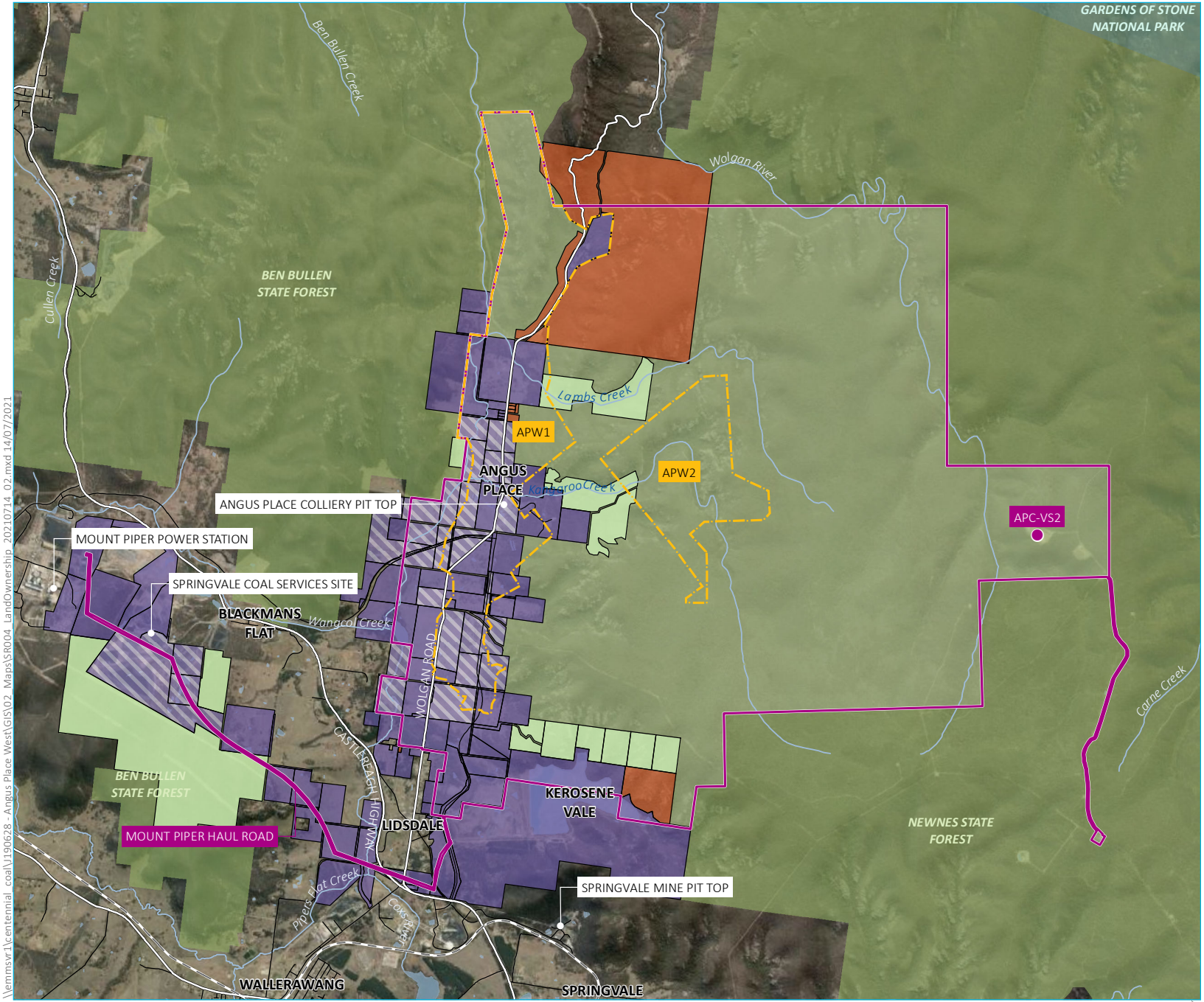
4.2 Land ownership

The project area is made up of land owned by Forestry Corporation of NSW, Crown land, freehold land, NSW Government land and land owned by Centennial (and its subsidiaries) (Figure 4.1). The proposed mining area is predominantly within Newnes State Forest (Figure 4.1). Other properties not owned by Centennial generally relate to road and utility infrastructure providers such as Lithgow City Council, Ausgrid, and Crown land. No surface disturbance on privately-owned land (ie private land not owned by Centennial or its entities) is required as part of the project. Centennial Angus Place will continue to engage and consult with local landholders as the project is further defined and throughout the assessment process.

4.3 Resource demand

Centennial Coal is the only supplier of coal to MPPS through its Western Coalfield operations. The main source of supply currently is the Springvale Coal Mine, which is adjacent to Angus Place and is approved to extract coal until 2028.

The resource proposed for extraction is thermal coal which can assist in meeting the continued demand of MPPS. Centennial has long-term contracts in place with MPPS to provide its coal supply and the project will augment supply from local coal mines through to the end of the operational life of MPPS (ie 2042).



\\emmsvr1\centennial coal\J190628 - Angus Place West\GIS\02 Maps\SR004 LandOwnership 20210714 02.mxd 14/07/2021

Source: EMM (2021); Centennial Coal (2021); DFSI (2017); GA (2011)

Land ownership

Angus Place West
Scoping Report
Figure 4.1

EMM
creating opportunities

4.4 Project justification

4.4.1 Coal supply to Mount Piper Power Station

The project represents a logical, low impact extension to existing mine workings at Angus Place. It will make use of existing infrastructure at Angus Place's pit top, requiring minimal changes or upgrades to facilitate the project. Coal will be transported to MPPS via an existing private coal haul road.

Centennial's western coalfield mines, including the Springvale and Airly mines and the Clarence Colliery, are the only suppliers of coal to MPPS which in turn meets 15% of the State's power needs. With approval to extract up to 5.5 Mtpa, Springvale Mine (Figure 1.2) is the predominant supplier to MPPS with any shortfall being met by the Airly mine.

Over the past few years Springvale has experienced significant geological challenges underground whilst also managing environmental surface impacts, both have impacted coal quality, restricted production and resulted in changes to the mine plan. As a result, Springvale's anticipated life of mine has been shortened to approximately 2026.

The project will ensure both continuity of coal supply to MPPS and employment for the Springvale workforce, while also delivering a low impact mining operation, using a more flexible mining method that will meet MPPS's coal supply needs.

With MPPS scheduled to operate until 2042, Angus Place and this project, is well-placed to meet their future coal supply needs in conjunction with Centennial's other established operations.

4.4.2 Energy transition

While there is a transition to renewables underway coal remains the basis of power generation in NSW, with MPPS an important contributor with the capacity to meet 15% of NSW's energy needs or approximately 1.2 million homes annually. When mining at Springvale Mine ceases in approximately 2026 alternate coal supplies will be needed.

In the western coalfields Centennial has a portfolio of mines that have the capacity, coal reserves and infrastructure, to meet MPPS's future coal supply needs. The project is an integral part of this portfolio ensuring Centennial provides and delivers a multi-sourced, flexible coal supply option to MPPS until its closure.

The project will deliver a low impact operation while also underpinning energy security.

4.4.3 Local and regional economic stability

The Lithgow community and the surrounding townships have a long and proud industrial history which includes coal mining and energy generation. This industrial base represents the economic security of the area which in turn delivers significant local economic and social benefits.

At the same time Springvale moves to the end of its mine life Angus Place will begin to ramp up, providing continuity of employment and ongoing economic contribution locally. Centennial has a workforce that lives locally therefore ongoing employment keeps families in the community, supports local schools and businesses and binds the social fabric in the region.

For every single job at Centennial there is a multiplier effect which results in significant indirect employment benefits also in the local community. As a member of the Lithgow community for over 20 years Centennial has a close working relationship with Lithgow City Council and all community stakeholders. Centennial is invested in the community recognising its obligations as the single largest local employer to ensuring the ongoing economic and social stability of the region.

5 Statutory context

5.1 NSW planning framework

5.1.1 Approval pathway and process

i State significant development

The EP&A Act and NSW Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) form the statutory framework for planning approval and environmental assessment in NSW. The statutory trigger for development consent is provided for under Section 4.2(1) of the EP&A Act. This legislation is supported by environmental planning instruments, including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs).

Clause 7(1)(a) of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP) provides that development for the purposes of underground mining requires development consent.

Division 4.1 in Part 4 provides for the assessment and determination of State significant development (SSD). Under Section 4.36 of the EP&A Act, projects are classified as SSD if they are declared to be such by State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP). Schedule 1 of the SRD SEPP identifies development for the purpose of coal mining as SSD and the project is permissible with development consent under Clause 8(1) of the SRD SEPP.

The consent authority for the project will be the Minister for Planning and Public Spaces or the Independent Planning Commission (IPC). In accordance with Clause 8A of the SRD SEPP, the IPC is the consent authority for SSD in circumstances where:

- the council of the area in which the development is to be carried out has made a submission by way of objection; or
- at least 50 submissions (other than from a council) have been made by the public by way of objection; or
- the application is made by a person who has disclosed a reportable political donation under Section 10.4 of the EP&A Act in connection with the development application.

The Minister (or delegate) is the consent authority for all other SSD applications.

A development application for SSD must be accompanied by an EIS, prepared in accordance with the EP&A Regulation. Before preparing an EIS, an applicant must request SEARs, which are the terms of reference for the EIS. This document accompanies Centennial Angus Place's request for SEARs for the project.

Should approval be granted for the project, the existing approval (MP 06_0021) for operations at Angus Place would be surrendered. Accordingly, Section 4.63 of the EP&A Act provides that if a development consent is surrendered as a condition of a new development consent, the consent authority is not required to re-assess likely impacts of the continued development of the existing consent.

