



DENDROBIUM MINE EXTENSION PROJECT

SCOPING REPORT

DECEMBER 2021

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1 INTRODUCTION

1.1 BACKGROUND

The Dendrobium Mine is an underground metallurgical coal mine situated in the Southern Coalfield of New South Wales (NSW) approximately 8 kilometres (km) west of Wollongong (Figures 1 and 2).

Illawarra Coal Holdings Pty Ltd (Illawarra Metallurgical Coal [IMC]), a wholly owned subsidiary of South32 Limited (South32), is the owner and operator of the Dendrobium Mine.

The Dendrobium Mine supports an existing workforce of 650 personnel, and provides socio-economic benefits at national, state and local levels, delivering product coal from the Dendrobium Coal Preparation Plant (CPP) to the Port Kembla Steelworks for domestic use or to the Port Kembla Coal Terminal (PKCT) for transport to Liberty Primary Steel Whyalla Steelworks or export.

IMC's operations (i.e. the Dendrobium Mine and Appin Mine) play an important role in the Southern Coalfield economic ecosystem, supporting the ongoing employment of approximately 1,800 direct employees, with more than 90 per cent (%) living locally in the Illawarra region.

The broader Southern Coalfield economic ecosystem (which includes the Port Kembla Steelworks, the PKCT and other industries) is estimated to employ some 5,500 direct personnel in the Illawarra region, and inclusive of the indirect workforce, up to approximately 25,000 total jobs nationally (BAEconomics, 2020).

The Southern Coalfield is renowned for producing world-class metallurgical coal, which remains a vital ingredient (along with iron ore) for steelmaking both in Australia and globally and is the only metallurgical coal resource in NSW.

Mining has been undertaken in the Southern Coalfield for more than 100 years and continues to do so through the existing operational mines.

Due to access to high quality metallurgical coal resources in the Illawarra, steelmaking operations were established at Port Kembla and have occurred in parallel to mining in the Southern Coalfield for more than 90 years.

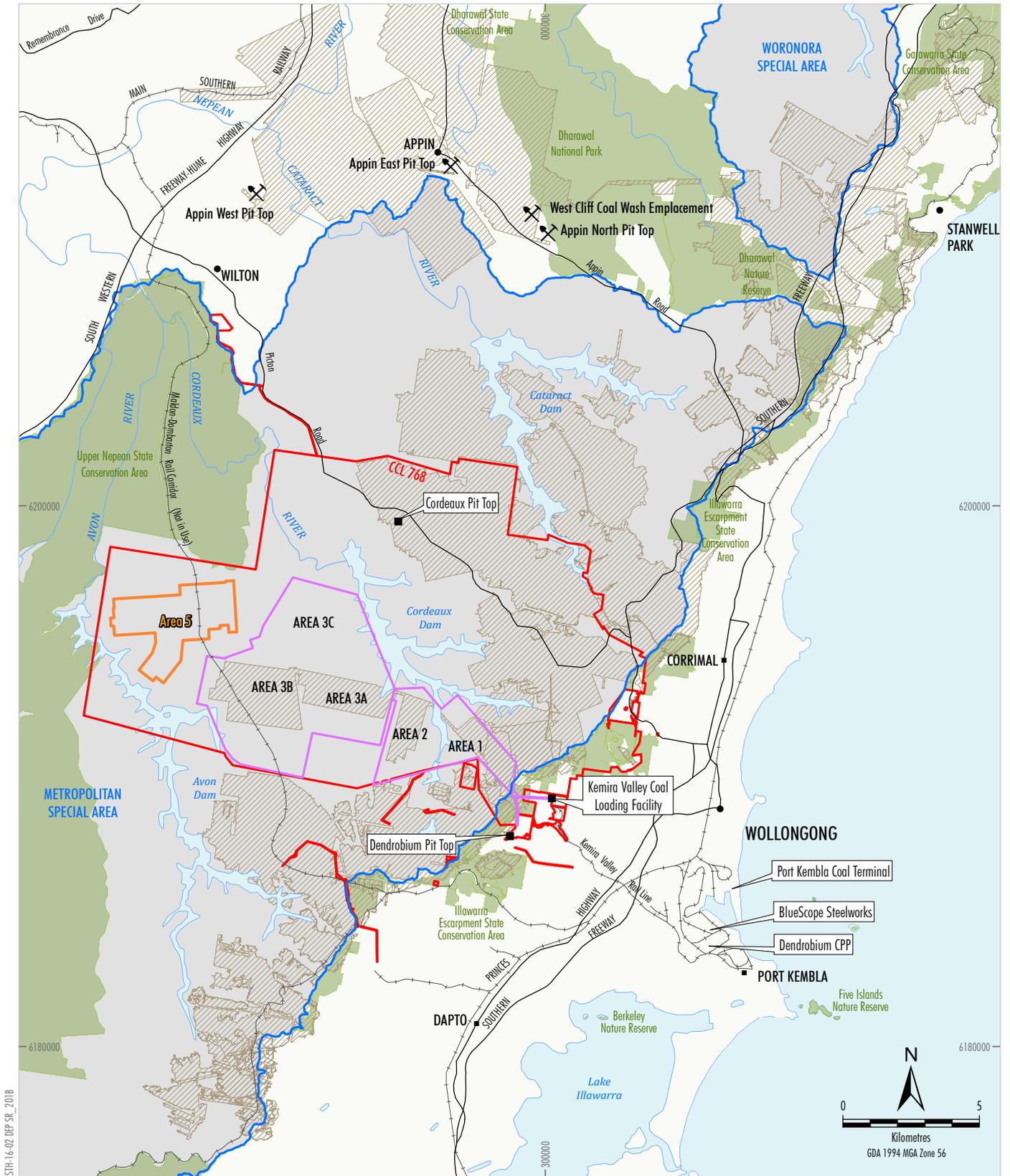
BlueScope owns and operates the Port Kembla Steelworks at Port Kembla in the Wollongong Local Government Area (LGA).

While other operational mines have links to the Port Kembla Steelworks, the existing Dendrobium Mine is unique in that it transports coal via private rail directly to the Dendrobium CPP that is located within the Port Kembla Steelworks precinct (Figures 1 and 2).

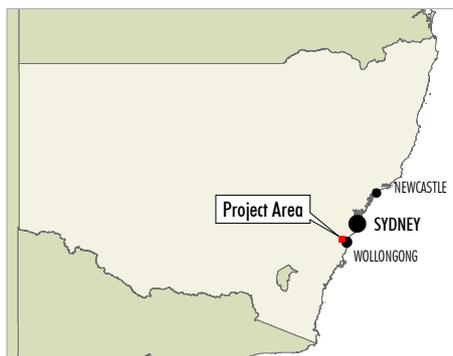
The Dendrobium Mine Extension Project (the Project) proposes to extend the mine life at the Dendrobium Mine to 31 December 2041 through underground mining operations within Area 5 until approximately 2035 (noting this may change depending on mine sequence), as well as use of the existing Dendrobium Mine surface facilities to 2041 to allow receipt of coal mined in approved Area 3C.

Accordingly, the Project is significant to both the Illawarra region and domestic steelmaking in Australia as:

- The Project would support a direct workforce of up to 800 personnel (650 existing workforce, an additional 50 workforce for the Project at full development, and an additional 100 personnel for construction activities).
- Current supplies of Wongawilli Seam coal from Dendrobium Area 3 will cease. Coal from the Project is planned to be blended with Appin coal to produce a premium metallurgical coal product suitable for use in steelmaking. The Project is required to facilitate the continuation of the Dendrobium Mine and to support the ongoing viability of IMC.
- The Project is important to the continued viability of the broader Southern Coalfield economic ecosystem, which is estimated to employ some 5,500 direct personnel in the Illawarra region, and inclusive of the indirect workforce, up to approximately 25,000 total jobs nationally (BAEconomics, 2020).
- Without the Project, the Dendrobium Mine and other IMC operations may become less viable (i.e. the Appin Mine), which in turn may result in the PKCT and other Southern Coalfield mines becoming unviable (the mines in the Southern Coalfield currently operating including IMC's operations, Peabody's Metropolitan Mine and SIMEC's Tahmoor Colliery) employ approximately 2,500 personnel [BAEconomics, 2020]).



SIH-16-02 DEP SR 2018



- LEGEND**
- Dendrobium Mining Lease
 - Road
 - Railway
 - National Park, Nature Reserve and State Conservation Area
 - Historic Mine Workings
 - Declared Catchment Area
 - Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001)
 - Dendrobium Underground Mining Area Extension Project

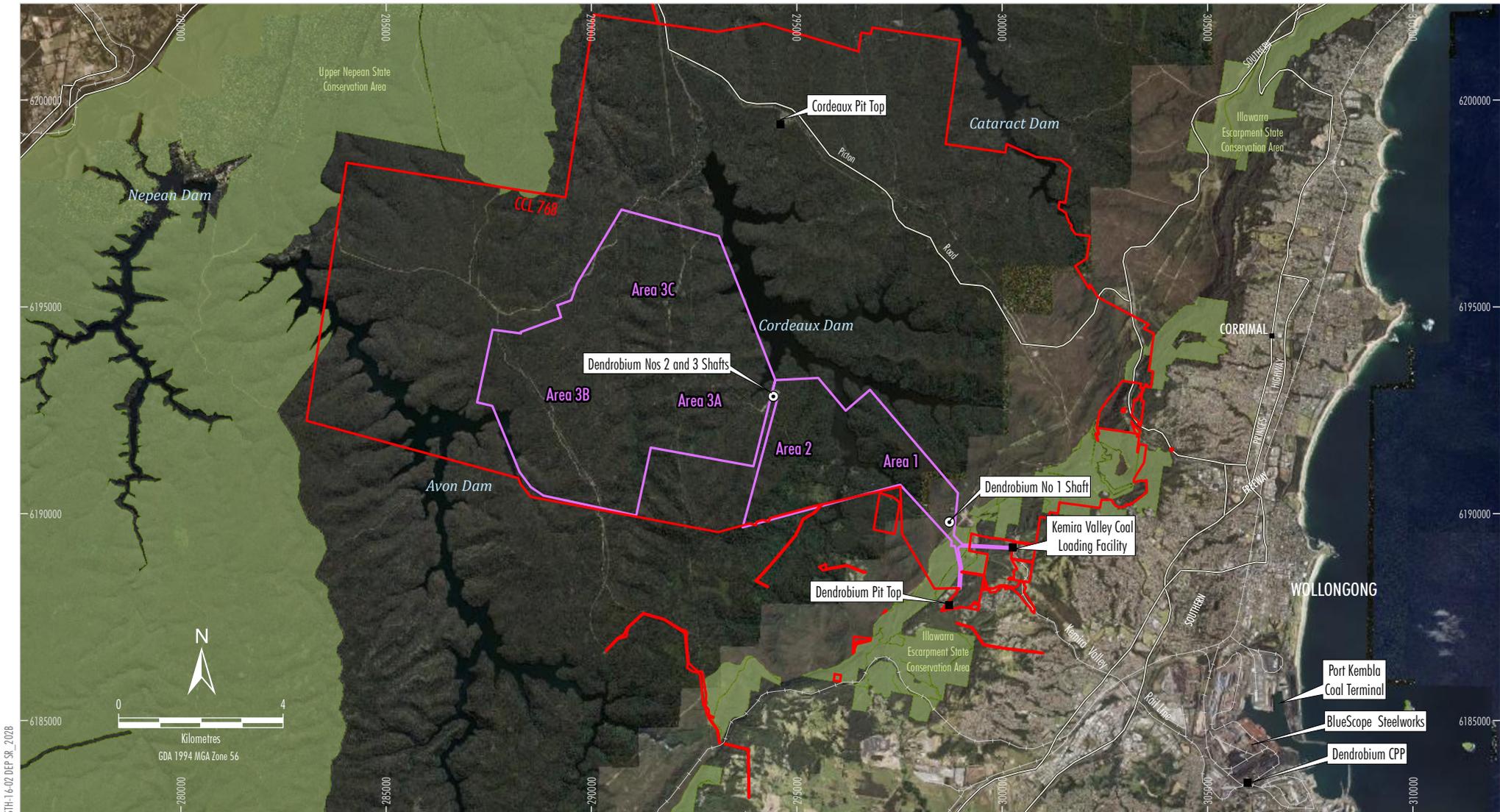
Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);



Illawarra Coal

DENDROBIUM MINE
Regional Location

Figure 1



- LEGEND**
- Dendrobium Mining Lease
 - Road
 - Railway
 - National Park, Nature Reserve and State Conservation Area
 - Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001)

Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);


 Illawarra Coal
D E N D R O B I U M M I N E
General Arrangement of the Approved Dendrobium Mine

Figure 2

- Closure of IMC’s operations could cost the local Wollongong region around A\$6.4 billion per year in lost regional product and the estimated loss to the Australian economy as a whole could be as high as A\$10.7 billion per year (BAEconomics, 2020).
- The Dendrobium Mine (and wider IMC operations) contributes to the local competitive supply of metallurgical coal to the Port Kembla Steelworks and through the PKCT, which the Australian Competition and Consumer Commission (ACCC) indicated was important to the viability of the Port Kembla Steelworks.
- The Project is related to the Port Kembla Steelworks, including the BlueScope blast furnace reline Critical State Significant Infrastructure (CSSI) project which was declared Critical State Significant Infrastructure (CSSI) on 28 May 2021 (i.e. Port Kembla Steelworks Blast Furnace No 6 CSSI).

IMC previously sought to extend mining operations at the Dendrobium Mine through a development application (known as the Dendrobium Mine – Plan for the Future: Coal for Steelmaking [the previous application]).

The NSW Department of Planning, Industry and Environment (DPIE) concluded in its “whole-of-government” assessment report that the previous application was in the public interest and recommended approval (DPIE, 2020a):

The Department considers that South32 has designed the project in a manner that achieves a good balance between maximising the recovery of a coal resource of State significance and minimising the potential impacts on the water resource, biodiversity values and other environmental values of the Metropolitan Special Area.

...

On balance, the Department believes that the Project’s benefits significantly outweigh its residual costs, and that it is in the public interest and is approvable, subject to the recommended conditions.

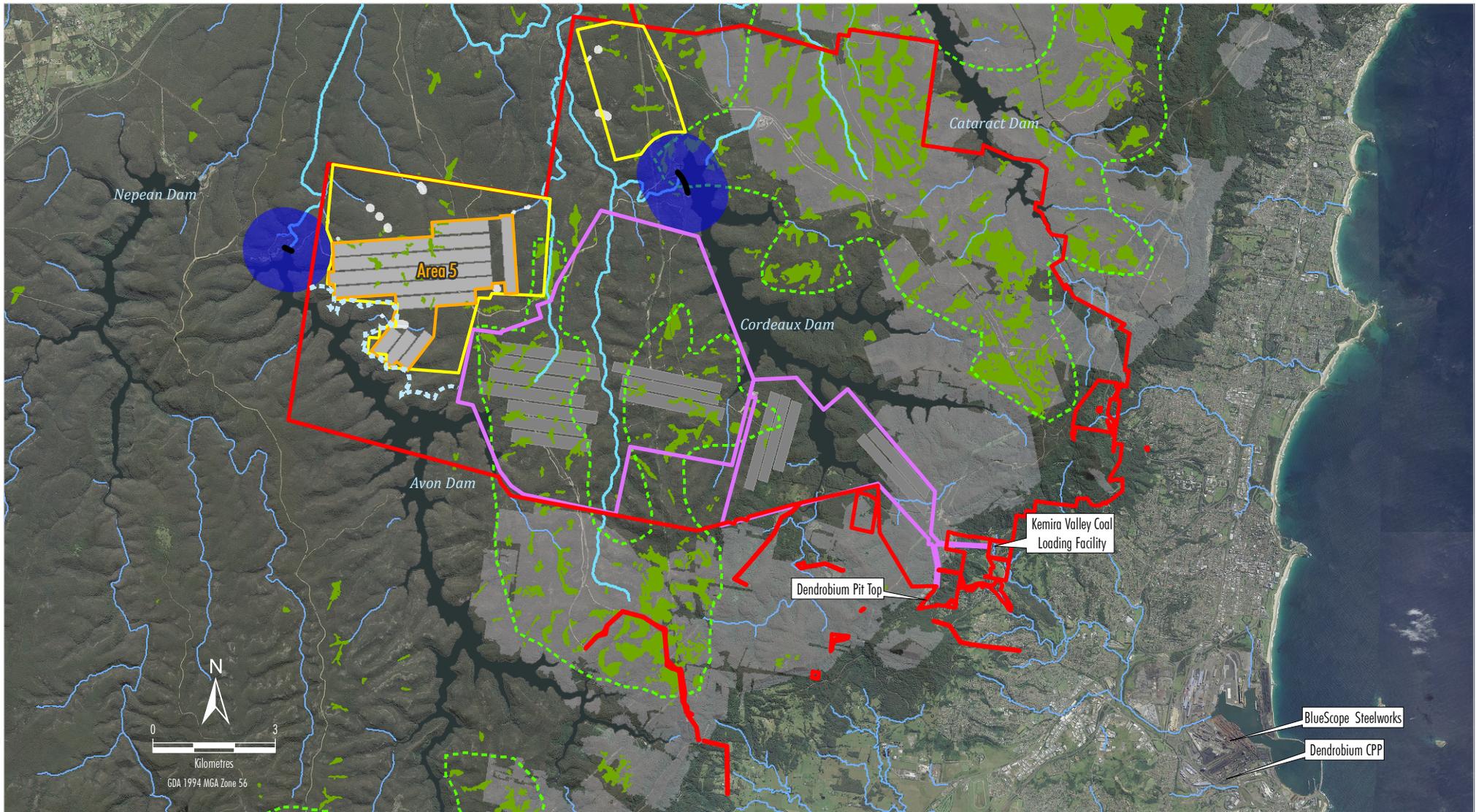
However, this previous application was refused by the Independent Planning Commission (IPC) in February 2021, primarily due to the IPC’s view of potential impacts of the mine development on the Metropolitan Special Area.

IMC has re-designed the Project to reduce the overall footprint thereby reducing potential impacts through (Table 1 and Figure 3):

- approximately 60% reduction in longwall mining area;
- approximately 60% reduction in surface water losses (from the previous application);
- no predicted connective fracturing from the seam-to-surface when using the Tammetta equation;
- no longwall mining beneath 3rd, 4th and 5th order (or above) streams;
- approximately 50% reduction in the length of 1st and 2nd order streams longwall mined beneath;
- approximately 40% reduction in the number of swamps (listed as threatened) longwall mined beneath;
- commitment to avoid longwall mining beneath identified key stream features;
- reduction in number of previously identified Aboriginal heritage sites directly mined under from 22 to six sites (with the likelihood of direct impacts to these six sites expected to be approximately 1 in 10 based on extensive monitoring of subsidence-related impacts to heritage sites);
- no longwall mining beneath previously identified high archaeological significance Aboriginal heritage sites;
- increased longwall mining setback distance (at least 400 m) from the Avon River, Cordeaux River and Donalds Castle Creek;
- minimum longwall mining setback distance of 300 m from the Full Supply Level of the Avon Dam;
- minimum longwall mining setback distance of 1,000 m from dam walls; and
- use of existing infrastructure (namely the Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Kemira Valley Rail Line, Dendrobium CPP, Shaft Sites Nos 1, 2 and 3 and the West Cliff Stage 3 Coal Wash Emplacement) which would reduce the requirement for additional disturbance.

Table 1
Comparison of the Project and Previous Application Mine Plans

Component	Parameter	Previous Application		Project (Revised Area 5)	Change (Project Compared to Previous Application Area 5 & Area 6)
		(Area 5 & Area 6)	(Area 5 only)		
Mine Layout					
<i>Longwall Footprint</i>	Area (km ²)	16.4	13.1	7.2	56% reduction
Surface Water Catchment					
<i>Avon Reservoir</i>	Area directly undermined by longwalls (km ²)	4.5	4.5	3.0	33% reduction
<i>Avon River</i>		5.0	5.0	2.1	58% reduction
<i>Cordeaux River</i>		6.8	3.7	2.1	69% reduction
<i>Cordeaux Reservoir</i>		0.1	0	0.0	100% reduction
Dam Walls					
<i>Avon Dam Wall</i>	Minimum distance from the longwalls (km)	1.0	1.0	1.0	No change
<i>Cordeaux Dam Wall</i>		1.1	3.5	>4.0	> 400% approx. increase (in minimum offset distance)
Watercourses					
<i>Avon River</i>	Total length within 400 m of longwalls (km)	0.34	0.34	0.0	100% reduction
<i>Cordeaux River</i>		0.24	0.0	0.0	100% reduction
<i>Donalds Castle Creek</i>		2.8	2.8	0.0	100% reduction
<i>3rd Order Streams</i>	Total length directly above the longwalls (km)	0.74	0.74	0.0	100% reduction
<i>1st and 2nd Order Streams</i>		27.8	23.6	13.1	53% reduction
Key Stream Features					
<i>Key Stream Features</i>	Number located within 400 m of longwalls	49	39	10	80% reduction
Upland Swamps					
<i>Upland Swamps</i>	Number directly or partially above longwalls	26	22	15	42% reduction
Aboriginal Heritage Sites					
<i>Aboriginal Heritage Sites (High Archaeological Significance)</i>	Number directly or partially above longwalls (previously identified)	1	1	0	100% reduction
<i>Aboriginal Heritage Sites (Low and Medium Archaeological Significance)</i>		21	15	6	71% reduction



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- LEGEND**
- Dendrobium Mining Lease
 - Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001)
 - Historic Mine Workings
 - Previous Application
 - Project Application Underground Mining Area
 - Project Underground Mine Area
 - Project Longwalls

- 3rd Order and Above Watercourses
- 300 m Full Supply Level Setback
- Key Stream Feature
- Setback from Dam Walls
- Coastal Upland Swamp
- Swamp Cluster Setbacks

Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);



D E N D R O B I U M M I N E
Project Mine Design

Figure 3

The Project would create an additional 50 operational jobs, as well as an additional 100 jobs during construction, and support the ongoing employment of approximately 1,800 direct employees across IMC’s operations (i.e. Dendrobium Mine and Appin Mine), with more than 90% living locally in the Illawarra region.

In December 2021, the Project was declared State Significant Infrastructure (SSI) under Section 5.12 of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) by the Minister for Planning, due to its strategic importance to the broader Southern Coalfield economic ecosystem.

1.2 PURPOSE OF THIS DOCUMENT

This document has been prepared to support an application under Section 5.15 of the EP&A Act for approval to carry out a Project designated SSI. This document provides a description of the Project and is to support the preparation of the Secretary’s Environmental Assessment Requirements (SEARs) in accordance with Section 5.16 of the EP&A Act.

The SEARs will identify matters that will need to be addressed in the Environmental Impact Statement (EIS) for the Project.

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Referral (Referral 2017/7855) provided as part of the previous application to the Commonwealth Minister for the Environment was declared to be a ‘Controlled Action’.

The Project will also separately be referred by IMC to the Commonwealth Minister for the Environment for consideration as to whether it constitutes a ‘Controlled Action’ and requires approval under the EPBC Act.

The SEARs for the Project will be prepared by DPIE in accordance with Section 5.16 of the EP&A Act and will include consultation with relevant public authorities and consideration of feedback received from relevant public authorities as well as the Commonwealth.

1.3 STRUCTURE OF THIS DOCUMENT

This document has been prepared in consideration of the *State Significant Infrastructure Guidelines* (DPIE, 2021a), in particular, *Appendix A – Preparing a Scoping Report*.

Other relevant SSI Guidelines that have been considered in the preparation of this document include:

- *Undertaking Engagement Guidelines for State Significant Projects* (DPIE, 2021b) (Section 5);
- *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2021c) (Section 6.3); and
- *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2021d) (Attachment C).

The document is structured as follows:

- | | |
|-----------|---|
| Section 1 | Introduction – provides a summary of the Project and describes the purpose and structure of this Scoping Report. |
| Section 2 | Strategic Context – identifies key strategic issues and describes how the Project will fit with existing land uses in the area and outlines the strategic importance and permissibility of the Project. |
| Section 3 | Project Description – provides a description of the Project, and the types of activities that would be undertaken. |
| Section 4 | Statutory Context – identifies potentially relevant statutory planning instruments and requirements. |
| Section 5 | Engagement – outlines consultation with relevant stakeholders that has already been undertaken and is proposed to be carried out for the Project going forward. |
| Section 6 | Proposed Assessment of Impacts – identifies key environmental issues of relevance to the Project, outlines the proposed level and scope of environmental assessment, and identifies strategies to address the impacts identified. |
| Section 7 | References. |
| Section 8 | Abbreviations and Acronyms. |

1.4 PROPONENT DETAILS

Illawarra Coal Holdings Pty Ltd (ABN 69 093 857 286) is the applicant for the Project¹. The contact details for IMC are:

Illawarra Coal Holdings Pty Ltd
Level 35
108 St Georges Terrace
PERTH WESTERN AUSTRALIA 6000
Phone: (02) 4286 3000

The IMC website is:

<https://www.south32.net/what-we-do/places-we-work/illawarra-metallurgical-coal>

The Dendrobium Mine is located at Cordeaux Road, Mount Kembla NSW 2526.

1.5 PROJECT OVERVIEW

The Project includes extraction of a new underground mining area (known as Area 5) to gain access to additional coal within CCL 768 (Figure 4).

Surface infrastructure required for the Project would primarily include an extension to the life and use of the existing surface operations of the Dendrobium Mine (namely the Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Kemira Valley Rail Line, Dendrobium CPP, Shaft Sites Nos 1, 2 and 3 and the West Cliff Stage 3 Coal Wash Emplacement). The Project would involve the development of some additional supporting surface infrastructure (e.g. ventilation shafts).

The Project would create an additional 50 operational jobs, as well as an additional 100 jobs during construction, and support the ongoing employment of some 1,800 direct employees across IMC's Dendrobium and Appin Mine, with more than 90% living locally in the Illawarra region.

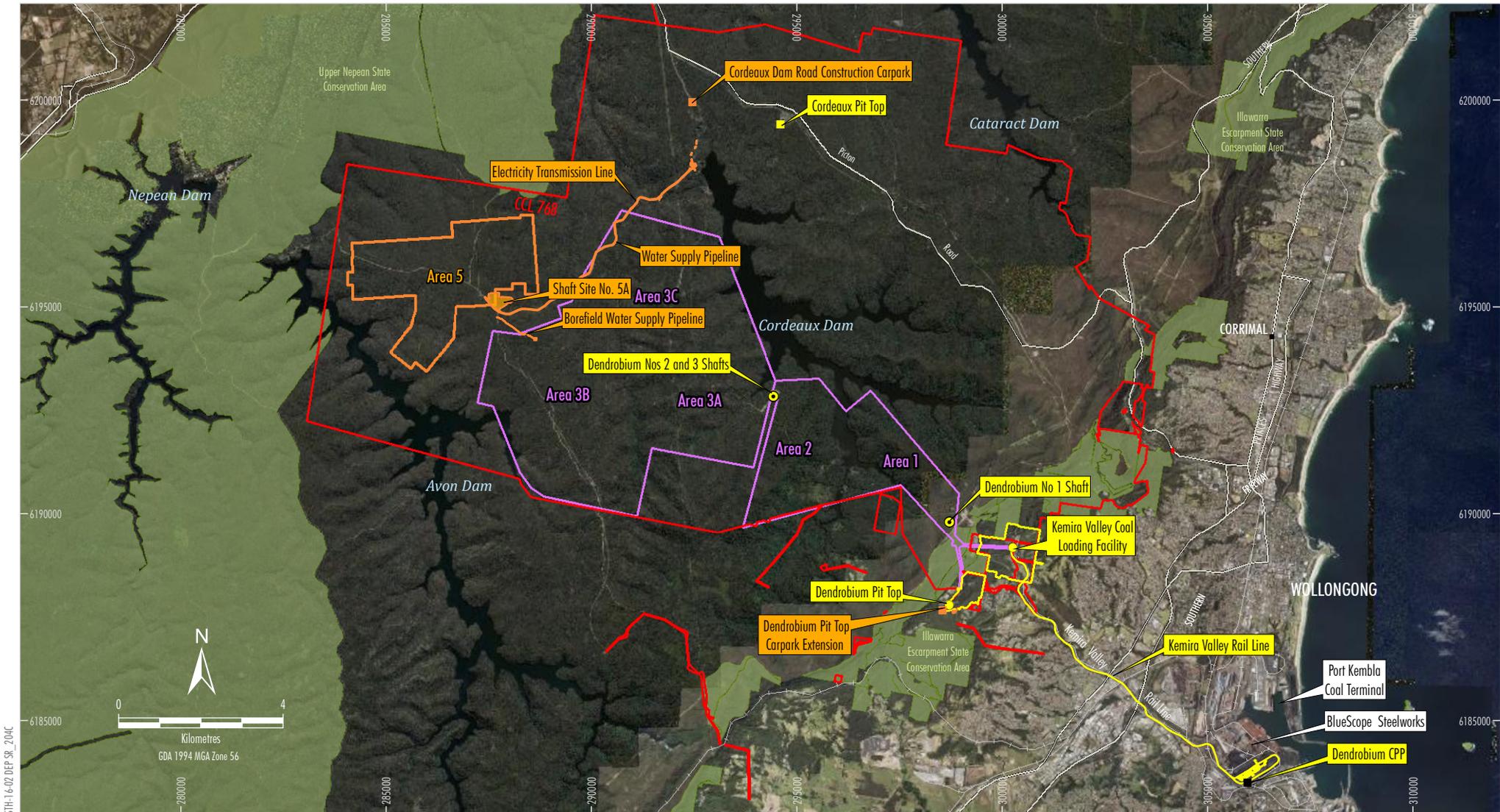
The Project proposes to extend the mine life at the Dendrobium Mine to the end of 2041 through underground mining operations within Area 5 until approximately 2035 (noting this may change depending on mine sequence), as well as use of the existing Dendrobium Mine surface facilities to 2041 to allow receipt of coal mined in approved Area 3C.

The Project mine life extension would also allow the potential for the receipt of Appin Mine Run-of-Mine (ROM) coal at the Dendrobium CPP, if required, to continue to the end of the currently approved Appin Mine life under Project Approval 08_0150 (i.e. 2041).

The Project involves similar, but reduced, development activities relative to the previous application. In summary, the Project would include the following:

- longwall mining of the Bulli Seam in a new underground mining area (Area 5);
- development of underground roadways from the existing Dendrobium Mine underground areas (namely Area 3) to Area 5;
- use of existing Dendrobium Mine underground roadways and drifts for personnel and materials access, ventilation, dewatering and other ancillary activities related to Area 5;
- development of new surface infrastructure associated with mine ventilation and gas management and abatement, water management and other ancillary infrastructure;
- handling and processing of up to 5.2 million tonnes per annum (Mtpa) of ROM coal (no change from the approved Dendrobium Mine);
- extension of underground mining operations within Area 5 until approximately 2035;
- use of the existing Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Dendrobium CPP and Dendrobium Shafts with minor upgrades and extensions until approximately 2041;
- transport of ROM coal from the Kemira Valley Coal Loading Facility to the Dendrobium CPP via the Kemira Valley Rail Line;
- handling and processing of coal from the Dendrobium Mine (including the Project) and IMC's Appin Mine (if required) at the Dendrobium CPP to 2041;
- delivery of coal from the Dendrobium CPP to Port Kembla for domestic use at the Port Kembla Steelworks and Liberty Primary Steel Whyalla Steelworks or export through the PKCT;

¹ At all relevant times in relation to the Project, Illawarra Coal Holdings Pty Ltd will be acting as agent for and on behalf of Dendrobium Coal Pty Ltd (Dendrobium Coal) in respect of all mining and exploration tenements held by Dendrobium Coal.



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- | | |
|---|--|
| <p>LEGEND</p> <ul style="list-style-type: none"> Dendrobium Mining Lease Road Railway National Park, Nature Reserve and State Conservation Area Dendrobium Mine Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001) | <p>Dendrobium Mine Extension Project</p> <ul style="list-style-type: none"> Underground Mining Area Surface Facilities (Existing Dendrobium Mine) Surface Facilities (Proposed Dendrobium Mine Extension Project) |
|---|--|

Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);



DENDROBIUM MINE
General Arrangement
Dendrobium Mine Extension Project

Figure 4

- transport of coal wash by road to customers for engineering purposes (e.g. civil construction fill) for other beneficial uses and/or for emplacement at the West Cliff Stage 3 and/or Stage 4 Coal Wash Emplacement;
- development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement (noting that opportunities for beneficial use of coal wash would be maximised);
- continued use of the Cordeaux Pit Top for mining support activities such as exploration, environmental monitoring, survey, rehabilitation, administration and other ancillary activities;
- progressive development of sumps, pumps, pipelines, water storages and other water management infrastructure;
- controlled release of excess water in accordance with the conditions of Environmental Protection Licence (EPL) 3241 and beneficial use;
- monitoring, rehabilitation and remediation of subsidence and other mining effects; and
- other associated infrastructure, plant, equipment and activities.

An indicative Project general arrangement showing the underground mining area is provided on Figure 5.

The Project does not include longwall mining (i.e. secondary extraction) within approved underground mining Areas 1, 2, 3A, 3B and 3C. These activities will continue to operate in accordance with Development Consent DA 60-03-2001 (as modified).

1.6 RELATED DEVELOPMENTS

This section provides an overview of related developments, including existing and approved developments that would be incorporated into the Project or operated in conjunction with the Project under separate approvals.

