

# PART A

## Introduction





# 1 Introduction

## 1.1 Overview

The Cobbora Coal Project (the Project) is an open cut coal mine that will be developed on around 4,300 hectares (ha) of land near Cobbora in the central west of New South Wales (NSW). Up to 12 million tonnes per annum (Mtpa) of coal will be produced, primarily to sell to Macquarie Generation, Origin Energy and Delta Electricity. The coal will be used to generate electricity at four of the six large coal-fired power stations operating in NSW. Some coal will be produced for spot sales, most likely to the Project's existing customers, or for export.

**Table 1.1** Primary project customers

Customer	Power station(s)	Location
Macquarie Generation	Bayswater and Liddell	Upper Hunter Valley
Origin Energy	Eraring	Central Coast
Delta Electricity	Vales Point	Central Coast

This environmental assessment (EA) describes the Project and its likely environmental, social and economic impacts in accordance with the requirements of applicable NSW and Commonwealth planning and environmental laws. It also informs interested parties about the Project and its likely implications.

## 1.2 Background and proponent

The existing state-owned power stations in NSW use about 30 million tonnes (Mt) of thermal black coal for electricity generation each year. All of this coal is supplied by privately owned mines, exposing the power station operators to market price variability and supply insecurity over the longer term. The Project was conceived to partially address these concerns by providing about 30% of the coal needed by NSW power stations. Contracts have been executed to supply 9.5 Mtpa of coal over 17 years at a pre-agreed price so the power stations can continue to provide a secure supply of competitively priced electricity to NSW residents. The Project will supply coal to meet these contracts.

In 2008, an unincorporated joint venture (UJV) was formed by the three state-owned power corporations (Macquarie Generation, Eraring Energy and Delta Electricity) to manage the development of the Cobbora coal resource.

In October 2010, the NSW Government announced it would develop the Cobbora Coal Project to deliver greater certainty of long term fuel costs for electricity generation. Cobbora Holding Company Pty Limited (CHC) was formed in January 2011 for this purpose.

CHC is an entity owned by the State of NSW and is the proponent for the Project.

## 1.3 Project location and summary

### 1.3.1 Project area

The Project is located about 5 km south of Cobbora, 22 km south-west of Dunedoo, 64 km north-west of Mudgee and 60 km east of Dubbo in the central west of NSW. The project application area (PAA) covers around 274 km<sup>2</sup>, most of which (179 km<sup>2</sup> or 65%) is owned by CHC. The Golden Highway is to the north of the PAA and Spring Ridge Road runs through its centre. The Cudgegong River crosses the southern part of the PAA, from where a water supply pipeline to the mine will extend. The PAA contains agricultural land, woodland, some rural residential properties and Crown land or other reserves. Mine operations are only proposed on land owned by CHC.

The PAA is located within three local government areas (LGAs): Mid-Western Regional Council, Warrumbungle Shire Council and Wellington Council. The provisions of State Environmental Planning Policy (Mining, Petroleum and Extractive Industries 2007) permits mining with consent, regardless of any prohibitions in the Local Environment Plans (LEPs) that apply to the PAA.

The Project location is shown in Figure 1.1.

### 1.3.2 Project summary

In 2003, the NSW Department of Primary Industries started to explore for coal in the project area as part of the Western Exploration Program. Substantial resources of coal suitable for power generation were found during this program. On 15 May 2009, the members of the Cobbora UJV were invited by the Minister for Mineral Resources to apply for an exploration licence (EL), which was granted on 31 August 2009 (EL 7394). EL 7394 was later transferred to CHC and covers some 323 km<sup>2</sup>, much of which is in the PAA.

Development of a new mine and associated infrastructure is now proposed. The Project's key elements are:

- an open cut mine;
- a coal handling and preparation plant (CHPP);
- a train loading facility and rail spur;
- a locomotive provisioning facility (subject to ARTC requirements);
- a mine infrastructure area; and
- supporting infrastructure including: access roads; water supply and storage; and electricity supply.

The indicative Project layout is shown in Figure 1.2.

The Project will produce up to 12 Mtpa of coal over an operating life of 21 years. It is envisaged construction activities will begin in mid-2013, with coal supplied to customers from the first half of 2015. Rehabilitation will continue beyond the 21 years of mining (Figure 1.3).



The Project's disturbance footprint will be about 4,300 ha of which the mining areas will be 3,950 ha. However, impacts have generally been assessed based on a potential disturbance area of about 4,700 ha that includes infrastructure and related corridors. This will allow for small variations to the final alignment of these components based on detailed engineering. The potential disturbance area assumes that:

- construction of water pipelines will disturb an area approximately 10 m wide in a 20 m wide corridor;
- the rail spur will disturb an area approximately 20 to 60 m wide in a 140 m wide corridor;
- power lines will be across agricultural land and a small area will be disturbed when each pole is erected. These disturbance areas will be within a 40 m wide corridor; and
- road realignments will disturb an area approximately 10 m wide.