5.1.2 Permissibility

Angus Place is within the Lithgow LGA. The applicable local planning instrument is the Lithgow Local Environmental Plan 2014 (Lithgow LEP). There are seven land use zones within the project area:

- IN1 – General Industrial;
- R5 – Large Lot Residential;
- RU1 – Primary Production;
- RU2 – Rural Landscape;
- RU3 – Forestry;
- SP2 – Infrastructure (Electricity Generating Works); and
- SP2 – Infrastructure (Roads and Traffic Facility).

Underground coal mining is a prohibited land use in all the above zones. However, the Mining SEPP makes the project a permissible land use. Sub-clause 7(1)(a) of the Mining SEPP states that development for the purpose of underground mining may be carried out on any land with development consent. Further, mining is permissible on land where development for the purposes of agriculture (RU1 Primary Production and RU2 Rural Landscape, RU3 Forestry and SP2 Infrastructure) is permissible.

In relation to any inconsistency between the Mining SEPP and an LEP, sub-clause 5(3) provides that the Mining SEPP prevails to the extent of the inconsistency. Therefore, the project is permissible with development consent.

5.1.3 Other State approvals and licences

Under Sections 4.41 and 4.42 of the EP&A Act, certain separate environmental authorisations will not be required for the project or will be required to be issued consistent with the planning approval granted for the project. These separate environmental approvals is summarised in Table 5.1. Further environmental and other approvals may be required in addition to those referred to under Section 4.41 and 4.42 of the EP&A Act, and these will be considered and assessed where relevant to the project.

Table 5.1 Permits and approvals under NSW legislation that may be required for the project

Legislation	Relevance to the project	Comment
Approvals not required under Section 4.41 of the EP&A Act		
A permit under Section 201, 205 or 219 of the NSW *Fisheries Management Act 1994* (FM Act).	Relevant but not required.	The EIS will include consideration of potential impacts on watercourses to be undermined by the project and, where required, appropriate management measures will be identified.
An approval under Part 4, or an excavation permit under Section 139 of the NSW *Heritage Act 1977* (Heritage Act).	Relevant but not required.	No listed historic heritage sites occur within or in close proximity to the project area. Notwithstanding, the EIS will consider potential impacts to historic heritage items and identify appropriate management and mitigation measures as required.

Table 5.1 Permits and approvals under NSW legislation that may be required for the project

Legislation	Relevance to the project	Comment
An Aboriginal heritage impact permit under Section 90 of the NPW Act.	Relevant but not required.	An Aboriginal cultural heritage assessment (ACHA) will be conducted over the proposed mining areas to identify any Aboriginal heritage sites and appropriate management and mitigation measures to be implemented, if required, as part of the project.
A bushfire safety authority under Section 100B of the NSW *Rural Fires Act 1997* (RF Act).	Relevant but not required.	A bushfire management plan will be prepared following receipt of approval of the project.
A water use approval under Section 89, a water management work approval under Section 90 or an activity approval (other than a groundwater interference approval) under Section 91 of the NSW *Water Management Act 2000* (WM Act).	Relevant but not required.	A water resources impact assessment will be prepared as part of the EIS and will include a groundwater and surface water assessment. This assessment will consider potential impacts to water resources as a result of the project, including any groundwater and surface water access licence requirements.
Approvals required to be issued consistently under Section 4.42 of the EP&A Act		
An aquaculture permit under section 114 of the FM Act.	No	The project does not involve aquaculture.
A mining lease under the NSW *Mining Act 1992*.	No	The project will be undertaken within existing mining leases held by Centennial Angus Place.
A production lease under the NSW *Petroleum (Onshore) Act 1991*.	No	The project does not involve petroleum production.
An EPL under Section 3 of the NSW *Protection of the Environment Operations Act 1997* (POEO Act).	Yes	Angus Place is covered by EPL 467. EPL 467 will be varied as required if the project is approved.
A consent under Section 138 of the NSW *Roads Act 1993* (Roads Act).	No	A consent is required under Section 138 of the Roads Act to work on or above a road or to connect a road to a classified road. No works on or above a road are likely to be required for the project.
A licence under the NSW *Pipelines Act 1967*.	No	The pipelines that will be used as part of the project will convey waste water and mine water. In accordance with Section 5.1(d) of the NSW *Pipelines Act 1967,* these pipelines are considered exempt of licence requirements.

5.1.4 Consistency with State environmental planning policies

A number of State and regional policies are relevant to the project. Consideration of the project's consistency with relevant policies and plans is provided in Table 5.2.

Table 5.2 Consideration of relevant State environmental planning policies

Policy	Relevant project elements	Consistency of the project
Mining SEPP	The project	This SEPP provides for the orderly development of resources to promote the social and economic welfare of NSW. It also establishes planning controls to encourage ecologically sustainable development. Part 3 specifies certain non-discretionary standards for management of impacts associated with mining and the project's compliance with these will be assessed in the EIS. Consideration of Part 3 matters will be given in the EIS.
State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)	Electricity supply	This SEPP aims to facilitate the effective delivery of infrastructure across NSW. Under Clause 45 of the Infrastructure SEPP, the consent authority must notify the electricity supply authority for the area and invite comments about potential safety risks. The EIS will include an assessment of impacts on electricity transmission lines and will describe the consultation that has been undertaken to date in respect of the project with transmission line owners (where relevant).
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33)	Storage and transport of dangerous goods	SEPP 33 regulates the determination of development applications to carry out a "potentially hazardous industry" or "potentially offensive industry". The EIS will document the established best management practices for hydrocarbons and explosives used within the project area, as well as effective implementation of the approved environmental management strategy (EMS) and occupational health and safety management systems. The project is not considered to comprise a 'potentially hazardous industry" or a "potentially offensive industry" and therefore a preliminary hazard analysis will not be undertaken as required by Clause 12 of SEPP 33 and nor does Clause 13 of SEPP 33 apply to the consent authority's determination of the project's development application.
State Environmental Planning Policy (Koala Habitat Protection) 2021 (Koala SEPP)	Clearance of potential Koala habitat	The Koala SEPP regulates the clearing of Koala habitat. However it does not apply to land dedicated or reserved under the NPW Act or to land dedicated as a State Forest. As the project relates to underground mining, clearing will be limited to maintenance of existing access tracks only in State Forest areas. Nonetheless, a biodiversity development assessment report (BDAR) will be prepared and will include consideration of potential impacts on Koala habitat, where relevant.
State Environmental Planning Policy No 55 – Remediation of Land (SEPP 55)	Historic mining and agricultural activities have potential for land contamination	SEPP 55 provides for a state-wide planning approach to the remediation of contaminated land in order to reduce the risk to human health or any other aspect of the environment. The EIS will consider land contamination in accordance with SEPP 55.
State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011	Water discharges	This SEPP applies to land within the Sydney drinking water catchment. Clause 10(1) of this SEPP provides that a consent authority must not grant consent to the carrying out of development on land within the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a "neutral or beneficial effect" (NorBE) on water quality. The surface water and groundwater studies proposed for the project will undertake a NorBE assessment.

5.1.5 Other relevant policies

i NSW Government Strategic Statement on Coal Exploration and Mining

In August 2020, the NSW Government released the *Strategic Statement on Coal Exploration and Mining* (NSW Government 2020) (The Statement) which sets out the NSW Government's approach to global transition to a low carbon future, consistent with Australia's ambitions under the Paris Agreement and management of impacts to coal-reliant communities. The Statement provides a four-point action plan:

1. Improving certainty about where coal mining should occur.
2. Supporting responsible coal production.
3. Reducing the impact of coal mining.
4. Supporting diversification of coal-reliant regional economies to assist with the phase-out of thermal coal mining.

The Statement commits the NSW Government to consider responsible applications to extend the life of existing coal mines, which is consistent with the objectives of this project (ie to extend the life of an existing coal mining operation and support responsible coal production).

ii NSW Aquifer Interference Policy

The NSW Aquifer Interference Policy (AIP) is the framework under which access to groundwater (for non-consumptive use) is managed in NSW. The AIP clarifies the requirements for obtaining water access licences for aquifer interference activities under NSW water legislation and establishes and objectively defines considerations in assessing and providing advice on whether more than minimal impacts might occur to a key water-dependent asset.

The AIP establishes minimal impact considerations for aquifer interference activities (minimal impact) on water supply works in highly productive and less productive alluvial, porous and fractured rock groundwater sources, beyond which make good provisions may be required.

The AIP indicates that where mining results in the loss of water from an overlying source that is covered by a water sharing plan (WSP), a water access licence is required under the WM Act to account for this take of water. According to the AIP, proponents of a mining project seeking development consent under Part 4 of the EP&A Act must provide estimates of all quantities of water likely to be taken from any water source during and following cessation of the activity and all predicted impacts associated with the activity.

The AIP requires that potential impacts on groundwater sources, including their users and groundwater dependent ecosystems (GDEs), be assessed against minimal impact considerations. If the predicted impacts are less than the Level 1 minimal impact considerations, then these impacts will be considered as acceptable. An assessment of the project against the minimal impact considerations will be provided in the EIS.

iii Central West Orana Regional Plan

The *Central West and Orana Regional Plan 2036* (DPE 2017) (the Regional Plan) guides land use planning priorities and decision making in the Central West and Orana Region. The region covered by the plan includes the project area.

The Regional Plan identifies the mining sector as the largest contributor to the regional economy, comprising $2.5 billion (16.2%) of gross regional product in 2011 and employing 5% of the regional workforce.