A description of the Project's relationship with other developments, including how cumulative impacts would be assessed, is provided in Section 6.3.

1.6.1 Summary of Existing Dendrobium Mine

Approved Dendrobium Mine

The Dendrobium Mine extracts coal from the Wongawilli Seam (also known as the No 3 Seam) within CCL 768 using underground longwall mining methods. The Dendrobium Mine includes the following:

- five approved underground mining domains, named Areas 1, 2, 3A, 3B and 3C (longwall mining is currently being undertaken in Area 3B, with extraction largely complete in Areas 1, 2 and 3A);
- approved operational capacity of up to 5.2 Mtpa of ROM coal; and
- approved mine life until 31 December 2030.

The potential environmental impacts associated with the development of the Dendrobium Mine were assessed in the *Environmental Impact Statement for the Dendrobium Underground Coal Mine* (Olsen Environmental Consulting, 2001). Following a Commission of Inquiry, the Dendrobium Mine was approved on 20 November 2001 by the then NSW Minister for Urban Affairs and Planning under the EP&A Act.

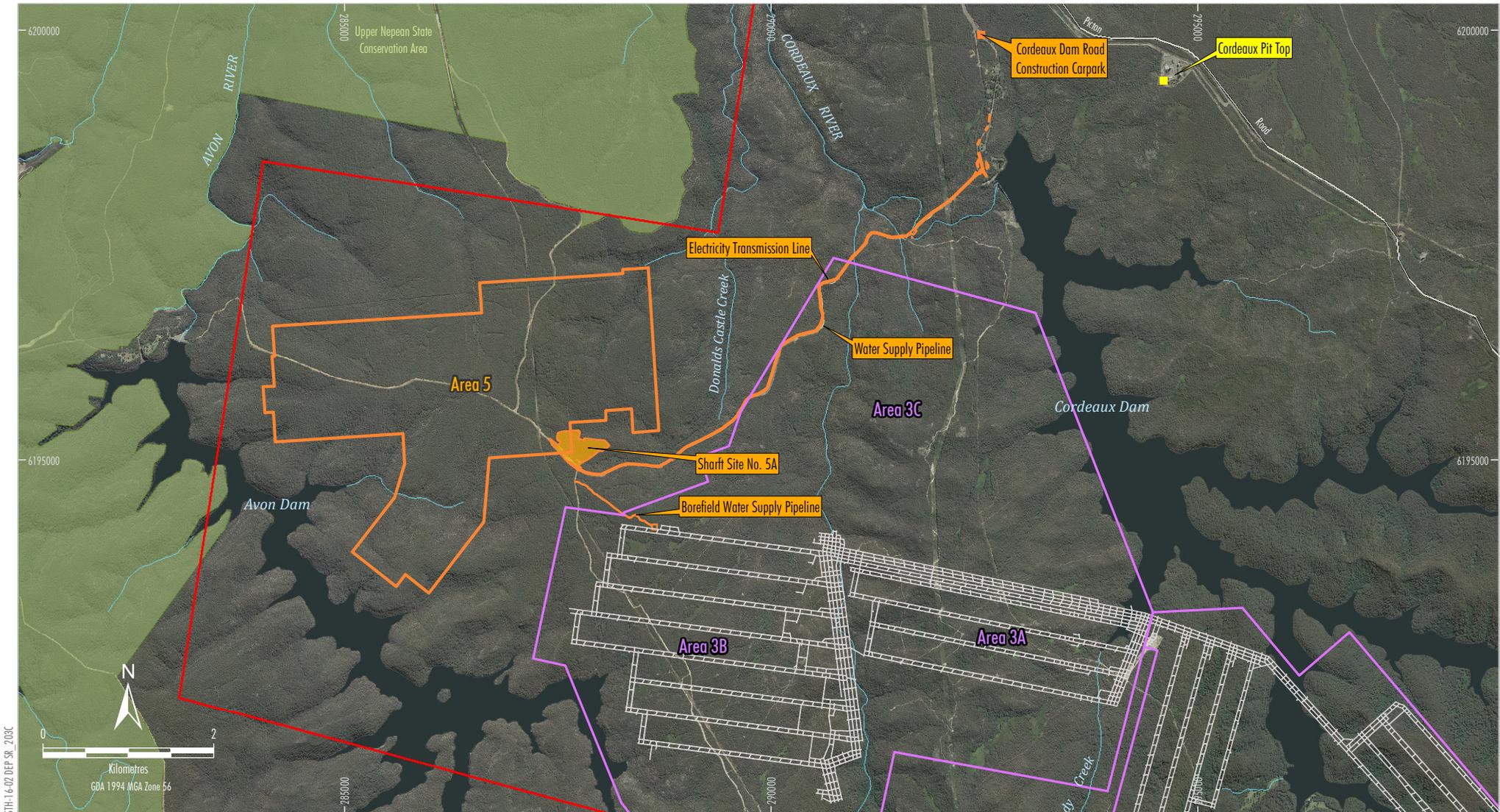
The Project does not include longwall mining (i.e. secondary extraction) within the approved underground mining areas in the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C.

These underground mining operations would continue to operate in accordance with Development Consent DA 60-03-2001 (as modified) (Figures 6 and 7).

However, a number of other existing activities and works currently approved at the Dendrobium Mine would be covered by the Infrastructure Approval for the Project (if granted), including coal clearance from Area 5 via existing roadways, and use of underground ancillary infrastructure (dewatering infrastructure, electricity etc.).

The Project would include an extension to the life of the existing surface operations of the Dendrobium Mine (namely the Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Kemira Valley Rail Line, Dendrobium CPP, Shaft Sites Nos 1, 2 and 3 and the West Cliff Stage 3 Coal Wash Emplacement).

These activities and works are described in Section 3.



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- | | |
|--|--|
| LEGEND | Dendrobium Mine Extension Project |
| Dendrobium Mining Lease | Underground Mining Area |
| Road | Surface Facilities (Existing Dendrobium Mine) |
| National Park, Nature Reserve and State Conservation Area | Surface Facilities (Proposed Dendrobium Mine Extension Project) |
| Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001) | |

Source: Geoscience Australia, 2004; Department of Industry (2018); Department Finance, Services & Innovation (2018);



D E N D R O B I U M M I N E
Dendrobium Mine Extension Project -
Underground Mining Area

Figure 5

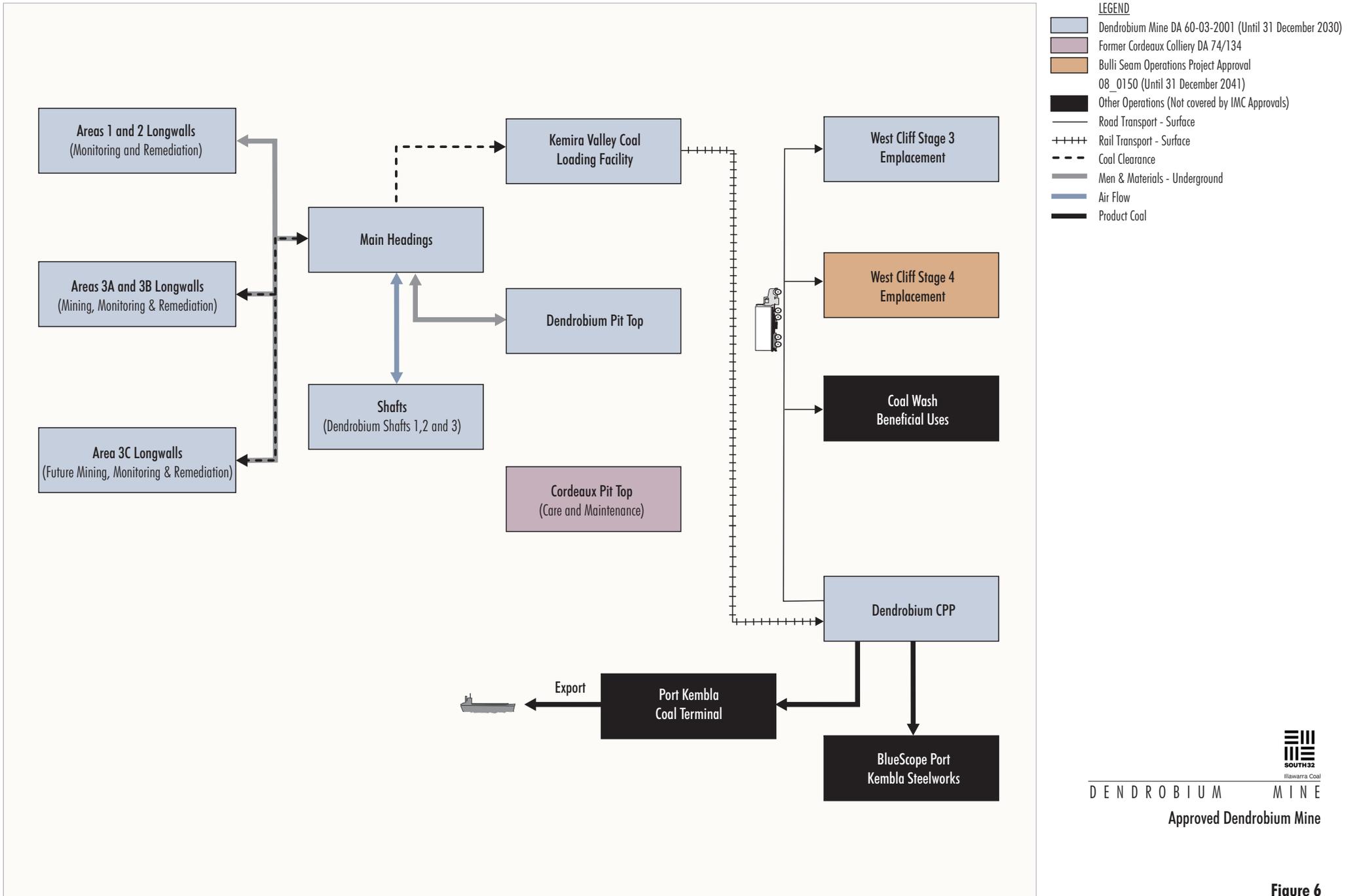


Figure 6

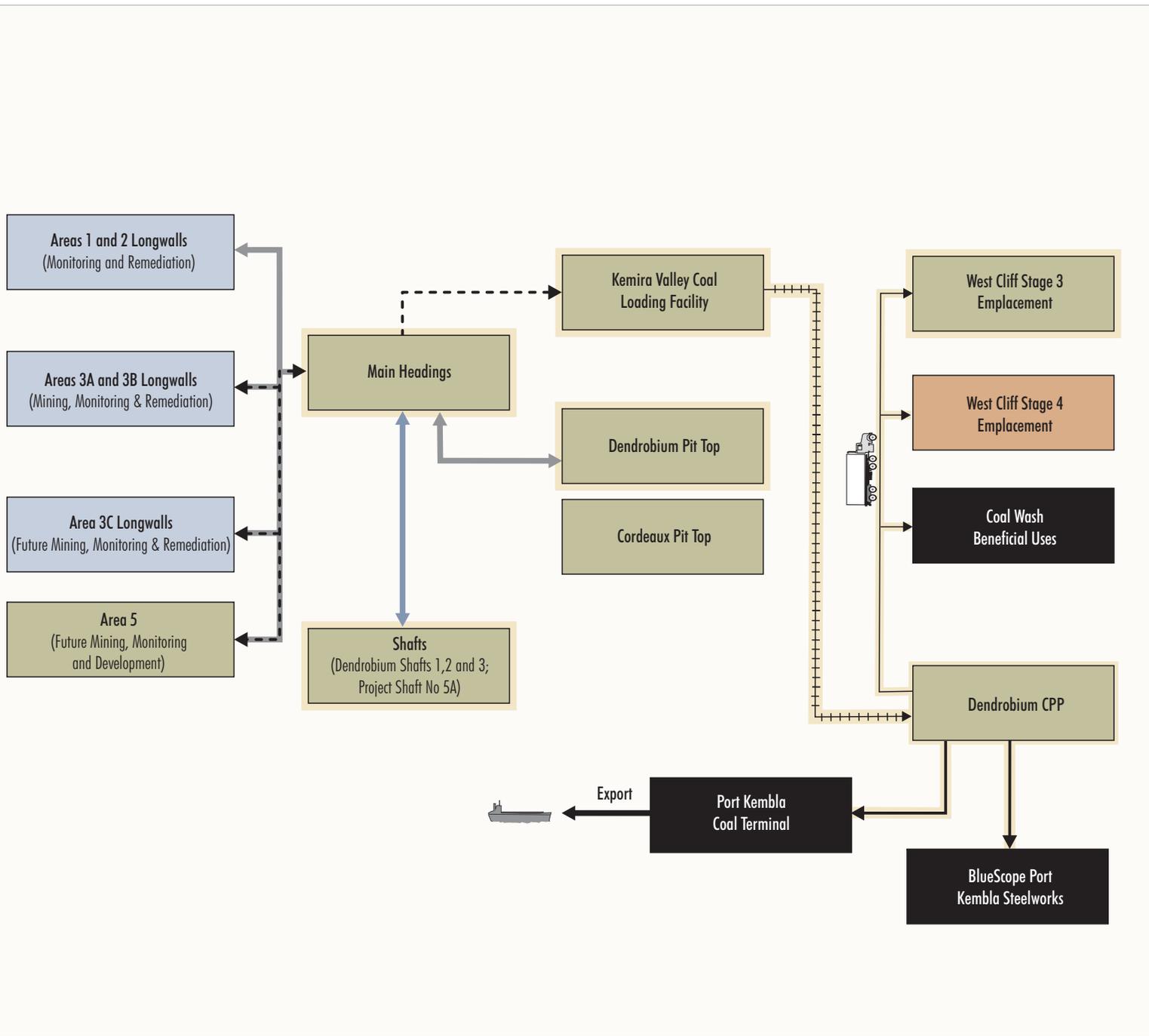


Figure 7

There is uncertainty regarding the ability to mine the remaining reserves in the approved Area 3C and the timing, which is contingent on IMC's ability to effectively drain gas from the seam to achieve levels which facilitate safe extraction of the resource.

Area 3C would be mined under Development Consent DA 60-03-201, however, as the approved mine life of the Dendrobium Mine under Development Consent DA 60-03-2001 is 31 December 2030, the necessary extension to the operational life of the Dendrobium Mine under Development Consent DA 60-03-2001 to allow mining in the majority Area 3C (i.e. areas where there is currently high gas content) after 31 December 2030 would be subject to a separate application for approval.

However, as surface infrastructure would be covered by any new Infrastructure Approval for the Project, it is proposed that the Project life would extend to 2041 (i.e. beyond the expected life of Area 5) to enable receipt of remaining coal mined in Area 3C.

Coal Wash Management

Coal wash produced at the Dendrobium CPP as part of the Project would be transported by road to the West Cliff Stage 3 and Stage 4 Coal Wash Emplacement.

The West Cliff Stage 3 Coal Wash Emplacement is currently approved under the Dendrobium Mine Development Consent DA 60-03-2001, with an extension to the life of the West Cliff Stage 3 Coal Wash Emplacement to 2041 proposed as part of the Project.

1.6.2 Summary of Approved Appin Mine

Coal Wash Management

Development and rehabilitation of the West Cliff Stage 4 Coal Wash Emplacement would continue to be conducted in accordance with Project Approval 08_0150 for the Appin Mine, with current approval until 31 December 2041.

The environmental impacts of the West Cliff Coal Wash Emplacement have been previously assessed as part of the Application for Further Approval of West Cliff Emplacement Stage 3 (Cardno Forbes Rigby, 2007) and the Appin Mine Environmental Assessment (Illawarra Coal, 2009).

The currently approved West Cliff Coal Wash Emplacement has sufficient capacity for the Project and other IMC operations.

This is partly due to IMC's supply of coal wash for engineering purposes (e.g. civil construction fill) and other beneficial uses, reducing the quantity of coal wash required to be emplaced at the West Cliff Coal Wash Emplacement.

Given this, there is no proposed change to the capacity, extent, height, final landform or rehabilitation of the West Cliff Stage 3 and Stage 4 Coal Wash Emplacement required for the Project.

Processing of Appin Mine Coal

ROM coal from the Appin Mine would continue to be transported to the West Cliff CPP for processing, however, could also be transported to the Dendrobium CPP for processing, if required (consistent with Project Approval 08_0150).

The Project would extend the life of the Dendrobium Mine to 2041, which would allow the potential for the receipt of Appin Mine ROM coal at the Dendrobium CPP, if required, to continue to the end of the currently approved Appin Mine life (i.e. 2041).

1.6.3 Summary of Port Kembla Steelworks

The BlueScope Port Kembla Steelworks are located on approximately 742 hectares (ha) of land adjacent to Port Kembla Harbour (Figure 1) and operate under a number of approvals.

The Dendrobium CPP is located within the steelworks and is integrated with BlueScope's operations. Metallurgical coal from IMC's operations that is sold to BlueScope for steelmaking is transported within the steelworks via dedicated infrastructure operated by BlueScope.

1.6.4 Summary of Port Kembla Coal Terminal

The PKCT (Figure 1) operates in accordance with Project Approval 08_0009. It receives coal from a number of operations in the region via a combination of public and private roads and rail.

Product coal from the Project to be sold to customers outside the Illawarra region would be transported to the PKCT via private roads within the steelworks, where it would be stockpiled for transport to Liberty Primary Steel Whyalla Steelworks or for export. The handling and stockpiling of Project coal at the PKCT would occur in accordance with the approvals for the PKCT, and these activities are not part of the Project.

2 STRATEGIC CONTEXT

2.1 PROJECT RATIONALE

2.1.1 Continuation of the Dendrobium Mine

The Project is required to facilitate the continuation of the Dendrobium Mine.

There is uncertainty regarding the ability to mine the remaining reserves in the approved Area 3C and the timing, which is contingent on IMC's ability to effectively drain gas from the seam to achieve levels which facilitate safe extraction of the resource. Current supplies of Wongawilli Seam coal from Dendrobium Area 3 will cease regardless of the Project.

If the Project were not to proceed, the disruption to the production from Dendrobium Mine could accelerate closure of the operation and affect the overall viability of IMC.

Closure of IMC's operations could cost the local Wollongong region around A\$6.4 billion per year in lost regional product and the estimated loss to the Australian economy as a whole could be as high as A\$10.7 billion per year (BAEconomics, 2020).

The NSW Government's *Strategic Statement on Coal Exploration and Mining in NSW* (NSW Government, 2020a) recognises the value of metallurgical coal production to the NSW economy, including:

- Existing industry investment and extension of the life of existing operations (rather than development of greenfield operations).
- The long history of coal mining in NSW, and its close ties with local communities.
- The potential for coal production to deliver significant economic benefits to local communities, including jobs and investment.

IMC is a local company that has been mining metallurgical coal for steelmaking for over 85 years.

In addition, the *Strategic Statement on Coal Exploration and Mining in NSW* recognises the importance of metallurgical coal supply for use in the steelmaking process (NSW Government, 2020a):

The use of coal in the manufacture of steel (coking coal) is likely to be sustained longer as there are currently limited practical substitutes available.

This is reinforced by BlueScope's FY21 sustainability report, in which BlueScope Head of Technologies Chris Page acknowledged that the emergence of green steel alternatives is still under development (BlueScope Steel September 2021 Investor Briefings):

"And we believe the transition to green steel still has a long way to go. It's not going to be a day or a month or a year, it's going to be decades."

The Project would be consistent with the *Strategic Statement on Coal Exploration and Mining in NSW* as:

- the Project has been developed in a manner that considers the benefits and consequences of the development for other land uses, including coexistence with the Metropolitan Special Area;
- the Project would result in the following benefits for the local area, NSW and for the national economy:
 - continuation of current operational employment at the Dendrobium Mine of approximately 650 personnel, and generation of approximately 50 operational jobs and approximately 100 construction jobs for the region, with many more expenditure-induced indirect jobs;
 - enable IMC to continue supporting BlueScope's Port Kembla Steelworks, the Liberty Primary Steel Whyalla and the Australian steelmaking industry, including local and regional businesses;
 - enable IMC to continue supporting the Port Kembla Coal Terminal;
 - State and Commonwealth corporate tax contributions (with estimated contributions of approximately A\$160 million to NSW in real terms over the life of the Project); and
 - payment of significant royalties to the NSW Government over the life of the Project (with estimated contributions of approximately A\$280 million to NSW in real terms over the life of the Project).

Further consideration of the Project on social, environmental and economic grounds, including consideration of the principles of ecologically sustainable development, consideration of alternatives and a cost-benefit analysis, would be included in the EIS. This evaluation would consider the *Guidelines for the economic assessment of mining and coal seam gas proposals* (NSW Government, 2015a).

2.1.2 Strategic Importance to the Port Kembla Steelworks

The existing Dendrobium Mine is integrated with BlueScope's steelmaking operations at Port Kembla and has been a cost effective and reliable source of metallurgical coal for the Port Kembla Steelworks since 2005.

The Project will allow the continued supply of ROM coal from the Dendrobium Mine to the Dendrobium CPP located at BlueScope's Port Kembla Steelworks.

The dependency of the Port Kembla Steelworks on the continued supply of metallurgical coal from local sources in the Southern Coalfield was acknowledged by the NSW Legislative Council (5 May 2021), the DPIE (2020), the independent economic study commissioned by DPIE for the previous application (BAEconomics, 2020) and BlueScope in its submission to the IPC (15 December 2020):

The purpose of BlueScope's submission is to firstly emphasise to the Independent Planning Commission, and the state of NSW, the critical importance of a continuation of mining in the Southern Coalfield of NSW for the ongoing production of iron and steel at the Port Kembla Steelworks.

Metallurgical coal supplies for BlueScope are reliant upon an ongoing commercially viable coal mining sector in the Southern Coalfield. BlueScope understands that export sales are critical to the mining operations remaining commercially viable. Further, local supplies of metallurgical coal are vital for the continuing economic health of the Illawarra region and NSW at large, including the 4,500 direct jobs and contractors, supporting around 8,900 jobs that rely on Port Kembla Steelworks, the largest steel production facility in Australia.

This importance has only been enhanced as the production of domestic steel has become a critical part of:

- a) *The development of sustainable and secure supply chains post the COVID pandemic; and*

- b) *the significant step up in investment in renewable energy projects across NSW because of recently announced NSW Government policies.*

The second purpose of this submission is to emphasise the important role of the Dendrobium Mine, operated by South32, as one key mine that supplies metallurgical coal for steelmaking at Port Kembla.

The Port Kembla Steelworks at Port Kembla is the largest steel production facility in Australia, and one of only two primary iron and steelmaking facilities in Australia.

The importance of local (i.e. Australian) steelmaking is described in the Parliamentary Report *Australia's Steel Industry: Forging Ahead* (Commonwealth of Australia, 2017), which outlines the safety benefits and economic significance of the steel industry to the Australian economy and regional economies where steelmaking facilities are located. In the Illawarra region, the Port Kembla Steelworks (Commonwealth of Australia, 2017):

- directly employs 3,000 people (noting the BlueScope submission to the IPC states 4,500 direct employees);
- indirectly supports about 10,000 jobs in the region (noting the BlueScope submission to the IPC stated 8,900 indirect employees) (with the Illawarra Business Chamber noting in its submission to the Parliamentary Report that the multiplier effect of the steel industry is three to five indirect jobs for every direct job generated by the industry); and
- contribute approximately A\$1.9 billion per annum to the economy, based on analysis conducted by Wollongong City Council (without considering any multiplier effect [i.e. additional economic contributions that would be generated within the broader economy]).

The proximity of the Southern Coalfield coal mines is a major factor in BlueScope's ability to make steel economically.

The Southern Coalfield is renowned for producing world-class metallurgical coal, which remains a vital ingredient for steelmaking both locally and globally. Due to the strategic proximity to local metallurgical coal resources, steelmaking operations were established at Port Kembla and have occurred alongside mining in the Southern Coalfield for more than 90 years. The BlueScope Port Kembla Steelworks was specifically designed to utilise the coals from the Illawarra region.

Ultimately the decision around coal supplies and blends as important ingredients for steelmaking lies with the end user. However, current supplies of Wongawilli Seam coal from Dendrobium Area 3 will cease regardless of the Project. The coal from Area 5 is planned to be blended with Appin coal to produce a premium metallurgical coal product suitable for use in steelmaking in both the domestic and export markets.

IMC currently supplies BlueScope with 60% of its overall metallurgical coal needs. While BlueScope may be able to source alternate supplies of metallurgical coal locally, the quantity and longevity of this option is uncertain and metallurgical coal imported from outside the Illawarra is expected to cost more than local metallurgical coal.

The importance of multiple local metallurgical coal supplies to the Port Kembla Steelworks is outlined by the ACCC (2017), which noted the disadvantages the Port Kembla Steelworks may face if it were required to source metallurgical coal from the Bowen Basin in Queensland (rather than the Illawarra region):

... there is significant additional cost associated with transporting substitutable coking coal from alternative sources to the Australia steelmakers as well as potential capacity constraints limiting the ability of one steelmaker to import large volumes of coal by ship.

... In relation to transportation costs, BlueScope would incur significantly higher freight logistics costs to ship coal from the Bowen Basin via the Queensland coal exporting ports to its steel mill at Port Kembla compared to the costs associated with the supply of coal from South32 and Metropolitan's mines in the Illawarra to its steelworks at Port Kembla. Market inquiries indicate that the cost of transporting coal from the Bowen Basin to Port Kembla is likely to be between \$US10-15 per tonne.

The independent economic assessment undertaken on behalf of DPIE for the previous application by BAEconomics concluded that the worst-case scenario would be closure of Dendrobium Mine and Appin Mine which will lead to broader impacts to the Southern Coalfield economic ecosystem, such as the cessation of coal exports through PKCT and the production of primary steel at the Port Kembla Steelworks (BAEconomics, 2020):

... the ongoing economic viability of the premium hard coking coal mining, iron smelting and coal transport and shipping businesses located in and around the Wollongong-Port Kembla area and elsewhere in the Southern Coalfield of NSW is critically dependent on the continuing success of both Illawarra Metallurgical Coal and BlueScope Steel.

Major changes in either of these businesses would have flow on effects to the other as well as to other significant coal and iron and steel related businesses.

While an alternative mine in the Southern Coalfield may be able to meet demand from the Port Kembla Steelworks, if IMC were not viable this may materially disadvantage the Port Kembla Steelworks as there will be reduced competition between local suppliers. The importance of multiple local metallurgical coal supplies to the Port Kembla Steelworks is consistent with the ACCC findings (i.e. avoidance of a monopoly on local supply).

The independent economic assessment (BAEconomics, 2020) goes further in stating that the future of IMC and the broader Southern Coalfield economic ecosystem is related:

... the historical linkages and dependencies between Illawarra Metallurgical Coal and the primary steelmaking operations at BlueScope mean that the failure of one will compromise the other. While it is likely that the overall operations of Illawarra Metallurgical Coal would be economically viable without coal offtake by BlueScope Steel, it would be unlikely to be viable to keep the Appin Mine operating should the Dendrobium Mine be forced to close.

As such, the continued operation of the Dendrobium Mine via the Project (which offsets the higher costs of the Appin operations) supports the viability of IMC and the broader Southern Coalfield economic ecosystem.

Closure of IMC's operations could cost the local Wollongong region around A\$6.4 billion per year in lost regional product and the estimated loss to the Australian economy as a whole could be as high as A\$10.7 billion per year (BAEconomics, 2020). In addition, the closure of IMC's operations could result in the loss of employment for some estimated 5,500 direct personnel in the Illawarra region, and inclusive of the indirect workforce losses, up to approximately 25,000 total jobs nationally (BAEconomics, 2020).

2.1.3 Revised Mine Plan and Consideration of IPC Statement of Reasons

As outlined in the IPC's Statement of Reasons, the NSW Government assessed the previous application and stated it was in the public interest and recommended approval.

However, in February 2021, the IPC refused IMC's previous application to extend mining operations at the Dendrobium Mine, primarily due to the IPC's view of potential impacts of the mine development on the Metropolitan Special Area.

IMC has re-designed the Project to reduce the overall footprint thereby reducing potential impacts on the Metropolitan Special Area (Section 6).

IMC would achieve this through:

- approximately 60% reduction in longwall mining area;
- approximately 60% reduction in surface water losses (from the previous application);
- no predicted connective fracturing from the seam-to-surface when using the Tammetta equation;
- no longwall mining beneath 3rd, 4th and 5th order (or above) streams;
- approximately 50% reduction in the length of 1st and 2nd order streams longwall mined beneath;
- approximately 40% reduction in the number of swamps (listed as threatened) longwall mined beneath;
- commitment to avoid longwall mining beneath identified key stream features;
- reduction in number of previously identified Aboriginal heritage sites directly mined under from 22 to six sites (with the likelihood of direct impacts to these six sites expected to be approximately 1 in 10 based on extensive monitoring of subsidence-related impacts to heritage sites);
- no longwall mining beneath previously identified high archaeological significance Aboriginal heritage sites;
- increased longwall mining setback distance (at least 400 m) from the Avon River, Cordeaux River and Donalds Castle Creek;
- minimum longwall mining setback distance of 300 m from the Full Supply Level of the Avon Dam; and
- minimum longwall mining setback distance of 1,000 m from dam walls.

The Project would create an additional 50 operational jobs at full development and an additional 100 jobs for construction activities, as well as support the ongoing employment of some 1,800 direct personnel across IMC's operations (i.e. Dendrobium Mine and Appin Mine), with more than 90% living locally in the Illawarra region.

An indicative summary of how the Project seeks to address the IPC's key concerns in regard to the previous application is described in Section 6 and Attachment A.

Further detail would be provided in the new EIS prepared for the Project.

2.2 LOCAL AND REGIONAL CONTEXT

2.2.1 Project Area

The Project is located in the Southern Coalfield of NSW, approximately 8 km west of Wollongong (Figure 1).

A preliminary Schedule of Lands for the Project SSI Application Area² is provided in Attachment B. The SSI Application Area is located within the Wollongong, Wingecarribee and Wollondilly LGAs.

The Dendrobium Pit Top and Kemira Valley Coal Loading Facility are located in the Mt Kembla village, approximately 8 km west of Wollongong on the Illawarra Escarpment. The Kemira Valley Rail Line runs from the Kemira Valley Coal Loading Facility to the Dendrobium CPP, which is located within the Port Kembla Steelworks precinct.

The existing access and material drifts (Dendrobium tunnel and Kemira tunnel) to the Dendrobium Mine pass beneath a portion of the Illawarra Escarpment State Conservation Area to the existing underground mining areas. However, within the SSI Application Area, the Illawarra Escarpment State Conservation Area is restricted to a depth of 15.24 metres.

The SSI Application Area for the Project also includes a portion of the Upper Nepean State Conservation Area, however, these portions are restricted to a depth of 50 m.

² The SSI Application Area may be subject to change following detailed engineering and mine planning, environmental assessment and consideration of alternatives conducted for the EIS.

The existing and Project underground mining areas at the Dendrobium Mine are located within the Avon and Cordeaux catchments, including Avon Dam and Cordeaux Dam. These catchments are situated within the Metropolitan Special Area declared under the *Water NSW Act 2014*. The Project underground mining area would not directly undermine the full supply level of the Avon or Cordeaux Dams.

The Project underground mining area is situated on the Woronora Plateau, which includes the upper catchments of the Cataract River and Nepean River. The Woronora Plateau is characterised by incised watercourses that have formed steep blocky valleys and cliff lines that contain sandstone overhangs. Open sections of exposed sandstone occur along ridge tops and plateau caps.

Original vegetation remains over most of the underground mining areas, except for the presence of fire roads, powerlines, the unused Maldon-Dombarton rail corridor and other minor disturbances.

Other mines in the vicinity of the Project include:

- Appin Mine (IMC owned, active);
- West Cliff Colliery (IMC owned, under care and maintenance);
- Cordeaux Colliery (IMC owned, under care and maintenance);
- Russell Vale Colliery (Wollongong Coal, to restart in 2021/22);
- Tahmoor South Coal Project (SIMEC, active); and
- Wongawilli Colliery (Wollongong Coal, under care and maintenance).

2.2.2 Environmentally Sensitive Areas

While section 5.22(2) of the EP&A Act specifies that EPIs do not apply to SSI, a preliminary investigation of environmentally sensitive areas of State significance (as defined in the State and Regional Development SEPP) with respect to the Project that would have applied to the Project if it was SSD has been undertaken and identified the following:

- The provisional SSI Application Area is not within coastal waters of the State.
- No lands reserved as an aquatic reserve under the *NSW Fisheries Management Act 1994* or as a marine park under the *NSW Marine Estate Management Act 2014* occur within the provisional SSI Application Area.

- No lands within a wetland of international significance declared under the Ramsar Convention on Wetlands or lands within a World Heritage area declared under the World Heritage Convention occur in or near the provisional SSI Application Area.
- The provisional SSI Application Area includes a portion of the Upper Nepean State Conservation Area, and strata below the Illawarra Escarpment State Conservation Area associated with existing access and material drifts at the Dendrobium Mine (Figure B-1 of Attachment B).
- No lands declared as critical habitat under the *NSW Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* occur within the provisional SSI Application Area.
- Crown land within the provisional SSI Application Area is shown on Figure B-1 of Attachment B. There is no Crown land within the Project underground mining area (Area 5).

2.2.3 Compatibility with the Metropolitan Special Area

Project longwall mining would occur beneath catchment areas of the Metropolitan Special Area, where access by the public is prohibited.