There is some overlap between the buffer areas for each of these components. The ecological assessments refined the potential disturbance area to 4,630 ha. Of this, 70 ha is not vegetated (eg roads and dams) so vegetation disturbance has been assessed based on an area of 4,560 ha.

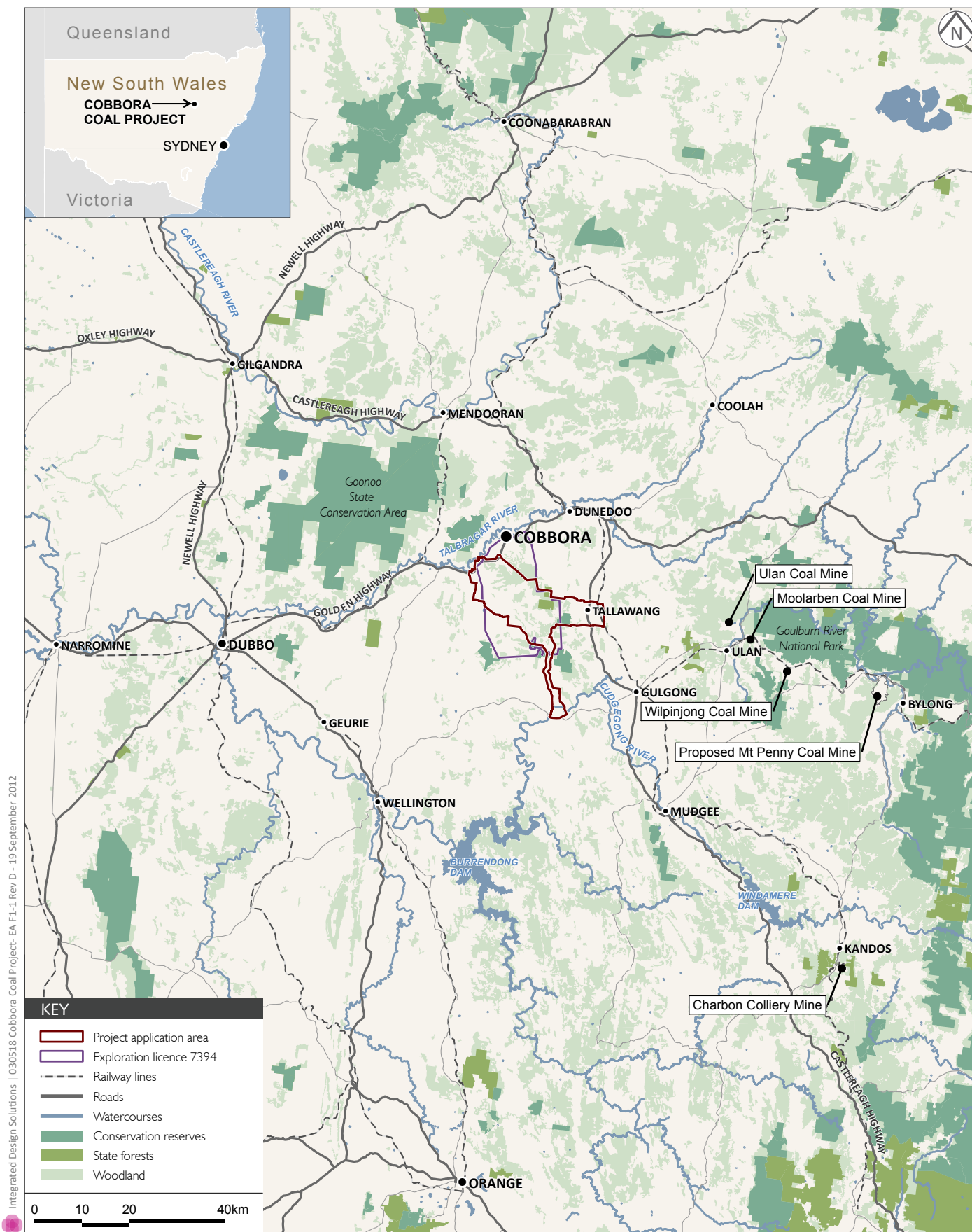
## 1.4 Purpose of the EA

For NSW approvals, the EA accompanies an application for a 'major project' in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The NSW Minister for Planning is the decision maker, although decisions for many Part 3A projects are delegated to the Planning Assessment Commission.

For Commonwealth approvals, the EA accompanies an application for approval of a 'controlled action' under the Environment Protection Biodiversity Conservation Act 1999 (EPBC Act). The Minister for Sustainability, Environment, Water, Population and Communities is the decision maker for the EPBC Act.

The EA's first purpose is to provide information to support the Project application to allow NSW and Commonwealth government authorities to assess its merits and make recommendations to decision makers about whether or not to grant approval.