The vision for the Central West and Orana region is for mining to continue to provide local job opportunities and make a significant regional economic contribution. The project is consistent with the plan, as it will contribute significantly to the diversity of economic development and employment in the region and will enable the realisation of the economic opportunity that mining presents. As identified in the plan and mentioned above, the project will deliver significant economic benefits to the region.

iv Lithgow 2040 Local Strategic Planning Statement

The *Lithgow 2040 Local Strategic Planning Statement* is a 20 year strategic plan to set out land use directions and priorities for the future of Lithgow. The statement identifies that mining is the largest contributor to the Lithgow City, comprising $243 million or 23% of the contribution to the local economy. It also includes actions to maintain the mining industry, including the protection of coal mining titles, extractive industry areas (such as sand and construction materials), surface and supporting operation facilities from further land use conflict.

5.2 Commonwealth legislation

5.2.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the primary Commonwealth legislation that governs protection of the environment and is administered by the Commonwealth Department of Agriculture, Water and the Environment (DAWE). Part 3 of the EPBC Act states that an action that has, will have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES), may not be undertaken without approval from the Commonwealth Minister for Environment.

A search of the Commonwealth's protected matters search tool was used to generate a list of MNES or other matters protected by the EPBC Act likely to occur within the project area. The results of the search are summarised in Table 5.3. Further discussion of ecological communities and species within the project area will be provided in the BDAR that accompanies the EIS.

Table 5.3 Results of the protected matters search relevant to the project area

MNES	Relevance to the project
World heritage properties	The Blue Mountains World Heritage Area is within the search tool buffer radius (10 km).
National heritage places	The Gardens of Stone National Park and the Wollemi National Park, which form part of the Greater Blue Mountains Area are within the search tool buffer radius (10 km).
Wetlands of international importance (listed under the Ramsar Convention)	4 within search tool buffer radius (10 km).
Commonwealth listed threatened species	55 listed threatened species identified as likely to occur within the search area.
Commonwealth listed threatened ecological communities (TECs)	Commonwealth listed TECs identified as likely to occur within the search area include: • Temperate Highland Peat Swamps on Sandstone Endangered Ecological Community (EEC); • Natural Temperate Grassland of the South Eastern Highlands; • Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion; and • White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC).
Migratory species (protected under international agreements)	13 listed migratory species identified as likely to occur within the search area.
Commonwealth marine areas	Not applicable.
Great Barrier Reef Marine Park	Not applicable.
Nuclear actions (including uranium mines)	Not applicable.
A water resource, in relation to coal seam gas development and large coal mining development	If it is determined that the project could result in a significant impact to a water resource, DPIE will refer the EIS water assessments to the Commonwealth Independent Expert Scientific Committee for advice.
Other matters covered by the EPBC Act	
Commonwealth land	No Commonwealth land is within the project area or is anticipated to be impacted by the project.
Commonwealth heritage places outside Australia	No impacts will occur to Commonwealth heritage places outside Australia as a result of the project.

As part of the preparation of the EIS, Centennial Angus Place will determine whether the project's potential impacts on MNES (namely biodiversity and water resources) warrant referral of the project under the EPBC Act.

5.2.2 Native Title Act 1993

The Commonwealth *Native Title Act 1993* recognises that Aboriginal people may have rights and interests to certain land and waters which derive from traditional laws and customs. Native Title may be recognised in places where Indigenous people continue to follow traditional laws and customs and have maintained a link with their traditional country.

Most land within the project area is subject to an Ancillary Deed which was entered into on the 31 January 2003 by the Gundungurra Native Title Claim Group, the Gundungurra Tribal Council Aboriginal Corporation and a number of Centennial entities including Centennial Angus Place Pty Ltd. As such, Angus Place is bound by the terms of this Deed. The Deed is subject to a confidentiality clause and as such further detail is unable to be provided in this document.

Any Native Title matters that are not dealt with within the existing Ancillary Deed are required to be resolved prior to the grant of a new mining lease required for the project.

5.2.3 National Greenhouse and Energy Reporting Act 2007

The Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act) provides a single national framework for the reporting and dissemination of information about the greenhouse gas (GHG) emissions, GHG projects and energy use and production of corporations. It makes registration and reporting mandatory for corporations whose energy production, energy use or GHG emissions meet specified thresholds.

Centennial Angus Place reports GHG emissions from its operations on an annual basis. GHG emissions will be assessed in the EIS.

6 Stakeholder engagement

6.1 Overview

Centennial and its entities undertake a range of engagement activities for their projects and have a longstanding relationship with the community across its Western Coalfield operations including Angus Place, Springvale and Western Coal Services. Stakeholder engagement for the project has to date focused on communicating with:

- private landholders and tenants;
- registered Aboriginal parties (RAPs);
- Western Region Combined Community Consultative Committee (Western Region CCC);
- Western Region Aboriginal Cultural Heritage Committee; and
- Project Steering Committee.

The purpose of this engagement has been to understand who the key stakeholders are for the project and to understand the environmental and social issues for the community. This engagement has allowed the discussion of findings of specialist reports to date (including Aboriginal cultural heritage, subsidence, and water resources). Engagement has also been undertaken to secure access to private land holdings enabling baseline biodiversity and Aboriginal cultural heritage surveys to be undertaken and to obtain water samples for the purpose of developing a water census.

This scoping stage engagement has enabled Centennial Angus Place to develop an understanding of the key concerns for the community, which include:

- concerns about potential subsidence impacts due to the relatively shallow depth of cover;
- loss of property value; and
- impacts to groundwater and surface water resources.

6.2 Stakeholder engagement strategy

Expectations from regulators and community for meaningful stakeholder engagement have been refined in recent years. In response to this, Centennial Angus Place has already developed a stakeholder engagement strategy for the project, which identifies:

- stakeholders relevant to the project;
- the overall objective for consultation with each stakeholder (or stakeholder group); and
- timing, methods and key matters to be discussed/resolved with each stakeholder.

The stakeholder engagement strategy includes consideration of the draft *Undertaking Engagement Guide – Guidance for State Significant Projects* (DPIE 2020b), which recommends significant upfront focus and effort with regards to consultation with key stakeholders (including the local community) during preparation of a scoping report.

A summary of the stakeholders identified and their potential interests in relation to the project is provided in Table 6.1.

Table 6.1 Stakeholders and potential interests

Stakeholder	Interest
NSW Department of Planning, Industry and Environment (DPIE)	Project introduction, assessment pathway and timing. Approach to community and stakeholder engagement.
Regional NSW Mining Exploration Group (RNMEG)	Impacts to exploration and mining of significant mineral resources. Demonstrate how the project will avoid/minimise impacts on exploration activities.
Biodiversity Conservation and Science Directorate (BCS)	Biodiversity and offsets. GDEs.
Heritage NSW	Aboriginal cultural heritage. Historic heritage.
Environment Protection Authority (EPA)	Potential impacts on noise, odour, water and air quality.
Department of Primary Industries (DPI)	Impacts on agricultural production. Potential for land use conflicts. Water supply.
DPIE Water	Impacts to alluvial and fractured rock aquifers Impacts on mapped watercourses and associated riparian corridors.
Transport for NSW (TfNSW)	Impacts on roads under TfNSW jurisdiction (namely Castlereagh Highway).
Crown land	Impacts on Crown land, Crown roads and Crown waterways.
Forestry Corporation of NSW (Forestry NSW)	Access roads within Newnes State Forest.
NSW Rural Fire Service (RFS)	Impacts on bushfire prone land and implementation of appropriate bushfire protection measures. Consideration of asset protection zones (APZs).
Lithgow City Council	Project introduction, assessment pathway and timing. Approach to community and stakeholder engagement. Impacts on roads under Lithgow City Council jurisdiction. Impacts on the local community, infrastructure and services. Cumulative impacts with other major projects. Waste management. Water supply. Project benefits and opportunities.
Commonwealth Government Department of Agriculture, Water and the Environment (DAWE)	MNES as defined under the EPBC Act.
Neighbouring landowners	Project introduction, assessment pathway and timing. Potential concerns about the project (eg traffic, noise, air quality, subsidence, health and safety). Impacts to neighbouring agricultural operations and land use conflicts. Proposed mitigation and management measures to address impacts.
Other interested community members	Project introduction, assessment pathway and timing. Project benefits and opportunities. Impacts on the local community, infrastructure and services. Proposed mitigation and management measures to address impacts.

Table 6.1 Stakeholders and potential interests

Stakeholder	Interest
Local businesses and media	Project introduction, assessment pathway and timing. Project benefits and opportunities. Impacts on the local community, infrastructure and services.
Special interest groups	Project introduction, assessment pathway and timing. Impacts on the local community, infrastructure and services. Environmental impacts to water systems and biodiversity. Project benefits and opportunities.
Aboriginal community	Project introduction, assessment pathway and timing. Consultation regarding the Aboriginal cultural heritage values of the project area and potential impacts on identified Aboriginal cultural heritage sites.

6.3 Proposed EIS engagement

6.3.1 Objectives

Centennial's primary objectives for engagement during the preparation of the EIS will be to ensure nominated stakeholders have a sufficient understanding of:

- the project;
- how the project may affect them;
- options for mitigation/offset for identified impacts;
- how engagement will contribute to the overall approval process for the project; and
- how they can participate in the approval process and stay informed and consulted.

Stakeholder engagement will also be used as a platform for Centennial Angus Place to:

- collect qualitative and quantitative data and insights for scoping the EIS and relevant technical assessments to maximise diversity and representativeness;
- understand the interests that stakeholders have in the project and how potential impacts are predicted to be experienced from their perspective; and
- consider the views of stakeholders in a meaningful way and using these insights to inform project refinement and, if required, mitigation and management measures.