Mining within the Metropolitan Special Area has occurred for more than 100 years, including longwall mining for the existing Dendrobium Mine, which is approved to 2030.

The effects of underground mining within the Metropolitan Special Area is well understood and has been subject to multiple reviews, including the Stored Water Inquiry by Justice Reynolds, Southern Coalfield Inquiry and reviews by the Independent Expert Panel for Mining in the Catchment (IEPMC).

The most recent review by the IEPMC (2019) concluded there has been no observed material impacts to drinking water supplies due to mining in these catchments:

Reservoir leakage rates – there is no measured evidence of significant long-term leakage from reservoirs due to mining in the Special Areas.

...

Watercourse bed leakage (at catchment scale) – from material presented to the Panel, there remains no strong evidence that cracking of watercourse beds leads to significant losses of water at catchment scales relevant for water supplies.

WaterNSW's principal objective under the *WaterNSW Act 2014* is:

... to ensure that declared catchment areas and water management works in such areas are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment...

It is noted that a key part of this principal objective relates to the promotion of "water quality" within the declared catchment areas. In this regard, the IEPMC (2019) concluded:

Although the impact of underground long-wall mining in the catchment could lead to small changes in the levels of impurities in water entering SCA's dams, these changes can be coped with by SW's [Sydney Water's] treatment plants as evidence to date does not suggest a sufficiently large change in soluble organic concentrations to be of concern.

2.3 OTHER STRATEGIC PLANNING DOCUMENTS

2.3.1 Illawarra Shoalhaven Regional Plan 2041

The *Illawarra Shoalhaven Regional Plan 2041* (NSW Government, 2021) applies to the Wollongong, Kiama, Shellharbour and Shoalhaven LGAs. The *Illawarra Shoalhaven Regional Plan 2041* sets the strategic framework for the region, aiming to protect and enhance the region's assets and plan for a sustainable future until 2041.

The Project is partially located within the area covered by the *Illawarra Shoalhaven Regional Plan 2041* (NSW Government, 2021).

The *Illawarra Shoalhaven Regional Plan 2041* recognises steel making and manufacturing as critical industry sectors within the region (NSW Government, 2021):

The region lies partly within the Southern Coalfield that provides the only hard coking coal in NSW and is in high demand for steel production around the world. As the region grows, the continued extraction of resource lands should remain a priority.

The Project would provide for continued supply of metallurgical coal for the Australian steel industry and for export through the PKCT.

The *Illawarra Shoalhaven Regional Plan 2041* acknowledges that metallurgical coal mining within the Metropolitan Special Area has the potential to affect water supply, security and infrastructure, and ecological integrity (NSW Government, 2021). In this regard, the *Illawarra Shoalhaven Regional Plan 2041* (NSW Government, 2021) concludes:

These risks must be carefully managed through assessment, management and regulation that is informed by best available science.

IMC has re-designed the Project to reduce the overall footprint thereby reducing potential impacts on water resources (as well as biodiversity values and other environmental values of the Metropolitan Special Area), in addition to provision of offsets.

2.3.2 NSW Net Zero Plan Stage 1: 2020-2030

The *Net Zero Plan Stage 1: 2020-2030* (NSW Government, 2020b) provides the foundational framework for NSW to reach net-zero emissions by 2050, and acknowledges the ongoing contribution of mining:

New South Wales' \$36 billion mining sector is one of our biggest economic contributors, supplying both domestic and export markets with high quality, competitive resources. Mining will continue to be an important part of the economy into the future and it is important that the State's action on climate change does not undermine those businesses and the jobs and communities they support.

Consistent with the Dendrobium Mine, the Project would continue to operate in consideration of the objectives of South32's company-wide Climate Change Strategy and annual *Our Approach to Climate Change* as detailed in its annual Sustainable Development Report.

South32 supports the objectives of the Paris Agreement and is committed to achieving net zero operational carbon emissions by 2050. It has set a medium-term target to halve its operational carbon emissions (Scope 1 and 2) by 2035.

It is acknowledged that there is no definitive 'best pathway' to net zero and some of the innovations needed are not fully developed.

South32 will achieve this target by optimising its business to be more energy efficient and embed emissions abatement opportunities, unlocking low-carbon design and technology and identify opportunity to partner with government and industry on a just transition to a low carbon future.

Further measures to reduce Project-related emissions will be described in the EIS.

2.3.3 Other Strategic Planning Documents

The following strategic planning documents will also be considered in the planning of the Project and the preparation of the EIS:

- *A Plan for Growing Sydney* (NSW Government, 2014).
- *South East and Tablelands Regional Plan 2036* (NSW Government, 2017a).
- *Our Greater Sydney 2056 South District Plan – connecting communities* (NSW Government, 2018a).
- *Our Greater Sydney 2056 Western City District Plan – connecting communities* (NSW Government, 2018b).
- *Our Wollongong 2028 – Community Strategic Plan* (Wollongong City Council, 2018).
- *Wingecarribee Local Planning Strategy 2015-2031* (Wingecarribee Shire Council, 2016).
- *Create Wollondilly – Community Strategic Plan 2033* (Wollondilly Shire Council, 2013).
- *Greater Sydney Local Strategic Plan 2016-2021* (Greater Sydney Local Land Services, 2016).
- *Developments adjacent to National Parks and Wildlife Service lands: Guidelines for consent and planning authorities* (National Parks and Wildlife Services [NPWS], 2020).
- *WaterNSW Principles for Managing Mining and Coal Seam Gas Impacts in Declared Catchment Areas* (WaterNSW, undated).

2.3.4 Cumulative Impacts

The EIS would consider whether the Project is likely to generate cumulative impacts with other developments/projects in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE, 2021c).

As the Project is located within the Metropolitan Special Area, and would involve a continuation of the existing operations at the Dendrobium Mine it is not anticipated that the Project would result in significant cumulative impacts with other developments.

A summary of existing developments and future projects that would be assessed cumulatively in the EIS is provided in Attachment D.

2.3.5 Water Offset Agreements

The NSW Government proposed a planning agreement that would require IMC to make payments to the NSW Government to offset water quantity and quality impacts during and post-mining. The terms of the proposed planning agreement for the previous application were accepted by IMC.

This planning agreement was developed consistent with the recommendations of the IEPMC to provide a “net beneficial” effect to Sydney’s drinking water supplies.

IMC would seek to enter a similar agreement with the NSW Government to offset water quantity and quality impacts during and post-mining for the Project.

The agreement would allow the Minister for Water, Property and Housing to spend these funds (as required) on priority water projects to result in a net benefit to Sydney’s drinking water supply.

3 PROJECT

3.1 TARGET RESOURCE

3.1.1 Mining and Exploration Tenements

Table 2 provides details of the mining tenements currently held by IMC, Dendrobium Coal and Endeavour Coal Pty Limited related to the Project.

The Project underground mining area would be located wholly within CCL 768. No additional mining tenements are required for the proposed underground mining associated with the Project.

Similarly, no additional mining tenements are required for the continued use of the Dendrobium Mine surface facilities for the Project.

Table 2
Relevant IMC Mining Tenements

Tenement Reference	Expiry
CCL 768	07/10/2029
ML 1510	23/04/2023
ML 1566	06/09/2026

ML = Mining Lease

3.1.2 Mine Layout Constraints

IMC will seek to maximise resource recovery within geological, environmental and infrastructure constraints.

IMC has identified a number of key natural and built features in the vicinity of CCL 768 that may be susceptible to subsidence impacts. These features would *not* be mined beneath and the Project has incorporated minimum setbacks from these features.

For the Project, the revised mine layout will include:

- approximately 60% reduction in longwall mining area;
- approximately 60% reduction in surface water losses (from the previous application);
- no predicted connective fracturing from the seam-to-surface when using the Tammetta equation;
- no longwall mining beneath 3rd, 4th and 5th order (or above) streams;

- approximately 50% reduction in the length of 1st and 2nd order streams longwall mined beneath;
- approximately 40% reduction in the number of swamps (listed as threatened) longwall mined beneath;
- commitment to avoid longwall mining beneath identified key stream features;
- reduction in number of previously identified Aboriginal heritage sites directly mined under from 22 to six sites (with the likelihood of direct impacts to these six sites expected to be approximately 1 in 10 based on extensive monitoring of subsidence-related impacts to heritage sites);
- no longwall mining beneath previously identified high archaeological significance Aboriginal heritage sites;
- increased longwall mining setback distance (at least 400 m) from the Avon River, Cordeaux River and Donalds Castle Creek;
- minimum longwall mining setback distance of 300 m from the Full Supply Level of the Avon Dam; and
- minimum longwall mining setback distance of 1,000 m from dam walls.

Outcomes of environmental assessment studies would also be considered during mine planning conducted in parallel with the EIS.

3.2 PROJECT DESCRIPTION

Table 3 provides a summary of the key characteristics of the Project.

3.2.1 Project Construction and other Development Activities

The Project would use existing pit tops and supporting infrastructure. Additional infrastructure and upgrades to existing infrastructure that are required to support the Project would be progressively developed in parallel with ongoing mining operations, including:

- development of underground roadways, coal clearance infrastructure and other ancillary infrastructure required to access and support Project underground mining areas;
- underground mining machinery replacement and upgrades;

Table 3
Summary Comparison of the Approved Dendrobium Mine and the Project

Component	Approved Dendrobium Mine (DA 60-03-2001)	Project
Mine Life	Until 31 December 2030.	Until 31 December 2041 ² .
Mining Method	Underground extraction using longwall mining methods.	No change.
Resource	Mining of the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C within CCL 768.	Approximately 31 Mt of additional ROM coal within the Bulli Seam in Area 5 within CCL 768.
Annual Production	Handling and processing of up to 5.2 Mtpa of ROM coal.	No change.
Coal Handling and Processing	<p>Transport of coal from underground workings to the Kemira Valley Coal Loading Facility via an underground conveyor network.</p> <p>Sizing and stockpiling of coal at the Kemira Valley Coal Loading Facility prior to transport to the Dendrobium CPP via the Kemira Valley Rail Line, in accordance with the approved hours of operation.</p> <p>Processing of up to 5.2 Mtpa of sized ROM coal at the Dendrobium CPP.</p>	No change.
Management of Mining Waste	<p>Transportation of up to approximately 1.1 Mtpa of coal wash by road from the Dendrobium CPP to the West Cliff Stage 3 and Stage 4¹ Coal Wash Emplacement.</p> <p>Development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement.</p> <p>Supply of coal wash to customers for engineering purposes (e.g. civil construction fill) or for other beneficial uses.</p>	<p>No change.</p> <p>No change.</p> <p>No change.</p>
General Infrastructure	<ul style="list-style-type: none"> • Dendrobium Pit Top. • Kemira Valley Coal Loading Facility. • Kemira Valley Rail Line. • Dendrobium CPP. • Dendrobium Shafts Nos 1, 2 and 3. • West Cliff Stage 3 Coal Wash Emplacement. 	<p>Continued use of existing infrastructure with minor upgrades and extensions.</p> <p>Development of new surface infrastructure associated with mine ventilation and gas management and abatement at Shaft Site No 5A to support underground mining operations in Area 5, and other ancillary infrastructure (including electricity transmission line to proposed mine ventilation infrastructure) and minor fire trail upgrades.</p> <p>Development of additional carpark facilities.</p>
Product Transport	Delivery of product coal from the Dendrobium CPP to the Port Kembla Steelworks or to PKCT for transport to Liberty Primary Steel Whyalla Steelworks or for export.	No change.

Table 3 (Continued)
Summary Comparison of the Approved Dendrobium Mine and the Project

Component	Approved Dendrobium Mine (DA 60-03-2001)	Project
Water Management	<p>Water management infrastructure to separate clean, oily and dirty water.</p> <p>Use of a combination of recycled treated mine water and potable water purchased from Sydney Water in underground and surface operations.</p> <p>Release of water in accordance with the conditions of EPL 3241.</p>	<p>No change (with augmentations and extensions to existing water management infrastructure as required).</p> <p>No change.</p> <p>No change (release volumes and release infrastructure to be modified as required based on Project mine inflow rates).</p> <p>Development of temporary water supply infrastructure for construction water supply for Shaft Site No 5A.</p> <p>Provision of offsets (funding of “indirect” offsets) for predicted surface water take as a result of the Project that would result in a net gain to Metropolitan water supplies.</p>
Workforce	<p>Current workforce of approximately 650 operational personnel.</p>	<p>At full development an additional 50 operational personnel for the Project.</p> <p>Up to approximately 100 personnel would also be required for construction and development activities.</p>
Hours of Operation	<p>Operated on a continuous basis, 24 hours per day, seven days per week.</p> <p>Trains do not travel on the Kemira Valley Rail Line between 11.00 pm and 6.00 am, unless written approval is obtained from the NSW Environment Protection Authority (EPA) for emergency use of the rail line.</p>	<p>No change.</p>

¹ Development and rehabilitation of the West Cliff Stage 4 Coal Wash Emplacement would continue to be conducted in accordance with Project Approval 08_0150 for the Appin Mine.

² Area 5 mine life to approximately 2035. Use of surface infrastructure that forms part of the Project proposed to continue until 2041 to receive coal from IMC’s operations.

- development and augmentation of mine ventilation infrastructure and other ancillary infrastructure (including electricity transmission line to proposed mine ventilation infrastructure);
- additional gas management and abatement infrastructure;
- upgrades to the Dendrobium Pit Top and decommissioning and removal of redundant infrastructure;
- ongoing maintenance and upgrades of the Kemira Valley Rail Line and water management infrastructure;
- upgrades and replacement of infrastructure at the Dendrobium CPP and removal of redundant infrastructure; and
- minor augmentations and upgrades of other surface facilities.

Construction would generally occur 7.00 am to 5.00 pm Monday to Sunday. Some construction and development works (e.g. drilling and construction of ventilation shafts, and underground development activities) would occur on a 24 hour per day basis.

Noise mitigation measures would be investigated as part of the EIS to minimise noise impacts on neighbours as far as reasonable and feasible.

Additional mobile equipment would be required for periods during the Project construction and development activities including drill rigs, mobile cranes, excavators, loaders and delivery trucks.

The number and type of equipment would vary depending on the construction development activity being undertaken.

3.2.2 Underground Mining Operations

The Project involves an extension of longwall mining operations within CCL 768 to include extraction of the Bulli Seam in Area 5 (Figure 4).

IMC would also continue mining within underground mining areas approved under Development Consent DA 60-03-2001. Monitoring and remediation/rehabilitation activities would continue to be undertaken by IMC in previous mining areas.

The Project would operate within the existing production limit of up to 5.2 Mtpa of ROM coal. Other associated infrastructure and activities would include:

- personnel and materials access, which may involve upgrades to the existing facilities at the Dendrobium Pit Top;
- materials handling and transport systems to convey coal from the longwall and development faces to the surface;
- underground equipment (e.g. shearers, continuous miners, conveyors and bins) and mobile fleet (e.g. load haul dump vehicles, drill rigs, shuttle cars and personnel carriers);
- ventilation systems to maintain a safe working environment within the underground workings;
- gas monitoring systems and gas management and abatement activities;
- water management systems to transfer groundwater that accumulates in underground workings to the surface; and
- surface monitoring, rehabilitation and remediation of subsidence effects.

The locations of surface infrastructure (Figure 4) would be refined through detailed mine planning, environmental assessment outcomes and consideration of alternatives, and would be documented in the EIS.

3.2.3 Waste Management

The Project would generate waste streams of a similar nature to current waste generation at the Dendrobium Mine. Waste sorting would be limited on-site with the majority of recyclable and general waste being recycled or disposed of off-site at an approved waste management facility. The key waste streams for the Project would comprise:

- coal wash;

- pre-mine/goaf drainage gas;
- general solid waste and recyclables;
- waste oil and grease;
- sewage and effluent; and
- minor quantities of other waste types from mining and workshop activities (e.g. used tyres and oil filters).

IMC would continue to apply general waste minimisation principles (i.e. reduce, re-use and recycling where practicable) to minimise the quantity of wastes that require disposal. The Project would also continue to research and, where it is relevant to do so, develop and implement waste management practices to ensure the disposal of waste is minimised.

3.2.4 Product Coal Handling and Transportation

Product coal from the Dendrobium CPP would continue to be temporarily stockpiled prior to being transported. Product coal would be transported from the Dendrobium CPP to meet demand from the Port Kembla Steelworks for use in the steelmaking process or to the PKCT for transport to Liberty Primary Steel Whyalla Steelworks and other export customers. All product coal transportation would be via private internal roads within the Port Kembla industrial precinct.

Product coal transportation currently occurs on a continuous basis (24 hours per day, seven days per week) and would continue for the Project.

3.2.5 Coal Wash Management

Over the life of the Project, it is estimated that up to approximately 5.2 Mt of additional coal wash would be produced from the processing of coal from the Project underground mining area.

IMC is committed to supporting the continued supply of coal wash for engineering purposes (e.g. civil construction fill) or for other circular economy opportunities (e.g. beneficial uses), consistent with the *NSW Circular Economy Policy Statement* (NSW Government, 2019).

3.2.6 Infrastructure and Services

Existing surface infrastructure and services would continue to be used throughout the Project life, with required upgrades and extensions.

Surface infrastructure and services would continue to operate 24 hours per day, seven days per week.

The Project would involve development of the following new surface infrastructure (Figure 4):

- Ventilation Shaft Site 5A with upcast and downcast ventilation shafts, gas management and abatement infrastructure, and mine services infrastructure;
- electricity transmission line to Ventilation Shaft Site 5A;
- pumping station and water supply pipeline to Ventilation Shaft Site 5A;
- additional carpark facilities; and
- minor fire trail upgrades.

3.2.7 Water Management

The Project would involve the use of the existing water management infrastructure with minor augmentations and extensions, including the progressive development of sumps, pumps, pipelines, water storage and other water management infrastructure.

Underground and surface operations would continue to use a combination of potable and recycled water. Potable water would be supplied by Sydney Water. Recycled water would continue to be sourced from the adjacent underground mine workings.

Water supply for ventilation shaft construction would be provided via one of the following options:

- temporary pumping of recycled mine water from the Dendrobium Mine underground workings via existing boreholes;
- temporary pumping of raw water from the Cordeaux River; or
- delivery of potable water via water truck.

Further details of the proposed water management and construction water supply would be provided in the EIS.

3.2.8 Other Activities

Other activities that would be conducted as a component of the Project include environmental monitoring and minor associated infrastructure.

The Project would also include the continued rehabilitation of existing mining disturbance associated with the Dendrobium Mine. A detailed rehabilitation strategy for these areas will be presented in the Project EIS.

3.3 MANAGEMENT STRATEGIES

Preliminary strategies to address potential impacts associated with the Project are outlined in Section 6, which would be developed and refined through the environmental assessment process.

It is proposed to continue the management approach at the existing Dendrobium Mine for the Project.

It is anticipated that any new Infrastructure Approval would include a contemporary Extraction Plan process to mitigate, remediate, monitor, manage and offset potential impacts associated with subsidence.

3.4 PROJECT SCHEDULE

The Project is required to facilitate the continuation of the Dendrobium Mine.

There is uncertainty regarding the ability to mine the remaining reserves in the approved Area 3C and the timing.

Current supplies of Wongawilli Seam coal from Dendrobium Area 3 will cease regardless of the Project.

Following completion of current mining areas, Project Area 5 would be extracted (anticipated completion in 2035), followed by the majority of approved Area 3C if gas drainage is successful³.

3.5 RELATIONSHIP WITH OTHER DEVELOPMENTS

Key proposed or approved projects that may potentially interact with the Project include:

- Port Kembla Outer Harbour Development;
- Port Kembla Gas Terminal;
- Port Kembla Power Station;
- BlueScope Port Kembla Steelworks Blast Furnace No 6 Reline;
- Port Kembla Bulk Liquids Terminal;
- Princes Highway Albion Park Rail Bypass;

³ Subject to separate assessment and approval of an extension to the Dendrobium Mine Development Consent DA 60-03-2001.

- Tahmoor South Coal Project;
- Cordeaux Colliery (IMC owned, under care and maintenance);
- Russell Vale Colliery (Wollongong Coal);
- Wongawilli Colliery (Wollongong Coal); and
- Metropolitan Mine (Peabody).

Potential interactions with these developments (both direct and cumulative) are summarised in Attachment D and will be considered where relevant in the Project EIS.

3.6 PROJECT ALTERNATIVES CONSIDERED

3.6.1 Alternatives Considered

A number of alternative mine plans to the Project mine plan have been considered by IMC to date and have not been adopted, including:

- extension of mine life to 2048 (i.e. an additional 8 years for the previous application compared to the Project);
- additional proposed mining domain Area 6;
- larger extent of underground mining area in Area 5, with the Project mine plan revised to target areas that would predominantly yield the highest quality metallurgical coal resource; and
- development of additional surface infrastructure (e.g. three additional ventilation shaft sites).

IMC has re-designed the Project to reduce the overall footprint thereby reducing potential impacts to the Metropolitan Special Area.

3.6.2 Further Refinements to be Considered

Further consideration of refinements to the Project would be undertaken as a component of the EIS, including consideration of additional measures to avoid, mitigate, rehabilitate, monitor and/or offset the potential impacts of the Project.

4 STATUTORY CONTEXT

4.1 PERMISSIBILITY AND STRATEGIC PLANNING

4.1.1 Applicability of Division 5.2 of Part 5 of the Environmental Planning and Assessment Act 1979

Approval for the Project will be sought under the SSI provisions (i.e. Division 5.2) under Part 5 of the EP&A Act. The EP&A Act and EP&A Regulation generally set the framework for planning and environmental assessment in NSW.

Under section 5.12 of the EP&A Act any development, or class of development, may be declared as SSI by a State Environmental Planning Policy (SEPP).

Clause 15 of the *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP) provides that a development is declared SSI for the purposes of the EP&A Act if it is specified in Schedule 4 of the State and Regional Development SEPP.

In December 2021, the NSW Minister for Planning declared the Project to be SSI.

As the Project has been declared to be SSI and may be carried out without obtaining Development Consent under Part 4 of the EP&A Act, the Project requires assessment and approval under Part 5, Division 5.2 of the EP&A Act.

The NSW Minister for Planning is the approval authority for SSI developments (including the Project) under Part 5 of the EP&A Act.

4.1.2 Permissibility of the Project

Section 5.22 of the EP&A Act provides that:

- (1) *Part 4 and Division 5.1 do not, except as provided by this Division, apply to or in respect of State significant infrastructure (including the declaration of the infrastructure as State significant infrastructure and any approval or other requirement under this Division for the infrastructure).*

- (2) *Part 3 and environmental planning instruments do not apply to or in respect of State significant infrastructure, except that—*

- (a) *they apply to the declaration of infrastructure as State significant infrastructure or as critical State significant infrastructure (and to the declaration of development that does not require consent), and*
- (b) *they apply in so far as they relate to section 3.16, and for that purpose a reference in that section to enabling development to be carried out in accordance with an environmental planning instrument or in accordance with a consent granted under this Act is to be construed as a reference to enabling State significant infrastructure to be carried out in accordance with an approval granted under this Division.*

As such, in accordance with section 5.22(2) of the EP&A Act, Environmental Planning Instruments (EPIs) do not apply to SSI, beyond the declaration of the Project as SSI (Section 4.1.1).

Accordingly, the provisions of Part 4 of the EP&A Act do not apply, and the Project is not prohibited under any EPIs. Notwithstanding, in the EIS IMC would consider the requirements of EPIs that would have applied to the Project, but for its SSI declaration by the Minister for Planning (Section 4.1.1).

4.1.3 Planning Provisions

While section 5.22(2) of the EP&A Act specifies that EPIs do not apply to SSI, relevant provisions and objectives of the following SEPPs that would have applied to the Project but for its SSI declaration would still be considered by IMC in the preparation of the EIS:

- State and Regional Development SEPP;
- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*;
- *State Environmental Planning Policy (Infrastructure) 2007*;
- *State Environmental Planning Policy No. 33 (Hazardous and Offensive Development) (SEPP 33)*;
- *State Environmental Planning Policy (Koala Habitat Protection) 2020*;
- *State Environmental Planning Policy (Koala Habitat Protection) 2021*; and

- *State Environmental Planning Policy No. 55 (Remediation of Land)*.
- *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*.
- *State Environmental Planning Policy (Three Ports) 2013*.

4.1.4 Planning Strategies

Strategic planning documents that would be considered in the planning of the Project and the preparation of the EIS include those listed in Section 2.3.3.

4.2 OTHER APPROVALS AND LICENCES

Under sections 5.23 and 5.24 of the EP&A Act, a number of environmental approvals would not be required for the Project or, would be required to be issued consistent with the Minister for Planning's approval for the Project (if granted).

Other environmental approvals and licences relevant to the Project are described below.

4.2.1 Water NSW Act 2014

The existing and Project underground mining areas at the Dendrobium Mine are located within the Metropolitan Special Area, which is a declared "Special Area" under the *Water NSW Act 2014*. Special Areas are jointly managed by WaterNSW and the National Parks and Wildlife Service (on behalf of the Minister for the Environment).

IMC has consent from WaterNSW to enter the Metropolitan Special Area and carry out activities permitted by statutory approvals.

IMC would seek to extend this consent for the Project to undertake approved activities within the Metropolitan Special Area.

4.2.2 Water Management Act 2000

Under section 5.23(1) of the EP&A Act, if the Project is approved as SSI, water use approvals under section 89, water management work approvals under section 90, or activity approvals (excluding aquifer interference approvals) under section 91 of the *Water Management Act 2000* (WM Act) would not be required for the Project.

The EIS would include consideration of the Project against the water management principles and access licence dealing principles under the WM Act. The EIS would also identify access licences required for each water source associated with the Project.

4.2.3 Protection of the Environment Operations Act 1997

The NSW *Protection of the Environment Operations Act 1997* (PoEO Act) and the NSW *Protection of the Environment Operations (General) Regulation 2009* set out the general obligations for environmental regulation in NSW.

The Dendrobium Mine currently operates under EPL 3241 granted under the PoEO Act. The EPL contains conditions which relate to emission and discharge limits, environmental monitoring and reporting.

It is expected that the Project would, if approved, require a variation of EPL 3241.

4.2.4 Coal Mine Subsidence Compensation Act 2017

The *Coal Mine Subsidence Compensation Act 2017* (CMSC Act) provides a scheme for the provision of compensation for damage caused by subsidence resulting from coal mine operations, and the assessment and management of risks associated with subsidence resulting from coal mine operations.

At all times while the Project is an active mine, IMC would be liable to pay compensation in relation to damage caused by subsidence arising from the Project on improvements or goods under Part 2 of the CMSC Act. Any claims for compensation by another party under the CMSC Act would be lodged with Subsidence Advisory NSW.

The Project is not located within a Mine Subsidence District declared under section 20 of the CMSC Act.

4.2.5 Roads Act 1993

If the Project is approved, IMC would apply for the necessary consents under section 138 of the NSW *Roads Act 1993* associated with mining under any public road.

Under section 5.24(1) of the EP&A Act, if the Project is approved as SSI, consent under section 138 of the *Roads Act 1993* cannot be refused and is to be substantially consistent with any approval granted under Division 5.2 of Part 5 of the EP&A Act.

4.2.6 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth EPBC Act referral (Referral 2017/7855) provided as part of the previous application to the Commonwealth Minister for the Environment was declared to be a 'Controlled Action'.

The Project will also separately be referred by IMC to the Commonwealth Minister for the Environment for consideration as to whether it constitutes a 'Controlled Action' and requires approval under the EPBC Act.

If the Project is assessed for impacts on water resources under the assessment bilateral agreement with the NSW Government, NSW and the Commonwealth will jointly obtain the advice of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development.

4.3 PRE-CONDITIONS TO EXERCISING THE POWER TO GRANT APPROVAL

Where relevant, pre-conditions to exercising the power to grant approval for the Project that should be considered when setting SEARs for the Project are presented in Attachment E.

For completeness, relevant pre-conditions that would have applied but for the Project's SSI declaration are also presented in Appendix E.

4.4 MANDATORY MATTERS FOR CONSIDERATION

Matters that the approval authority is required to consider in deciding whether to grant approval that may be relevant to setting the SEARs for the Project are presented in Attachment E.

For completeness, relevant matters that the approval authority would have been required to consider but for the Project's SSI declaration are also presented in Appendix E.

5 ENGAGEMENT

IMC regularly engages with the community in regard to the Dendrobium Mine through the following mechanisms:

- a dedicated website (<https://www.south32.net/our-operations/australia/illawarra-coal>);
- Dendrobium Community Consultative Committee (DCCC) meetings (with meeting minutes provided on the website and emailed direct to interested stakeholders);
- Dendrobium Community Enhancement Program (DCEP) (a dedicated community-based social investment program to benefit the communities surrounding the Dendrobium Mine);
- community information sheets and letter box drops;
- media releases and other media activities;
- general community surveys and reports;
- Dendrobium News (an IMC publication for the communities surrounding the Mine);
- landholder relations program; and
- information days and mine open days.

As part of the previous application, IMC undertook extensive stakeholder engagement, including consultation with key government agencies and the community.

Stakeholder engagement undertaken during all phases of the previous application has informed the design of the Project.

Specific engagement completed in relation to the Project has included consultation with the following government agencies regarding the status of the Project and the lodgement of this request for SEARs:

- the DPIE;
- WaterNSW; and
- Department of Regional NSW – Mining Exploration and Geoscience (MEG).

In addition, IMC has consulted with the DCCC in regard to the status of the Project throughout 2021.

5.1 STAKEHOLDER ENGAGEMENT PROGRAM

A stakeholder engagement program has been developed for the Project. Key objectives of this program are to:

- engage with NSW Government and key stakeholders about the Project;
- seek input from key stakeholders on the elements of the Project;
- recognise and respond to local interest or concerns regarding the Project; and
- continue the ongoing dialogue between IMC and its key stakeholders.

The issues raised and outcomes of the stakeholder engagement program would be reported in the EIS.

The consultation would include the following government agencies and authorities:

- DPIE;
- DPIE – Water;
- Natural Resources Access Regulator;
- WaterNSW;
- DPIE – Biodiversity and Conservation Division (BCD);
- Dams Safety NSW;
- Heritage NSW;
- Resources Regulator NSW;
- EPA;
- Department of Regional NSW – MEG;
- Transport for NSW (including Roads and Maritime Services);
- Wollongong City Council;
- Wingecarribee Shire Council;
- Wollondilly Shire Council;
- NSW Rural Fire Service; and
- Commonwealth Department of Agriculture, Water and the Environment.

The stakeholder engagement program also recognises other key stakeholders including:

- mine employees;
- BlueScope Steel;
- DCCC;
- Mount Kembla, Cordeaux Heights and Unanderra communities;
- the Aboriginal community;
- local, State and Federal elected representatives;
- interested non-Government organisations;
- infrastructure owners; and
- local customers and suppliers.

The EIS engagement program would include the use of a variety of consultation mechanisms such as:

- public access to key documents (e.g. this request for SEARs and the EIS);
- existing community information mechanisms, including:
 - regular updates to the DCCC;
 - community information sheets and letter box drops;
 - updates in the Dendrobium News;
 - provision of information on the website (<https://www.south32.net/our-operations/australia/illawarra-coal>); and
 - information days;
- consultation with the Aboriginal community in consideration of the requirements of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water, 2010); and
- meetings with government agencies and other key stakeholders.

In addition to the general Project consultation outlined above, Square Peg Social Performance (Square Peg) has prepared a Social Impact Assessment (SIA) Scoping Report.

Square Peg has relied on the engagement undertaken with a range of stakeholders during the preparation of the previous application *Dendrobium Mine: Plan for the Future – Coal for Steelmaking Social Impact Assessment* (Elliot Whiteing, 2019) as well as during the assessment phase to ascertain views on existing cumulative and potential incremental Project social impacts (Attachment B).

It is noted that overall, the majority of submissions to the EIS for the previous application expressed support for an extension to the Dendrobium Mine (81%).

Key existing and potential environmental and social impacts raised in Project engagement to date include:

- socio-economic benefits of the approved Dendrobium Mine employment and expenditure, the Dendrobium Mine's links to the Port Kembla Steelworks and how the Project may extend or build upon these benefits;
- compatibility of the Project with surrounding land uses, including the Metropolitan Special Area and impacts on water resources;
- noise levels being experienced, particularly in Mount Kembla, proximal to the Dendrobium Pit Top and the Kemira Valley Rail Line;
- greenhouse gas emissions from the Project, including Scope 3 emissions associated with the use of product coal; and
- mine-related traffic potentially creating congestion on the local road network (particularly surrounding the Dendrobium Pit Top).

Based on the consultation conducted to date, primarily as part of the previous SIA, there is likely to be a high level of public and regulatory interest in the Project.

Potential Project incremental impacts, including potential cumulative impacts with other mining developments, would be investigated in the specialist studies for the EIS.

6 PROPOSED ASSESSMENT OF IMPACTS

6.1 OVERVIEW

The DPIE has published Categories of Assessment Matters as part of the *State Significant Infrastructure Guidelines – Preparing an Environmental Impact Statement* (DPIE, 2021 e) that includes a generic checklist of matters to assist proponents to:

- consider all matters;
- filter out any matters that are not relevant to the Project; and
- inform the likely level of assessment required in the EIS.

The previous application, as well as the IPC Statement of Reasons, has been used to assist with identifying the key potential issues of the Project.