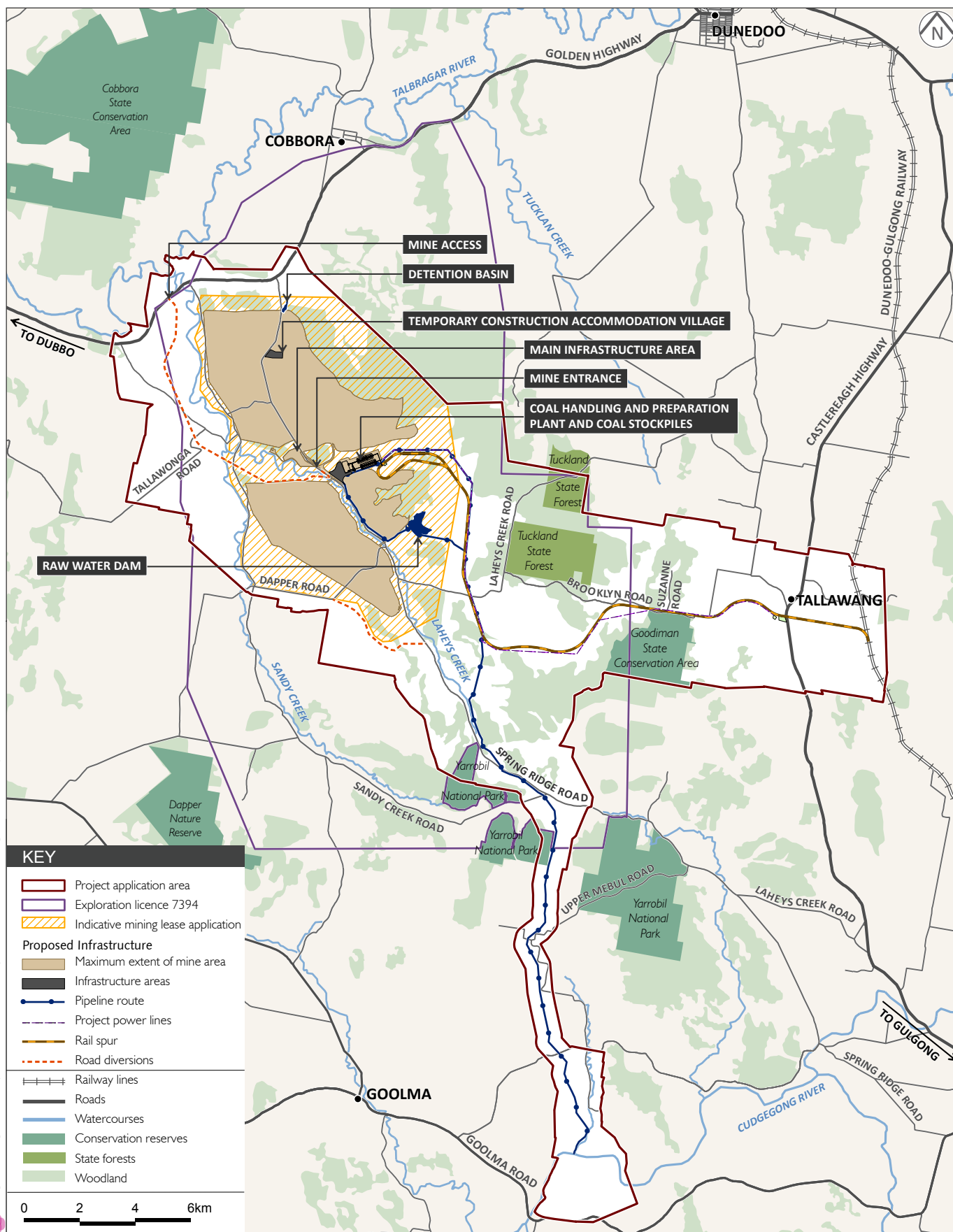
The EA's second purpose is to inform the public about the Project so that they can make submissions on its merits or impacts. Such submissions are a further important information source for the governmental assessment process.