Stakeholder engagement outcomes will also inform the scope of the social impact assessment.

6.3.2 Engagement actions

Centennial Angus Place will continue the engagement it has commenced for the project. Consultation and engagement proposed to be undertaken as part of the preparation of the EIS is summarised in Table 6.2.

Table 6.2 Proposed engagement actions

Stakeholder	Method of engagement
Landholders and tenants within the project area	Face to face meetings. Written correspondence.
Landholders who will experience a change in amenity when the site re-commences operations	Face to face meetings.
Special interest groups	Face to face meeting/briefing Written correspondence
Broader community	Advertisement in local media publications. Community information session.
Project Steering Committee	Presentation to steering committee meeting.
Western Region CCC	Presentation to CCC meetings.
RAPs	Continued engagement as part of Aboriginal cultural heritage assessment.
Western Region Aboriginal Cultural Heritage Committee	Aboriginal Cultural Heritage Committee meetings and specific engagement as required for the project.
State government agencies (eg EPA, DPIE Water and BCS)	Written correspondence. Project briefing.
Lithgow City Council	Written correspondence. Project briefing.
Service providers (eg electricity transmission and telecommunications asset owners)	Written correspondence.
Industry stakeholders (includes EnergyAustralia, Regis Resources)	Written correspondence.

7 Proposed assessments

7.1 Issues identification

The environmental, social and economic matters relevant to the project have been reviewed. Key issues and the proposed level and scope of assessments have been identified using the *Preparing a Scoping Report – State Significant Development Guide* (DPIE 2020a).

Matters have been characterised and allocated to one of the following categories:

- Matters requiring further assessment in the EIS – these have been identified as key issues requiring detailed assessment; for example, detailed field surveys and/or quantified modelling techniques to fully understand the impacts and identify project-specific mitigations and/or alternatives.
- Matters requiring no further assessment in the EIS – potential for a material impact on a matter; however, measures to manage the impact are well understood and routinely used on-site or other similar projects, for example, odour, parking on-site and rail network capacity.

Matters considered have been characterised based on:

- stakeholder consultation and engagement outcomes as discussed in Chapter 6;
- risk assessments taking into consideration known and identified issues;
- knowledge and experience gained via previous approval applications (including APMEP); and
- baseline environmental data.

7.2 Matters requiring further assessment

7.2.1 Subsidence

i Existing environment

The project area is mostly overlain by the Newnes Plateau; however, the northern and southern part of the proposed mining area is west of previous workings, beneath the valley of the Upper Coxs River. The Upper Coxs River lies to the west of the Newnes Plateau and flows from north to south. Newnes Plateau is a surface topographical feature that divides the surface water catchments into the Coxs River (west, south-west), Wolgan River (north) and Bungleboori Creek (east). The Wolgan Valley lies to the north of the Newnes Plateau.

Angus Place lies in the south-western part of the Western Coalfield of the Sydney Basin. The proposed first workings will be extracted in the Lithgow Seam. The floor of the Lithgow Seam generally dips from the west to the east. The average seam dip across the proposed mining area is approximately 1.5%. The thickness of the Lithgow Seam within the proposed mining area varies between 2.4 m and 3.9 m. The depths of cover above the proposed mining area vary between approximately 43 m and 270 m.

ii Changes to the land

The project will only use first workings bord and pillar mining methods. First workings bord and pillar mining involves the formation of roadways and pillars that are designed to be geotechnically long-term stable. Using this mining method will result in negligible vertical subsidence (ie ≤20 mm).

Nonetheless, the project's potential impacts on natural (including Coxs River, creeks, drainage lines, cliffs, steep slopes and swamps) and built (including Wolgan Road, unsealed access tracks, services, farm dams, groundwater bores, houses and mining infrastructure) features will be assessed.

Subsidence will be controlled to negligible levels by using a low impact form of mining. This is not likely to result in seam to surface connection and limited levels of subsidence at the surface.

iii Treatments and assessment approach

A qualitative assessment of subsidence effects, impacts and environmental consequences will be prepared as part of the EIS. The assessment will:

- review relevant information (eg indicative layouts of the first workings, surface levels, seam levels, seam thicknesses, proposed mining heights, overburden geology and known geological structures);
- review available ground monitoring data (if available) above existing mining areas;
- identify natural and built features above the proposed mining area;
- predict surface subsidence due to the development of the first workings; and
- assess the potential impacts on natural and built features near the proposed mining area.

The report will include a summary of the subsidence prediction methodology, predicted subsidence, assessments of potential impacts on surface features and, if required, recommended monitoring and management strategies for the surface features.

7.2.2 Water resources

i Groundwater

a Existing environment

Centennial Angus Place has a detailed understanding of the existing groundwater environment within the project area and surrounds. The Burralow Formation and the Mount York Claystone are the key hydrogeological units of the area and affect swamp formation in the region. Both of these units are characterised by the presence of impermeable claystone/shale bands and provide the hydraulic barriers between the perched and shallow groundwater systems and the shallow and deep groundwater systems, respectively. Each of the three groundwater systems (perched, shallow and deep), defined by these stratigraphic units display independent hydraulic behaviours.

The project area is within the Sydney Basin Coxs River and the Sydney Basin Richmond Groundwater Sources, regulated under the Water Sharing Plan for the Greater Metropolitan Region Groundwater Source 2011.

There are 34 groundwater works in the vicinity of the proposed mining area, including several immediately above or adjacent to the proposed mining area. A number of private landholders hold Water Access Licences (WALs), including for stock and domestic, industrial and commercial use.

b Changes to the groundwater environment

As noted above, a first workings mine design will be introduced as part of the project. This reduces potential for vertical subsidence greater than 20 mm; however, conservatively, the mine design has still established offset buffers for a number of sensitive surface features including Long Swamp.

The project is not expected to result in significant impacts to the groundwater regime; however, preliminary investigations indicate that the project may result in groundwater level drawdown at two private landowner bores that utilise water nearby the coal seam. Any groundwater drawdown may have an impact on baseflows within the surrounding water catchments and this aspect will also be considered in the EIS.

c Treatments and assessment approach

Centennial's regional groundwater model will be reviewed and updated to include consideration of first workings bord and pillar operations within the proposed mining areas. Predictive uncertainty will be accommodated in the groundwater model. The water resources impact assessment will consider potential groundwater impacts and will include:

- a summary of bore searches using publicly available information;
- a summary of field hydrology census surveys to confirm information collated and additional information regarding existing groundwater users and sensitive receptors (including ecological);
- predicted groundwater level drawdown at identified receptors (bores and ecological receptors), presenting the range of potential drawdown based on predictive uncertainty analysis;
- groundwater quality impacts as a result of the receipt and temporary storage of surplus stormwater from the SCSS transferred in accordance with the McPhillamys Gold Project (SSD-9505); and
- a summary of proposed monitoring, mitigation and management measures, which would include a commitment to make good (if requirements for make good provisions are triggered).

There are a number of methods that Centennial Angus Place could implement to make good on affected water supply works and these will differ from landholder to landholder. Make good measures may include:

- deepening the bore to allow it to access a deeper part of the groundwater source;
- lowering or replacing the pump within the bore;
- drilling a new bore (shallower or into different groundwater source);
- providing an alternate water supply (eg trucking water to the landowner or piping from a different source or location); or
- other.

ii Surface water

a Existing environment

The project area is within the Wolgan River/Carne Creek and Coxs River catchments, which report to the Hawkesbury and Nepean catchments, respectively. Angus Place's pit top is in a local catchment of Kangaroo Creek, which flows into Coxs River and then to Lake Wallace further downstream.

Surface water flow in the Coxs River catchment is in a southerly direction, reflecting surface topographic gradient toward Lake Wallace and further downstream, Lake Lyell, which is the water supply reservoir for MPPS (via intermediate transfer to Thompsons Creek Dam). Outflow from Lake Lyell eventually contributes to Lake Burragorang. Surface water flow in the Wolgan River catchment is northerly into the Wolgan Valley.

The Coxs River catchment is within the Sydney Drinking Water Catchment as defined by State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011.

The project area is within the Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources including the Hawkesbury and Lower Nepean Rivers and Upper Nepean and Upstream Warragamba water sources. Therefore, any reduction in baseflow contribution to surface water courses from local groundwater systems will require licensing, as per the requirements of the AIP.

b Changes to the surface water environment

Potential impacts to surface water resources are anticipated to be minimal, with mine water discharges at Angus Place ceasing in 2020 and not proposed to resume as part of the project. As noted above, a first workings mine design will be introduced as part of the project. This reduces potential for vertical subsidence greater than 20 mm; however, conservatively, the mining areas have been designed to avoid directly undermining Coxs River.

Impacts, though considered unlikely, on the following receptors will be considered:

- downstream waterways;
- downstream water users;
- swamp ecosystems; and
- the Sydney Drinking Water Catchment.

c Treatments and assessment approach

The water resources impact assessment will include a comprehensive assessment of potential impacts to surface water resources and receptors and will include:

- review of available data (including regional hydrological and water balance modelling, water quality, flow and level and existing water management systems at Angus Place);
- water and salt balance modelling;
- surface water quality assessments (including recommendations for additional monitoring locations and/or parameters for future monitoring if required); and
- an assessment of the potential impact that the project may have on water resources, users and receptors.

The water resources impact assessment will also address WaterNSW requirements for NorBE effect on water quality within the Sydney Drinking Water Catchment.