Key potential issues are those environmental aspects that will require Project-specific assessment to assess the potential impacts and develop measures to avoid, mitigate and/or monitor the potential impacts of the Project.

The proposed level and scope of assessments have been identified to assist DPIE with issuing of the SEARs for the Project under Section 5.16 of the EP&A Act. The proposed level and scope of assessments were determined based upon:

- understanding of the local and regional context and the Project (Section 2.2);
- feedback from stakeholder consultation undertaken to date (i.e. previous application) (Section 5);
- baseline environmental data; and
- experience from previous environmental management and approvals processes at the Dendrobium Mine.

6.2 KEY ISSUES AND OTHER ISSUES FOR INCLUSION IN THE ENVIRONMENTAL IMPACT STATEMENT

The key issues identified for the Project are summarised below, in consideration of the IPC Statement of Reasons for the previous application and the proposed scope of the Project:

- impacts on water resources (i.e. quantity and quality);

- biodiversity impacts (including Upland Swamps);
- impacts to Aboriginal cultural heritage sites;
- economics impacts; and
- mine closure.

To address the key concerns raised by the IPC, IMC has re-designed the Project to reduce the overall footprint thereby reducing potential impacts through:

- approximately 60% reduction in longwall mining area (from the previous application);
- approximately 60% reduction in surface water losses (from the previous application);
- no predicted connective fracturing from the seam-to-surface when using the Tammetta equation;
- no longwall mining beneath 3rd, 4th and 5th order (or above) streams;
- approximately 50% reduction in the length of 1st and 2nd order streams longwall mined beneath;
- approximately 40% reduction in the number of swamps (listed as threatened) longwall mined beneath (from the previous application);
- no longwall mining beneath identified key stream features;
- reduction in number of previously identified Aboriginal heritage sites directly mined under from 22 to six sites (with the likelihood of direct impacts to these six sites expected to be approximately 1 in 10 based on extensive monitoring of subsidence-related impacts to heritage sites);
- no longwall mining beneath previously identified high archaeological significance Aboriginal heritage sites;
- increased longwall mining setback distance (at least 400 m) from the Avon River, Cordeaux River and Donalds Castle Creek;
- minimum longwall mining setback distance of 300 m from the Full Supply Level of the Avon Dam; and
- minimum longwall mining setback distance of 1,000 m from dam walls.

An indicative summary of how the IPC's key concerns would be addressed via a new application for the Project is provided in Attachment A. Further detail would be provided in the new EIS prepared for the Project.

These, as well as additional environmental issues which would be considered in the EIS are provided in Table 4 with a preliminary list of study requirements to address these issues.

In addition to consideration of the key potential environmental issues, potential additional impacts relevant to the Project will also be considered and addressed through the EIS:

- potential amenity impacts (air quality, noise and visual);
- greenhouse gas emissions; and
- potential impacts to historic heritage.

Recognised specialists would be commissioned to conduct the studies outlined in Table 4, and independent peer review will be conducted for select key studies (e.g. Groundwater Assessment), in consideration of the draft *Peer Review Guideline* (NSW Government, 2017b) (or its latest version).

Assessment of the key potential environmental issues and the other potential impacts identified above will include consideration of:

- the existing environment, using baseline data gathered over the life of the Dendrobium Mine;
- potential impacts of all stages of the Project, including relevant cumulative impacts;
- measures that can be implemented to avoid, mitigate, rehabilitate/remediate, monitor and offset the potential impacts of the Project; and
- contingency plans and adaptive management for managing any potentially significant residual risks to the environment.

Assessments for the EIS would consider applicable policies, guidelines and plans.

6.3 CUMULATIVE IMPACT ASSESSMENT

Table 4 summarises the environmental assessment matters that would include a cumulative impact assessment. Further detail regarding the developments that would be considered in the assessment of cumulative impacts is provided in Attachment C.

Cumulative impact assessments in the EIS will:

- take into consideration past, present and reasonably foreseeable planned development that are relevant due to their proximity and potential to interact with potential Project impacts;
- outline how cumulative impacts may be managed through strategic planning or policy (e.g. water licensing); and
- document how cumulative impacts have been considered and, to the fullest extent practical, the Project's relative contribution to those potential cumulative impacts.

Table 4
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Access	Road and rail network Traffic and parking	<p>Detailed Road Transport Assessment, including:</p> <ul style="list-style-type: none"> Assessment of changes in traffic volumes on the surrounding road network – in accordance with the <i>Guide to Traffic Generating Developments</i> (Roads and Traffic Authority, 2002). Assessment of potential cumulative impacts on the road network resulting from the Project and nearby developments. Investigation of measures to avoid, mitigate and/or monitor the potential impacts of the Project. 	<ul style="list-style-type: none"> Continued use of existing site access roads to the Dendrobium Mine surface facilities. Construction of a new carpark facility opposite the Dendrobium Pit Top to accommodate additional Project workforce. Implementation of the Dendrobium Mine <i>Traffic Management Plan</i> and IMC's <i>Driver's Code of Conduct</i>.
Air Quality	Particulate matter Gases	<p>Detailed Air Quality and Greenhouse Gas Assessment, including:</p> <ul style="list-style-type: none"> Modelling and assessment of potential air quality impacts as a result of Project activities – in accordance with the <i>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales</i> (EPA, 2016). Estimation of greenhouse gas emissions and consideration of relevant Government policy. Assessment of potential cumulative impacts resulting from the Project and nearby developments. Investigation of measures to avoid, mitigate and/or monitor the potential impacts of the Project. <p>Engagement with nearby receivers concerned about potential particulate matter impacts.</p>	<ul style="list-style-type: none"> Use of the existing coal handling and transport infrastructure at the Kemira Valley Coal Loading Facility, Kemira Valley Rail Line and Dendrobium CPP. Continued implementation of feasible and reasonable mitigation measures on-site to minimise particulate matter generation during operations. Utilisation of the existing air quality monitoring network and Dendrobium Mine <i>Air Quality Management Plan</i>, with augmentations as required. Application of the <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments</i> (NSW Government, 2018c). Implementation of IMC's <i>Greenhouse Gas & Energy Efficiency Management Plan</i>.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Amenity	Noise and vibration	<p>Detailed Noise and Blasting Assessment, including:</p> <ul style="list-style-type: none"> Modelling and assessment of potential noise impacts as a result of construction activities and mining operations, including road and rail traffic – in accordance with relevant guidelines, including the <i>Noise Policy for Industry</i> (EPA, 2017), <i>NSW Road Noise Policy</i> (DECCW, 2011) and <i>NSW Interim Construction Noise Guideline</i> (Department of Environment and Climate Change, 2009). Assessment of potential cumulative impacts resulting from the Project and nearby developments. Investigation of measures to avoid, mitigate and/or monitor the potential impacts of the Project. <p>Focused engagement with nearby receivers concerned about potential impacts on acoustic amenity.</p>	<ul style="list-style-type: none"> Use of the existing coal handling and transport infrastructure at the Kemira Valley Coal Loading Facility, Kemira Valley Rail Line and Dendrobium CPP. Continued implementation of feasible and reasonable mitigation measures on-site to minimise particulate matter generation during operations. Utilisation of the existing noise monitoring network and <i>Noise Management Plan</i>, with augmentations as required. Continued implementation of existing blast management procedures to maintain compliance with Project blast criteria. Application of the <i>Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments</i> (NSW Government, 2018c).
	Visual	<p>Standard assessment of potential landscape and visual impacts in the EIS as a result of the Project, particularly from publicly accessible viewpoints at the Cordeaux Dam and Avon Dam.</p>	<ul style="list-style-type: none"> Implementation of visual impact minimisation measures as required (e.g. design of new surface infrastructure such that it blends in with the surrounding environment [e.g. for ventilation shaft sites]). Implementation of the Dendrobium Mine <i>Lighting Management Plan</i>.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Biodiversity	Conservation Areas Terrestrial flora and fauna (including Upland Swamps)	<p>Detailed Biodiversity Development Assessment Report, including:</p> <ul style="list-style-type: none"> Assessment of potential impacts on any terrestrial and aquatic species, populations, ecological communities or their habitats, including consideration of subsidence, groundwater and surface water assessments. Flora and fauna surveys of the underground mining area and review of previous survey effort. Risk assessment approach to consideration of potential subsidence impacts and environmental consequences to streams and swamps. Assessment of potential impacts on biodiversity in accordance with the <i>Biodiversity Assessment Method</i> (DPIE, 2020b). Identification of measures that would be implemented to maintain or improve the biodiversity values of the surrounding region in the medium to long term. 	<ul style="list-style-type: none"> Consideration of environmental assessment outcomes during detailed mine planning, for example minimisation of vegetation disturbance, particularly disturbance of areas with higher ecological value. Development and implementation of Extraction Plans to mitigate, monitor, remediate, manage and/or offset potential impacts on ecology. Offset and compensatory measures to maintain or improve the biodiversity values of the surrounding region in the medium to long-term (e.g. provision of like-for-like offsets for impacts to Upland Swamps). Implementation of existing Dendrobium Mine management plans. Surface disturbance protocols (including pre-clearance surveys). Weed and feral animal control measures. Rehabilitation strategy for the Project.
	Aquatic flora and fauna	<p>Detailed Aquatic Ecology Assessment, including:</p> <ul style="list-style-type: none"> Assessment of potential impacts on aquatic species, populations, ecological communities or their habitats, including consideration of subsidence, groundwater and surface water assessments. Identification of measures that would be implemented to maintain or improve the aquatic ecology values of the surrounding region in the medium to long-term. 	<ul style="list-style-type: none"> Consideration of environmental assessment outcomes during detailed mine planning, for example: <ul style="list-style-type: none"> minimisation of impacts to aquatic habitat; development of performance measures. Development and implementation of Extraction Plans to mitigate, monitor, remediate, manage and/or offset potential impacts on aquatic ecology. Offset and compensatory measures to maintain or improve the aquatic ecology values of the surrounding region in the medium to long-term (e.g. stream remediation). Implementation of existing Dendrobium Mine management plans. Surface disturbance protocols (including pre-clearance surveys, implementation of erosion and sediment controls). Rehabilitation strategy for the Project.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Built environment	Public and private infrastructure	<p>Detailed Road Transport Assessment, including:</p> <ul style="list-style-type: none"> Assessment of changes in traffic volumes on the surrounding road network – in accordance with the <i>Guide to Traffic Generating Developments</i> (Roads and Traffic Authority, 2002). Assessment of potential cumulative impacts on the road network resulting from the Project and nearby developments and mines. <p>Detailed Subsidence Assessment of potential subsidence effects on built features including public infrastructure.</p> <p>Focused engagement with WaterNSW in regard to water supply infrastructure.</p>	<ul style="list-style-type: none"> Continued use of existing site access roads to the Dendrobium Mine surface facilities. Construction of a new carpark opposite the Dendrobium Pit Top to accommodate additional Project workforce. Implementation of the Dendrobium Mine <i>Traffic Management Plan</i> and IMC's <i>Driver's Code of Conduct</i>. Implementation of the Dendrobium Mine <i>WaterNSW Asset Management Plan</i>.
Economic	Natural resource use Opportunity cost Livelihood	<p>Detailed Economic Assessment of potential impacts on the regional and NSW economy and a cost-benefit analysis – in accordance with the <i>Guidelines for the economic assessment of mining and coal seam gas proposals</i> (NSW Government, 2015), including:</p> <ul style="list-style-type: none"> Economic assessment of potential impacts on the regional and NSW economy and a cost-benefit analysis, including the Projects strategic importance to the Port Kembla Steelworks. Project justification, including consideration of alternatives, principles of ecologically sustainable development and the objects of the EP&A Act. Consideration of the significance of the coal resource. <p>Focused engagement with other industries and businesses in the area.</p>	<ul style="list-style-type: none"> Development of additional and continued implementation of the existing strategies to maximise local employment and support of local businesses. Continued community contributions from IMC.
Hazards and risks	Bushfire	<p>Standard assessment of potential bushfire risk, including consideration of:</p> <ul style="list-style-type: none"> CSIRO data regarding increased risk of bushfires, changes in rainfall and evaporation due to global climate change. Potential hydrological changes to Upland Swamps in consideration of site-specific data for previously mined under swamps that have been subject to bushfire. Bushfire risk assessments to inform the location and setbacks of Project surface infrastructure. 	<ul style="list-style-type: none"> Implementation of the Dendrobium Mine <i>Bushfire Management Plan</i>. Development of bushfire management and mitigation measures to minimise bushfire risk to and from Project infrastructure.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Hazards and risks (continued)	Dams safety	<p>Detailed Subsidence Assessment of potential subsidence effects on built features, including Avon and Cordeaux Dam walls.</p> <p>Focused engagement with Dams Safety NSW in regard to water supply infrastructure.</p>	<ul style="list-style-type: none"> Development of mitigation, management and monitoring measures for potential subsidence impacts to the Cordeaux Dam, Avon Dam and associated dam walls, in consultation with WaterNSW and Dams Safety NSW (e.g. development of detailed monitoring programs and Trigger Action Response Plans). Implementation of the Dendrobium Mine <i>WaterNSW Asset Management Plan</i>.
	Groundwater contamination	<p>Detailed Groundwater Assessment, including:</p> <ul style="list-style-type: none"> Assessment of the impacts of the Project on the quantity and quality of the region's water resources, connectivity between water sources, water-dependent assets and water-related infrastructure. Assessment of potential cumulative impacts resulting from the Project and nearby developments and mines in accordance with the <i>Aquifer Interference Policy</i> (NSW Government, 2012) and relevant water sharing plans under the <i>Water Management Act 2000</i>. Numerical groundwater modelling in accordance with the <i>Australian Groundwater Modelling Guidelines</i> (Barnett <i>et al.</i>, 2012). Investigation of measures to avoid, mitigate, remediate, monitor and/or offset the potential impacts of the Project. Expert peer review of the groundwater assessment in accordance with the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development Information Guidelines. Groundwater modelling and water quality analysis to reflect water management concepts and sealing designs for mine closure including portal discharge management. <p>Detailed Mine Closure Study to identify feasible sealing options and locations and water management options.</p>	<ul style="list-style-type: none"> Continued implementation of the existing management measures to mitigate, monitor, remediate, manage and offset potential impacts on water resources, including review and update of the site-wide <i>Water Management Plan</i>. Development and implementation of Extraction Plans to mitigate, monitor, remediate, manage and/or offset potential impacts on water resources. Continued use of and extension to the existing groundwater and surface water monitoring networks. Mitigation or other contingency measures in the event that private groundwater users or surface water uses are adversely affected by the Project. Sealing of the Dendrobium Mine post-closure to manage mine inflow/outflow.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Heritage	Historic	<p>Detailed Historic Heritage Assessment, including:</p> <ul style="list-style-type: none"> Assessment of potential impacts on historic heritage. Investigation of measures to avoid, mitigate, monitor and manage the potential impacts of the Project. Focused engagement with interested stakeholders. <p>Detailed Subsidence Assessment of potential subsidence effects on items of historic heritage.</p>	<ul style="list-style-type: none"> Development of a management plan to provide guidance for management of heritage items during the detailed design, construction and operational phases of the Project (e.g. for Dendrobium Pit Top construction works). Surface disturbance protocols (including salvage or demarcation of sites where applicable). Development of subsidence performance measures for any significant historic heritage sites, if required. Adaptive management approach to achieve subsidence performance measures, if required. Development and implementation of Extraction Plans to mitigate, monitor and manage potential impacts on historic heritage.
	Aboriginal cultural	<p>Detailed Aboriginal Cultural Heritage Assessment of impacts on items of Aboriginal heritage and cultural values in accordance with the <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> (DDECCW, 2010) and <i>Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation</i> (Department of Environment and Conservation, 2005), including:</p> <ul style="list-style-type: none"> Assessment of potential cumulative impacts resulting from the Project and other known or potential impacts on Aboriginal cultural heritage sites. Investigation of measures to avoid, mitigate, monitor and manage the potential impacts of the Project. <p>Focused engagement with interested Aboriginal parties.</p> <p>Detailed Subsidence Assessment of potential subsidence effects on Aboriginal cultural heritage items.</p>	<ul style="list-style-type: none"> Consideration of environmental assessment outcomes during detailed mine planning (e.g. locations of Aboriginal heritage sites). Involvement of Aboriginal stakeholders during the assessment and operational phase. Surface disturbance protocols (including salvage or demarcation of sites where applicable). Development of subsidence performance measures for any significant heritage sites. Adaptive management approach to achieve subsidence performance measures. Development and implementation of Extraction Plans to mitigate, monitor and manage potential impacts on Aboriginal heritage.
Land	Stability	<p>Standard assessment of new surface disturbance areas and changes to rehabilitation domains associated with the Project.</p> <p>Detailed Subsidence Assessment of potential subsidence.</p>	<ul style="list-style-type: none"> Update of the <i>Illawarra Metallurgical Coal Mining Operations Plan - Dendrobium Mine and Cordeaux Colliery</i> to incorporate the Project.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Social	Way of life Community Accessibility Culture Surroundings Livelihoods	<p>Detailed Social Impact Assessment prepared in accordance with the <i>Social Impact Assessment Guideline for State Significant Projects</i> (DPIE, 2021d), including:</p> <ul style="list-style-type: none"> Assessment of potential cumulative impacts resulting from the Project and nearby developments and mines. Investigation of measures to avoid, mitigate and/or monitor the potential impacts of the Project. <p>Focused engagement and consideration of extensive engagement undertaken for the previous application with relevant stakeholders as outlined in the SIA Scoping Report (Attachment B).</p>	<ul style="list-style-type: none"> Development of additional and continued implementation of the existing strategies to maximise local employment and support of local businesses. Ongoing community contributions by IMC.
	Health and wellbeing	<p>Detailed Air Quality and Greenhouse Gas Assessment.</p> <p>Detailed Noise and Blasting Assessment.</p> <p>Detailed Social Impact Assessment.</p> <p>Focused engagement with nearby receivers concerned about potential impacts on amenity.</p>	<ul style="list-style-type: none"> Continued use of the existing coal handling and transport infrastructure. Continued implementation of feasible and reasonable mitigation measures on-site to minimise dust emissions and noise generation during construction activities and mining operations. Utilisation of the existing noise and air quality monitoring network, with augmentations as required. Implementation of the Dendrobium Mine <i>Air Quality Management Plan</i> and <i>Noise Management Plan</i>.

Table 4 (Continued)
Key Potential Environmental Issues, Proposed Assessment and Preliminary Strategies

Environmental/Social Matter		Proposed Level and Scope of Assessment	Preliminary Strategies to Address Potential Impacts*
Water Resources	Hydrology Water quality Water availability	<p>Detailed Groundwater Assessment, including:</p> <ul style="list-style-type: none"> Assessment of the impacts of the Project on the quantity and quality of the region's water resources, connectivity between water sources, water-dependent assets and water-related infrastructure. Assessment of potential cumulative impacts resulting from the Project and nearby developments and mines in accordance with the <i>Aquifer Interference Policy</i> (NSW Government, 2012) and relevant water sharing plans under the <i>Water Management Act 2000</i>. Numerical groundwater modelling in accordance with the <i>Australian Groundwater Modelling Guidelines</i> (Barnett <i>et al.</i>, 2012). Investigation of measures to avoid, mitigate, remediate, monitor and/or offset the potential impacts of the Project. Expert peer review of the groundwater assessment in accordance with the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development Information Guidelines. <p>Detailed Surface Water Assessment, including:</p> <ul style="list-style-type: none"> Assessment of the impacts of the Project on the quantity and quality of the region's water resources, connectivity between water sources, water-dependent assets and water-related infrastructure. Assessment against the <i>Neutral or Beneficial Effect on Water Quality Assessment Guideline 2015</i> (Sydney Catchment Authority, 2015). Assessment of potential cumulative impacts resulting from the Project and nearby developments and mines. Detailed site water balance for the Project, incorporating development of a water management strategy for the life of the Project. Investigation of measures to avoid, mitigate, remediate, monitor and/or offset the potential impacts of the Project. <p>Detailed Geological Structures Review to identify relevant geological features in the vicinity of the Project.</p> <p>Detailed Mine Closure Study to identify feasible sealing options and locations and water management options.</p> <p>Focused engagement with key Government agencies.</p>	<ul style="list-style-type: none"> Continued implementation of the existing management measures to mitigate, monitor, remediate, manage and offset potential impacts on water resources, including review and update of the site-wide <i>Water Management Plan</i>. Development and implementation of Extraction Plans to mitigate, monitor, remediate, manage and/or offset potential impacts on water resources. Continued use of and extension to the existing groundwater and surface water monitoring networks. Water management strategy for the Project based on regular reviews of the site water balance. Erosion and sediment control during construction and operation. Appropriate licensing in accordance with the legislative requirements of the <i>Water Management Act 2000</i>. Mitigation or other contingency measures in the event that private groundwater users or surface water uses are adversely affected by the Project. Management of controlled water discharges in accordance with EPL 3241. Provision of surface water offsets such that the Project would be consistent with Government policy to achieve "net gain" to water supplies (through surface water offsets). Provision of water quality improvement actions as part of the Project to target reduced sedimentation in the Special Catchment Areas. Mitigation, offset and/or compensatory measures to achieve net neutral or beneficial effect on water quality in the Avon Dam and Cordeaux Dam catchments.

* To be refined during detailed impact assessments.

7 REFERENCES

- BAEconomics (2020) *Review of the Key Economic Interactions between the Dendrobium Mine and Related Entities in the Wollongong Region*.
- Barnett, B., Townley, L.R., Post, V., Evans, R.E., Hunt, R.J., Peeters, L., Richardson, S., Werner, A.D., Knapton, A. and Boronkay, A., (2012). *Australian groundwater modelling guidelines, Waterlines report 82. National Water Commission, Canberra*.
- Cardno Forbes Rigby (2007). *Application for Further Approval of West Cliff Emplacement Stage 3*.
- Commonwealth of Australia (2017) *Australia's Steel Industry: Forging Ahead. Senate Economics References Committee*.
- Department of Energy and Climate Change (2009) *NSW Interim Construction Noise Guideline*.
- Department of Environment and Conservation (2005) *Aboriginal Cultural Heritage Impact Assessment and Community Consultation*.
- Department of Environment, Climate Change and Water (2010) *Aboriginal Cultural Heritage consultation requirements for proponents 2010*.
- Department of Environment, Climate Change and Water (2011) *NSW Road Noise Policy*.
- Department of Planning, Industry and Environment (2020a) *Dendrobium Mine Extension Project*.
- Department of Planning, Industry and Environment (2020b) *Biodiversity Assessment Method*.
- Department of Planning, Industry and Environment (2021a) *State Significant Infrastructure Guidelines*.
- Department of Planning, Industry and Environment (2021b) *Undertaking Engagement Guidelines for State Significant Projects*.
- Department of Planning, Industry and Environment (2021c) *Cumulative Impact Assessment Guidelines for State Significant Projects*.
- Department of Planning, Industry and Environment (2021d) *Social Impact Assessment Guideline for State Significant Projects*.
- Department of Planning, Industry and Environment (2021e) *State Significant Infrastructure Guidelines – Preparing an Environmental Impact Statement*.
- Elliot Whiteing (2019). *Dendrobium Mine – Plan for the Future: Coal for Steelmaking Social Impact Statement*.
- Environment Protection Authority (2016) *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*.
- Environment Protection Authority (2017) *Noise Policy for Industry*.
- Greater Sydney Local Land Services (2016) *Greater Sydney Local Strategic Plan 2016-2021*.
- Illawarra Coal Holdings Pty Ltd (2009). *Bulli Seam Operations Environmental Impact Statement*.
- Independent Expert Panel for Mining in the Catchment (2019) *Report of the Independent Expert Panel for Mining in the Catchment: Part 2 – Coal Mining Impacts in the Special Areas of the Greater Sydney Water Catchment*. Prepared for the NSW Department of Planning, Industry and Environment.
- National Parks and Wildlife Services (2020) *Developments adjacent to National Parks and Wildlife Service lands: Guidelines for consent and planning authorities*.
- New South Wales Government (2012). *NSW Aquifer Interference Policy*.
- New South Wales Government (2014) *A Plan for Growing Sydney*.
- New South Wales Government (2015a) *Guidelines for the economic assessment of mining and coal seam gas proposals*.
- New South Wales Government (2017a) *South East and Tablelands Regional Plan 2036*.
- New South Wales Government (2017b) *Peer Review Guideline*.
- New South Wales Government (2018a) *Our Greater Sydney 2056: South District Plan – connecting communities*.

New South Wales Government (2018b). *Our Greater Sydney 2056: Western City District Plan – connecting communities.*

New South Wales Government (2018c). *Voluntary Land Acquisition and Mitigation Policy – For State Significant Mining, Petroleum and Extractive Industry Developments.*

New South Wales Government (2019). *Circular Economy Policy Statement.*

New South Wales Government (2020a) *Strategic Statement on Coal Exploration and Mining in NSW.*

New South Wales Government (2020b) *Net Zero Plan Stage 1: 2020-2030.*

New South Wales Government (2021) *Illawarra Shoalhaven Regional Plan 2041.*

Olsen Environmental Consulting (2001). *Environmental Impact Statement for the Dendrobium Underground Coal Mine.*

Roads and Traffic Authority (2002) *Guide to Traffic Generating Developments.*

Sydney Catchment Authority (2015). *The Neutral or Beneficial Effect on Water Quality Assessment Guideline.*

Wingecarribee Shire Council (2016) *Wingecarribee Local Planning Strategy 2015-2031.*

Wollondilly Shire Council (2013). *Wollondilly Community Strategic Plan 2033.*

Wollongong City Council (2018) *Our Wollongong 2028 – Community Strategic Plan.*

8 ABBREVIATIONS AND ACRONYMS

		EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
%	percent	EPIs	Environmental Planning Instruments
ACCC	Australian Competition and Consumer Commission	EPL	Environment Protection Licence
BCD	Biodiversity and Conservation Division	FSL	Full Supply Level
CCL	Consolidated Coal Lease	ha	hectares
CMSC Act	<i>Coal Mine Subsidence Compensation Act 2017</i>	IEPMC	Independent Expert Panel for Mining in the Catchment
CPP	Coal Preparation Plant	IMC	Illawarra Metallurgical Coal
CSIRO	Commonwealth Scientific and Industrial Research Organisation	IPC	Independent Planning Commission
CSSI	Critical State Significant Infrastructure	km	kilometres
DCCC	Dendrobium Community Consultative Committee	LGA	Local Government Area
DCEP	Dendrobium Community Enhancement Program	m	metres
DEC	NSW Department of Environment and Conservation (now DPIE)	Mt	million tonnes
DECCW	Department of Environment, Climate Change and Water	Mtpa	million tonnes per annum
Dendrobium Coal	Dendrobium Coal Pty Ltd	NPV	net present value
DPIE	NSW Department of Planning, Industry and Environment	NPWS	National Parks and Wildlife Services
EIS	Environmental Impact Statement	NSW	New South Wales
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>	PoEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
EP&A Regulation	<i>NSW Environmental Planning and Assessment Regulation 2000</i>	ROM	run-of-mine
EPA	NSW Environment Protection Authority	SEARs	Secretary's Environmental Assessment Requirements
		SEPP	State Environmental Planning Policy
		SIA	Social Impact Assessment
		SMP	Subsidence Management Plan
		South32	South32 Limited

SSD	State Significant Development
SSI	State Significant Infrastructure
the previous application	Dendrobium Mine – Plan for the Future: Coal for Steelmaking
the Project	Dendrobium Mine Extension Project
WM Act	<i>Water Management Act 2000</i>

ATTACHMENT A
IPC STATEMENT OF REASONS RECONCILIATION TABLE

**Table A-1
IPC Statement of Reasons Reconciliation Table**

Aspect		Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
1	Economics	<ul style="list-style-type: none"> IPC conclusion that the benefits of the previous application do not outweigh adverse impacts. IPC uncertainty as to why it would be ok for previous application to supply no Wongawilli Seam coal to BlueScope until approximately 2043 (and given Area 6 does not form part of the revised Project). IPC uncertainty as to why BlueScope is reliant on an extension of the Dendrobium Mine specifically, in consideration that both IMC's Appin Mine and Peabody's Metropolitan Mine could continue to supply Bulli Seam coal to the steelworks. 	<ul style="list-style-type: none"> Economic Assessment based on revised mine plan. The NSW Government has declared the Project SSI, therefore, confirming the significant socio-economic benefits of the Project and its importance to the broader Southern Coalfield economic ecosystem. IMC has consulted with BlueScope in regard to the change from Wongawilli Seam coal to Bulli Seam coal for Area 5. In addition, BlueScope's previous submissions on the previous application have confirmed the importance of the continued supply of metallurgical coal from local sources in the Southern Coalfield. Ultimately the decision around coal supplies and blends as important ingredients for steelmaking lies with the end user. However, current supplies of Wongawilli Seam coal from Dendrobium Area 3 will cease regardless of the Project. The coal from Area 5 is planned to be blended with Appin coal to produce a premium metallurgical coal product suitable for use in steelmaking in both the domestic and export markets. The continued operation of the Dendrobium Mine via the Project supports the viability of IMC and the broader Southern Coalfield economic ecosystem (which includes the Port Kembla Steelworks) as a whole.

Table A-1 (Continued)
IPC Statement of Reasons Reconciliation Table

Aspect	Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
<p>2</p> <p>Special Catchment Areas</p>	<ul style="list-style-type: none"> • IPC conclusion that the previous application is incompatible with the Metropolitan Special Area: <ul style="list-style-type: none"> - uncertainty in the prediction and magnitude of subsidence impacts of the previous application; and - uncertainty in the quantum of surface water losses and impact to the catchment. 	<ul style="list-style-type: none"> • Surface Water Assessment and Groundwater Assessment based on revised mine plan demonstrating a reduction in impacts to water resources (approximately 60% reduction in surface water losses from the previous mine plan) through: <ul style="list-style-type: none"> - approximately 60% reduction in longwall mining area (from the previous application); - reduced mine life; - no predicted connective fracturing to the surface when calculated using the Tammetta Equation (which the Independent Advisory Panel for Underground Mining [IAPUM] has stated provides a conservative method for calculating the height of fracturing); - no longwall mining beneath 3rd, 4th or 5th order (or above) streams; - approximately 50% reduction in the length of 1st and 2nd order streams longwall mined beneath; • Revised Project mine plan that results in the following additional benefits: <ul style="list-style-type: none"> - approximately 40% reduction in number of swamps (listed as threatened) longwall mined beneath (from the previous application); - no longwall mining beneath identified key stream features; - reduction in the number of previously identified Aboriginal heritage sites directly mined under from 22 sites to six sites; - no longwall mining beneath previously identified high archaeological significance Aboriginal heritage sites; - longwall mining at least 400 metres from the Avon River, Cordeaux River and Donalds Castle Creek; - longwall mining at least 300 metres from the Full Supply Levels of Sydney’s water supply reservoirs; - longwall mining at least 1,000 metres from dam walls; • Surface water offsets: <ul style="list-style-type: none"> - the Project would be consistent with Government policy to achieve “net gain” to water supplies (through surface water offsets); - Government would need to create a licensing regime specifically for the Project consistent with the recommendations of the IEPMC and the Minister’s media statement; • IPC concluded that the previous application satisfied NorBE (i.e. accepted the previous project would have a neutral or beneficial effect to water quality in the catchment [including post-mining] and reduced mine plan for the Project would also reduce potential water quality impacts by reducing surface disturbance from 28.5 hectares (ha) to approximately 20 ha. • Subsidence Assessment based on revised mine plan demonstrating a reduction in subsidence impacts (as per above). The maximum predicted vertical subsidence for the Project is approximately 20% less than the maximum predicted values based on the previous mine plan (inclusive of Area 6), due to the lower extraction height in Area 5. In addition, the extent of the longwall mining area for the Project has been reduced and the extents of the natural and built features affected by subsidence are less than that based on the previous mine plan. • Subsidence impacts are not uncertain as predictions are based on site specific data from the current operations which has been updated for the revised mine plan, and conservative assumptions where necessary.

Table A-1 (Continued)
IPC Statement of Reasons Reconciliation Table

3	Aspect	Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
	Groundwater/ Mine Closure	<ul style="list-style-type: none"> • IPC uncertainty that the Dendrobium Mine and Project can be adequately sealed. • IPC conclusion that risks and impacts of groundwater recovery on the surface water environment post-closure are uncertain. 	<ul style="list-style-type: none"> • Groundwater Assessment based on revised mine plan that considers groundwater recovery and potential water quality impacts post-closure, including analysis of site-specific data from the Dendrobium Mine. • Specific Mine Closure Study to identify feasible sealing options and locations and water management options. • Groundwater modelling to reflect closure study water management concepts and sealing designs including portal discharge management. • Revised mine plan includes areas of reduced extraction height and higher depths of cover such that the recommended groundwater conceptualisation means there will be a constrained zone above Area 5 which would therefore limit potential for groundwater from the coal seam to reach the surface. • General: <ul style="list-style-type: none"> - mine closure is an issue with or without the Project (i.e. historical catchment wide issue); - IAPUM recommended a Mine Closure Plan to address closure issues which was adopted by DPIE. The EIS will outline clear closure management concepts and engineering basis of design for post-closure water management; - IMC holds groundwater licences under the <i>Water Management Act 2000</i> to account for ongoing groundwater take, including post-mining; - surface water offsets provide an upfront payment for post-mining surface water losses (i.e. based on surface water losses into perpetuity); - IPC concluded that the previous mine plan satisfied NorBE and therefore inherently accepted the previous application would have a neutral or beneficial effect to water quality in the catchment (including post-mining), which would be the case for the Project.
	Surface Water	<ul style="list-style-type: none"> • IPC uncertainty in the ability to accurately predict the quantum and impact of surface water loss from the catchment. • IPC uncertainty that surface water losses can be addressed by mitigation measures/conditions of consent. 	<ul style="list-style-type: none"> • Surface Water Assessment and Groundwater Assessment based on the revised mine plan will demonstrate reduction in impacts (approximately 60% reduction in surface water losses from the previous mine plan) (as per Item 1). • Surface water loss and groundwater modelling has been refined during several subsequent longwall extraction Subsidence Management Plan applications and has general acceptance by major stakeholders such as WaterNSW and DPIE. • As per previous application, the surface water offset proposal for the Project (via Planning Agreement with the Minister for Water) is consistent with Government policy to achieve “net gain” to water supplies (through surface water offsets).