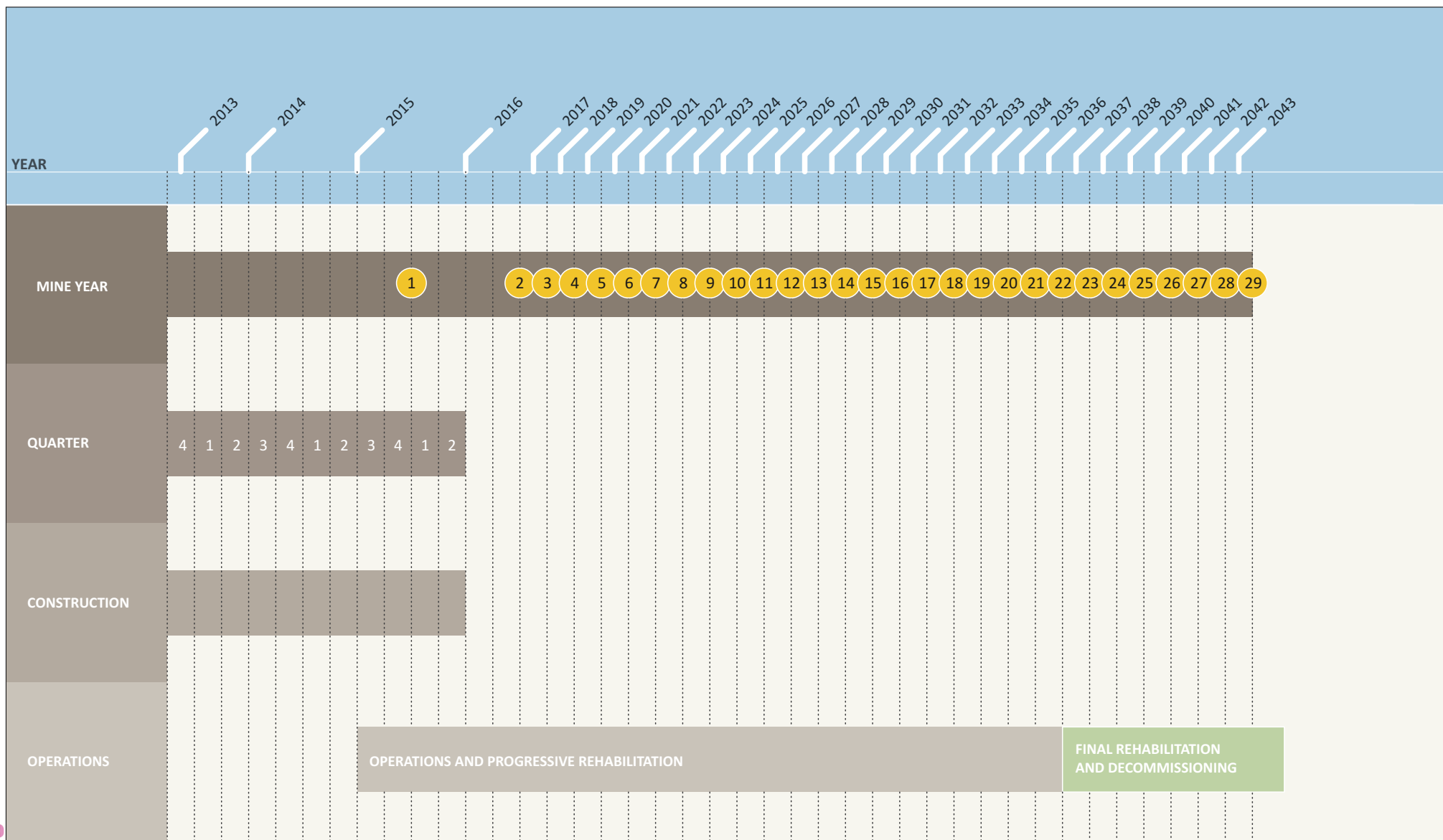


Project Location

Cobbora Coal Project - Environmental Assessment

Figure I.1





Indicative Project Schedule

Cobbora Coal Project - Environmental Assessment

Figure I.3



The EA has been prepared to address specific requirements given by the Commonwealth and NSW assessment agencies. These requirements are provided in the Director General's environmental assessment requirements (DGRs) issued on 23 December 2011, summarised in Table 1.2 (NSW), and in Attachment A to the DGRs, summarised in Table 1.3 (Commonwealth). The Commonwealth requirements are specifically addressed in the Matters of National Environmental Significance report appended to Appendix H ('Terrestrial ecology assessment').

**Table 1.2 Summary of NSW environmental assessment requirements**

Aspect	Key assessment requirements	Reference in EA
<b>General requirements</b>	The EA must include:	
	• Executive summary;	
	• Detailed description of the Project, including:	<i>Section 2.1</i>
	- need for the project;	
	- alternatives considered, including justification for the proposed mine plan; and	<i>Section 3.21 and Chapter 24</i>
	- likely staging of the Project;	<i>Section 3.1 to 3.18</i>
	- likely interactions between the Project and existing, approved and proposed mining operations in the vicinity of the site;	<i>Section 2.2.10, 8.5, 13.5, 13.6 and 14.3</i>
	- plans of any proposed building works; and	<i>Section 22.3</i>
	- proposed rehabilitation strategy for the Project area having regard to the key principles in the Strategic Framework for Mine Closure, including:	<i>Section 9.4, 9.5 and 9.6</i>
	▪ rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria;	
	▪ nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies; and	
	▪ potential for integrating this strategy with any other biodiversity offset and/or rehabilitation strategies in the region.	
	• Risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment;	<i>Section 24.1</i>
	• Detailed assessment of the key issues specified below, and any other significant issues identified in the risk assessment (see above), which includes:	<i>Chapter 2 and Chapters 6 to 21</i>
	- description of the existing environment, using sufficient baseline data;	
	- assessment of the potential impacts of the project, including any cumulative impacts, taking into consideration any relevant guidelines, policies, plans and statutory provisions (see below);	
	- description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the project, including detailed contingency plans for managing any significant risks to the environment;	