7.2.3 Biodiversity

i Existing environment

The mine is near the Newnes Plateau and the Gardens of Stone National Park. There are a number of threatened terrestrial and aquatic species listed under State and Commonwealth legislation within the wider project boundary. A protected matters search listed 55 Commonwealth-listed threatened species, 4 TECs and 15 migratory bird species as likely to occur within the search area, which includes the proposed mining areas.

ii Potential changes and impacts

The only construction required to support the project is associated with the construction of a transfer pipeline to facilitate the transfer of water from the Angus Place pit top to the McPhillamys Gold Project water pipeline Pumping Station Facility No.1.

This construction is located within an area assessed as part of the McPhillamys Gold Project as shown on Figure 3.1. As the construction of this pipeline will only proceed if the McPhillamys Gold Project is approved, no further assessment of impacts on biodiversity as a result of these construction activities is proposed. Further, it is acknowledged that the anticipated 20 mm subsidence levels from the proposed first workings only mining method is unlikely to impact terrestrial biodiversity. However, a conservative approach will be adopted in the assessment (ie to identify biodiversity above the proposed mining area so that it can be accounted for and monitored appropriately, if required).

While there are Newnes Plateau Shrub Swamp communities within the region and within the project area, there are only two small areas of swamps that partially intersect the proposed mining areas of the project. The swamps follow the alignments of Kangaroo Creek, Lambs Creek and tributaries of the Coxs River. A buffer will be established using the 26.5˚ angle of draw of the proposed first workings and the known extent of Long Swamp. Indirect impacts to GDEs as a result of any groundwater drawdown that may occur as a result of the project will be considered in the assessment.

iii Treatments and assessment approach

A biodiversity development assessment report (BDAR) will be prepared by an accredited assessor in accordance with the *Biodiversity Assessment Method* (BAM). The BAM will also be applied to identify reasonable measures and strategies that can be taken to avoid and minimise impacts on biodiversity.

Plant community types (PCTs) within the proposed mining area will be mapped and field surveys will be undertaken to ground truth the severity and extent of recent bushfire activity in accordance with *Guideline for applying the Biodiversity Assessment Method at severely burnt sites* (DPIE 2020c). Centennial Angus Place will engage with DPIE about the proposed assessment approach and level of survey required within bushfire affected areas. The BDAR will also include consideration of potential impacts to identified GDEs.

The BDAR will confirm if any offsets are required (including ecosystem and species credits). However, it is considered that offsets are unlikely to be required for this project as a result of the minimal predicted surface impacts.

7.2.4 Aboriginal cultural heritage

i Existing environment

Angus Place has well established protocols in place to guide Aboriginal cultural heritage management. The protocols are detailed in Centennial's Western Region Aboriginal Cultural Heritage Management Plan (ACHMP). These protocols are centred around close consultation with Registered Aboriginal Parties (RAPs) which have interests in the region and with whom well-developed and active formal relationships exist.

The ACHMP was prepared to provide Centennial with a consistent approach to consulting with the local Aboriginal community regarding cultural heritage matters as well as minimum standards and processes for identifying, monitoring and managing cultural heritage objects and sites within its Western Coalfield operational areas.

The key aspect to this process was the establishment of a core group of RAPs for each mining operations area and from this the establishment of an Aboriginal heritage sub-committee of representatives from the various RAPs who meet twice a year to review any recently completed or proposed heritage-related works. For any proposed new work within Centennial's western operations area, additional consultation is required in accordance with the ACHMP.

This consultation process also aligns with Heritage NSW's Aboriginal Consultation Requirements for Proponents (DECCW 2010a) and allows for all interested parties who express an interest to be added to the Aboriginal stakeholder list for that project area. Consultation in accordance with Heritage NSW's *Aboriginal Consultation Requirements for Proponents* (DECCW 2010a) for the project has already commenced.

ii Potential changes and impacts

The proposed mining area has been designed to avoid impacts to Aboriginal cultural heritage sites, where practicable. For example, undermining of Maiyingu Marragu (Black Fellows Hands Reserve) will be avoided.

It is acknowledged that the anticipated 20 mm of subsidence from the proposed first workings only mining method is unlikely to physically impact Aboriginal sites or objects. However, a conservative approach will be adopted (ie to identify sites above the proposed mining area so that they can be accounted for and monitored appropriately, if required).

iii Treatments and assessment approach

An Aboriginal cultural heritage assessment (ACHA) will be completed in accordance with:

- Aboriginal Consultation Requirements for Proponents (DECCW 2010a);
- Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (the Code) (DECCW 2010b); and
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

The purpose of the ACHA will be to identify, assess and manage the Aboriginal cultural heritage values related to the project area, specifically those that are at risk of being impacted. Aboriginal heritage values will be identified from the following methods:

- consultation with RAPs to identify Aboriginal sites, social or cultural values of the study area and places of special significance that should be considered;
- search of the Aboriginal Heritage Information Management System (AHIMS) register for records of previously registered Aboriginal sites;

- development of a predictive model of Aboriginal site location;
- an archaeological survey by archaeologists and RAPs;
- assessing the significance of Aboriginal places and/or objects identified in the course of the archaeological investigations and through Aboriginal community consultation;
- assessing the impact of the project on identified Aboriginal cultural heritage values; and
- proposing appropriate management measures for potentially impacted Aboriginal cultural heritage values in response to their assessed significance.

An archaeological field survey of the proposed mining area has been undertaken with the assistance of RAP representatives identified through the implementation of Heritage NSW's Aboriginal Consultation Requirements for Proponents (DECCW 2010a). The survey focused on areas predicted to have high archaeological sensitivity including watercourses and level to gently inclined landforms within 200 m of watercourses; areas of outcropping stone; site types such as rock shelters or grinding grooves that are deemed potentially susceptible to subsidence impacts; as well as areas identified by RAPs warranting inspection. The outcomes of this survey will be reported in the ACHA.

7.2.5 Historic heritage

i Existing environment

The project area has been the subject of heritage assessments to support the APMEP.

The assessments did not identify any specific items of built heritage or items listed on State or local heritage registers. However, it is noted that the area surrounding Angus Place has been subject to historic mining and agriculture and, therefore, there may be heritage landscapes that will need to be considered.

ii Proposed changes and impacts

As there are no locally, State or Commonwealth listed physical historic heritage items or archaeological sites within the Angus Place Lease Boundary, it is unlikely that historic heritage impacts would result from the project.

iii Treatment and assessment approach

A desktop assessment of potential impacts on historic heritage associated with the project will be undertaken with reference to the following guidelines and policies:

- *Assessing Heritage Significance* (NSW Heritage Council 2001);
- *Assessing Historical Importance: A guide to State Heritage Register Criterion A* (NSW Heritage Office 2006);
- *Assessing Historical Association: A guide to State Heritage Register Criterion B - Heritage Information Series* (NSW Heritage Office 2000);
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (NSW Heritage Council 2009);
- *Statements of Heritage Impact* (NSW Heritage Office 2002); and
- *Burra Charter* (Australia International Council on Monuments and Sites 2013).

7.2.6 Air quality and greenhouse gas

i Existing environment

Angus Place's pit top is in a rural area. A relatively small number of rural residential properties are located along Wolgan Road and in the Upper Wolgan Valley in the vicinity of the mine. The closest, R1, is approximately 800 m south-west of the existing pit top (Figure 1.2).

Air quality in the vicinity of the project is influenced by a range of potential sources, including neighbouring mining and industrial operations, agricultural activity, bushfires and 'burning off', other industry (eg MPPS), vehicle movements, roads, wind-blown dust from nearby and remote areas, fragments of pollens, moulds and domestic wood fires.

Angus Place operates in accordance with the *Western Region Air Quality and Greenhouse Gas Management Plan* (AQGHGMP), which is a requirement of MP 06_0021 and aims to reduce and mitigate potential sources which may decrease air quality across the whole of Centennial's Western Coalfield operations.

ii Changes to the air quality environment

Air quality impacts of the project are expected to be much the same to that approved for existing operations. However, the key changes will be from recommencing operations at the mine after being in care and maintenance for a number of years. The project will extend the timeframe over which impacts were expected to occur to 2042.

The project will use underground mining methods and will not produce any overburden. Angus Place is expected to maintain similar operational air quality controls at the pit top to that which are already approved, and as such dust generation is not expected to materially increase over that which has previously been assessed and approved.

The key changes to previously approved operations which will influence air quality will be:

- the maximum annual ROM coal extraction rate will reduce to 2 Mtpa;
- operational air quality impacts will continue until 2042; and
- the construction of additional infrastructure to facilitate the supply of water to the McPhillamys Gold Project.

The key air quality matters for the project will be emissions of particulate matter and the potential for these emissions to cause adverse impacts at nearby sensitive receptors for an increased period than that currently approved.

GHG emissions generated by the project through its operational life and potential impacts will also be a key matter for consideration in the EIS.

iii Treatments and assessment approach

a Air quality

A detailed assessment of potential impacts on air quality will be undertaken in accordance with the assessment guidelines from the EPA, namely the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA 2016). Air dispersion modelling (CALPUFF) will be used to predict the off-site dust concentrations and deposition levels due to estimated emissions from the project. Model predictions will be compared with EPA air quality assessment criteria and the potential for adverse impacts will be assessed based on the level of compliance with the criteria.

b Greenhouse gas

A detailed assessment of GHG emissions associated with the project will be completed. The assessment will be inclusive of an estimation of direct and indirect GHG emissions, comparing these to the State and Commonwealth emissions. The detailed assessment will include emission calculations in accordance with National Greenhouse Accounts Factors (DoEE 2019), National Greenhouse and Energy Reporting System (administered by Australian Government Clean Energy Regulator) and Australia Greenhouse Emissions Information System (administered by the Australian Government Department of Industry, Science, Energy and Resources).