Table A-1 (Continued)
IPC Statement of Reasons Reconciliation Table

Aspect	Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
5	Biodiversity <ul style="list-style-type: none"> IPC conclusion that the previous application does not meet the “avoid” principle in its mine plan. IPC uncertainty that long-term biodiversity impacts can be addressed via offsets (including like-for-like offsets for Upland Swamps). 	<ul style="list-style-type: none"> Biodiversity Development Assessment Report and Aquatic Ecology Assessment based on revised mine plan will demonstrate reduction in potential impacts to biodiversity (as per Item 1). Additional avoidance measures (reduction from 26 to 15 Upland Swamps directly mined under): <ul style="list-style-type: none"> removal of Area 6 (avoidance of all Upland Swamps directly mined under in Area 6 [i.e. avoidance of mining beneath five swamps]); refinement to Area 5 layout (avoidance of six additional swamps directly mined under); IAPUM acknowledges that complete avoidance of swamps/streams is not possible: <i>The Panel recognises that not all streams, swamps or other ecological assets can be protected while still having a viable mining plan.⁴</i> Biodiversity impacts may be offset via the NSW Biodiversity Offset System and consistent with Government policy – as is standard with all State Significant Development/SSI projects. Like for like offsets for swamps are available for the Project via IMC’s offset property. IMC has secured an offset property in order to offset project swamp impacts on a like-for-like basis. This exceeds NSW Government policy requirements which provide for proponents to pay into the Biodiversity Conservation Fund to offset such impacts.

⁴ <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-8194%2120201102T055834.983%20GMT>

Table A-1 (Continued)
IPC Statement of Reasons Reconciliation Table

Aspect	Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
6	Aboriginal Heritage <ul style="list-style-type: none"> IPC conclusion that impacts to Aboriginal cultural heritage sites are unacceptable and do not meet the principles of ecologically sustainable development. 	<ul style="list-style-type: none"> Aboriginal Cultural Heritage Assessment based on revised mine plan that demonstrates reduction in potential impacts. Revised mine plan that results in reduction in previously identified sites directly mined under from 22 sites to six sites (see Item 1) including through: <ul style="list-style-type: none"> refinement of Area 5 layout which reduces impacts to sites (reduction from 16 sites to six sites directly mined under); avoidance of mining under all sites previously identified as high archaeological significance in Area 5; removal of Area 6 (avoidance of six Aboriginal Cultural Heritage sites); While the Project would seek to subside a number of Aboriginal heritage items, anticipated low likelihood of significant impacts to sites (based on extensive monitoring from the Southern Coalfield). The EIS will include reference to IMC's recently developed company-wide policy statement <i>Our Approach to Australian Aboriginal and Torres Strait Islanders' Cultural Heritage</i> and IMC's guiding principles and management measures outlined in regard to management of Aboriginal cultural heritage. Revised ACHA in consultation with Registered Aboriginal Parties (RAPs).
7	Bushfire <ul style="list-style-type: none"> IPC conclusion that inadequate assessment of increased bushfire risk as a result of the previous application and is not consistent with principles of ESD. 	<ul style="list-style-type: none"> Greenhouse Gas Assessment (new for Project) which considers potential risk of bushfire. Bushfire risk assessment has been undertaken to inform the location and setbacks of ventilation shaft and gas drainage/flaring infrastructure. Bushfire management and mitigation measures have been developed to minimise bushfire risk to and from Project infrastructure. EIS will consider CSIRO data regarding increased risk of bushfires, changes in rainfall and evaporation due to global climate change – noting that these changes are not attributable to the Project (except insofar as the Project's contribution to global greenhouse gas emissions). The EIS will assess potential hydrological changes to Upland Swamps and will identify offset requirements accordingly – in consideration of site-specific data for previously mined under swamps that have been subject to bushfire.

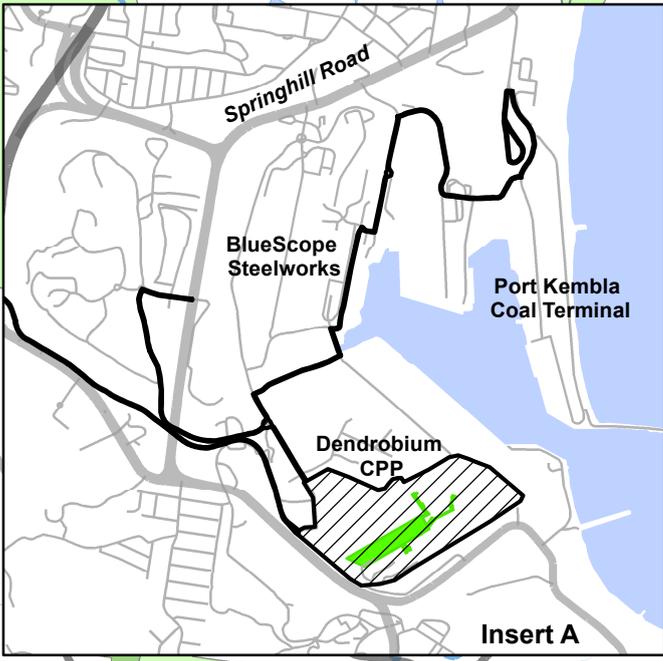
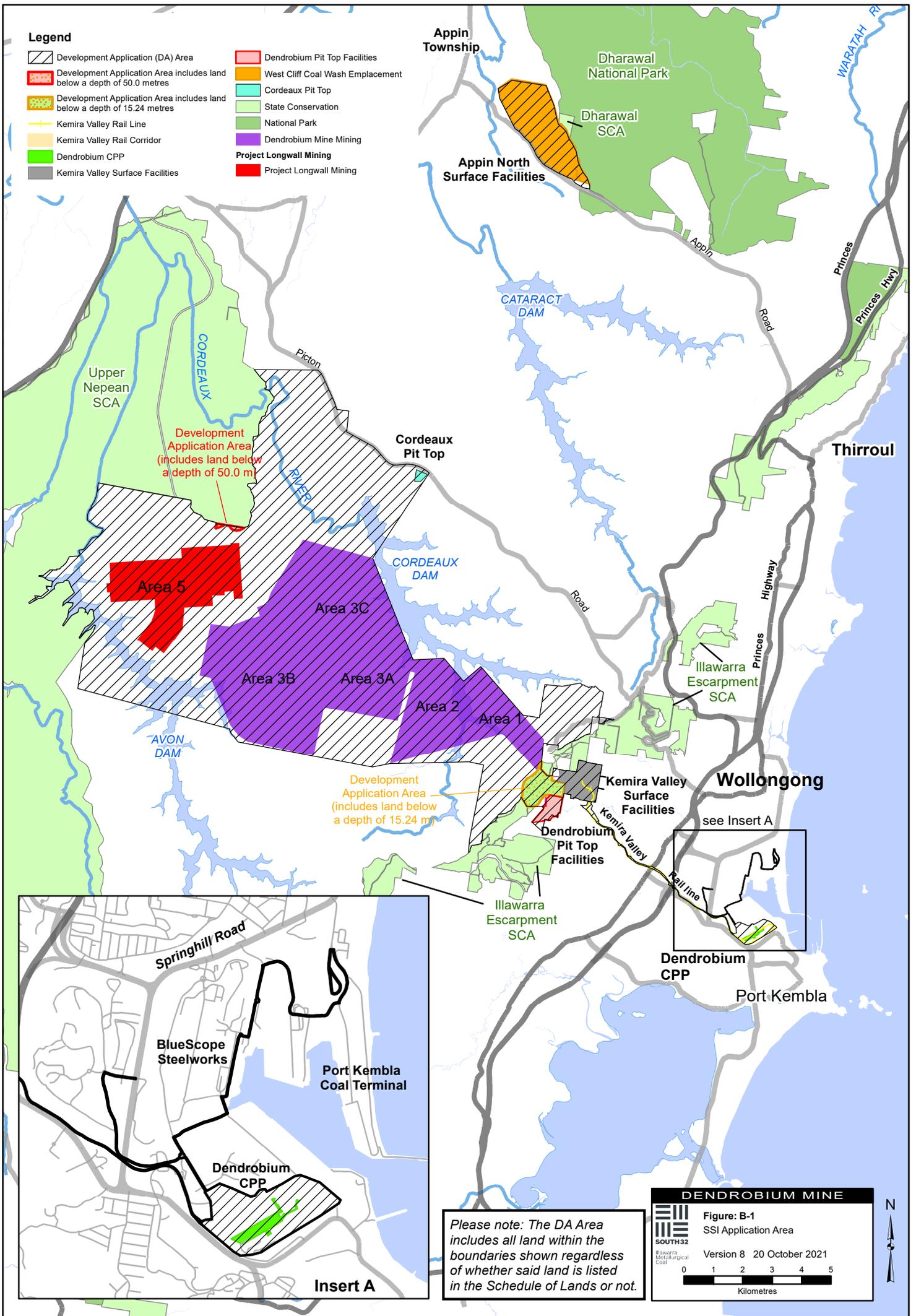
Table A-1 (Continued)
IPC Statement of Reasons Reconciliation Table

Aspect	Key Points to Address	How Key Point has been Addressed by the Dendrobium Mine Extension Project
<p>8</p> <p>Statutory Context</p>	<ul style="list-style-type: none"> • IPC conclusion that the previous application did not satisfy the objects of the EP&A Act. • IPC conclusion that the previous application did not satisfy the principle of intergenerational equity and triggered the precautionary principle. 	<ul style="list-style-type: none"> • EIS to describe: <ul style="list-style-type: none"> - strategic importance of Project (refer to Item 1); - statutory context; - measures to be implemented to avoid impacts (i.e. changes to revised mine plan); - conservatism in modelling methodology to predict impacts; - mitigation and management measures and offsets to address potential impacts, consistent with Government policy. • Addressing aspects 1 to 7 (refer to rows above) will assist in demonstrating that ESD, intergenerational equity and the precautionary principle are addressed by revised mine plan.

ATTACHMENT B
PRELIMINARY SSI APPLICATION AREA AND SCHEDULE OF LANDS

Legend

-  Development Application (DA) Area
-  Development Application Area includes land below a depth of 50.0 metres
-  Development Application Area includes land below a depth of 15.24 metres
-  Kemira Valley Rail Line
-  Kemira Valley Rail Corridor
-  Dendrobium CPP
-  Kemira Valley Surface Facilities
-  Dendrobium Pit Top Facilities
-  West Cliff Coal Wash Emplacement
-  Cordeaux Pit Top
-  State Conservation
-  National Park
-  Dendrobium Mine Mining
-  Project Longwall Mining

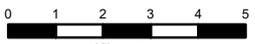


Please note: The DA Area includes all land within the boundaries shown regardless of whether said land is listed in the Schedule of Lands or not.

DENDROBIUM MINE

 **Figure: B-1**
SSI Application Area

Version 8 20 October 2021





**Table B-1
Schedule of Lands – Crown Lands**

Tenure Type	Lot Number	Deposited Plan Number
Crown	21	DP1190749
Crown	212	DP1176205
Crown	101	DP1263480

**Table B-2
Schedule of Lands – Cadastral Parcels**

Tenure Type	Lot Number	Deposited Plan Number
Freehold	1	DP1000997
Freehold	1	DP1001013
Freehold	1	DP1001210
Freehold	1	DP1006994
Freehold	1	DP1012600
Freehold	2	DP1061983
Local Government Authority	1	DP1061983
Freehold	22	DP1076092
Freehold	13	DP1092321
Freehold	1	DP1098046
Freehold	142	DP1098209
Freehold	11	DP1101896
Freehold	3	DP1103666
Freehold	2	DP1103666
Freehold	1	DP1103666
Freehold	1	DP1103781
Freehold	18	DP1111734
Freehold	50	DP1115767
Freehold	114	DP1127132
Freehold	22	DP1128396
Freehold	19	DP1131362
Freehold	103	DP1141089
Freehold	302	DP1148391
Freehold	2	DP1157196
Freehold	81	DP1170187
NSW Government	1920	DP1176023
Freehold	701	DP1177300
Freehold	12	DP1182111
Freehold	11	DP1182111
NSW Government	4	DP1185541
NSW Government	7	DP1185541
NSW Government	8	DP1185541

Table B-2 (Continued)
Schedule of Lands – Cadastral Parcels

Tenure Type	Lot Number	Deposited Plan Number
NSW Government	6	DP1185541
NSW Government	3	DP1185541
NSW Government	64	DP1188514
NSW Government	45	DP1189567
Freehold	2	DP1190181
Freehold	1	DP1190181
Freehold	1	DP1190306
Freehold	2	DP1190306
Freehold	138	DP1190404
Freehold	21	DP1190621
Freehold	1	DP1190768
Freehold	115	DP1190868
Freehold	2	DP1191281
Freehold	1	DP1191281
NSW Government	171	DP1193240
Freehold	161	DP1196124
Freehold	74	DP1218449
NSW Government	14	DP1233164
Freehold	1	DP156003
Freehold	1	DP156521
Freehold	2	DP157009
Freehold	3	DP157009
Freehold	1	DP157009
Freehold	1	DP159797
Freehold	2	DP159797
Freehold	3	DP159797
Freehold	1	DP164689
Freehold	1	DP171969
Unknown	1	DP191695
Freehold	3	DP196371
Freehold	2	DP196371
Freehold	1	DP196406
Freehold	3	DP196426
Freehold	2	DP196426
Freehold	1	DP196426
Freehold	2	DP196766
Freehold	1	DP196766
Freehold	2	DP196993
Freehold	1	DP196993

Table B-2 (Continued)
Schedule of Lands – Cadastral Parcels

Tenure Type	Lot Number	Deposited Plan Number
Freehold	4	DP203034
Freehold	3	DP203034
Freehold	1	DP203263
Freehold	2	DP208440
Freehold	1	DP208743
Freehold	2	DP208744
Freehold	3	DP214572
Freehold	25	DP216637
Freehold	2	DP217891
Freehold	1	DP221602
Freehold	1	DP227274
Freehold	2	DP227274
Freehold	12	DP250762
Freehold	11	DP250762
NSW Government	1	DP255281
Freehold	18	DP255285
Freehold	14	DP255285
Freehold	16	DP255285
Freehold	15	DP255285
Freehold	68	DP259919
Freehold	13	DP401354
Freehold	7	DP401354
Freehold	12	DP401354
Freehold	8	DP401354
Freehold	1	DP41756
Freehold	2	DP41756
Freehold	70	DP432516
Freehold	1	DP44334
Freehold	1	DP45861
Freehold	1	DP553102
Freehold	1	DP560813
Freehold	1	DP575707
Freehold	102	DP602229
Freehold	1	DP60361
Unknown	1	DP606430
Freehold	1	DP606431
Freehold	1	DP606434
Freehold	1	DP615178
Freehold	1	DP713256

Table B-2 (Continued)
Schedule of Lands – Cadastral Parcels

Tenure Type	Lot Number	Deposited Plan Number
Freehold	1	DP724278
Freehold	1	DP740795
Freehold	1	DP745811
Freehold	1	DP745812
Unknown	1	DP745816
Freehold	1	DP745817
Freehold	23	DP751278
Freehold	68	DP751278
Unknown	170	DP751278
Freehold	166	DP751278
Freehold	134	DP751278
Freehold	137	DP751278
Freehold	284	DP751278
Freehold	289	DP751278
Freehold	30	DP751278
Freehold	275	DP751278
Freehold	279	DP751278
Freehold	285	DP751278
Freehold	216	DP751278
Freehold	217	DP751278
Freehold	24	DP751278
Freehold	13	DP751278
Freehold	276	DP751278
Freehold	278	DP751278
Freehold	1	DP782097
Freehold	6	DP867936
Freehold	7	DP867936
Freehold	1	DP907377
Freehold	213	DP914738
Freehold	212	DP914738
Freehold	1990	DP914739
NSW Government	2140	DP914740
NSW Government	2000	DP914741
Freehold	1	DP920893
Freehold	1	DP920894
Freehold	1	DP986723

**Table B-3
Schedule of Lands – Other**

Other	
Kemira Valley Rail Line	-
State Rail Authority (Crown)	Railway lands located between or adjacent to the above parcels of land
Wollondilly Shire Council, Wingecarribee Shire Council, Wollongong City Council or Crown	Other roads located between or adjacent to the above parcels of land
Crown	Creeks or streams located between or adjacent to the above parcels of land
Unidentified	Closed Road (Crown)
<p>In addition to the above, the SSI Application Area includes all land shown within the boundaries of the SSI Application Area in Figure B-1 regardless of whether said land is listed in the Schedule of Lands or not.</p> <p>The land parcels within the SSI Application Area (listed above) were extracted from the NSW Digital Cadastral Database (DCDB) via GIS. The DCDB was downloaded from https://maps.six.nsw.gov.au/clipnship.html in October 2021. No guarantee can be made regarding the accuracy of this data.</p>	

**ATTACHMENT C
SIA SCOPING REPORT**



SOCIAL IMPACT ASSESSMENT: SCOPING REPORT

For the Dendrobium Mine Extension Project



Provided for

SOUTH32

Author

DANIEL HOLM



SQUARE PEG
SOCIAL PERFORMANCE

EXECUTIVE SUMMARY

Illawarra Metallurgical Coal (IMC) is seeking an Infrastructure Approval for the Dendrobium Mine Extension Project (the Project) which would seek to extract and process up to 5.2 million tonnes per annum of run-of-mine coal. The Project includes a new mining domain (Area 5) within the existing Consolidated Coal Lease 768 and the continuation of the existing Dendrobium Mine surface facilities at Mount Kembla, approximately 8 kilometres (km) from Wollongong in New South Wales (NSW).

The Project would extend the operation of the Dendrobium Mine to the end of 2041, and at full development would require an additional 50 operational personnel and up to approximately 100 personnel for construction and development activities.

The Project is critical to the continued viability of IMC. A viable IMC is a key enabler to the success of the broader Southern Coalfield economic ecosystem (which includes the Port Kembla Steelworks, the Port Kembla Coal Terminal and other industries).

This document is the Social Impact Assessment (SIA) for the Scoping Report for the Project, and has been developed in accordance with the NSW Department of Planning, Industry and Environment's *Social Impact Assessment Guideline for State Significant Projects* (Department of Planning Industry and Environment, 2021d). This document identifies likely affected stakeholder groups, defines a social locality for the Project, provides an initial understanding of the social baseline of the affected community, and proposes a methodology for the SIA to support the Environmental Impact Statement (EIS) for the Project.

Ten potential impacts and benefits have been identified for the SIA to support the EIS for the Project. Impacts considered to require standard assessment include:

- Contribution to ongoing viability of mining and steelmaking in the Illawarra region, thus supporting population stability and community sustainability.
- Sustaining Mount Kembla's traditional identity as a mining community.
- Ongoing contribution to community wellbeing and sustainability of the primary and secondary social localities.
- Continuation of the existing Dendrobium Mine workforce of 650 employees and creation of approximately 50 additional operational employment opportunities and 100 construction employment opportunities, as well as supporting the continuation of employment within the Southern Coalfield economic ecosystem.
- Further opportunity to contribute to gender equality and economic reconciliation.



SIA Scoping Report

Impacts for which a detailed assessment is proposed include:

- Potential impact to Aboriginal heritage sites affecting Indigenous peoples.
- Potential impacts to environmental values and water catchment.
- Potential for noise and dust impacting residents in the vicinity of the Dendrobium Pit Top and Kemira Valley Coal Loading Facility (similar to current levels).
- Potential for rail noise impacting residents along the Kemira Valley Rail Line (similar to current levels).
- Ongoing contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.

The SIA will analyse and evaluate the potential benefits and impacts of the Project, drawing on primary and secondary data collection and community consultation.

GLOSSARY AND ABBREVIATIONS

Term	Meaning
ABS	Australian Bureau of Statistics
CCC	Community Consultative Committee
CCL	Consolidated Coal Lease
CPP	Coal Preparation Plant
DCEC	Dendrobium Community Enhancement Committee
DCEP	Dendrobium Community Enhancement Program
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
EPL	Environmental Protection Licence
ETL	Electricity Transmission Line
IAIA	International Association of Impact Assessment
ICMM	International Council on Mining and Metals
IPC	Independent Planning Commission
LGA	Local Government Area
MSA	Metropolitan Special Area
Mt	Million tonnes
Mtpa	Million tonnes per annum
NSW	New South Wales
ROM	Run-of-mine
SEARS	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment

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1. INTRODUCTION

1.1 Background and Purpose

The Dendrobium Mine is an underground metallurgical coal mine situated in the Southern Coalfield of New South Wales (NSW) approximately 8 kilometres (km) west of Wollongong.

Dendrobium Coal Pty Ltd, a wholly owned subsidiary of Illawarra Coal Holdings Pty Ltd (Illawarra Metallurgical Coal [IMC]), a wholly owned subsidiary of South32 Limited (South32), is the owner and operator of the Dendrobium Mine. The Dendrobium Mine, Appin Mine and supporting operations are managed by IMC.

Development Consent DA 60-03-2001 for the Dendrobium Mine was granted by the NSW Minister for Urban Affairs and Planning under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) in November 2001.

The Dendrobium Mine extracts coal from the Wongawilli Seam (also known as the No 3 Seam) within Consolidated Coal Lease (CCL) 768 using underground longwall mining methods. The Dendrobium Mine includes five approved underground mining domains, named Areas 1, 2, 3A, 3B and 3C. Longwall mining is currently being undertaken in Area 3B, with extraction largely complete in Areas 1, 2 and 3A (Figure 1). The Dendrobium Mine has an approved operational capacity of up to 5.2 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal until 31 December 2030.

The Dendrobium Mine provides ongoing work to approximately 650 employees and contractors from the region. Through its supply chain it further supports numerous businesses – small and large – in the Illawarra region and beyond.

IMC is seeking an Infrastructure Approval for the Dendrobium Mine Extension Project (the Project), which would support the extraction of approximately 31 million tonnes (Mt) of ROM coal from Area 5 (see Figure 2), within CCL 768. The life of the Project includes longwall mining in Area 5 up to approximately 31 December 2034, and ongoing use of existing surface facilities until 2041 (including for handling of Area 3C ROM coal).

In December 2021, the Project was declared State Significant Infrastructure (SSI) under Section 5.12 of Part 5 of the EP&A Act by the Minister for Planning, due to its strategic importance to the broader Southern Coalfield economic ecosystem. Approval for the Project will be sought under the SSI provisions (i.e. Division 5.2) under Part 5 of the EP&A Act.

Square Peg Social Performance has been engaged by IMC to carry out a Social Impact Assessment (SIA) as part of the Environmental Impact Statement (EIS) for the Project. This document is the SIA Scoping Report and its purpose is to inform the NSW Department of Planning, Industry and Environment (DPIE) in its preparation of the Secretary's Environmental Assessment Requirements (SEARs) for the Project.

It has been prepared in accordance with the *Social Impact Assessment Guideline for State Significant Projects* (Department of Planning Industry and Environment, 2021d) and its supporting *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects* (Department of Planning Industry and Environment, 2021e), referred to as the *SIA Guideline* and *Technical Supplement*. The key purposes of the SIA scoping process as described in the SIA Guideline are to:

- gain an initial understanding of the project's social locality;
- gain an initial understanding of the characteristics of the communities within the project's social locality (described as the social baseline);
- conduct an initial evaluation of the likely social impacts for different groups in the social locality and the level to which these impacts need to be assessed;
- consider potential refinements or approaches in response to likely social impacts; and
- consider the remainder of the SIA tasks, including engagement.

1.2 Project Description

The Project would include the following activities:

- longwall mining of the Bulli Seam in a new underground mining area (Area 5);
- development of underground roadways from the existing Dendrobium Mine underground mining areas (namely Area 3) to Area 5;
- use of existing Dendrobium Mine underground roadways and drifts for personnel and materials access, ventilation, dewatering and other ancillary activities related to Area 5;
- development of new surface infrastructure associated with mine ventilation and gas management and abatement, water management and other ancillary infrastructure;
- handling and processing of up to 5.2 Mtpa of ROM coal (no change from the approved Dendrobium Mine);
- extension of mining operations in Area 5 until approximately 2035;
- use of the existing Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Dendrobium Coal Preparation Plant (CPP) and Dendrobium Shafts with minor upgrades and extensions until approximately 2041;
- transport of sized ROM coal from the Kemira Valley Coal Loading Facility to the Dendrobium CPP via the Kemira Valley Rail Line;
- handling and processing of coal from the Dendrobium Mine (including the Project) and IMC's Appin Mine (if required) to the Dendrobium CPP;
- delivery of coal from the Dendrobium CPP to Port Kembla for domestic use at the Port Kembla Steelworks and Liberty Primary Steel Whyalla Steelworks or export through the Port Kembla Coal Terminal;
- transport of coal wash by road to customers for engineering purposes (e.g. civil construction fill), for other beneficial uses and for emplacement at the West Cliff Stage 3 and Stage 4 Coal Wash Emplacement;
- development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement (noting that opportunities for beneficial use of coal wash would be maximised);
- continued use of the Cordeaux Pit Top for mining support activities such as exploration, environmental monitoring, survey, rehabilitation, administration and other ancillary activities;

SIA Scoping Report

- progressive development of sumps, pumps, pipelines, water storages and other water management infrastructure;
- controlled release of excess water in accordance with the conditions of Environmental Protection Licence (EPL) 3241 and beneficial use;
- monitoring, rehabilitation and remediation of subsidence and other mining effects; and
- other associated infrastructure, plant, equipment and activities.

The Project would involve a construction workforce of approximately 100 personnel and provide ongoing employment to approximately 700 mine personnel.

Table 1 provides a comparative summary of activities associated with the Project compared to the approved Dendrobium Mine.

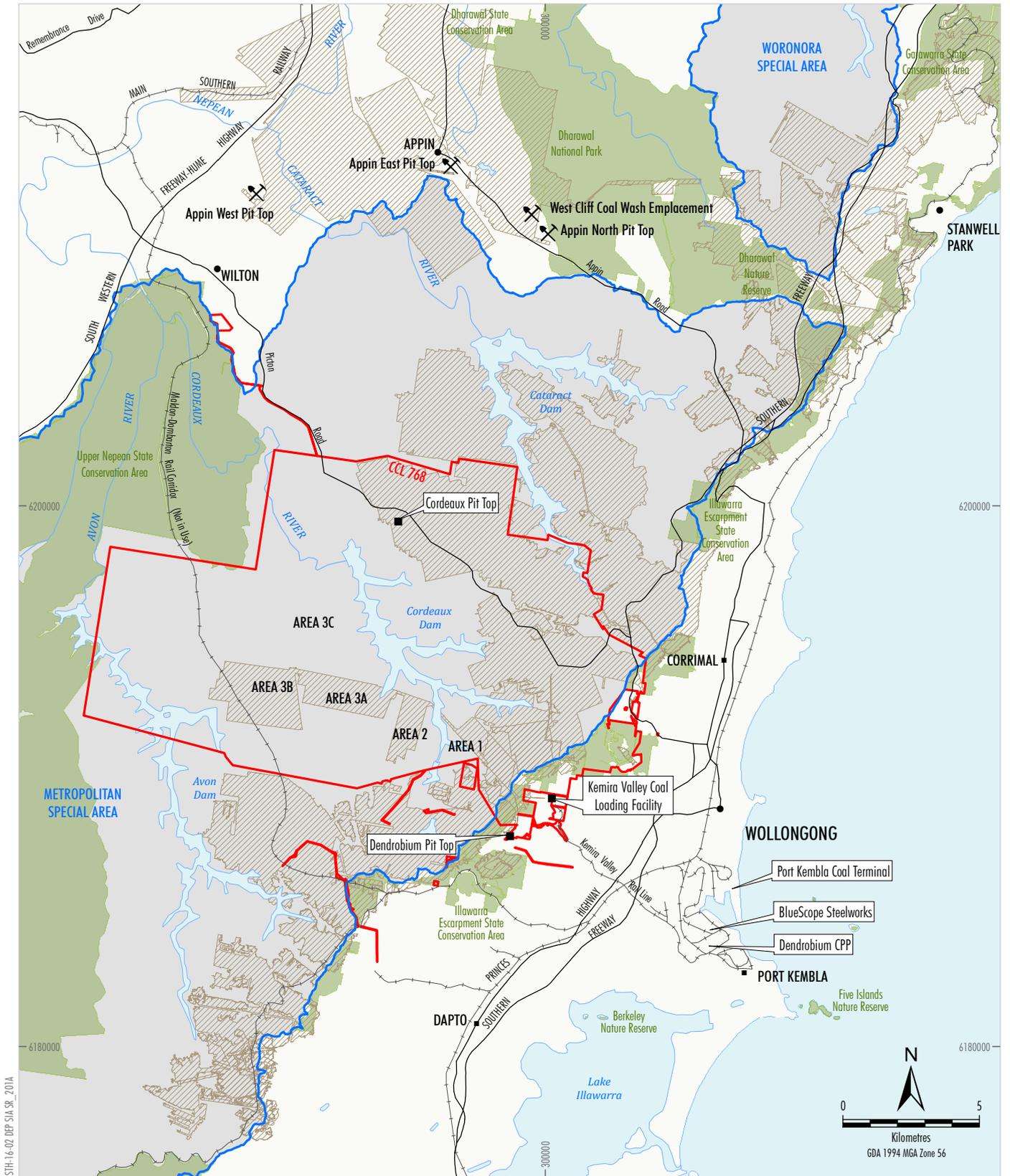
TABLE 1 SUMMARY COMPARISON OF THE APPROVED DENDROBIUM MINE AND THE PROJECT

Component	Approved Dendrobium Mine (DA 60-03-2001)	Project
Mine Life	Until 31 December 2030.	Until 31 December 2041 ¹ .
Mining Method	Underground extraction using longwall mining methods.	No change.
Resource	Mining of the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C within CCL 768.	Approximately 31 Mt of additional ROM coal within the Bulli Seam within Area 5.
Annual Production	Handling and processing of up to 5.2 Mtpa of ROM coal.	No change.
Coal Handling and Processing	Transport of coal from underground workings to the Kemira Valley Coal Loading Facility via an underground conveyor network. Sizing and stockpiling of coal at the Kemira Valley Coal Loading Facility prior to transport to the Dendrobium CPP via the Kemira Valley Rail Line, in accordance with the approved hours of operation. Processing of up to 5.2 Mtpa of sized ROM coal at the Dendrobium CPP.	No change.
Management of Mining Waste	Transportation of up to approximately 1.1 Mtpa of coal wash by road from the Dendrobium CPP to the West Cliff Stage 3 and Stage 4 Coal Wash Emplacement. Development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement. Supply of coal wash to customers for engineering purposes (e.g. civil construction fill) or for other beneficial uses.	No change.

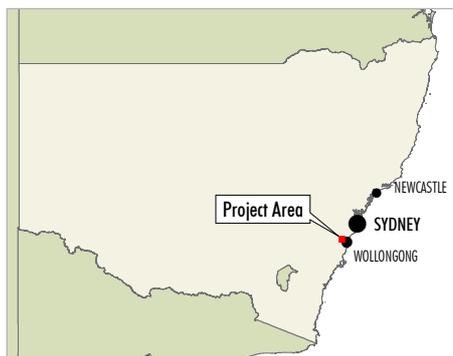
¹ The Project does not include approved underground mining operations in the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C at the Dendrobium Mine and associated surface activities (such as monitoring and remediation). These activities will continue to operate in accordance with Development Consent DA 60-03-2001 (as modified).