**Table 1.2 Summary of NSW environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
	<ul style="list-style-type: none"> <li>- statement of commitments, outlining all the proposed environmental management and monitoring measures;</li> </ul>	<i>Section 23</i>
	<ul style="list-style-type: none"> <li>- conclusion justifying the project on economic, social and environmental grounds, taking into consideration whether the project is consistent with the objects of the <i>Environmental Planning &amp; Assessment Act 1979</i>; and</li> </ul>	<i>Section 24.3</i>
	<ul style="list-style-type: none"> <li>- signed statement from the author of the Environmental Assessment, certifying that the information contained within the document is neither false nor misleading.</li> </ul>	<i>Before Executive Summary</i>
<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Include accurate estimates of any vegetation clearing associated with the Project;</li> <li>• Detailed assessment of the potential impacts of the project on any terrestrial and aquatic threatened species, populations, ecological communities or their habitats;</li> <li>• Detailed description of the measures that would be implemented to avoid or mitigate impacts on biodiversity;</li> </ul>	<i>Section 10.5.1 and 10.4.1</i>
	<ul style="list-style-type: none"> <li>• Revised offset strategy to ensure the project maintains or improves the biodiversity values of the region in the medium to long term (in accordance with NSW and Commonwealth policies); and</li> </ul>	<i>Section 10.7</i>
	<ul style="list-style-type: none"> <li>• Consideration of how the proposal may impact upon lands covered by the <i>Brigalow and Nandewar Community Conservation Area Act 2005</i>, and related specific identified matters.</li> </ul>	<i>Section 10.5.5</i>
<b>Water resources</b>	<ul style="list-style-type: none"> <li>• Detailed modelling of the potential surface and groundwater impacts of the project;</li> </ul>	<i>Section 7.2.3 and 8.2.2</i>
	<ul style="list-style-type: none"> <li>• Detailed site water balance, including a description of site water demands, water disposal methods, water supply infrastructure and water storage structures;</li> <li>• Demonstration that water supplies for the construction and operation of the mine can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any Water Sharing Plan (WSP) and/or requirements of the <i>Water Act 1912</i> and the NSW Inland Groundwater Shortage Zone Embargo for water sources outside of any relevant WSP;</li> </ul>	<i>Section 7.5.6, 8.4.2 and 8.5.4</i>
	<ul style="list-style-type: none"> <li>• Description of the measures proposed to ensure the Project can operate in accordance with the proximity and water source protection criteria of the relevant WSP; and</li> </ul>	<i>Section 7.4, 7.6.4 and 8.5.4</i>
	<ul style="list-style-type: none"> <li>• Identification of any licensing requirements under the <i>Water Act 1912</i> or <i>Water Management Act 2000</i>.</li> </ul>	<i>Section 4.3.4 and 4.3.5</i>
	<ul style="list-style-type: none"> <li>• Detailed assessment of potential impacts on: <ul style="list-style-type: none"> <li>- the quality and quantity of existing surface and ground water resources, over both the short and long term;</li> <li>- affected licensed water users and basic landholder rights;</li> <li>- the riparian, ecological, geo-morphological and hydrological values of watercourses resulting from any proposed diversion works; and</li> <li>- groundwater dependent ecosystems.</li> </ul> </li> </ul>	<i>Section 7.4, 7.6.4 and 8.5.4</i>
	<ul style="list-style-type: none"> <li>• Detailed description of the proposed water management system and water monitoring program for the project and other measures to mitigate surface and groundwater impacts; and</li> </ul>	<i>Section 7.6 and 8.6</i>

**Table 1.2 Summary of NSW environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
	<ul style="list-style-type: none"> <li>Detailed flood impact assessment identifying the impact of the Project on flooding and the measures proposed to mitigate potential flood impacts.</li> </ul>	Section 8.5.3
<b>Land resources</b>	<ul style="list-style-type: none"> <li>Detailed assessment of the impacts of the Project on: <ul style="list-style-type: none"> <li>National Park Estate; and</li> <li>agricultural land and productivity, which includes: <ul style="list-style-type: none"> <li>detailed assessment and mapping pre- and post-mining (including land capability and agricultural suitability mapping) of soil characteristics, across all proposed areas of surface disturbance and an assessment of their value and limitations for rehabilitation;</li> <li>description of the agricultural resources (especially soils and water resources used or capable of being used for agriculture) and agricultural enterprises of the locality;</li> <li>identification of any regionally or state significant agricultural resources in the locality, with particular references to higher productive alluvial soils and associated surface/groundwater systems that may be impacted directly or indirectly by the proposal;</li> <li>detailed assessment of the potential impacts of the Project on agricultural resources and/or enterprises of the locality including: <ul style="list-style-type: none"> <li>impacts as a result of reallocation of licensed water extraction from irrigation to mining uses;</li> <li>direct impacts on soil, groundwater and surface water resources as a result of mining activity;</li> <li>change in land use due to requirements for biodiversity offsets.</li> </ul> </li> </ul> </li> </ul> </li> <li>Detailed description of measures that would be implemented to avoid, reduce or mitigate impacts of the Project on agricultural resources and/or enterprises of the locality including; and</li> <li>Justification for any significant long term changes to agricultural resources, particularly if highly productive agricultural resources (eg alluvial lands and associated groundwater resources) are proposed to be affected by the Project.</li> </ul>	Chapter 9 and 10
<b>Air quality</b>	<ul style="list-style-type: none"> <li>Quantitative assessment of potential: <ul style="list-style-type: none"> <li>construction and operational impacts, with a particular focus on dust emissions (including PM2.5 and PM10 emission, and dust generation from coal transport), as well as diesel and blast fume emissions;</li> <li>spontaneous combustion properties of overburden or reject material;</li> <li>reasonable and feasible mitigation measures to minimise dust, diesel and blast fume emissions, including evidence that there are no such measures available other than those proposed; and</li> <li>monitoring and management measures, in particular real-time air quality monitoring and predictive meteorological forecasting.</li> </ul> </li> </ul>	Section 14.5