7.2.7 Noise and vibration

i Existing environment

Angus Place's pit top is in a rural area. A relatively small number of rural residential properties are located along Wolgan Road and in the Upper Wolgan Valley in the vicinity of the mine. The closest, R1, is approximately 800 m south-west of the existing pit top (Figure 1.2).

MP 06_0021 contains strict noise criteria. Angus Place also operates in accordance with the approved *Western Region Noise Management Plan* (Centennial 2021), which is a requirement of MP 06_0021 and aims to reduce and mitigate noise generated by Centennial's Western Coalfield operations.

ii Changes to the noise environment

Noise and vibration impacts are expected to be similar to previously approved operations with the key changes arising from the recommencement of operations at the mine after being in care and maintenance for a number of years. As the project involves underground mining, the noise impacts of the project will be mostly related to the pit top and trucking operations. The key changes to existing operations which will influence noise and vibration include:

- construction of infrastructure (such as the infrastructure to facilitate the supply of water to the McPhillamys Gold Project); and
- operational noise and vibration impacts will continue until 2042.

Typical maximum noise level events at Angus Place's pit top are likely to include trucks being loaded or dozer operations.

Noise associated with the transport of coal on the private haul road will continue to be managed in accordance with the relevant conditions of SSD-5579 (Western Coal Services Project). Coal transport will not need to occur on the public road network.

iii Treatments and assessment approach

A detailed assessment of potential noise and vibration impacts will be completed and documented in the EIS. The assessment will consider the previous assessment undertaken for the APMEP. It will consider relevant noise impacts to local receptors within the vicinity of Angus Place's pit top. Results of the assessment and mitigation measures adopted will be documented within the EIS.

The assessment will be completed with reference to the following guidelines and policies:

- *NSW Noise Policy for Industry* (NPfI) (EPA 2017);
- *Voluntary Land Mitigation and Acquisition Policy* (VLAMP) (NSW Government 2018);
- *Interim Construction Noise Guideline* (ICNG) (NSW Department of Environment Climate Change (DECC) 2009);

- *Assessing Vibration: A Technical Guideline* (NSW Department of Environment and Conservation (DEC) 2006); and
- *Road Noise Policy* (RNP) (NSW Department of Environment Climate Change and Water (DECCW) 2011).

The scope of work to address the identified potential impacts includes:

- establish noise sources and noise outputs of existing equipment proposed to be utilised by the project;
- undertake noise modelling and assessment, taking into consideration the following:
  - predictive modelling;
  - operational noise mitigation strategies;
  - potential construction activity impacts; and
  - potential road traffic impacts.

The assessment of potential vibration impacts will include consideration of:

- local receptors in proximity of Angus Place's pit top;
- existing and proposed infrastructure;
- Aboriginal cultural heritage sites; and
- impacts to livestock.

7.2.8 Traffic

i Existing road network

The main access to Angus Place's pit top is via the Castlereagh Highway and Wolgan Road. The project will continue to use these roads as the key access routes to the existing pit top.

ii Proposed changes and impacts

The project is expected to have a negligible impact on approved traffic impacts at the pit top however there will be an increase in traffic along Wolgan Road as a result of the recommencement of operations at the mine after being in care and maintenance for a number of years.

Analysis undertaken for the APMEP will be reviewed and updated for the project. This previous analysis indicated that there is significant spare capacity and consistently low average delays on local roads. All roads to the existing pit top are therefore expected to remain at level of service 'A'.

A SIDRA analysis of the intersection of Castlereagh Highway and Wolgan Road and Castlereagh Highway and Main Street identified performance will continue at a rating of 'good' and level of service 'A' through to 2024 (considering both predicted annual growth and cumulative impacts from other projects). The updated traffic analysis will consider the effects of the continuation of operations at Angus Place until 2042.

While the project will not generate additional trips, annual average growth and other sub-regional traffic-generating projects will, over the life of the project, increase flows along the Castlereagh Highway.

The maximum number of personnel over a 24-hour period is expected to be approximately 200, with an average of approximately 150. The pit top already contains sufficient on-site parking for the anticipated workforce numbers, with capacity in excess of peak demands to handle contractors and shift changeover periods.

All coal will continue to be transported off-site by truck in accordance with the relevant conditions of SSD-5579 (Western Coal Services Project). Coal transport will not need to occur on the public road network.

The project will not need significant upgrades to the State or local road network.

iii Treatments and assessment approach

An updated traffic impact assessment (TIA) will be prepared for the project to assess potential impacts to road and intersection capacity, traffic safety and accessibility. The assessment will be undertaken in reference to:

- *Guide to Traffic Generating Developments* (Transport for NSW (formerly RTA) 2002);
- *Guide to Traffic Management* (Austroads 2019a);
- *Guide to Road Design* (Austroads 2015);
- *Temporary Traffic Management and Road Safety* (Austroads 2019b); and
- Lithgow LEP.

The TIA will further assess and identify potential project impacts and mitigation measures. Key areas of focus will be the assessment of cumulative impacts of nearby industrial operations including road safety and impacts to travel times and accessibility.

7.2.9 Socio-economic

i Existing environment

The Lithgow area has thrived for many generations based on the socio-economic benefits that mining has provided. The proposed mining areas are located wholly within the Newnes State Forest, and away from private landholdings and residences. The social impact assessment (SIA) for the APMEP (James Marshall and Co 2014) assessed how individuals and groups utilise the proposed mining area in relation to the Newnes State Forest and Newnes Plateau based upon site visits, feedback and outcomes from community stakeholder engagement.

The EIS prepared for the APMEP found that employment in the mining industry provides significant flow-on effects for local support services via direct and indirect employment opportunities across a range of sectors. Centennial has recently undertaken a socio-economic profile for its western region operations for the period 2017-2019 (Aigis Group 2020), which shows that in terms of social capital and economic benefits:

- Centennial employs all coal mining industry workers in the Lithgow LGA, which contributes around 11% of the total LGA workforce;
- the majority of Centennial's employees (around 79%) live in the LGA;
- State royalties of around $30 million accrue from the operations yearly;
- between $4.5 million – $6.9 million a year is injected into the local economy through employee wages;
- most employees and their families participate in local regular sport, social or community activities; and
- Centennial supports a range of local community initiatives, schools and sporting clubs.

It is clear that that Centennial's employees have strong connections to their local communities demonstrated via shopping in the communities where they live, coaching junior sport, participating in social activities, supporting local fundraising activities.

ii Proposed change and impacts

The project will employ around 200 full time equivalent workers. The workforce is expected to be drawn from within Lithgow and surrounding areas. Therefore, it is anticipated that similar social impacts and benefits are likely to accrue from the project that were anticipated to occur as a result of APMEP.

iii Treatments and assessment approach

An update to the 2013 SIA will be undertaken for the project in accordance with *Social Impact Assessment Guideline State Significant Projects* (DPIE 2021). It will consider the following themes:

- Any increased demand for local and regional infrastructure and services (such as housing, childcare, health, education and emergency services).
- Impacts on social amenity, particularly impacts on local residents of and other nearby landowners and residents.
- A detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the development, including any infrastructure improvements or contributions and/or voluntary planning agreement or similar mechanism.

DPIE's scoping worksheets have been completed for the project (Appendix A).

An economic assessment will also be conducted for the project, with reference to the economic assessment undertaken for the APMEP and in accordance with the *Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals* (DPIE 2015).

It is anticipated that the scope of the economic assessment will include:

- a cost benefit analysis;
- a local effects analysis;
- regional economic impact assessment;
- quantification of the economic cost, benefits and impacts of the project at the local, regional and State levels; and
- the provision of recommendations on any relevant management and mitigation.

7.2.10 Rehabilitation and decommissioning

i Existing environment

Centennial Angus Place placed the mine in care and maintenance and it currently undertakes rehabilitation activities in accordance with the MOP. As the project is an underground mine, rehabilitation will be limited to the decommissioning and rehabilitation of surface infrastructure sites.

ii Proposed changes and potential impacts

Key issues for the assessment include:

- the restoration of land to uses compatible with surrounding land-uses in accordance with relevant guidelines and regulations; and
- the progressive decommissioning of infrastructure and rehabilitation of associated disturbance areas no longer required for operations.

iii Treatments and assessment approach

An assessment of mine closure and rehabilitation impacts associated with the project will be undertaken and documented in the EIS. The assessment will be completed considering the proposed changes and potential impacts with reference to the following guidelines and policies, as well as in consideration of the Resources Regulator's operational rehabilitation reforms:

- *ESG3: Mining Operations Plan Guidelines* (DPIE 2013);
- *Integrated mine closure: Good Practice Guide*, 2nd Edition (ICMM 2019);
- *Mine closure - Leading practice sustainable development program for the mining industry* (Department of Foreign Affairs and Trade 2016); and
- *Strategic Framework for Mine Closure* (ANZMEC-MCA 2000).

The assessment will include:

- consideration of existing rehabilitation commitments;
- consideration of potential biodiversity impacts and identification of mechanisms to minimise impacts;
- an assessment of potential final land uses and contemporary mechanisms to achieve identified outcomes;
- mechanisms to achieve final land use outcomes, whether this be for agricultural or biodiversity outcomes;
- identify public safety requirements;
- identify the requirements of progressive rehabilitation; and
- consideration of the disturbance of rehabilitated areas to minimise biodiversity impacts.

Rehabilitation activities will be undertaken under the relevant MOP in place following approval of the project.

7.3 Matters requiring no further assessment

7.3.1 Visual amenity

i Existing environment

Angus Place's pit top site has been in its current location since the late 1970s. The components of the pit top will not materially change as a result of the project. The nearest residence is around 800 m from the pit top, and are existing tree screens on the roadside verges adjacent to the pit top shield views from residential receivers and passing motorists.