SIA Scoping Report

Component	Approved Dendrobium Mine (DA 60-03-2001)	Project
General Infrastructure	Dendrobium Pit Top. Kemira Valley Coal Loading Facility. Kemira Valley Rail Line. Dendrobium CPP. Dendrobium Shafts Nos 1, 2 and 3.	Continued use of existing infrastructure with minor upgrades and extensions. Development of new surface infrastructure associated with mine ventilation and gas management and abatement at Shaft Site No 5A to support underground mining operations in Area 5, and other ancillary infrastructure (including electricity transmission line to proposed mine ventilation infrastructure) and minor fire trail upgrades. Development of additional carpark facilities.
Product Transport	Delivery of product coal from the Dendrobium CPP to Port Kembla for domestic use at the Port Kembla Steelworks and Liberty Primary Steel Whyalla Steelworks or export through the Port Kembla Coal Terminal.	No change.
Water Management	Water management infrastructure to separate clean, oily and dirty water. Use of a combination of recycled treated mine water and potable water purchased from Sydney Water in underground and surface operations. Release of water in accordance with the conditions of EPL 3241.	No change (with augmentations and extensions to existing water management infrastructure as required). No change (release volumes and release infrastructure to be modified as required based on Project mine inflow rates). Development of temporary water supply infrastructure for construction water supply for Shaft Site No 5A. Provision of offsets (funding of “indirect” offsets) for predicted surface water take as a result of the Project that would result in a net gain to Metropolitan water supplies.
Workforce	Current workforce of approximately 650 operational personnel.	At full development an additional 50 operational personnel for the Project. Up to approximately 100 personnel would also be required for construction and development activities.
Hours of Operation	Operated on a continuous basis, 24 hours per day, seven days per week. Trains do not travel on the Kemira Valley Rail Line between 11.00 pm and 6.00 am, unless written approval is obtained from the NSW Environment Protection Authority (EPA) for emergency use of the rail line.	No change.
Community Engagement and Investment	Liaison with community through the Community Consultative Committee (CCC) and other means. Contribution to community through the Dendrobium Community Enhancement Program (DCEP), small grants program and strategic community investments.	No change.



SIH-16-02 DEP SIA SR 2014



- LEGEND**
- Dendrobium Mining Lease
 - Road
 - Railway
 - National Park, Nature Reserve and State Conservation Area
 - Historic Mine Workings
 - Declared Catchment Area

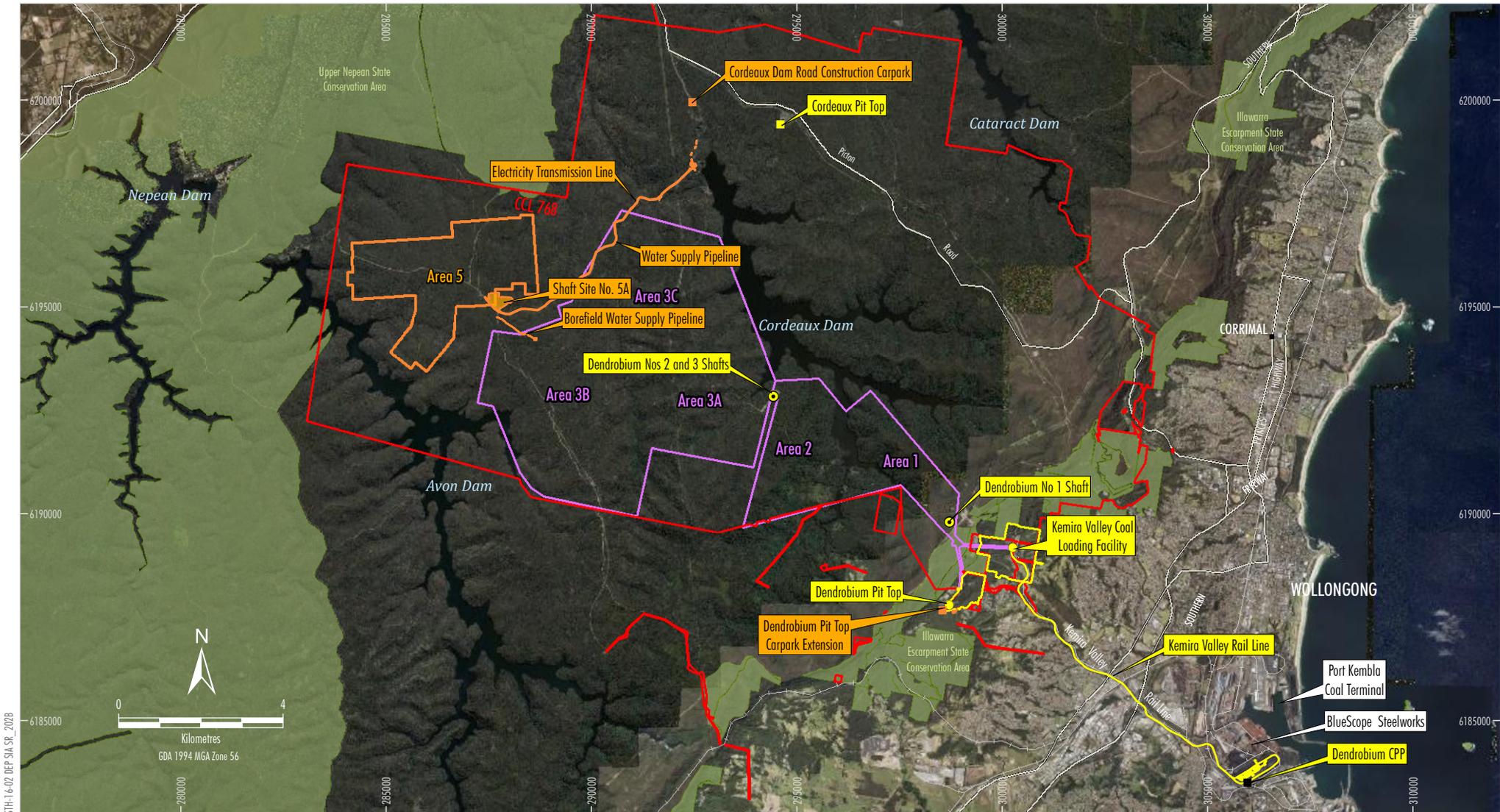
Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);



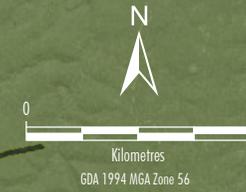
Illawarra Coal

D E N D R O B I U M M I N E
Regional Location

Figure 1



SITH-16-02-DEP-SIA-SR-202B



- | | |
|---|--|
| LEGEND | Dendrobium Mine Extension Project |
| Dendrobium Mining Lease | Underground Mining Area |
| Road | Surface Facilities (Existing Dendrobium Mine) |
| Railway | Surface Facilities (Proposed Dendrobium Mine Extension Project) |
| National Park, Nature Reserve and State Conservation Area | |
| Dendrobium Mine | |
| Dendrobium Underground Mining Area - Existing Mine (DA 60-03-2001) | |

Source: Geoscience Australia, (2006); Department of Industry (2018); Department Finance, Services & Innovation (2018);



DENDROBIUM MINE
General Arrangement
Dendrobium Mine Extension Project

Figure 2

1.3 Existing Dendrobium Mine

Operations at the Dendrobium Mine commenced in 2002, and currently provides employment for approximately 650 personnel, mostly originating from the Wollongong Local Government Area (LGA). Product coal is used for steelmaking at the Port Kembla Steelworks, shipped to Whyalla Steelworks or to the export market. The Dendrobium Mine – and others in the region – are thus an integral aspect of the Illawarra region's identity and history as an industrial centre, as well as an important component of the Australian steelmaking supply chain.

The Dendrobium Mine is well embedded in the local and regional community, with active community engagement, partnership and enhancement programs. Under Development Consent DA 60-03-2001, IMC is required to contribute \$0.03 per tonne of saleable coal production to fund developments in the local communities directly affected by the Dendrobium Mine (Condition 13 of Schedule 2), and fund and operate a Community Consultative Committee (CCC) (Conditions 9 and 10 of Schedule 8).

The CCC meets bi-monthly and its members include local community residents, Wollongong City Council and Wollondilly Shire Council representatives and environmental group representatives. Meetings are chaired by an independent chairperson and meeting minutes are publicly available on the IMC website. In addition to the CCC, IMC liaises and consults with local residents through a variety of means, including:

- community newsletters;
- providing information via the website;
- participation in community events and activities;
- community perception surveys; and
- individual landholder visits or meetings.

Further, IMC operates a community feedback program enabling community members to raise issues with the operation via a 24 hour community call line and a dedicated email address. Community complaints are required to be responded to within 24 hours and will be investigated by the community team. A total of 22 stakeholders lodged complaints in the 2020 financial year, with the most common complaint topics related to noise (37%) and rail related issues (21%) (South32, 2020b).

IMC has an active community investment program aligned with the United Nations Sustainable Development Goals and community priorities, supporting communities across four priority areas:

- **Education and leadership:** Quality education is the foundation of economic and social prosperity and supports the development of emerging and future community leaders.
- **Economic participation:** Economic opportunity and participation ensure that local and regional economies are resilient now and sustainable into the future.
- **Good health and social wellbeing:** Health and social wellbeing are integral to sustainable development and contribute to vibrant communities.
- **Natural resource resilience:** Communities that live in balance with their natural environments are resilient and sustainable.

IMC invests in the sustainability of the Wollongong area through a number of means. The Dendrobium Community Enhancement Program (DCEP) distributes the conditional community contributions to community projects in the vicinity of the Dendrobium Mine. The DCEP is overseen by the Community Enhancement Committee (DCEC) which is a sub-committee of the CCC. In addition, IMC operates a voluntary community grants program and strategic community investment program supporting small scale as well as long term strategic community projects.

IMC is a member of the International Council of Mining and Metals (ICMM) which aims to strengthen the environmental and social performance of the mining industry. As a member, IMC has committed to operating in accordance with its ten principles. Further, IMC is a signatory to the United Nations Global Compact ten principles, has developed a strong management system for social and environmental performance, and reports regularly to the public on its performance through its Sustainable Development Reports and other regular publications (South32, 2020a). IMC is committed to reconciliation between Aboriginal and Torres Strait Islander people and non-Indigenous Australians. The company has developed an Innovate Reconciliation Action Plan, which sets out directions and actions for its reconciliation journey, including setting targets for Indigenous participation in the workforce and supply chain (South32, 2020c).

1.4 Dendrobium Mine – Plan for the Future: Coal for Steelmaking

IMC has previously sought consent for the *Dendrobium Mine – Plan for the Future: Coal for Steelmaking Project*, also known as the *previous application*. The previous application to extract coal from longwall mining of the Bulli and Wongawilli Seams areas known as Area 5 and Area 6, and would have accessed these from mostly existing surface infrastructure with minor extensions and modifications. Coal was proposed to be transported from the Kemira Valley Coal Loading Facility to the Dendrobium CPP via the Kemira Valley Rail Line.

1.4.1 Consultation on the Previous Application

South32 lodged an application for SEARs for the previous application in December 2016 and the DPIE issued SEARs in February 2017. The EIS for the previous application involved extensive consultation and engagement with government departments, various interest groups, employees, local community residents and other stakeholders.

Table 2 below summarises the various opportunities communities had to provide input and comment to the EIS for the previous application, led by South32, by DPIE and the Independent Planning Commission (IPC).

TABLE 2 CONSULTATION FOR THE PREVIOUS APPLICATION

Consultation method	Detail
Website and community call line	A dedicated site within the South32 website with information about the Dendrobium mine and the extension project was provided, as well as a community call line for local residents to raise concerns or questions.
Stakeholder briefings	A large number of briefings and meetings with state government departments and agencies, federal government agencies, local governments, infrastructure owners and service providers, social infrastructure service providers and other resource companies.
Project newsletters	Letters informing about the project, the SEARs and inviting comment mailed to residents and local community groups. Project specific newsletters provided.
Community information sessions	Open meetings held in May 2019 in Unanderra and Kembla Heights.
Community survey	Distributed to 900 households within the zone of influence for the Dendrobium Mine, 113 responses received.
Employee survey	Distributed to the approximately 400 existing personnel, 278 responses received.
Consultation with community groups	A range of community groups were consulted primarily to inform the SIA.
Dendrobium Mine CCC	EIS information presented at bi-monthly meetings between April 2017 and February 2019, as well as monthly sub-committee meetings.
Consultation with Registered Aboriginal Parties	17 groups registered their interest and were subsequently consulted.
DPIE public exhibition	775 submissions received, of which 720 from the public, 39 from organisations and 16 from public authorities. 602 of the submissions were in support of the project, 153 objected and 19 commented.
IPC public hearing	80 speakers presented to the Commission.
Public comments to IPC	1,973 comments of which 1559 were unique author submissions, 260 form letters and 154 campaign emails. 1,090 of the submissions objected, 869 were in support and 14 commented.

Source: South32, DPIE and IPC (Department of Planning Industry and Environment, 2021b; Independent Planning Commission, 2021; South32, 2019)

Many of the responses and submissions supportive of the previous application highlighted the social and economic contribution the Dendrobium Mine was providing to the Illawarra region, and by extension how the previous application would see these continued. This extended to include the role the Dendrobium Mine played in maintaining steelmaking capability in Australia broadly. To the extent supportive submitters commented on potential impacts to water or the environment, they generally expressed satisfaction that IMC would manage these responsibly, as illustrated by the two indicative quotes from supportive public submissions to the EIS provided below:

“This operation in particular is critical to the economy of the Illawarra. It supports innumerable small and large businesses, as well as bringing vital highly paid jobs to the region. It must be supported.”

“Dendrobium Colliery, Illawarra Metallurgical Coal and South32 are a cornerstone of the Illawarra and are key to sustaining industry in this area. South32 are diligent operators and strive for minimal impact to environment and community. This is an important development for the Illawarra and the jobs and revenue that this project will directly and indirectly influence.”

Source: DPIE, Submissions to the EIS (Department of Planning Industry and Environment, n.d.)

Submitters who objected to the previous application argued that it would put the reservoirs that provide Sydney with water at risk, impact Aboriginal heritage sites, and contribute to climate change, thus contributing to negative intergenerational impacts. To the extent they commented on the economic impacts, they generally argued that these positive impacts were short term or overstated. The following quotes are from two objecting submitters to the EIS for the previous application:

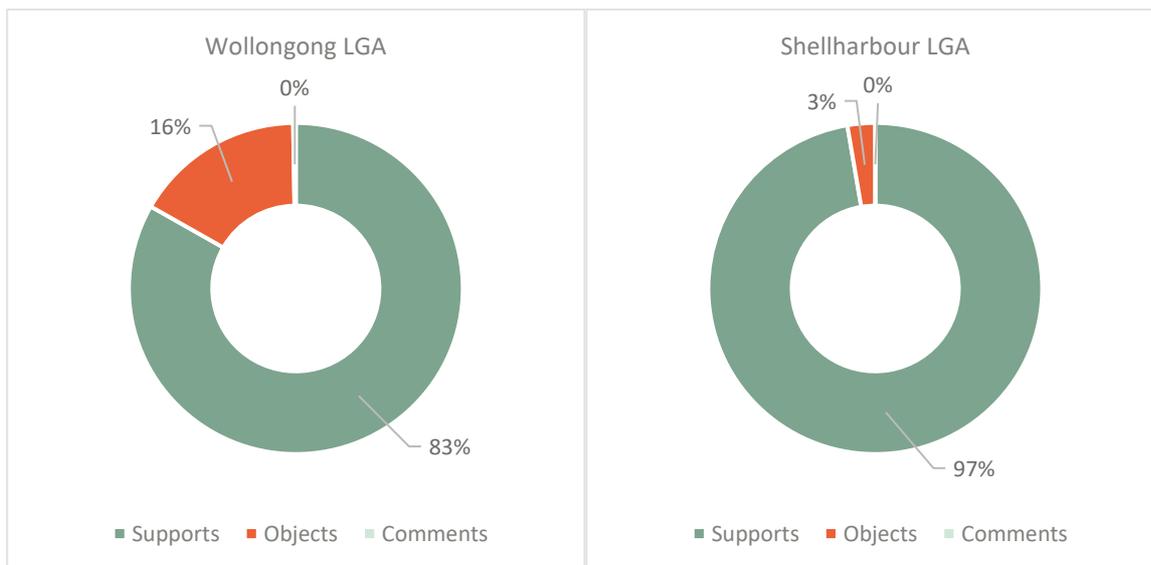
“The precautionary principle should apply as there is a clear risk of serious or irreversible harm to Sydney’s water catchment from this proposal /.../ There is no valid economic argument here.”

“This mine is a violation to the climate emergency...”

Source: DPIE, Submissions to the EIS (Department of Planning Industry and Environment, n.d.)

Overall, the majority of public submissions on the EIS (81%) expressed support for the previous application. When analysing public submissions from the LGA’s closest to the previous application, the proportion of supportive submissions is even larger, as shown in Figure 3 below.

FIGURE 3 PUBLIC EIS SUBMISSIONS FROM LGA’S IN DIRECT VICINITY TO PROJECT



Source: Based on DPIE (Department of Planning Industry and Environment, n.d.)

This trend is echoed in the submissions to the IPC, which noted that the majority of submissions who raised environmental and water related issues objected to the previous application, whereas the majority of those who raised economic issues supported it. Commensurate with the submissions to the EIS, the IPC noted that a majority of submissions from the local area expressed support for the previous application. Overall however, the majority of submissions – 60% of unique author submissions – objected to the previous application (Independent Planning Commission, 2021, p. 21).

1.4.2 SIA for the Previous Application

An SIA was undertaken as part of the EIS which included extensive stakeholder consultation and described and assessed 25 social impacts and benefits of the previous application.

The SIA summarised these as including – for the communities in the direct vicinity of the previous application:

- sustaining Mount Kembla’s traditional identity as a mining community;
- access to employment;
- contributions to community well-being as a result of IMC’s community investments and partnerships;
- potential for rail noise to affect residential amenity in Mount Kembla, Cordeaux Heights, Unanderra and Figtree, but with less severity and frequency than experienced prior to 2017;
- an ongoing contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road, with consequent potential for impacts on amenity and community concerns about traffic safety;
- occasional contributions to dust affecting homes downwind of Kemira Valley; and
- community concern about the potential for the previous application to affect the Metropolitan Special Area’s (MSA) capacity for water supply.

For communities across the Wollongong LGA, the SIA described the following impacts:

- the creation of approximately 207 jobs during the initial construction and development phase;
- continuity of employment for mine personnel including Dendrobium Mine’s current 265 employees and 140 Full Time Equivalent (FTE) contractors;
- an increase in employment opportunities, with approximately 507 operational personnel required at full development;
- maintaining a major component of the mining employment opportunities in the Wollongong LGA; and
- support for population stability and housing demand within the Wollongong LGA.

Overall, the SIA concluded that amenity impacts associated with the previous application would not be materially different from current experiences. The SIA further noted community concern about intergenerational impacts on people in Illawarra and the Greater Sydney area associated with groundwater and surface water risk, however did not investigate these further (Elliott Whiteing Social Planning Solutions, 2019, pp. v–vi).

In contrast to the previous application, the Project does not involve mining in Area 6 which would significantly reduce the potential predicted impacts to water resources, biodiversity as well as Aboriginal heritage sites within the MSA.

1.5 Document Structure

This SIA Scoping Report is structured as follows:

- Section 2 outlines the SIA scoping methodology;
- Section 3 defines the social locality for the Project and identifies likely impacted stakeholders;
- Section 4 contains a preliminary description of the existing social environment;
- Section 5 provides a preliminary impact identification;
- Section 6 describes the methodology for the SIA to support the EIS (Phase 2); and
- Section 7 provides a conclusion for the SIA.

2. METHODOLOGY

2.1 What are Social Impacts?

The methodology for this SIA Scoping Report has been developed following the process set out in the SIA Guideline (Department of Planning Industry and Environment, 2021d) as well as taking into account good practice SIA literature, in particular the guideline by Vanclay and colleagues issued by the International Association of Impact Assessment (IAIA) (Vanclay et al., 2015).

The IAIA considers *social impacts* to be “all the issues associated with a planned intervention (i.e. a project) that affect or concern people, whether directly or indirectly. Specifically, a social impact is considered to be something that is experienced or felt in either a perceptual (cognitive) or a corporeal (bodily, physical) sense, at any level” (Vanclay et al., 2015, p. 2). In a similar vein, the SIA Guideline state that social impacts generally mean “the consequences that people experience when a new project brings change” (Department of Planning Industry and Environment, 2021d, p. 7).

Various categorisations of social impacts exist, and for the purposes of this report those in the SIA Guideline have been adopted (see Table 3 below). Importantly, the definition above and the categorisation place *people* and their *experience* of change at the centre of the notion of social impacts (Department of Planning Industry and Environment, 2021d).

TABLE 3 SOCIAL IMPACT CATEGORIES

Impact Category	Description
Way of life	including how people live, how they get around, how they work, how they play, and how they interact each day.
Community	including composition, cohesion, character, how the community functions, resilience, and people’s sense of place.
Accessibility	including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not for profit organisation.
Culture	both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings.
Health and wellbeing	including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
Surroundings	including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
Livelihoods	including people’s capacity to sustain themselves through employment or business.
Decision-making systems	including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

Source: DPIE (Department of Planning Industry and Environment, 2021d, p. 19)

2.2 Approach and Strategy

This SIA Scoping Report has been developed based on an exploratory study involving multiple data sources. Commensurate with the SIA Guideline, it seeks to answer the following three questions:

- 1) *Who* are the stakeholders that are likely to experience social impacts from the Project, including whether these include any vulnerable groups?
- 2) *What* are the social impacts they are likely to experience, how significant are these likely to be, and what is their nature and socio-geographic extent?
- 3) *How* can these impacts and stakeholders best be studied for the second phase of the SIA, including engaging with communities?

2.3 Data Sources

Commensurate with the exploratory nature of a scoping study, a wide variety of data sources have informed this document, summarised in Table 4 below.

TABLE 4 SUMMARY OF DATA SOURCES

Project and operational data	Social, economic and demographic data	Local and regional plans and publications	Information from the previous application
<ul style="list-style-type: none"> • Complaints data. • Existing workforce locations. • IMC sustainability related publications. • Project description. 	Census and other demographic data from: <ul style="list-style-type: none"> • Australian Bureau of Statistics (ABS). • DPIE. 	Publicly available plans and reports addressing: <ul style="list-style-type: none"> • Local and regional history. • Current economic and community issues and priorities. 	<ul style="list-style-type: none"> • Extensive public consultation. • SIA. • Public Submissions on EIS. • IPC Statement of Reasons.

2.4 SIA Scoping Process

Overall, this SIA Scoping Report was developed using the following process and was carried out in June to December 2021:

- Project establishment.
- Data gathering.
- Determination of the social locality, likely impacts and stakeholders.
- Preparation of a preliminary social baseline.
- Development of methodology for the SIA to support the EIS.

2.4.1 Project Establishment

As a first step the SIA team established an understanding of the Project, its social environment and potential impacts by reviewing material about the Project, the existing Dendrobium Mine and the previous application. At this stage the SIA scoping methodology and data sources were identified.

2.4.2 Data Gathering

The second step involved gathering the data used for SIA analysis. This included sourcing data about the existing Dendrobium Mine, the extensive consultation and environmental and technical studies undertaken for the previous application, and particulars of the Project to gain an understanding of current community experiences and expected change. Social, economic and demographic data from state, federal and local governments were gathered, including Census data, other ABS data, and local and regional plans.

2.4.3 Determining Social Locality, Likely Impacts and Stakeholders

The data was then analysed to identify likely social impacts associated with the Project, their spatial distribution (social locality) and who might experience these (stakeholders). In doing so, the criteria, categorisations and process provided in the SIA Guideline and Technical Supplement provided key guidance.

Determining the Social Locality

According to the SIA Guideline a social locality should be defined for a project “depending on its nature and its impacts” and include an analysis of the scale and nature of the Project, who may be affected, whether any vulnerable or marginalised people may be affected, built or natural features on or near the project, relevant social, cultural, demographic trends or social change processes, the history of the proposed project and the area (Department of Planning Industry and Environment, 2021d, pp. 16–17).

Identifying Likely Impacts

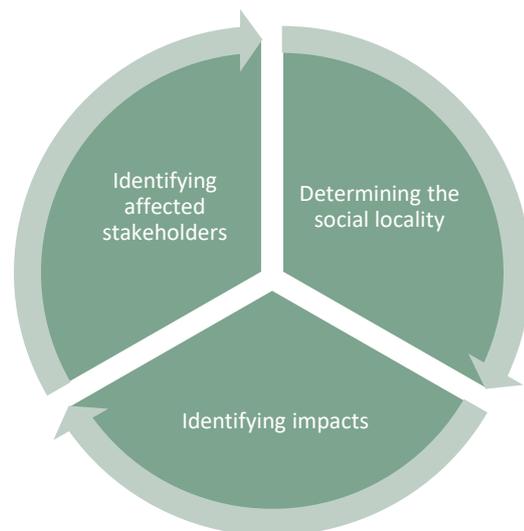
Likely social impacts were scoped and identified following the process described in the Technical Supplement (Department of Planning Industry and Environment, 2021e, pp. 7–9). Each impact was analysed to determine its likely significance and degree of assessment required.

Identifying Stakeholders

The stakeholder categorisation provided in the SIA Guideline engagement section (Department of Planning Industry and Environment, 2021d, p. 29) provided the starting point in identifying people and groups who may be affected by the Project’s social impacts and the preliminary impact identification and definition of social locality served to refine this.

It is important to note that the definition of a social locality, likely impacts and likely affected stakeholders is a recursive process, where the various steps progressively inform each other. This recursiveness is likely to extend into the subsequent SIA phases. As new information emerges, stakeholders, impacts and localities may require re-consideration.

FIGURE 4 RECURSIVENESS OF SCOPING SOCIAL IMPACTS



2.4.4 Prepare a Preliminary Social Baseline

Based on the identified stakeholders, impacts and social localities, a preliminary social baseline was then developed, seeking to describe key features of the community and its people. This included describing the history, social and economic indicators, indicators of community wellbeing and connectedness, and community and economic priorities and trends of the social locality. A complete social baseline will be developed for the SIA to support the EIS.

2.4.5 Developing a Methodology for the SIA to support the EIS

Based on the data and analysis conducted during this scoping exercise, the requirements of the SIA Guideline, and good practice SIA approaches, a methodology for the SIA to support the EIS was then developed. This includes proposed data sources, data generation methods and analysis processes. This stage also considered how to integrate the overall EIS engagement strategy with the SIA process. The primary data collection tools, including interview and focus group protocols, information sheets and consent forms were also developed at this stage.

2.5 Assumptions and Limitations

All SIA processes and methodologies come with limitations and rely on certain assumptions. For this SIA Scoping Report, the following should be noted:

- This SIA Scoping Report is exploratory and is aimed at informing the SIA to support the EIS. Any findings or conclusions should be interpreted in that context.
- All findings are based on the information available at the time of writing. It is possible that social, economic, demographic, cultural, environmental or Project-related information will change after the time of writing.
- Secondary data sources have been produced using various methodologies, which themselves come with assumptions and limitations. To ensure the data is credible and robust, official (government) sources have been prioritised, and where relevant limitations have been noted.
- Secondary social, economic and demographic data about communities are often drawn from the ABS Census as this provides a comprehensive and robust data source. As data is only available for the census undertaken in 2016, this data may not fully represent the current state of the community.
- This SIA Scoping Report has been prepared in consideration of the extensive engagement and public consultation processes undertaken for the previous application.
- All SIAs make statements about the future; about anticipated change processes and how stakeholders may experience these. There is always an element of uncertainty associated with these, and as such the findings in here should not be interpreted as exact predictions.
- Finally, the SIA process is not mechanistic, but one which relies to some extent on the judgements of the SIA practitioner. This SIA Scoping Report has aimed at transparently describing these judgements and the processes used at arriving at them.

3. SOCIAL LOCALITY AND POTENTIALLY AFFECTED STAKEHOLDERS

3.1 Defining the Social Locality

The social locality of the Project is – in brief – the geographic area in which social impacts of the Project are likely to be experienced. According to the SIA Guideline, a social locality does not have a prescribed meaning but should be “construed for each project” (Department of Planning Industry and Environment, 2021d, p. 16) As such, defining the social locality for the Project is not a mechanistic process, but one that requires interpreting a range of data points.

In determining the social locality for the Project, the following data points have been considered:

- The location of Project infrastructure.
- The origin of community complaints for the existing operations, as an indication of where the physical impacts of the Project are likely to be felt, and what these are likely to be.
- The location of the existing Dendrobium Mine workforce, as an indication of where socio-economic benefits from the Project are likely to be experienced.
- The origin and nature of public submissions on the EIS for the previous application, as an indication of where community interest in the Project is likely to originate, and the likely nature of that interest.
- Built and natural features near the Project, and the stakeholders who have expressed values in relation to these.

3.1.1 Social Locality Data

Project Infrastructure

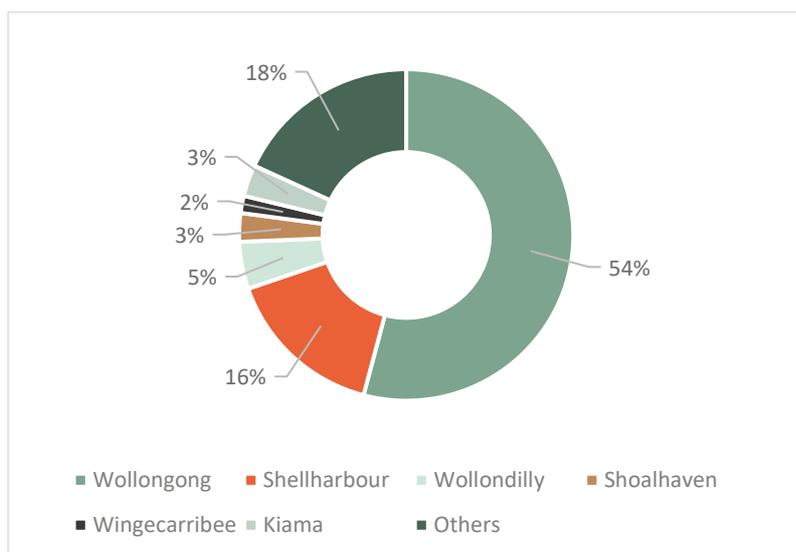
The Project would continue to use the existing Dendrobium Pit Top, Kemira Valley Coal Loading Facility, Kemira Valley Rail Line, Dendrobium CPP (located in the Port Kembla Steelworks precinct) and Dendrobium Mine Shafts 1, 2 and 3 with some upgrades and extensions. The Project would also involve the construction and operation of additional surface infrastructure including a new ventilation shaft site, an Electricity Transmission Line (ETL), a carpark extension adjacent to the Dendrobium Pit Top and a temporary construction personnel carpark adjacent to Cordeaux Dam Road.

Existing surface infrastructure is located within the Wollongong LGA. The Project underground mining area (Area 5), ventilation shaft site and the ETL are located in the Wollongong, Wingecarribee and Wollondilly LGA's. The majority of the Project workforce would access the site at the Dendrobium Pit Top via Cordeaux Road.

Public Submissions on the EIS for the Previous Application

As described in Section 1.4, DPIE received a total of 720 submissions on the EIS for the previous application, with 81% supporting the project and 19% objecting. The location of the submissions suggest where the interest (and arguably impact) of the Project is likely to be greatest. As Figure 5 below shows, more than two thirds of all submissions were made from residents within the Wollongong and Shellharbour LGA’s, with the former accounting for 54% of all submissions. If the surrounding LGA’s of Wollondilly, Shoalhaven, Kiama and Wingecarribee are included, this area would account for a total of more than 80% of all public submissions.

FIGURE 5 LOCATION OF SUBMISSIONS ON ORIGINAL EIS



Source: DPIE (Department of Planning Industry and Environment, n.d.)

Workforce Locations

The Dendrobium Mine has an existing workforce of approximately 650 people, most of which reside within a short drive of the Dendrobium Mine. An analysis of existing employee residential addresses found that more than half resided within the Wollongong LGA and 30% in the Shellharbour LGA². Table 5 below shows proportion of employees in each of the LGA’s directly surrounding the mine.

TABLE 5 EXISTING WORKFORCE LGA OF RESIDENCE

LGA	Percentage of existing workforce
Wollongong LGA	53%
Shellharbour LGA	31%
Kiama LGA	6%
Greater Sydney	2%
Rest of NSW	8%

Source: IMC

² Note that this includes direct employees only.

Location of Community Complaints

The Dendrobium Mine operates a community complaints program consisting of a 24 hour community call line and a general email address. The number of complaints has varied over the years, and in the 2020 financial year 131 complaints were received from a total of 22 stakeholders. It should be noted that two complainants submitted close to 70% of all complaints. As an indication of where impacts of the Dendrobium Mine are felt, 97% of complaints in the last financial year originated from Mount Kembla, followed by Figtree (1.2%) with the remainder lodged by anonymous complainants.

Built and Natural Features

Key built and natural features in the vicinity of the mine include the Illawarra Escarpment which stretches along the coast line and provides a natural border between Wollongong LGA and the shires directly to its west. The escarpment provides a feature of visual beauty for local residents, as well as an area for recreation through bushwalking and mountain biking.

The existing Dendrobium Mine and Area 5 proposed as part of the Project, are positioned underneath the MSA. The MSA is home to key water reservoirs providing drinking water to the greater Sydney population, a range of water courses and upland swamps and is rich in biodiversity. The MSA also contains a number of Aboriginal heritage sites. Public access to the MSA is restricted by WaterNSW.

Specifically for the Mount Kembla community (the village closest to the mine surface facilities) key built features include the public school, the soldiers and miners memorial church and cemetery.

The Port Kembla industrial precinct where the CPP is located is another key built feature, providing a visual anchor point for the regional identity as an industrial powerhouse, as well as a point of employment for numerous local residents.

3.1.2 Proposed Social Locality

The Project is likely to affect stakeholders within a primary social locality and a secondary social locality, described in the following subsections. Stakeholders that are most likely to experience social impacts from the Project are located within the primary and secondary social locality, however the perceived experience between stakeholders is likely to differ among individuals. Some stakeholders may experience impacts positively, others negatively, and some may not be impacted at all.

Figure 6 below shows the primary and secondary social localities for the Project.