**Table 1.2 Summary of NSW environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
Noise, vibration and blasting	<ul style="list-style-type: none"> <li>Quantitative assessment of potential: <ul style="list-style-type: none"> <li>construction, operational and off-site transport noise impacts;</li> <li>blasting impacts on people, livestock and property;</li> <li>reasonable and feasible mitigation measures (including assessment of restricted night time operations), including evidence that there are no such measures other than those proposed; and</li> <li>monitoring and management measures, in particular real-time, attended noise monitoring and predictive meteorological forecasting.</li> </ul> </li> </ul>	Section 14.5
Traffic and transport	<ul style="list-style-type: none"> <li>Detailed assessment of the potential impacts of the Project on the capacity, safety and efficiency of the: <ul style="list-style-type: none"> <li>local and regional rail network, having regard to the strategic objectives and cumulative impacts for the passenger and freight rail network; and</li> <li>local and regional road network, with particular regard to the cumulative traffic impact assessment condition assessment of the existing network; proposed new road infrastructure; and impacts of coal trains on level crossing operations.</li> </ul> </li> </ul>	Section 12.5
	<ul style="list-style-type: none"> <li>Details of mine to port or other domestic customer transport movements, train path availability and any required rail infrastructure works; and</li> </ul>	Section 15.5
	<ul style="list-style-type: none"> <li>Detailed description of measures that would be implemented to maintain and/or improve capacity, efficiency and safety of the road and rail networks in the surrounding area over the life of the Project.</li> </ul>	Section 12.5
		Section 13.6.1
		Section 13.5
Heritage	<ul style="list-style-type: none"> <li>Aboriginal heritage (including both cultural and archaeological significance): the assessment to be undertaken by qualified consultants and demonstrate effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting options and mitigation measures (including the final proposed measures). Where impacts on heritage are proposed, the EA must outline proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures); and</li> </ul>	Chapter 18
	<ul style="list-style-type: none"> <li>Historic heritage (including archaeology): the assessment to be undertaken by qualified consultants. Where impacts to State or locally significant historic heritage items are proposed, the EA must include a statement of heritage impact (including significance assessment) and outline proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures).</li> </ul>	Chapter 19
Greenhouse gases	<ul style="list-style-type: none"> <li>Qualitative assessment of the potential scope 1, 2 and 3 greenhouse gas emissions of the project;</li> </ul>	Section 15.2.3
	<ul style="list-style-type: none"> <li>Qualitative assessment of the potential impacts of these emissions on the environment; and</li> </ul>	Section 15.4
	<ul style="list-style-type: none"> <li>Assessment of all reasonable and feasible measures that could be implemented on site to minimise the greenhouse gas emissions of the project and ensure it is energy efficient.</li> </ul>	Section 15.3