Newnes State Forest shields views from the northern viewshed. Remote items of plant and infrastructure are within areas of Newnes State Forest on the Newnes Plateau where they would not be visible from residential receivers. There has not been any significant land-use changes or new residences near the pit top. Therefore, the visual impacts from nearby residential receivers will not change from that previously assessed and approved.

Existing visual mitigation measures will continue to be applied to the project, and consist of:

- cladding elevated conveyors and new infrastructure components at the pit top in neutral coloured steel sheeting;
- designing and installing lights to Australian Standard 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting to minimise light spill and direct shining towards receptors;
- burying pipelines and powerlines on the Newnes Plateau and revegetating cleared corridors; and
- progressively decommissioning Newnes Plateau infrastructure and rehabilitating infrastructure sites to an appropriate land use at the completion of their operational life.

ii Proposed changes and impacts

The project is expected to not change the visual impacts at the pit top. Infrastructure required to facilitate the supply of water to the McPhillamys Gold Project will not be visible from residential receivers.

iii Treatment and assessment approach

No further assessment of visual amenity impacts is proposed as part of the EIS.

7.3.2 Hazards and risks

Hazards and risks, inclusive of bushfire, associated with Angus Place are known and are not envisaged to change as a result of the project. The EIS will confirm the existing location of hazardous items and note identified risks.

Abbreviations

ACHA	Aboriginal cultural heritage assessment
ACHMP	Western Region Aboriginal Cultural Heritage Management Plan
AIP	Aquifer Interference Policy
Angus Place	Angus Place Colliery
APMEP	Angus Place Mine Extension Project
AQGHGMP	Western Region Air Quality and Greenhouse Gas Management Plan
BAM	Biodiversity Assessment Method
BCS	Biodiversity Conservation and Science Directorate
BDAR	biodiversity development assessment report
Centennial	Centennial Coal Company Limited
Centennial Angus Place	Centennial Angus Place Pty Limited
DAWE	Commonwealth Department of Agriculture, Water and Environment
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EIS	environmental impact statement
EPA	Environment Protection Authority
EP&A Act 1979	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
Forestry NSW	Forestry Corporation of NSW
FTE	full-time equivalent
GDE	groundwater dependent ecosystem
GHG	greenhouse gas
IPC	Independent Planning Commission
km	kilometre
LEP	local environmental plan
LGA	local government area
Lithgow LEP	Lithgow Local Environmental Plan 2014
Mining SEPP	State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007

ML	megalitre
MNES	matters of national environmental significance
MOP	Care and Maintenance Mining Operations Plan
MPPS	Mount Piper Power Station
Mtpa	million tonnes per annum
NorBE	neutral or beneficial effect
NSW	New South Wales
PCT	plant community type
RAP	registered Aboriginal party
RFS	NSW Rural Fire Service
RNMEG	Regional NSW Mining Exploration Group
ROM	run-of-mine
SCSS	Springvale Coal Services Site
SDWTS	Springvale Delta Water Transfer Scheme
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State significant development
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SWTP	Springvale Water Treatment Project
TfNSW	Transport for NSW
WAL	water access licence
Western Region CCC	Western Region Combined Community Consultative Committee
WMP	Angus Place Water Management Plan
WSP	water sharing plan

References

Aigis Group 2020, *Socioeconomic Profile Centennial Coal Western Operations.*

ANZMEC-MCA 2000, *Strategic Framework for Mine Closure*.

Austroads 2015, *Guide to Road Design*.

- 2019a, *Guide to Traffic Management*.
- 2019b, *Temporary Traffic Management and Road Safety.*

Centennial 2019, *Care and Maintenance Mining Operations Plan – Angus Place Colliery*.

- 2021, *Noise Management Plan Western Region.*

DEC 2006, *Assessing Vibration: A Technical Guideline*.

DECC 2009, *Interim Construction Noise Guideline.*

DECCW 2010a, *Aboriginal Community Consultation Requirements for Proponents*.

- 2010b, *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW*.
- 2011, *Road Noise Policy*.

DFAT 2016, *Mine Closure - Leading Practice Sustainable Development Program for the Mining Industry*.

DoEE 2019, *National Greenhouse Accounts Factors*.

DPE 2013, *ESG3: Mining Operations Plan Guidelines*.

- 2017, Central West and Orana Regional Plan 2036.

DPIE 2015, *Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals*

- 2020a, *Preparing a Scoping Report – State Significant Development Guide.*
- 2020b, *Undertaking Engagement Guide – Guidance for State Significant Projects*.
- 2020c, *Guideline for applying the Biodiversity Assessment Method at severely burnt sites.*
- 2021, *Social Impact Assessment Guideline State Significant Projects.*

EPA 2016, *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*.

- 2017, *NSW Noise Policy for Industry*.

ICMM 2019, *Integrated mine closure: Good Practice Guide (2nd edition).*

James Marshall and Co 2014, *Social Impact Assessment – Angus Place Mine Extension Project*. Report prepared by James Marshall and Co for Centennial Angus Place Pty Limited.

NSW Government 2018, *Voluntary Land Mitigation and Acquisition Policy*.

- 2020, *Strategic Statement on Coal Exploration and Mining*.

NSW Heritage Council 2001, *Assessing Heritage Significance*.

- 2002, *Statements of Heritage Impact*.

- 2009, *Assessing Significance for Historical Archaeological Sites and 'Relics'*.

NSW Heritage Office 2000, *Assessing Historical Association: A guide to State Heritage Register Criterion B - Heritage Information Series.*

- 2006, *Assessing Historical Importance: A guide to State Heritage Register Criterion A*.

RTA 2002, *Guide to Traffic Generating Developments*.

Appendix A

Scoping worksheets

Environmental Impact Statement (EIS) scoping worksheet for:	*Angus Place West*	Date:	28-Jul-21

What matters might be impacted?			What activities might cause an impact?	What are the characteristics of the impact?						How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?	
Social and environmental matters I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements *Click on the matter for a description, or the link above for full glossary*			Without any mitigation, is the proposal likely to impact on the matter? *(Select from list)*	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. *E.g. construction noise will be heard at nearby school* If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? *(Manual entry)*	Is the impact, without mitigation, expected to cause a material effect with regard to its... *(Answer 'Y', 'N' or '?')* *Click on characteristic for description, or the link above for further detail*				Does the impact need assessment in the EIS? *(Auto fills)*	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? *(Select from list)*	What safeguards and management measures are expected to be required to address the impact? *(Select from list)*	Are there community or other stakeholder concerns regarding the impact or activity? *(Based on engagement with community and other stakeholders)* *(Select from list)*	Expected level of assessment and/or engagement required *(Auto fills)*	Relevant section in Scoping Report *(Manual entry)*
					extent?	duration?	severity?	sensitivity?						
What does the proposal mean for people?	AMENITY	acoustic	Unlikely	Utilisation of haul road	N	N	N	N	No	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
			Likely	Coal handling / stockpile management at AP pit-top	?	?	?	?	Unknown	No	Project Specific	Yes	Key Issue + Focussed Engagement	
			Likely	General pit top activities	?	?	?	?	Unknown	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		visual	Unlikely	Stockpile	N	N	N	N	No	No	Standard	Yes	Other Issue + Focussed Engagement	
		odour	n/a											
		microclimate	n/a										No assessment necessary - Worksheet only	
		other - please specify												
	ACCESS	access to property	Unlikely	Due to the nature of the proposed project as a first workings project there will be no surface subsidence (<20mm). Therefore there will be no impact on the structure and safety of the driveway access points for surrounding neighbours.									Scoping Report	
		utilities	Unlikely	Due to the nature of the proposed project as a first workings project there will be no surface subsidence (<20mm). Therefore the will be no impact from subsidence to power poles and electricity and communication lines in the area.									Scoping Report	
		road and rail network	Unlikely	Employee and contractor traffic below currently approved threshold						Unknown	Project Specific		Key Issue	
		offsite parking	Unlikely	Existing car park will cater for proposed employee/contractors						Unknown	Project Specific		Key Issue	
		other - please specify												
	BUILT ENVIRONMENT	public domain	Unlikely	Newnes State Forest will not be affected by proposed first workings mining or existing infrastructure.									Scoping Report	
		public infrastructure	unlikely	The proposed project is first workings only and will therefore result in no surface subsidence (<20mm).									Scoping Report	
		other built assets	Unlikely	The proposed project is first workings only (less than 20mm of subsidence) and will therefore not impact surface dwellings, surface infrastructure and surface improvements.							Standard		Other Issue	
		water extraction boreholes	Likely	Proposed mining will affect two privately owned boreholes.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
	HERITAGE	natural	Unlikely	First workings mine design resulting in less the 20mm surface subsidence	?	?	?	?		Unknown	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		historic heritage	Unlikely	First workings mine design resulting in less the 20mm surface subsidence	?	?	?	?	Unknown	Unknown	Project Specific		Key Issue	
		Aboriginal cultural	Unlikely	First workings mine design resulting in less the 20mm surface subsidence. ACHA being completed as part of project with RAP fieldwork.	?	?	?	?	Unknown	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		built	Unlikely	First workings mine design resulting in less the 20mm surface subsidence	?	?	?	?	Unknown	Unknown	Standard		Other Issue	
		other - please specify												
	COMMUNITY	health	Unlikely	Air quality assessment to be completed including TSP and PM10 particulate matter assessment									Scoping Report	
		safety	Unlikely	Impacts to community safety as a result of subsidence impacts are unlikely due to the proposed project being first workings only resulting in no surface subsidence (<20mm).									Scoping Report	
		services and facilities	n/a										No assessment necessary - Worksheet only	
		cohesion, capital and resilience	Likely	Impacts to private landowners within Project Application Area who will likely raise concerns regarding the proposals in addition to material impacts regarding borehole impacts.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		housing	n/a										No assessment necessary - Worksheet only	
		other - please specify												
	ECONOMIC	natural resource use	Likely	Utilisation of coal resource for energy security	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		livelihood	Likely	Employment - Economic Assessment	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		opportunity cost	likely	Conservative mine design to minimise subsidence related impacts whilst ensuring financial viability of the project.	Y	Y	N	N	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		other - please specify												
for the natural environment?	AIR	particulate matter	Likely	Dust emissions from pit top operations	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		gases	Likely	Emissions from pit top operations and vehicles	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		atmospheric emissions	Likely	GHG emissions as part of proposed operations	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		other - please specify												
	BIODIVERSITY	native vegetation	Unlikely	Conservative mine design to minimise subsidence related impacts and any disturbance will only occur within existing cleared areas.	?	?	?	?	Unknown	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		native fauna	Unlikely	Conservative mine design to minimise subsidence related impacts and any disturbance will only occur within existing cleared areas.	?	?	?	?	Unknown	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		other - please specify												
		stability and/or structure	Unlikely	Conservative mine design to minimise subsidence related impacts.							Standard		Other Issue	