Primary Social Locality

There is a group of stakeholders who may experience the direct impacts of the Project, including potential for amenity impacts (e.g. noise, dust, traffic and odour). These comprise residents in the vicinity of the mine surface facilities (approximated by the State Suburbs of Mount Kembla Village and Kembla Heights), near the rail line and access roads (approximated by the State Suburbs of Cordeaux Heights, Unanderra, Figtree, Cringila and Spring Hill) and near the CPP, Port Kembla Steelworks and Port Kembla Coal Terminal in the State Suburb of Port Kembla. For the purpose of the SIA, this area is described as the *primary social locality*. Importantly, although data for the totality of these geographic areas is presented below, only a portion of the residents within these areas are likely to experience these impacts.

Secondary Social Locality

A secondary social locality has been defined as the Wollongong LGA (which comprises the primary social locality). The surface infrastructure for the Project is mostly located within this area, and it is likely that most of the employees for the Project will reside within the secondary social locality. Further, the vast majority of submissions to the EIS for the previous application were from stakeholders in this area indicating a very high – and mostly positive – interest in the Project.

Other Stakeholders

In addition to these spatially bounded social localities there are also a number of stakeholders with an interest in the Project and its potential impacts, but who do not necessarily reside within a geographic entity with a noticeable likely impact from the Project. These include various environmental interest groups, Indigenous persons with a connection to the land, businesses in the Australian coal mining and steelmaking industrial ecosystem, and residents in the greater Sydney area. These are described in the stakeholder section below.

3.2 Potentially Affected Stakeholders

The SIA to support the EIS would assess which stakeholders are likely to be affected by the Project. Table 6 below provides a preliminary view of potentially affected stakeholders based on an analysis of the SIA for the previous application (Elliott Whiteing Social Planning Solutions, 2019) and submissions on the EIS for the previous application from organisations within the social locality (Department of Planning Industry and Environment, n.d.). These have been categorised utilising the broad stakeholder categories provided in the SIA Guideline³ (Department of Planning Industry and Environment, 2021d, p. 29).

³ Other than local governments and state government departments and agencies, no names of organisations or individuals have been included in this table in order to protect their privacy. Note also that elected representatives which are included in the categorisation in the SIA Guideline have been omitted. The overall EIS engagement will include these.

TABLE 6 SIA STAKEHOLDER GROUPS

Stakeholder group	Detail
Aboriginal people and groups	<ul style="list-style-type: none"> • The relevant Local Aboriginal Land Councils • Registered Aboriginal Parties • Indigenous residents within the primary and secondary social locality
Existing and in-migrating residents and businesses	<ul style="list-style-type: none"> • Residents and businesses within the primary social locality • Residents and businesses within the secondary social locality
Councils	<ul style="list-style-type: none"> • The Wollongong LGA • LGA's surrounding the secondary social locality: Shellharbour LGA, Wollondilly LGA, Wingecarribee LGA
Community, including stakeholder groups, industry etc.	<ul style="list-style-type: none"> • Chambers of commerce in primary and secondary social locality • Economic development groups • Regional Development Australia – Illawarra • Local environmental non-Government organisations (NGOs) • Advocacy NGOs in primary and secondary social locality • State or nationally based interest groups • Firms and organisations in the Australian coal and steelmaking supply chain including BlueScope Steel
Workers, contractors and suppliers	<ul style="list-style-type: none"> • Existing employees of the Dendrobium mine • Trade union representing employees • Existing suppliers to the Dendrobium mine • Potential construction contractors
Public and private service and infrastructure providers and regulatory agencies	<ul style="list-style-type: none"> • Schools in the primary social locality • Rural fire brigades in the primary social locality • NSW Police Force • NSW Illawarra Health Department

4. PRELIMINARY DESCRIPTION OF THE EXISTING SOCIAL ENVIRONMENT

This section provides an initial description of the existing social environment, its history, features and people. In doing so it provides a preliminary baseline intended to build an understanding of the community. A complete social baseline will be developed for the SIA to support the EIS.

4.1 History and General Location

The Project is located approximately 8 km south-west of Wollongong City near the suburbs of Mount Kembla and Kembla Heights on the Illawarra Escarpment. Wollongong is the third largest city in NSW and is located approximately 70 km south of central Sydney. It is the traditional home to the Dharawal people who have occupied the area for at least 30,000 years.

European settlement of the area commenced in the early 1800s with cedar getters accessing the area in the 1810s followed by more permanent settlements from 1815. The town of Wollongong was established in the 1830s and 1840s and the first coal mine opened in the area in 1849 at Mount Keira, followed by others at Bellambi and Woonona over the subsequent decades. Mining at Mount Kembla commenced in 1882, and a rail line to Port Kembla was built to transport coal. Mount Kembla and Kembla Heights became the home of many miners, and the villages expanded to include schools, churches and a workmen's club. One of Australia's worst peacetime disasters occurred at the Mount Kembla Mine where an explosion in 1902 killed 94 miners and two rescuers.

The steelworks at Port Kembla was established in 1927 and together with other heavy manufacturing industries gradually became an important driver of the economy and population growth in the area.

4.2 Wollongong LGA

The City of Wollongong LGA was formed by amalgamation of four councils in 1947 (Wollongong City Council, 2010). The council consists of three wards with four Councillors from each and a directly elected Lord Mayor (Wollongong City Council, 2021). The primary social locality is predominantly covered by Ward 2 and Ward 3.

The City of Wollongong stretches along the coastline and includes a city centre, residential suburbs, beaches, Lake Illawarra to the south, and the industrial area at Port Kembla. The suburbs in the primary social locality are largely residential suburbs characterised by low to medium density dwellings, with Mount Kembla and Kembla Heights providing a more traditional village amenity, characterised by their proximity to the nature.

The *Our Wollongong 2028 Community Strategic Plan* sets out a vision and priorities for the area and was developed with substantial input from the community. The plan highlights the areas' achievements in revitalising the Wollongong city centre, its cultural and community projects and events and notes that the economy is diversifying to focus on advanced manufacturing, mining services and Information and communications technology. The plan sets out objectives across six goals, related to environmental protection, an innovative and sustainable economy, a creative and vibrant city, a connected, engaged and healthy community, liveability and accessible and affordable transport (Wollongong City Council, 2018).

4.3 Metropolitan Special Area

The underground mining area for the Project (Area 5) is positioned underneath the MSA. Public entry to most of the MSA is restricted and therefore public use of the land is limited to the various recreational areas and facilities open to the public. As evidenced by submissions on the EIS for the previous application and to the IPC, the value of the MSA as a source of drinking water for the Greater Sydney region was a concern among stakeholders. Several Aboriginal Heritage sites are also located within this area.

4.4 Socio-economic and Demographic Profile

At the time of the 2016 Census, Wollongong LGA had a population of 203,630 persons, making it the third largest city in NSW, after Sydney and Newcastle. The suburbs in the primary social locality had a combined population of approximately 30,000 people, with the largest suburb Figtree accounting for approximately one third of these.

The proportion of Indigenous people in the areas are similar to, or slightly below the NSW average of 2.9%, with the exception of Unanderra and Port Kembla, where Indigenous people comprise 3.2% and 3.7% of the population respectively. Several cultural, political and community groups exist within the Indigenous community in the Wollongong area. In addition to the Dharawal people, Indigenous people within the Wollongong LGA belong to, among others, the Yuin, Wiradjuri, Kamilaroi, Bundjalung, Dunghutti and Gumbayggir Nations (Wollongong City Council, n.d.-a).

With regards to cultural diversity, most of the suburbs within the primary social locality are generally slightly more or similarly culturally homogenous compared to Wollongong LGA, with relatively high proportions of people born in Australia and who speak only English at home. Wollongong in turn is slightly more homogenous than NSW across the same indicators. By contrast, Cringila and Port Kembla at the eastern extent of the primary social locality are more culturally diverse than the Wollongong average, with lower proportions of people born in Australia (51% and 66%) and who only speak English at home (40% and 66%).

Education levels – including the proportion of people who had finished year 12 of schooling and who had a Bachelor degree or higher – were highest in Mount Kembla, Figtree and Cordeaux Heights, and lowest in Cringila, Port Kembla, Unanderra and Kembla Heights⁴.

Median personal incomes were below the NSW median in Kembla Heights, Figtree, Unanderra, Cringila, Port Kembla and across the Wollongong LGA, and above in Mount Kembla, and Cordeaux Heights. With regards to socio-economic disadvantage, the suburbs in the primary social locality were in the 10th (Mount Kembla and Cordeaux Heights), 8th (Kembla Heights and Figtree) and 1st decile within NSW (Unanderra, Cringila and Port Kembla), meaning the former are among the least disadvantaged and the latter among the most disadvantaged suburbs within the state.

Unemployment rates in 2016 were highest in Cringila and Port Kembla at 12.4% and 10.8% respectively, followed by Unanderra at 8.7%. The remaining suburbs in the primary social locality all had unemployment rates below the NSW rate. Although high, unemployment among the Indigenous population in Wollongong is slightly below the NSW equivalent.

A summary of the key demographic and socio-economic indicators is provided in Table 7.

4.5 Economic Structure and Priorities

Mining remains an important contributor to the economy of the Wollongong LGA and the broader Illawarra region. Whilst the sector accounts for a relatively small portion of the region's employment (approximately 2%) it is the fifth largest industry in the Illawarra region in terms of economic output (Australian Bureau of Statistics, 2017; RDA Illawarra, 2015).

The *Wollongong City Council Economic Development Strategy* targets growth within sectors in the knowledge economy, such as Information and Communications Technology, Financial and Insurance Services and Professional, Scientific and Technical Services. The strategy also notes the importance of the metallurgical coal mining industry as a key aspect of the regional economy for the foreseeable future as it provides relatively stable, high paying jobs that are often full time, as well as because of its linkages to steelmaking in the region (Wollongong City Council, n.d.-b, p. 7,43). The *Illawarra-Shoalhaven Regional Plan 2041* also sets an objective to sustainably maximise the productivity of resource lands, including for mining (Department of Planning Industry and Environment, 2021c, p. 43).

⁴ Although the number of residents with a Bachelor degree or higher in Kembla Heights was too small to be reliable and is hence not reported here.

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TABLE 7 KEY DEMOGRAPHIC AND SOCIO-ECONOMIC INDICATORS

	Primary Social Locality							Wollongong LGA	NSW
	<i>Kembla Heights</i>	<i>Mount Kembla</i>	<i>Figtree</i>	<i>Cordeaux Heights</i>	<i>Unanderra</i>	<i>Cringila</i>	<i>Port Kembla</i>		
Population	119	1,068	11,564	4,559	5,434	2,198	5,014	203,630	7,480,228
Sex ratio	98.4	91.0	97.7	101.9	89.9	107.4	103.5	97.5	97.1
Median Age	30	40	40	39	43	36	43	39	38
Indigenous population	-	2.1%	1.5%	1%	3.2%	1.8%	3.7%	2.6%	2.9%
Born in Australia	85%	83%	74%	77%	71%	51%	66%	73%	65%
Speaking English only	87%	90%	77%	76%	76%	40%	66%	78%	69%
Median Personal Income	\$658	\$830	\$645	\$744	\$475	\$413	\$479	\$584	\$664
Median household income	\$1,208	\$2,325	\$1,581	\$2,265	\$950	\$901	\$1,016	\$1,339	\$1,486
Median rent (\$/weekly)	\$300	\$400	\$350	\$450	\$217	\$300	\$270	\$320	\$380
SEIFA index of disadvantage (decile within Aus)	8	10	8	10	1	1	1	6	-
Highest year of schooling 12 or equivalent	26%	57%	53%	60%	31%	36%	35%	48%	54%
Bachelor degree or higher	-	42%	38%	41%	18%	13%	20%	33%	38%
Unemployment	-	3.4%	5.9%	5.6%	8.7%	12.4%	10.8%	7.1%	6.3%
Youth unemployment	-	-	15%	14%	20%	18%	19%	16%	14%
Female unemployment	-	-	5%	5%	7%	11%	9%	7%	6%
Indigenous unemployment	-	-	-	-	-	-	-	14.7%	15.3%
Estimated unemployment (March 2021)	-	-	-	-	-	-	-	6.4%	5.5%

Source: Based on ABS and Labour Market Information Portal (Australian Bureau of Statistics, 2017; Labour Market Information Portal, 2021)

4.6 Community Connectedness and Wellbeing

Wollongong City Council undertakes regular wellbeing surveys among its population. The most recent survey is from 2021 and found relatively high levels of community engagement and connectedness⁵, high personal wellbeing score, and high perceptions of liveability. Personal wellbeing was rated at 79 for Wollongong residents, higher than the national benchmark of 76.5 (IRIS Research, 2021).

Residents generally feel part of the community (3.9 out of 5), trust others in the community (3.9 out of 5) and agree that Wollongong is a good place to live (4.6 out of 5). Further, 40% of respondents had volunteered in the last two years. These findings suggest relatively high levels of community and social capital across the secondary social locality (IRIS Research, 2021). More granular data on volunteering is available for the state suburbs within the primary social locality from the 2016 Census and indicates relatively high levels of volunteering across four of the suburbs. Between 21% and 28% of the residents in Mount Kembla, Kembla Heights, Figtree and Cordeaux Heights had volunteered in the previous 12 months, higher than the NSW proportion of 18%. The suburbs of Cringila, Port Kembla and Unanderra however had lower volunteering levels, at 9%, 13% and 14% respectively (Australian Bureau of Statistics, 2017).

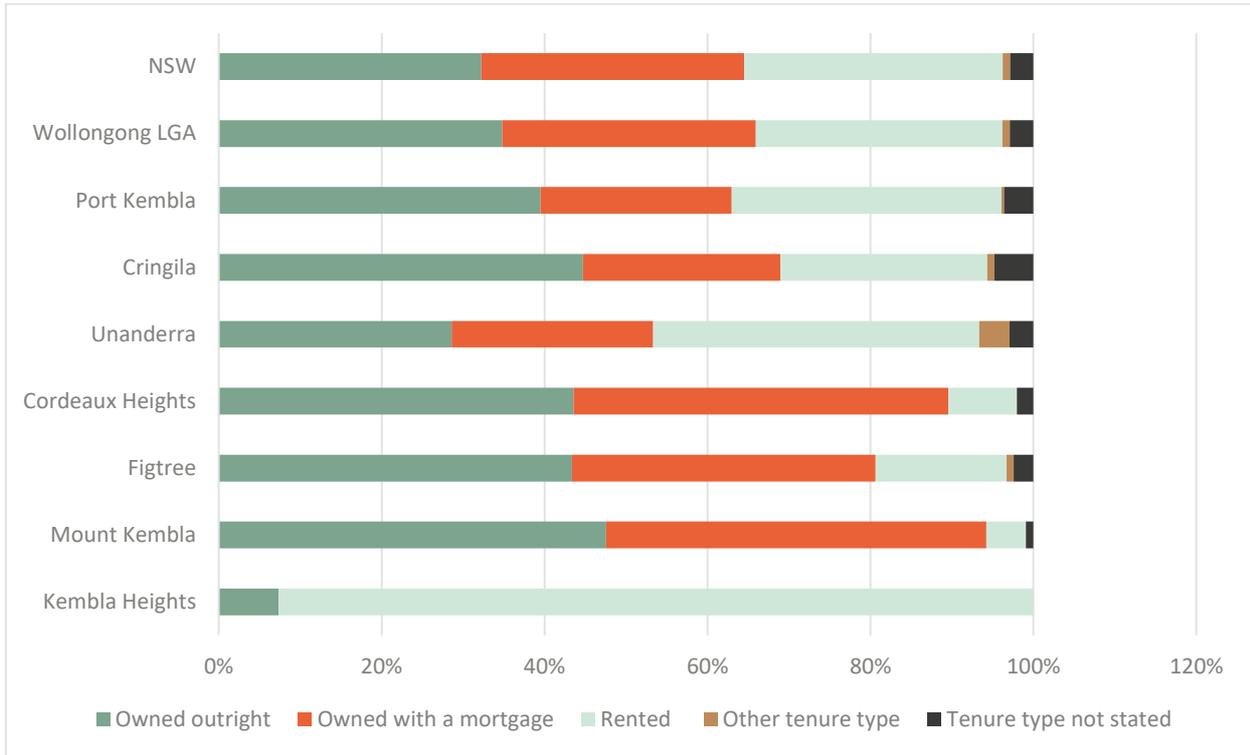
4.7 Housing Stock and Tenure

At the time of the 2016 Census there were a total of 10,383 occupied private dwellings in the primary social locality and close to 74,000 in the secondary social locality. Housing costs varied, with median rents above the state median in Mount Kembla and Cordeaux Heights within the primary social locality, and below the state median in Kembla Heights, Figtree, Unanderra, Cringila, Kembla Heights and across the Wollongong LGA. A relatively similar pattern is evident for median mortgage repayments (Australian Bureau of Statistics, 2017). A search of National Shelter's Rental Affordability Index for the second quarter of 2020 suggests that the postcodes 2526 and 2525, which approximate the primary social locality, are considered moderately unaffordable for an average Australian rental household (SGS Economics and Planning, 2020).

Tenure types vary significantly within the primary social locality, with 97% of dwellings in Kembla Heights being rented compared to 5% in Mount Kembla (see Figure 7).

⁵ Albeit declining on 2018 levels, likely to due to COVID-19 related challenges.

FIGURE 7 TENURE TYPES



Source: Based on ABS (Australian Bureau of Statistics, 2017)

4.8 Summary of the Preliminary Social Baseline

The initial understanding of the social localities arising from this brief analysis can be summarised as:

- The Wollongong LGA is located in a region with strong historical and current connections to the mining industry, where mining is seen as an important part of the economy for the near future, and where diversification into highly skilled sectors such as information and communications technology, advanced manufacturing and mining services is prioritised.
- Most of the suburbs in the primary social locality are generally culturally homogenous, relatively affluent and characterised by relatively high education levels, low unemployment and lower relative disadvantage.
- The main exception to the above are the suburbs of Cringila, Port Kembla and Unanderra which have lower incomes, lower education levels, lower degrees of volunteering and higher degrees of relative disadvantage. Cringila and Port Kembla in particular appear to experience higher degrees of disadvantage as well as cultural diversity across many indicators.
- The WaterNSW MSA appears valued by people within the social localities and beyond as a source of potable water for the Greater Sydney area, as well as home to several Aboriginal heritage sites.

5. PRELIMINARY SOCIAL IMPACT IDENTIFICATION

A preliminary impact identification and assessment has been carried out as part of the SIA Scoping Report, for the purpose of prioritising subsequent SIA data collection and analysis. In identifying these impacts, the following process was followed:

- 1) All aspects of the Project were listed and analysed as to whether these may give rise to a change with regards to the social impact categories described in Section 2.1.
- 2) For all identified impacts, the potentially affected stakeholder groups – i.e. those people who may experience the change – were then described.
- 3) A significance analysis was then carried out considering the likely duration, severity and scale, sensitivity of people affected and their level of concern or interest. This analysis formed the basis for the proposed level of assessment to be carried out in the SIA to support the EIS.

APPENDIX A details all aspects, likely experienced change and potential impacts considering both the impacts of the Project proceeding as well as not proceeding. Table 8 and Table 9 below summarise these and discusses the proposed level of assessment to be deployed in the SIA to support the EIS, based on the definition of each level of assessment in the Technical Supplement.

TABLE 8 POTENTIAL SOCIAL IMPACTS OF THE PROJECT PROCEEDING

Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Community	Contribution to ongoing viability of mining and steelmaking in the Illawarra, thus supporting population stability and community sustainability.	Residents, businesses and community organisations in the primary and secondary social locality and beyond.	Standard assessment.	Potentially impacting large number of stakeholders for long duration. Likely to constitute high community priority.
	Sustaining Mount Kembla's traditional identity as a mining community.	Residents and businesses in the primary social locality.	Standard assessment.	Relatively small number of stakeholders potentially impacted, but for long duration. Intangible impact not considered in other studies.
	Ongoing contribution to community wellbeing and sustainability of the primary and secondary social localities.	Residents and community organisations in the primary and secondary social locality.	Standard assessment.	Medium number of stakeholders potentially impacted but for long duration. Intangible impact not considered in other studies.

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Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Livelihoods	Creation of approximately 700 operational employment opportunities and 100 construction employment opportunities. Continuation of employment within the Southern Coalfield economic ecosystem.	Residents and businesses in the primary and secondary social locality.	Standard assessment.	Medium number of stakeholders affected but with high intensity and long duration. Likely to constitute high community priority.
	Further opportunity to contribute to gender equality and economic reconciliation.	Residents and businesses in the primary and secondary social locality, particularly females and Indigenous people.	Standard assessment.	Medium number of stakeholders affected but for long duration. Not considered in other studies.
Culture	Potential impact to Aboriginal heritage sites affecting Indigenous peoples.	Indigenous people with a connection to the area.	Detailed assessment.	Small number of stakeholders may be affected, but impact may be permanent and of high concern. The Aboriginal Cultural Heritage Assessment will consider this impact in detail in consultation with potentially affected stakeholders.
Surroundings	Potential for noise and dust affecting residents in the vicinity of the Coal Loading Facility similar to current levels.	Residents in the primary social locality, primarily in the vicinity of the Coal Loading Facility.	Detailed assessment.	Small number of stakeholders may be affected intermittently, and at low intensities. Change is minor compared to approved project, although duration is longer. The Air Quality and Greenhouse Gas Assessment and the Noise and Blasting Assessment will consider technical aspects of these amenity impacts.
	Potential for rail noise affecting residents along the Kemira Valley Rail Line similar to current levels.	Residents in the primary social locality, primarily in the vicinity of the Kemira Valley Rail Line and Coal Loading Facility.	Detailed assessment.	Small number of stakeholders may be affected intermittently, and at low intensities. Change is minor compared to approved project, although duration is long. The Noise and Blasting Assessment will consider technical aspects of impact.

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Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Surroundings	Potential for impacts to environmental values and water catchment.	Community members in the primary and secondary social locality.	Detailed Assessment.	Community members may be concerned about the potential for impacts on environmental values including surface water systems, biodiversity and habitat within the MSA as a result of underground mining, and about the potential for Project effects on potential catchment losses to public water supply. A number of technical studies for the EIS (e.g. subsidence, surface water, groundwater, biodiversity) will consider technical aspects of impact.
Accessibility	Ongoing contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.	Residents near relevant roads in the primary and secondary social locality.	Detailed assessment.	Relatively small number of stakeholders may be affected. Project traffic at most roads likely to represent minor proportion of total traffic. The Road Transport Assessment will consider technical aspects of impact.

TABLE 9 POTENTIAL IMPACT OF PROJECT NOT PROCEEDING

Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Community	Reduced contribution to ongoing viability of mining and steelmaking in the Illawarra, thus potentially contributing to population decline/ reduced growth and reduced community sustainability.	Residents, businesses and community organisations in the primary and secondary social locality and beyond.	Standard assessment.	Potentially impacting large number of stakeholders for long duration. Likely to constitute high community priority.
	Loss of Mount Kembla's traditional identity as a mining community.	Residents and businesses in the primary social locality.	Standard assessment.	Relatively small number of stakeholders potentially impacted, but for long duration. Intangible impact not considered in other studies.

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Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Community	Reduced contribution to community wellbeing and sustainability of the primary and secondary social localities.	Residents and community organisations in the primary and secondary social locality.	Standard assessment.	Medium number of stakeholders potentially impacted but for long duration. Intangible impact not considered in other studies.
Livelihoods	Loss of approximately 700 operational jobs employment a decade earlier. 100 construction and development jobs will not eventuate. Potential loss of employment from IMC's broader operations (i.e. cumulative 1,800 personnel).	Residents and businesses in the primary and secondary social locality.	Standard assessment.	Medium number of stakeholders affected but with high intensity and long duration. Likely to constitute high community priority.
	Significantly reduced opportunity to contribute to gender equality and economic reconciliation.	Residents and businesses in the primary and secondary social locality, particularly females and Indigenous people.	Standard assessment.	Medium number of stakeholders affected but for long duration. Not considered in other studies.
Culture	Potential impact to Aboriginal heritage sites affecting Indigenous peoples.	Indigenous people with a connection to the area.	Detailed assessment.	Small number of stakeholders may be affected. The Aboriginal Cultural Heritage Assessment will consider this impact in detail in consultation with potentially affected stakeholders.
Surroundings	Reduction in noise and dust affecting residents in the vicinity of the Coal Loading Facility.	Residents in the primary social locality, primarily in the vicinity of the Coal Loading Facility.	Detailed assessment.	Small number of stakeholders may be affected intermittently, and at low intensities. The Air Quality and Greenhouse Gas Assessment and the Noise and Blasting Assessment will consider technical aspects of impact.
	Reduction in rail noise for affected residents along the Kemira Valley Rail Line.	Residents in the primary social locality, primarily in the vicinity of the Kemira Valley Rail Line and the Coal Loading Facility.	Detailed assessment.	Small number of stakeholders may be affected intermittently. The Noise and Blasting Assessment will consider technical aspects of impact.

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Category	Potential Impact	Likely affected stakeholder groups	Proposed level of assessment	Rationale
Surroundings	Reduction in the potential for impacts to environmental values and water catchment.	Community members in the primary and secondary social locality.	Detailed Assessment.	A number of technical studies for the EIS (e.g. subsidence, surface water, groundwater, biodiversity) will consider technical aspects of impact.
Accessibility	Reduced contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.	Residents near relevant roads in the primary and secondary social locality.	Detailed assessment.	Relatively small number of stakeholders may be affected. The Road Transport Assessment will consider technical aspects of impact.

In summary, the impacts of the Project not proceeding include cessation of mining activities a decade earlier, thus leading to a cessation or reduction of the benefits and impacts associated with the Project proceeding.

These impacts will be further investigated in the subsequent SIA phases, including an analysis of the significance and the development of mitigation measures. The SIA to support the EIS would also consider any newly-identified impacts, or new information about these impacts which may warrant reconceptualisation or a different level of assessment. A cumulative impact assessment will also be included in the SIA to support the EIS.

No refinements to the Project scope or definition have been proposed based on this preliminary assessment. However, a number of refinements have been made by IMC to address potential environmental impacts identified as part of the previous application. In particular, the removal of underground mining at Area 6, and a reduction in the extent of the revised Area 5 would reduce the potential environmental impacts that were considered as part of the SIA for previous application.

6. METHODOLOGY FOR THE SECOND PHASE OF THE SIA

6.1 SIA Consultation and Primary Research

Consultation and primary data collection with community stakeholders is a key step in the second phase of the SIA. The objectives for the SIA consultation have been developed to align with the community engagement objectives in the SIA Guideline (Department of Planning Industry and Environment, 2021d, p. 28) including:

- collect and confirm primary data about the potentially affected community (the social baseline);
- seek stakeholder input into social impact identification and significance assessment, particularly seeking to understand how impacts may be experienced from the stakeholder perspective;
- ensure stakeholders have an opportunity to provide feedback into project planning and design; and
- collaborate on impact evaluation and prioritisation of mitigation measures.

6.1.1 Consultation Methods

Three consultation and primary data collection methods will be implemented for the SIA. The primary social research method for the SIA will be dedicated stakeholder interviews and meetings, supplemented with collaborative focus group meetings with the CCC. Additionally, open community meetings will be held to provide information to potentially affected stakeholders and seek their input. The extensive consultation undertaken for the SIA for the previous application will also be considered as part of the SIA for the Project.

Stakeholder Interviews

Commensurate with a qualitative research strategy, a purposive sampling strategy has been developed for the stakeholder interviews and meetings. Stakeholders will be selected with the aim to achieve the following criteria:

- 1) participation from all stakeholder categories in Table 6;
- 2) prioritising directly affected stakeholders;
- 3) balancing voices representing social, cultural, environmental and economic perspectives;
- 4) involvement of potentially vulnerable stakeholders, or where their direct involvement is not possible, organisations that represent their interest; and
- 5) Balanced representation of males and females.

BOX 1 INTERVIEWS

Stakeholder Interview Structure
<ol style="list-style-type: none"> 1) Understanding the stakeholder and their role in the community. 2) Input to social baseline; what is valued within the community, its features, people and their fears / aspirations. 3) Their views and prioritisation of potential social impacts of Project proceeding / not proceeding. 4) Current experience of impacts, including potential cumulative impacts (where relevant). 5) Thoughts about mitigation measures.

The interviews and stakeholder meetings will be semi-structured in nature and focus primarily on providing community input to the social baseline, social impact identification and prioritisation, and in the case of directly affected stakeholders determine their experiences of current and likely future impacts. A flexible interview protocol has been developed, the key structure of which is outlined in Box 1. Approximately 20 to 30 stakeholders will be approached for participation in interviews.

Focus Group

The existing Dendrobium Mine CCC will be mobilised to function as a focus group for the SIA. The purpose of the focus group meetings will be to deploy collaborative methods to collectively evaluate impacts and prioritise mitigation strategies. Two meetings will be held, the first aiming to conduct a community based social impact evaluation and the second to seek their input to prioritisation of mitigation measures.

BOX 2 FOCUS GROUP

Focus Group Structure

- Conduct community based social impact evaluation.
- CCC input to prioritisation of mitigation measures.

Community Meeting

The purpose of the community meetings is to enable interested and potentially affected stakeholders – particularly residents within the primary social locality – to provide input to the SIA, including impact identification and prioritisation. Should COVID-19 related restrictions prevent the implementation of an in-person public meeting alternative methods such as conducting remote consultations will be considered.

6.1.2 Validity, Privacy and Consent

For both the interviews and focus group activities, stakeholders will be informed about the context and purpose of the consultation, and notes from the consultation will be shared to seek their feedback. The aim of this is to ensure the findings adequately represent the participants' information, as well as to achieve communicative validity.

Further, a core consideration for the consultation process is for it to be carried out in an ethical fashion, particularly seeking to ensure that participants understand how their information will be stored, analysed and presented, and giving them the opportunity to determine how their information will be attributed. An information sheet and consent form has been prepared and will be provided to participants prior to or at the meetings.

6.2 EIS Consultation and Information Disclosure

The SIA consultation will be complemented by an overall EIS consultation and information disclosure process with the aim of informing stakeholders about the Project and providing them with an opportunity to provide input to EIS studies. All input provided into the EIS engagement methods will be reviewed for references to social impacts.

6.3 Additional Desktop Research and Analysis

Although primary research and consultation will provide the main data input for the remainder of the SIA, further secondary (desktop) research will also be conducted and data analysed. This will include expanding the social baseline with additional social, economic and demographic data and conducting further documentary analysis.

A cumulative impact assessment will be undertaken in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (Department of Planning Industry and Environment, 2021a), and drawing on publicly available data about other potential projects as well as feedback from community stakeholders.

7. CONCLUSION

This SIA Scoping Report has identified five social impacts where a standard assessment is proposed, and five where a detailed assessment is likely to be required (see Figure 8). Overall, as the Project is an extension of an existing, long standing operation, it seems likely that most social impacts of the Project proceeding will constitute continuations of existing experiences with minor changes in intensities, which would be confirmed in the EIS and supporting studies prepared in accordance with the relevant contemporary guidelines and policies.

FIGURE 8 SUMMARY OF IMPACTS AND PROPOSED LEVEL OF ASSESSMENT

Impacts for which a Standard Assessment is proposed	Impacts for which a Detailed Assessment is proposed
<ul style="list-style-type: none"> • Contribution to ongoing viability of mining and steelmaking in the Illawarra, thus supporting population stability and community sustainability. • Sustaining Mount Kembla's traditional identity as a mining community. • Ongoing contribution to community wellbeing and sustainability of the primary and secondary social localities. • Creation of approximately 700 operational employment opportunities and 100 construction employment opportunities, and the continuation of employment in the Southern Coalfield economic system. • Further opportunity to contribute to gender equality and economic reconciliation. 	<ul style="list-style-type: none"> • Potential impact to Aboriginal heritage sites affecting Indigenous peoples. • Potential for noise and dust affecting residents in the vicinity of the Coal Loading Facility similar to current levels. • Potential for rail noise affecting residents along the Kemira Valley Rail Line similar to current levels. • Potential impacts to environmental values and water catchment. • Ongoing contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.