**Table 1.2**      **Summary of NSW environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
<b>Visual</b>	<ul style="list-style-type: none"> <li>Detailed assessment of the: <ul style="list-style-type: none"> <li>changing landforms on the site during the various stages of the Project;</li> <li>potential visual impacts of the Project on private landowners in the surrounding area as well as key vantage points in the public domain, including lighting impacts; and</li> <li>detailed description of the measures that would be implemented to minimise the visual impacts of the Project.</li> </ul> </li> </ul>	<i>Section 17.3</i>
<b>Waste</b>	<ul style="list-style-type: none"> <li>Include: <ul style="list-style-type: none"> <li>accurate estimates of the quantity and nature of the potential waste streams of the project, including tailings and coarse reject; and</li> <li>detailed description of the measures that would be implemented to minimise the production of waste on site, and ensure that any waste produced is appropriately handled and disposed of.</li> </ul> </li> </ul>	<i>Section 3.13 and 3.18.8</i>
<b>Hazards</b>	<ul style="list-style-type: none"> <li>Including bushfires.</li> </ul>	<i>Section 11.1 and 22.3</i>
<b>Social and economic</b>	<ul style="list-style-type: none"> <li>Including an assessment of: <ul style="list-style-type: none"> <li>potential direct and indirect economic benefits of the Project for local and regional communities and the State;</li> </ul> </li> </ul>	<i>Section 20.3.2</i>
	<ul style="list-style-type: none"> <li>potential impacts on local and regional communities, including:</li> </ul>	<i>Section 20.3.2 and 21.5</i>
	<ul style="list-style-type: none"> <li>increased demand for local and regional infrastructure and services (such as housing, childcare, health, education and emergency services); and</li> </ul>	<i>Section 21.3</i>
	<ul style="list-style-type: none"> <li>impacts on social amenity.</li> </ul>	<i>Section 21.5</i>
	<ul style="list-style-type: none"> <li>Detailed description of the measures that would be implemented to minimise the adverse social and economic impacts of the Project, including any infrastructure improvements or contributions and/or voluntary planning agreement or similar mechanism; and</li> </ul>	<i>Section 20.4 and 21.4</i>
	<ul style="list-style-type: none"> <li>Detailed assessment of the costs and benefits of the development as a whole, and whether it would result in a net benefit for the NSW community.</li> </ul>	<i>Section 20.3.1</i>

**Table 1.2 Summary of NSW environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
<b>Consultation</b>	<p>During the preparation of the EA, you should consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with:</p> <ul style="list-style-type: none"> <li>• Commonwealth Department of Sustainability, Environment, Water, Population and Communities;</li> <li>• Office of Environment Heritage (including the Heritage branch)</li> <li>• Division of Resources and Energy within DTIRIS;</li> <li>• Department of Primary Industries, including NSW Office of Water;</li> <li>• Warrumbungle Shire Council;</li> <li>• Mid-Western Regional Council;</li> <li>• Wellington Shire Council;</li> <li>• relevant Catchment Management Authorities;</li> <li>• Roads and Maritime Services;</li> <li>• ARTC;</li> <li>• Transport for NSW; and</li> <li>• Essential Energy.</li> </ul> <p>The consultation process and the issues raised must be described in the EA.</p>	<i>Section 5.6 to 5.10</i>
<b>EPBC Act requirements</b>	The Commonwealth requirements are to be integrated into the assessment requirements of the EP&A Act.	Section 10.1 to 10.2

**Table 1.3 Summary of Commonwealth environmental assessment requirements**

Aspect	Key assessment requirements	Reference in EA
<b>General information</b>	<p>The background of the action including:</p> <ul style="list-style-type: none"> <li>- the title;</li> <li>- full name and postal address of the proponent;</li> <li>- an outline of the objective of the action;</li> <li>- the location;</li> <li>- background to the development;</li> <li>- how the action relates to other actions that have been or are being approved for the area;</li> <li>- current status of the action; and</li> <li>- consequences of not proceeding with the action.</li> </ul>	<p>Appendix D of the Terrestrial ecology assessment (Appendix H)</p> <p>EA Certification</p> <p>EA Certification</p> <p>Section 2.1</p> <p>Section 1.3</p> <p>Section 2.1</p> <p>Sections 2.5, 8.5, 13.5, 16.3 and 14.3</p> <p>Section 2.1</p> <p>Section 3.21.2</p>



**Table 1.3 Summary of Commonwealth environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
<b>Description of the controlled action</b>	<p>A description of the action, including:</p> <ul style="list-style-type: none"> <li>- all the components;</li> <li>- precise location of works, structures or elements of the action;</li> <li>- how the works are to be undertaken and design parameters of the action which may have impacts;</li> <li>- timing and duration of the impacts; and</li> <li>- a description of alternatives to the action and their likely impacts including: <ul style="list-style-type: none"> <li>i) taking no action;</li> <li>ii) description of the impacts of each action; and</li> <li>iii) detail to clarify why any alternative is preferable.</li> </ul> </li> </ul>	<p>Appendix D of the Terrestrial ecology assessment (Appendix H)</p> <p>Chapter 3</p> <p>Chapter 3</p> <p>Chapter 3</p> <p>Section 3.16 and 3.18</p> <p>Section 3.19</p>
<b>Description of the existing environment</b>	<p>A description of the existing environment and surrounding areas that may be affected by the action, including:</p> <ul style="list-style-type: none"> <li>- accepted methodology for targeting threatened species, ecological communities and their respective habitat, including the OEH's Survey and assessment guidelines (2009) and DSEWPaC's species-specific survey guidelines for nationally threatened species.</li> </ul> <p>In addition, the following must also be included:</p> <ul style="list-style-type: none"> <li>- a description of threatened species, ecological communities and suitable habitat within the site and surrounding areas that may be impacted;</li> <li>- the regional distribution and abundance of suitable and potential habitat surrounding the site.</li> </ul>	<p>Section 10.3</p> <p>Section 10.3</p> <p>Section 10.3</p>
<b>Description of the relevant impacts of the controlled action</b>	<p>An assessment of all relevant impacts with reference to <i>EPBC Act Policy Statement 1.1 Significant Impact Guideline Matters of National Environmental Significance</i> (2009) on threatened species and/or threatened ecological communities under sections 18 and 18A of the EPBC act including:</p> <ul style="list-style-type: none"> <li>- Box-Gum Woodland;</li> <li>- Ingram's zieria;</li> <li>- Large-eared pied bat;</li> <li>- Regent honeyeater.</li> </ul> <p>Information must include:</p> <ul style="list-style-type: none"> <li>- a description of the relevant impacts;</li> <li>- assessment of the nature and extent of likely short and long term impacts;</li> <li>- whether any relevant impacts are likely to be unknown, unpredictable or irreversible;</li> <li>- analysis of the significance of the relevant impacts; and</li> <li>- technical data or information needed to make an assessment of the relevant impacts.</li> </ul>	<p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p>