Environmental Impact Statement (EIS) scoping worksheet for:			*Angus Place West*								Date:	28-Jul-21	
What matters might be impacted?			**What activities might cause an impact?**	**What are the characteristics of the impact?**						**How will the impact be managed?**	**What are the community and other stakeholder views?**	**What level of assessment and engagement is required in the EIS preparation phase?**	
Social and environmental matters **I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements** ***Click on the matter for a description, or the link above for full glossary***			**Without any mitigation, is the proposal likely to impact on the matter?** ***(Select from list)***	**If there is a 'likely' impact:** **1. list the activities expected to cause the impact; and** **2. if applicable, list the receptor being impacted and its status.** *E.g. construction noise will be heard at nearby school* **If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location?** ***(Manual entry)***	**Is the impact, without mitigation, expected to cause a material effect with regard to its...** ***(Answer 'Y', 'N' or '?')*** ***Click on characteristic for description, or the link above for further detail***				**Does the impact need assessment in the EIS?** ***(Auto fills)***	**Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)?** ***(Select from list)***	**What safeguards and management measures are expected to be required to address the impact?** ***(Select from list)***	**Are there community or other stakeholder concerns regarding the impact or activity?** ***(Based on engagement with community and other stakeholders)*** ***(Select from list)***	**Expected level of assessment and/or engagement required** ***(Auto fills)***	**Relevant section in Scoping Report** ***(Manual entry)***
					extent?	duration?	severity?	sensitivity?						
What does the proposal mean	LAND	soil chemistry	Unlikely	Conservative mine design to minimise subsidence related impacts.							Standard		Other Issue	
		capability	Unlikely	Conservative mine design to minimise subsidence related impacts.									Scoping Report	
		topography	Unlikely	Conservative mine design to minimise subsidence related impacts.									Scoping Report	
		other - please specify												
	WATER	water quality	Likely	Proposed mining has the potential to affect water quality	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		water availability	Likely	Proposed mining has the potential to affect water availability	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		hydrological flows	Likely	Proposed mining has the potential to affect hydrological flows	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		hydrogeological flows	Likely	Proposed mining has the potential to affect hydrogeological flows	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
What risks does the proposal face?	RISKS	coastal hazards	n/a										No assessment necessary - Worksheet only	
		flood waters	n/a										No assessment necessary - Worksheet only	
		bushfire	Unlikely	Angus Place Colliery has an existing Bushfire Management Plan									Scoping Report	
		undermining	Likely	Conservative mine design to minimise subsidence related impacts.	N	N	N	N	No		Project Specific	Yes	Key Issue + Focussed Engagement	
		steep slopes	Unlikely	There are steep slopes that exist in areas above the proposed mining area. Conservative mine design to minimise subsidence related impacts.							Project Specific		Key Issue	
		other - please specify												

Social impact assessment (SIA) scoping worksheet for:			Angus Place West			Date		28-Jul-21		
Scoping results from EIS Worksheet						Is there a social impact?		What information will be required to assess the social impact?		
Social and environmental matters *Click on a matter below for brief description, or refer to full glossary*			Outline of impact *(Auto fill from EIS worksheet)*	Is a material effect on the matter expected? *(Auto fill from EIS worksheet)*	Is there community or other stakeholder concerns regarding the impact or activity? *(Auto fill from EIS worksheet)*	With regard to the matter expected to be impacted, will there be a social impact? *Select this cell for brief description, or click link above for further detail* Yes/No *(Select from list)*	If yes, outline the social impact *(Manual entry, if not already covered in column D)* If no, outline why *(Manual entry)*	Are impacts on the matter expected to require a non-SIA specialist study? *(Auto fill from EIS worksheet, then manually enter non-SIA report type)*	Will the non-SIA specialist study address the social impact? *Click on link above for further detail on potential classifications* *(Select from list)*	Level of assessment for the social impact in the SIA *Click on link above for further detail on potential classifications* *(Auto fills)*
What does the proposal mean for people?	AMENITY	acoustic	Utilisation of haul road	Yes	Yes	Yes		Noise Impact Assessment	Yes - in part	Specialist Report
		visual	Stockpile	Yes	Yes	Yes		No	No	Specialist Report
		odour								
		microclimate								
		other - please specify								
	ACCESS	access to property								
		utilities								
		road and rail network	Employee and contractor traffic below currently approved threshold	Yes		Yes		Traffic Impact Assessment	Yes - in part	Standard SIA
		offsite parking						Traffic Impact Assessment		
		other - please specify								
	BUILT ENVIRONMENT	public domain								
		public infrastructure								
		other built assets	The proposed project is first workings only (less than 20mm of subsidence) and will therefore not impact surface dwellings, surface infrastructure and surface improvements.	Yes		Yes		Subsidence Assessment	Yes - in part	Standard SIA
		other - please specify	Proposed mining will affect two privately owned boreholes.	Yes	Yes	Yes		Groundwater Impact Assessment	Yes - in part	Standard SIA
	HERITAGE	natural	First workings mine design resulting in less the 20mm surface subsidence	Yes	Yes	Yes		BDAR	Yes - in part	Standard SIA
		cultural	First workings mine design resulting in less the 20mm surface subsidence	Yes				Yes - ACHA	Yes - fully	Desktop SIA
		Aboriginal cultural	First workings mine design resulting in less the 20mm surface subsidence. ACHA being completed as part of project with RAP fieldwork.	Yes	Yes	Yes		Yes - ACHA	Yes - fully	Desktop SIA
		built	First workings mine design resulting in less the 20mm surface subsidence	Yes				Subsidence Assessment	Yes - in part	Standard SIA
		other - please specify								
	COMMUNITY	health								
		safety								
		services and facilities								
		housing	Impacts to private landowners within Project Application Area who will likely raise concerns regarding the proposals in addition to material impacts regarding borehole impacts.	Yes	Yes	Yes		No	No	Comprehensive SIA
		cohesion, capital and resilience								
		other - please specify								
	ECONOMIC	natural resource use	Utilisation of coal resource for energy security	Yes	Yes	Yes		Yes - Economic Impact Assessment	Yes - in part	Standard SIA
		livelihood	Employment - Economic Assessment	Yes	Yes	Yes		Yes - Economic Impact Assessment	Yes - in part	Standard SIA
		business opportunity	Conservative mine design to minimise subsidence related impacts whilst ensuring financial viability of the project.	Yes	Yes	Yes		Yes - Economic Impact Assessment	Yes - in part	Standard SIA
		other - please specify								
What does the proposal mean for the natural environment?	AIR	particulate matter	Dust emissions from pit top operations	Yes	Yes	Yes		Air Quality Assessment	Yes - in part	Standard SIA
		gases	Emissions from pit top operations and vehicles	Yes	Yes	Yes		Air Quality Assessment	Yes - in part	Standard SIA
		atmospheric emissions	GHG emissions as part of proposed operations	Yes	Yes	Yes		GHG Emissions Report	Yes - in part	Standard SIA
		other - please specify								
	BIODIVERSITY	native vegetation	Conservative mine design to minimise subsidence related impacts and any disturbance will only occur within existing cleared areas.	Yes	Yes	Yes		BDAR	Yes - in part	Standard SIA
		native fauna	Conservative mine design to minimise subsidence related impacts and any disturbance will only occur within existing cleared areas.	Yes	Yes	Yes		BDAR	Yes - in part	Standard SIA
		other - please specify								
	LAND	stability and/or structure	Conservative mine design to minimise subsidence related impacts.	Yes				No		
		soil chemistry	Conservative mine design to minimise subsidence related impacts.	Yes				No		
		capability								
		topography								
		other - please specify								
	WATER	water quality	Proposed mining has the potential to affect water quality	Yes	Yes	Yes	Impact of shallow workings on surface and groundwater.	Groundwater Impact Assessment	Yes - in part	Standard SIA
		water availability	Proposed mining has the potential to affect water availability	Yes	Yes	Yes		Groundwater Impact Assessment	Yes - in part	Standard SIA
		hydrological flows	Proposed mining has the potential to affect hydrological flows	Yes	Yes	Yes		Groundwater Impact Assessment	Yes - in part	Standard SIA
		other - please specify	Proposed mining has the potential to affect hydrogeological flows	Yes	Yes	Yes		Groundwater Impact Assessment	Yes - in part	Standard SIA