REFERENCES

- Australian Bureau of Statistics. (2017). *2016 Census of Population and Housing, General Community Profile, Catalogue Number 2001.0, Kembla Heights (SSC12093), Mount Kembla (SSC12769), Figtree (SSC11515), Cordeaux Heights (SSC11070), Unanderra (SSC14008), Wollongong (c) (LGA18450), New South Wales*.
- Department of Planning Industry and Environment. (n.d.). *Submissions, Dendrobium Mine Extension Project*. Retrieved June 15, 2021, from <https://www.planningportal.nsw.gov.au/major-projects/project/9696/submissions/12921/3251>
- Department of Planning Industry and Environment. (2021a). *Cumulative Impact Assessment Guidelines for State Significant Projects*. <https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/Policy-and-legislation/GD1259-RAF-Assessing-Cumulative-Impacts-Guide-final.pdf>
- Department of Planning Industry and Environment. (2021b). *Dendrobium Mine Extension Project. Proposed extension to the Dendrobium Coal Mine*. <https://www.planningportal.nsw.gov.au/major-projects/project/9696>
- Department of Planning Industry and Environment. (2021c). *Illawarra-Shoalhaven Regional Plan 2041*. <https://www.planning.nsw.gov.au/-/media/Files/DPE/Plans-and-policies/Plans-for-your-area/Regional-plans/Illawarra-Shoalhaven-Regional-Plan-05-21.pdf>
- Department of Planning Industry and Environment. (2021d). *Social Impact Assessment Guideline for State Significant Projects*. <http://www.planning.nsw.gov.au/~media/Files/DPE/Guidelines/social-impact-assessment-guideline-2017-09.ashx>
- Department of Planning Industry and Environment. (2021e). *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects* (Issue July).
- Elliott Whiteing Social Planning Solutions. (2019). *APPENDIX K Social Impact Assessment - DENDROBIUM MINE - PLAN FOR THE FUTURE: COAL FOR STEELMAKING PROJECT*.
- Independent Planning Commission. (2021). *Dendrobium Extension Project SSD 8194 Statement of Reasons for Decision*.
- IRIS Research. (2021). *Wollongong LGA Wellbeing Survey 2021*. https://www.wollongong.nsw.gov.au/__data/assets/pdf_file/0026/137663/Wollongong-LGA-Wellbeing-Survey-Final-Report-2021.PDF
- Labour Market Information Portal. (2021). *SALM Estimates*. <https://lmip.gov.au/default.aspx?LMIP/Downloads/SmallAreaLabourMarketsSALM/Estimates>
- National Health and Medical Research Council. (2018). National statement on ethical conduct in human research, 2007 (Updated 2018). In *Australian Government: National Health and Medical Research Council* (Vol. 2007, Issue Updated). <https://www.nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research-2007-updated-2018>
- RDA Illawarra. (2015). *Transition Illawarra Initiative - Update of the 2013 Transition Illawarra Report*. <https://www.rdaillawarra.com.au/assets/Regional-Plans/251d4a4321/FINAL-DAE-RDAI-Transition-Illawarra-update-17-Nov-2015.pdf>

- SGS Economics and Planning. (2020). *Rental Affordability Index (RAI)*. Rental Affordability Index. <https://www.sgsep.com.au/maps/rai/australia-rental-affordability-index-dec20/>
- South32. (2019). *Section 5 - Engagement - Dendrobium Mine – Plan for the Future: Coal for Steelmaking – Environmental Impact Statement*.
- South32. (2020a). *2020 Sustainable Development Report*. https://www.south32.net/docs/default-source/sustainability-reporting/fy20-sustainability-reporting/sustainable-development-report-2020.pdf?sfvrsn=8886afe8_12
- South32. (2020b). *DENDROBIUM MINE AND CORDEAUX COLLIERY ANNUAL REVIEW FY20*.
- South32. (2020c). *Innovate Reconciliation Action Plan, September 2020 to August 2022*. https://www.south32.net/docs/default-source/values-and-commitments/south32-innovate-reconciliation-plan.pdf?sfvrsn=c1db638a_2
- Vanclay, F., Baines, J. T., & Taylor, C. N. (2013). Principles for ethical research involving humans: Ethical professional practice in impact assessment Part I. *Impact Assessment and Project Appraisal*, 31(4), 243–253. <https://doi.org/10.1080/14615517.2013.850307>
- Vanclay, F., Esteves, A. M., Aucamp, I., & Franks, D. M. (2015). *Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects*.
- Wollongong City Council. (n.d.-a). *Aboriginal Culture and Communities*. Retrieved July 8, 2021, from <https://www.wollongong.nsw.gov.au/about/aboriginal-culture-and-communities>
- Wollongong City Council. (n.d.-b). *Economic Development Strategy 2019-2029*. https://www.wollongong.nsw.gov.au/__data/assets/pdf_file/0034/9988/Wollongong-City-Council-Economic-Development-Strategy-2019-2029.pdf
- Wollongong City Council. (2010). *A Thematic History of the City of Wollongong*. https://www.wollongong.nsw.gov.au/__data/assets/pdf_file/0027/116784/Thematic-History-of-the-City-of-Wollongong.PDF
- Wollongong City Council. (2018). *Our Wollongong 2028 - Community Strategic Plan*. https://www.wollongong.nsw.gov.au/__data/assets/pdf_file/0025/34918/Our-Wollongong-2028.pdf
- Wollongong City Council. (2021). *Your Council Officials*. <https://www.wollongong.nsw.gov.au/your-council/your-council-officials>

APPENDIX A Preliminary Impact Analysis

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TABLE 10 IMPACT IDENTIFICATION – WITH THE PROJECT

Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
Mine Life	Until 31 December 2030.	Until 31 December 2041 ⁶ .	Extension in time of the mine and its role in the local community.	Community: Sustaining Mount Kembla's traditional identity as a mining community.	No
Mining Method	Underground extraction using longwall mining methods.	No change.	None.	-	
Resource	Mining of the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C within CCL 768.	Approximately 31 Mt of additional ROM coal within Area 5.	Potential for subsidence affecting Aboriginal heritage sites overlaying Area 5 and potential impacts to environmental values and water catchment.	Culture: Potential impact to Aboriginal heritage sites affecting Indigenous peoples in the area. Surroundings: Community members may be concerned about the potential for impacts on environmental values including surface water systems, biodiversity and habitat within the MSA.	No Yes
Annual Production	Handling and processing of up to 5.2 Mtpa of ROM coal.	No change.	None.	-	

⁶ The Project does not include approved underground mining operations in the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C at the Dendrobium Mine and associated surface activities (such as monitoring and remediation). These activities will continue to operate in accordance with Development Consent DA 60-03-2001 (as modified).

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
Coal Handling and Processing	Transport of coal from underground workings to the Kemira Valley Coal Loading Facility via an underground conveyor network.	No change.	None.	-	
	Sizing and stockpiling of coal at the Kemira Valley Coal Loading Facility prior to transport to the Dendrobium CPP via the Kemira Valley Rail Line, in accordance with the approved hours of operation.	No change.	Extension in time of amenity related impacts (noise, dust, rail noise), but unlikely to increase in spatial extent or intensity.	Surroundings: Potential for noise and dust affecting residents in the vicinity of the Coal Loading Facility similar to current levels.	Yes
	Processing of up to 5.2 Mtpa of sized ROM coal at the Dendrobium CPP.	No change.	No change expected as the CPP is located in an industrial precinct.	-	Surroundings: Potential for rail noise affecting residents along the Kemira Valley Rail Line similar to current levels.
Management of Mining Waste	Transportation of up to approximately 1.1 Mtpa of coal wash by road from the Dendrobium CPP to the West Cliff Stage 3 and Stage 4 ¹ Coal Wash Emplacement.	No change.	Increase in heavy vehicle volume between the CPP and Coal Wash Emplacement, primarily along Appin Road.	Surroundings: Ongoing contribution to traffic primarily on Appin Road.	Yes
	Development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement.	No change.	None.	-	

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
	Supply of coal wash to customers for engineering purposes (e.g. civil construction fill) or for other beneficial uses.	No change.	Extension in time of existing supply relationship and attendant economic impacts, although likely to not be material.	-	
General Infrastructure	Dendrobium Pit Top.	Continued use of existing infrastructure with minor upgrades and extensions.	Unlikely to cause any material change.	-	
	Kemira Valley Coal Loading Facility. Kemira Valley Rail Line. Dendrobium CPP. Dendrobium Shafts Nos 1, 2 and 3.	Development of surface infrastructure associated with mine ventilation and gas management and abatement (Site 5A), and other ancillary infrastructure (including electricity transmission line to proposed mine ventilation infrastructure) and minor fire trail upgrades.	Development and operation of these facilities are unlikely to cause any material impact as they are located a significant distance from any residence or public use area.	-	
		Development of additional carpark facilities.	Development of car park is unlikely to cause any material impact as it is located at a significant distance from any residence or public use area.	-	

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
Product Transport	Delivery of coal from the Dendrobium CPP to Port Kembla for domestic use at Port Kembla Steelworks and Liberty Primary Steel Whyalla Steelworks or for export through the Port Kembla Coal Terminal.	No change.	Extension in time of existing supply relationships, and by consequence potentially the ongoing operation and coal mining and steel-making in the Illawarra.	Community: Contribution to ongoing viability of mining and steelmaking in the Illawarra, thus supporting population stability and community sustainability.	Yes – the impact is by its nature linked to other industries or projects.
Water Management	Water management infrastructure to separate clean, oily and dirty water. Use of a combination of recycled treated mine water and potable water purchased from Sydney Water in underground and surface operations. Release of water in accordance with the conditions of EPL 3241.	No change (with augmentations and extensions to existing water management infrastructure as required). No change (release volumes and release infrastructure to be modified as required based on Project mine inflow rates). Development of temporary water supply infrastructure for construction water supply for Shaft Site No 5A. Provision of offsets (funding of “indirect” offsets) for predicted surface water take as a result of the Project that would result in a net gain to Metropolitan water supplies	Unlikely to cause a direct impact to people or communities although the use of water from and release of water to watercourses in the MSA may be a source of community concern.	-	

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
Workforce	Current workforce of approximately 650 operational personnel.	<p>At full development an additional 50 operational personnel for the Project.</p> <p>Up to approximately 100 personnel would also be required for construction and development activities.</p> <p>IMC plays an important role in the Southern Coalfield economic system. IMC's Dendrobium Mine and Appin Mine employ approximately 1,800 personnel in the Illawarra Region.</p>	<p>Extension in time and quantum of operational employment thus contributing to economic prosperity of the Illawarra region. Potential to further increase proportion of females and Indigenous people in workforce thus contributing to economic reconciliation and gender equality.</p>	<p>Livelihoods: Creation of approximately 700 operational employment opportunities and 100 construction employment opportunities. Continuation of employment from IMC's broader operations (i.e. cumulative 1,800 personnel).</p> <p>Livelihoods: Further opportunity to contribute to gender equality and economic reconciliation.</p> <p>Community: Contributing to ongoing viability of mining and steelmaking in the Illawarra, thus supporting population stability and community sustainability.</p>	No
			<p>Extended duration of employee traffic to and from access points.</p>	<p>Accessibility: Ongoing contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.</p>	No
					Yes, as noted above.

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact	Likely cumulative impacts
Hours of Operation	Operated on a continuous basis, 24 hours per day, seven days per week. Trains do not travel on the Kemira Valley Rail Line between 11.00 pm and 6.00 am, unless written approval is obtained from the NSW EPA for emergency use of the rail line.	No change.	-	-	-
Community Engagement and Investment	Liaison with community through CCC and other means. Contribution to community through DCEP, small grants program and strategic community investments.	No change.	Extended duration of community engagement and investment. Potential to further tailor investment to target key community priorities.	Community: Ongoing contribution to community wellbeing and sustainability of the primary and secondary social localities.	Yes – the impact is by its nature dependent on other initiatives contributing to wellbeing and sustainability.

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TABLE 11 IMPACT IDENTIFICATION – PROJECT NOT PROCEEDING

Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact
Mine Life	Until 31 December 2030.	Until 31 December 2041 ⁷ .	Cessation a decade earlier of the mine and its role in the local community.	Community: Loss of Mount Kembla’s traditional identity as a mining community.
Mining Method	Underground extraction using longwall mining methods.	No change.	None.	-
Resource	Mining of the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C within CCL 768.	Approximately 31 Mt of additional ROM coal within Area 5.	None.	-
Annual Production	Handling and processing of up to 5.2 Mtpa of ROM coal.	No change.	None.	-
Coal Handling and Processing	Transport of coal from underground workings to the Kemira Valley Coal Loading Facility via an underground conveyor network.	No change.	None.	-
	Sizing and stockpiling of coal at the Kemira Valley Coal Loading Facility prior to transport to the Dendrobium CPP via the Kemira Valley Rail Line, in accordance with the approved hours of operation.	No change.	Cessation a decade earlier of amenity related impacts (noise, dust, rail noise), but unlikely to increase in spatial extent or intensity.	Surroundings: Reduction in noise and dust affecting residents in the vicinity of the Coal Loading Facility. Surroundings: Reduction in rail noise for affected residents along the Kemira Valley Rail Line.

⁷ The Project does not include approved underground mining operations in the Wongawilli Seam in Areas 1, 2, 3A, 3B and 3C at the Dendrobium Mine and associated surface activities (such as monitoring and remediation). These activities will continue to operate in accordance with Development Consent DA 60-03-2001 (as modified).

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact
	Processing of up to 5.2 Mtpa of sized ROM coal at the Dendrobium CPP.	No change.	No change expected as the CPP is located in an industrial precinct.	-
Management of Mining Waste	Transportation of up to approximately 1.1 Mtpa of coal wash by road from the Dendrobium CPP to the West Cliff Stage 3 and Stage 4 ¹ Coal Wash Emplacement.	No change.	Reduction of heavy vehicle volume between the CPP and Coal Wash Emplacement, primarily along Appin Road a decade earlier.	Accessibility: Reduction in traffic primarily on Appin Road.
	Development and rehabilitation of the West Cliff Stage 3 Coal Wash Emplacement.	No change.	None.	-
	Supply of coal wash to customers for engineering purposes (e.g. civil construction fill) or for other beneficial uses.	No change.	Reduction in time of existing supply relationship and attendant economic impacts, although likely to not be material.	-
General Infrastructure	Dendrobium Pit Top. Kemira Valley Coal Loading Facility. Kemira Valley Rail Line.	Continued use of existing infrastructure with minor upgrades and extensions.	Unlikely to cause any material change.	-
	Dendrobium CPP. Dendrobium Shafts Nos 1, 2 and 3.	Development of surface infrastructure associated with mine ventilation and gas management and abatement (Site 5A), and other ancillary infrastructure (including electricity transmission line to proposed mine ventilation infrastructure) and minor fire trail upgrades.	Not developing and operating these facilities are unlikely to cause any material impact as they are located a significant distance from any residence or public use area.	-

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact
		Development of additional carpark facilities.	Not developing car park is unlikely to cause any material impact as it is located at a significant distance from any residence or public use area.	-
Product Transport	Delivery of coal from the Dendrobium CPP to Port Kembla for domestic use at Port Kembla Steelworks and Liberty Primary Steel Whyalla Steelworks or for export through the Port Kembla Coal Terminal.	No change.	Reduction in time of existing supply relationships, and by consequence potentially the ongoing operation and coal mining and steel-making in the Illawarra.	Community: Reduced contribution to ongoing viability of mining and steelmaking in the Illawarra, thus potentially contributing to population decline / reduced growth and reduced community sustainability.
Water Management	Water management infrastructure to separate clean, oily and dirty water. Use of a combination of recycled treated mine water and potable water purchased from Sydney Water in underground and surface operations. Release of water in accordance with the conditions of EPL 3241.	No change (with augmentations and extensions to existing water management infrastructure as required). No change (release volumes and release infrastructure to be modified as required based on Project mine inflow rates). Development of temporary water supply infrastructure for construction water supply for Shaft Site No 5A. Provision of offsets (funding of “indirect” offsets) for predicted surface water take as a result of the Project that would result in a net gain to Metropolitan water supplies.	-	-

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact
Workforce	Current workforce of approximately 650 operational personnel.	<p>At full development an additional 50 operational personnel for the Project.</p> <p>Up to approximately 100 personnel would also be required for construction and development activities.</p> <p>IMC plays an important role in the Southern Coalfield economic system. IMC's Dendrobium Mine and Appin Mine employ approximately 1,800 personnel in the Illawarra Region.</p>	<p>Reduced total number of employees and reduced operations leading to a reduced contribution to economic prosperity of the Illawarra region.</p> <p>Reduced potential to further increase proportion of females and Indigenous people in workforce thus contributing to economic reconciliation and gender equality.</p> <hr/> <p>Reduced duration of employee traffic to and from access points.</p>	<p>Livelihoods: Loss of approximately 700 operational jobs employment a decade earlier. 100 construction and development jobs will not eventuate. Potential loss of employment from IMC's broader operations (i.e. cumulative 1,800 personnel).</p> <p>Livelihoods: Significantly reduced opportunity to contribute to gender equality and economic reconciliation.</p> <p>Community: Reduced contribution to ongoing viability of mining and steelmaking in the Illawarra, thus potentially contributing to population decline / reduced growth and reduced community sustainability.</p> <hr/> <p>Accessibility: Reduced contribution to traffic in Mount Kembla, and on Cordeaux Road, Picton Road and Appin Road.</p>

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Component	Approved Dendrobium Mine (Development Consent DA 60-03-2001)	Dendrobium Mine Extension Project	Potential experienced change	Potential Social Impact
Hours of Operation	Operated on a continuous basis, 24 hours per day, seven days per week. Trains do not travel on the Kemira Valley Rail Line between 11.00 pm and 6.00 am, unless written approval is obtained from the NSW EPA for emergency use of the rail line.	No change.	-	-
Community Engagement and Investment	Liaison with community through CCC and other means. Contribution to community through DCEP, small grants program and strategic community investments.	No change.	Reduced duration of community engagement and investment.	Community: Reduced contribution to community wellbeing and sustainability of the primary and secondary social localities.

DOCUMENT PROPERTIES

Version	Purpose	Issued	Contributors	Approver
1.0	Final version	6/12/2021	Daniel Holm	Daniel Holm

DECLARATION

The lead author of this SIA Scoping Report is Daniel Holm. Daniel is the director and principal consultant of Square Peg Social Performance. He holds a master's degree in political science from Uppsala University in Sweden and has approximately 15 years of professional experience in the field of social impact assessment, social performance, social policy and communications, and is a member of the International Association of Impact Assessment. Daniel has contributed to or led more than fifteen SIA's or other projects studying community and stakeholder experiences of projects or policy interventions. He is currently undertaking PhD studies at the University of Queensland.

In submitting this SIA Scoping Report the following declarations are made:

- This SIA Scoping report contains all information deemed relevant for the purposes of meeting the requirements set out in the Social Impact Assessment Guideline for State Significant Projects (Department of Planning Industry and Environment, 2021d).
- None of the information presented herein is to the knowledge of the lead author false or misleading.
- The lead author is aware of and have endeavoured to abide by the ethical principles and considerations outlined in the National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2018) and the Principles for ethical research involving humans: ethical professional practice in impact assessment Part I (Vanclay et al., 2013).
- The qualifications, experience and professional memberships of the lead author are set out in the paragraph above.

Signed and dated:

 6/12/2021

Daniel Holm

**ATTACHMENT D
CUMULATIVE IMPACT ASSESSMENT SCOPING TABLE**

**Table D-1
Cumulative Impact Assessment Scoping Table**

Projects	Approximate Distance from Project ¹	Indicative Timing/Overlap	Amenity (Air, Noise and Human Health)	Potential Overlap Between Impacts of the Project on Environmental Matters and Impacts of Other Project on the Same Environmental Matter						
				Groundwater	Surface Water	Social	Road Transport	Rail Access and Rail Noise	Visual, Landscape and Final Landform	Biodiversity and Heritage
Port Kembla Outer Harbour Development	22 km south-east	N/A	Standard	Outside the relevant study area	Outside the relevant study area	Limited interaction expected	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Port Kembla Gas Terminal	21 km south-east	N/A	Standard	Outside the relevant study area	Outside the relevant study area	Limited interaction expected	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Port Kembla Power Station	21 km south-east	N/A	Standard	Outside the relevant study area	Outside the relevant study area	Limited interaction expected	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Port Kembla Bulk Liquids Terminal	20 km south-east	N/A	Standard	Outside the relevant study area	Outside the relevant study area	Limited interaction expected	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Tahmoor South Coal Project	6 km north-west	Operational (approval for underground mining to 2035)	Limited interaction expected	Detailed	Limited interaction expected	Standard	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Cordeaux Colliery (IMC-owned, under care and maintenance)	Within Project area	Currently in care and maintenance	Limited interaction expected	Detailed	Limited interaction expected	Limited interaction expected	Limited interaction expected	Limited interaction expected	Limited interaction expected	Limited interaction expected

Table D-1 (Continued)
Cumulative Impact Assessment Scoping Table

Future Projects	Approximate Distance from Project ¹	Indicative Timing/Overlap	Amenity (Air, Noise and Human Health)	Potential Overlap Between Impacts of the Project on Environmental Matters and Impacts of Other Project on the Same Environmental Matter						
				Groundwater	Surface Water	Social	Road Transport	Rail Access and Rail Noise	Visual, Landscape and Final Landform	Biodiversity and Heritage
Russell Vale Colliery	5 km north-east	Operational (approval for underground mining to 2028)	Limited interaction expected	Detailed	Limited interaction expected	Standard	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Wongawilli Coal Mine	Directly south	Response to Submissions phase at time of Scoping Report lodgement	Limited interaction expected	Detailed	Limited interaction expected	Standard	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Metropolitan Coal Mine	25 km north-east	Operational (approval for underground mining to 2035)	Outside the relevant study area	Outside the relevant study area	Outside the relevant study area	Limited interaction expected	Limited interaction expected	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
Appin and West Cliff	12 km north	Operational (approval for underground mining to 2041)	Limited interaction expected	Detailed	Limited interaction expected	Standard	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area
BlueScope Port Kembla Steelworks Blast Furnace No 6 Reline	22 km south-east	N/A	Standard	Outside the relevant study area	Outside the relevant study area	Standard	Standard	Limited interaction expected	Outside the relevant study area	Outside the relevant study area

¹ From Project underground mining Area 5.

**ATTACHMENT E
PRE-CONDITIONS TO GRANTING APPROVAL AND MANDATORY MATTERS FOR
CONSIDERATION**

Table E-1A
Applicable Pre-conditions to Granting Approval

Statutory Reference	Pre-condition	Relevance
<i>Environmental Planning and Assessment Regulation 2000 (EP&A Regulation)</i>		
clause 193	<p>Under clause 193, unless the application is for specific types of infrastructure (including mining), the consent of the owner of the land is required for an infrastructure application. In this case, because the Project comprises coal mining, the applicant is required to:</p> <ul style="list-style-type: none"> • publish a notice on the NSW planning portal; and <ul style="list-style-type: none"> - provide written notice to the owner of the land no later than 14 days after the application is made; <u>or</u> - publish a notice in a newspaper circulating in the area in which the infrastructure is to be carried out at least 14 days before the EIS is placed on public exhibition. 	Illawarra Metallurgical Coal (IMC) will satisfy relevant notification requirements under clause 193 prior to the Project application being determined by the Minister for Planning.
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>		
section 131AB	Before deciding whether or not to approve the taking of an action that involves a large coal mining development that the Commonwealth Minister for the Environment believes is likely to have a significant impact on water resources and may have an adverse impact on a matter protected by a provision of Part 3 of the EPBC Act, the Commonwealth Minister for the Environment must obtain the advice of the Independent Expert Scientific Committee on Coal Seam Gas and Large Mining Development (IESC).	The Project will be referred to the Commonwealth Minister for the Environment for consideration as to whether the Project meets the criteria of a 'Controlled Action' and requires approval under the EPBC Act.

Table E-1B
Other Typical Mining Pre-conditions to Granting Development Consent
(Not Applicable Due to the Project SSI Declaration)

Statutory Reference	Pre-condition	Relevance
<i>State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55).</i>		
Clause 7(1)	A consent authority must consider whether the land is contaminated and be satisfied that, if the land is contaminated, the land is suitable in its contaminated state (or will be suitable after remediation) for the purpose of the Project.	SEPP 55 is not applicable to the Project being SSI. Notwithstanding, SEPP 55 would be considered in the EIS for the Project and a Land Contamination Assessment would be included in the EIS.
<i>Mining Act 1992 (Mining Act)</i>		
section 380AA	An application for Development Consent to mine for coal cannot be made or determined unless the applicant is the holder of an authority that is in force in respect of coal for the relevant land, or the applicant has the written consent of the holder of such an authority to make the application.	IMC ⁵ is the holder of AUTH 143, AUTH 338, AUTH 374, CCL 768, CCL 724, ML 1510 and ML 1566 for Group 9 minerals (Coal) over all relevant land where mining for coal is proposed to be carried out for the Project. No additional mining tenements would be required for the Project. Therefore, there is no impediment under section 380AA of the Mining Act to IMC making the application for Project approval. The Mining Act is not applicable to the Project being SSI. Notwithstanding, the Mining Act would be considered in the EIS for the Project.
<i>Dams Safety Act 2015 (Dams Safety Act)</i>		
section 48(4)	A consent authority must, before granting Development Consent for mining operations within a notification area of a declared dam, refer the application to Dams Safety NSW and take into consideration any matters raised by Dams Safety NSW.	The Project would involve activities associated with mining operations within the notification area of the Avon Dam. The Dams Safety Act is not applicable to the Project being SSI. Notwithstanding, the Dams Safety Act would be considered in the EIS for the Project.
<i>Wollongong Local Environmental Plan 2009, Wingecarribee Local Environmental Plan 2010 and Wollondilly Local Environmental Plan 2011</i>		
Various	Aims, permissibility and special provisions of Local Environmental Plans (LEPs) may be applicable to the granting of Development Consent for a mine.	The requirements of the <i>Wollongong Local Environmental Plan 2009, Wingecarribee Local Environmental Plan 2010 and Wollondilly Local Environmental Plan 2011</i> would be considered in the EIS. The LEPs are not applicable to the Project being SSI. Notwithstanding, the LEPs would be considered in the EIS for the Project.

⁵ At all relevant times in relation to the Project, Illawarra Coal Holdings Pty Ltd will be acting as agent for and on behalf of Dendrobium Coal Pty Ltd (Dendrobium Coal) in respect of all mining and exploration tenements held by Dendrobium Coal.

**Table E-2A
Applicable Mandatory Matters for Consideration**

Statutory Reference	Mandatory Consideration
<i>Considerations under the Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	
section 1.3	<p>Relevant objects of the EP&A Act:</p> <ul style="list-style-type: none"> • Promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources. • Facilitate ecologically sustainable development (ESD) by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment. • Promote the orderly and economic use and development of land. • Protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats. • Promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage). • Promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State. • Provide increased opportunity for community participation in environmental planning and assessment.
section 5.22	As per section 5.22 of the EP&A Act, environmental planning instruments do not apply to SSI except in limited circumstances. However, this report has identified relevant EPIs that will be considered by IMC in the EIS (Section 4.1.3).
<i>Considerations under the Biodiversity Conservation Act 2016</i>	
section 7.14(2)	The Minister for Planning is to take into consideration the likely impact of the proposed development on biodiversity values as assessed in the Project BDAR.
section 7.16(3)	<p>If the Minister for Planning is of the opinion that the Project is likely to have serious and irreversible impacts on biodiversity values, the Minister is required to:</p> <ul style="list-style-type: none"> • take those impacts into consideration; and • determine whether there are any additional and appropriate measures that will minimise those impacts if approval is to be granted.
<i>Considerations under the Environment Protection and Biodiversity Conservation Act 1999</i>	
section 136(1)	<p>In deciding whether or not to approve the taking of an action, and what conditions to attach to an approval, the Commonwealth Minister for the Environment must consider the following:</p> <ul style="list-style-type: none"> • matters relevant to any matter that the Minister has decided is a controlling provision for the action; and • economic and social matters.

Table E-2A (Continued)
Applicable Mandatory Matters for Consideration

Statutory Reference	Mandatory Consideration
Considerations under the Environment Protection and Biodiversity Conservation Act 1999	
section 136(2)	<p>In considering the matters referred to in section 136(1), the Commonwealth Minister for the Environment must take into account:</p> <ul style="list-style-type: none"> • the principles of ESD; and • the assessment report (if any) relating to the action. <p>In addition, section 136(2) (ca) to (g) specify the Commonwealth Minister for the Environment must take into account, if applicable:</p> <ul style="list-style-type: none"> • the finalised EIS; • the recommendation report relating to the action; • if a relevant inquiry was conducted, the report of the commissioners; • any other information the Minister has on the relevant impacts of the action; • any relevant comments given to the Minister; • relevant advice obtained by the Minister from the IESC; and • notices or relevant comments provided in accordance with the EPBC Act.
section 139(1)	<p>In deciding whether or not to approve the taking of an action with respect to threatened species and endangered communities, and what conditions to attach to such approval, the Commonwealth Minister for the Environment must not act inconsistently with:</p> <ul style="list-style-type: none"> • Australia's obligations under: <ul style="list-style-type: none"> – the Convention on Biological Diversity; or – the Convention on Conservation of Nature in the South Pacific; or – the Convention on International Trade in Endangered Species of Wild Fauna and Flora; or • a recovery plan or threat abatement plan.
section 139(2)	<p>If the Commonwealth Minister for the Environment is considering whether to approve the taking of an action and the action has or will have, or is likely to have, a significant impact on a particular listed threatened species or a particular listed threatened ecological community the Minister must, in deciding whether to so approve the taking of the action, have regard to any approved conservation advice for the species or community.</p>

Table E-2B
Other Typical Mining Mandatory Matters for Consideration
(Not Applicable Due to the Project SSI Declaration)

Statutory Reference	Mandatory Consideration
Considerations under the EP&A Regulation	
clause 92(b)	For the demolition of a building, the consent authority must consider the provisions of AS 2601-1991: <i>The Demolition of Structures</i> .
Considerations under SEPP 33	
clause 13	A consent authority must consider current circulars or guidelines published by the DPIE relating to hazardous or offensive development, whether to consult with relevant public authorities regarding any environmental or land use safety requirements, a preliminary hazard analysis prepared by the applicant, feasible alternatives to the development and likely future use of surrounding land.
Considerations under SEPP 55	
clause 7(1)	A consent authority must consider whether the land is contaminated and be satisfied that, if the land is contaminated, the land is suitable in its contaminated state (or will be suitable after remediation) for the purpose of the Project.
Considerations under the Mining SEPP	
clause 12	Before determining an application for consent for the purposes of mining the consent authority must: <ul style="list-style-type: none"> (a) consider – <ul style="list-style-type: none"> (i) the existing uses and approved uses of land in the vicinity of the development, and (ii) whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development, and (iii) any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses, and (b) evaluate and compare the respective public benefits of the development and the land uses referred to in paragraph (a)(i) and (ii), and (c) evaluate any measures proposed by the applicant to avoid or minimise any incompatibility, as referred to in paragraph (a)(iii).
clause 12A	Before determining an application for consent for the purposes of mining the consent authority must consider relevant provisions of the <i>Voluntary Land Acquisition and Mitigation Policy (VLAMP)</i> (NSW Government, 2018b).
clause 13	Before determining an application for development in the vicinity of mining, petroleum or extractive industry, the consent authority must (among other things) consider whether or not the development is likely to have a significant impact on current or future extraction or recovery of minerals, petroleum or extractive materials (including by limiting access to, or impeding assessment of, those resources), and any ways in which the development may be incompatible with any of those existing or approved uses or that current or future extraction or recovery.

Table E-2B (Continued)
Other Typical Mining Mandatory Matters for Consideration
(Not Applicable Due to the Project SSI Declaration)

Statutory Reference	Mandatory Consideration
Considerations under the Mining SEPP (contd)	
clause 14	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner (including conditions to ensure that impacts on significant water resources, including surface and groundwater resources, are avoided, or are minimised to the greatest extent practicable, that impacts on threatened species and biodiversity, are avoided, or are minimised to the greatest extent practicable, and that greenhouse gas emissions are minimised to the greatest extent practicable). This includes considering an assessment of greenhouse gas emissions (including downstream emissions) having regard to any applicable State or national policies, programs of guidelines concerning greenhouse gas emissions.
clause 15	Before determining an application for consent for the purposes of mining the consent authority must consider the efficiency of the development in terms of resource recovery and whether or not the consent should be issued subject to conditions aimed at optimising the efficiency of resources recovery and the reuse or recycling of material.
clause 16	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions regarding transport of materials.
clause 17	Before determining an application for consent for the purposes of mining the consent authority must consider whether or not the consent should be issued subject to conditions regarding rehabilitation, including the particular considerations set out in clause 17(2).
Considerations under the Infrastructure SEPP	
clauses 85(2)(b)(ii) and 86(2)(b)(ii)	If applicable, before determining a development application for development that is in or adjacent to a rail corridor (and to which section 85(1) applies) or that involves penetration of ground to a depth of at least 2 m below ground level within 25 m of a rail corridor, the consent authority must take into consideration any guidelines issued by the Secretary for the purposes of those clauses and published in the NSW Government Gazette (i.e. the <i>Development Near Rail Corridors and Busy Roads – Interim Guideline</i> [NSW Government 2008]).
clause 104(3)(b)	If applicable, before determining a development application for development to which clause 104 applies, the consent authority must take into consideration: <ul style="list-style-type: none"> (ii) the accessibility of the site concerned, including the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and (iii) any potential traffic safety, road congestion or parking implications of the development.

Table E-2B (Continued)
Other Typical Mining Mandatory Matters for Consideration
(Not Applicable Due to the Project SSI Declaration)

Statutory Reference	Mandatory Consideration
Considerations under the Drinking Water Catchment SEPP	
clause 10(1)	A consent authority must not grant consent to the carrying out of development on land in the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality.
clause 11(1)	A consent authority must not grant consent to the carrying out of development on land in the Sydney drinking water catchment except with the concurrence of the Minister administering the <i>Water NSW Act 2014</i> .
Considerations under the Dams Safety Act 2015	
section 48(4)	Before granting Development Consent for the carrying out of any mining operations in a notification area of a declared dam, the consent authority must refer the application to Dams Safety NSW and take into consideration any matters that are raised by Dams Safety NSW.
Considerations under the Wollongong Local Environmental Plan 2009, Wingecarribee Local Environmental Plan 2010, Wollondilly Local Environmental Plan 2011	
Various	Local Environmental Plans may specify mandatory matters for consideration by the consent authority for mining projects.