**Table 1.3 Summary of Commonwealth environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
	<p>Description of the impacts on the Box-Gum Woodland, including the vegetation condition of the site and the methods by which this was determined.</p> <p>It should also include direct, indirect, cumulative and facilitative impacts, during construction and operation phases, on the:</p> <ul style="list-style-type: none"> <li>- extent and connectivity with other areas of the Box-Gum Woodland;</li> <li>- quality or integrity of the Box-Gum Woodland including invasive species, fertilisers, herbicides, chemicals or pollutants which threaten species in the ecological community;</li> <li>- EPBC Act listed species dependent on the Box-Gum Woodland;</li> <li>- habitat on site critical to the survival of the Box-Gum Woodland</li> <li>- abiotic factors necessary for Box-Gum Woodland survival.</li> </ul> <p>These impacts should be described for the construction and operation phases of the controlled action.</p> <p>This information should be provided with reference to the ecological community as it is defined and listed under the EPBC Act.</p> <p>Where there is a potential habitat for EPBC Act listed species (Appendix A), surveys must be undertaken. These surveys must be timed appropriately and undertaken for a suitable period of time by qualified persons. A subsequent description of the relevant impacts on such EPBC Act listed species should include, inter alia, direct, indirect, cumulative and facilitative impacts on the:</p> <ul style="list-style-type: none"> <li>- population of the species at the site;</li> <li>- area of occupancy of the species;</li> <li>- habitat critical to the survival of the species;</li> <li>- breeding cycle of the population; and</li> <li>- availability or quality of habitat for the species.</li> </ul> <p>If an endangered ecological community or threatened species listed at Appendix A is not believed to be present on the proposed site, detailed information must be included in the Environmental Assessment Report to provide certainty that this community will not be impacted.</p>	<p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p> <p>Section 10.5</p>
<b>Proposed safeguards and mitigation measures</b>	<p>A description of feasible mitigation measures, changes to the controlled action or procedures, which have been proposed by the proponent or suggested in public submissions, and which are intended to prevent or minimise relevant impacts. Information must include:</p> <ul style="list-style-type: none"> <li>- a description of the mitigation measures that will be undertaken to prevent or minimise the relevant impacts of the action. These mitigation measure should be substantiated and based on best available practices;</li> <li>- an assessment of the expected or predicted effectiveness of the mitigation measures including the effect on abundance and condition of species, suitable habitat and ecological communities;</li> </ul>	<p>Section 10.4</p> <p>Section 10.4</p> <p>Section 10.4</p>

**Table 1.3 Summary of Commonwealth environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
	<ul style="list-style-type: none"> <li>- any statutory or policy basis for the mitigation measures;</li> <li>- the cost of the mitigation measures;</li> <li>- an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs (including any relevant thresholds for corrective actions) for the relevant impacts of the action. Include the person or agency responsible for implementing these programs and the effectiveness of all mitigation measures, including any provisions for independent environmental auditing;</li> <li>- the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program;</li> <li>- identification of mitigation measures proposed to be undertaken by State governments, local governments or the proponent;</li> <li>- any changes to the controlled action which prevent or minimise relevant impacts on listed threatened species and communities.</li> </ul>	<p>Section 10.4</p> <p>Section 10.4</p> <p>Section 10.4, 10.6 and 23.2</p> <p>Section 10.4</p> <p>Section 10.4</p> <p>Section 10.4</p>
<b>Offsets</b>	<p>Should any residual impact exist that cannot be mitigated it may be necessary for offset measures to be considered in order to ensure the protection of matters of national environmental significance in perpetuity. If required, the department may negotiate offsets with you during the assessment phase. Reference should be made to the Department's draft policy statement, including any revisions to this statement, at:</p> <p><a href="http://www.environment.gov.au/epbc/publications/draft-environmental-offsets.html">http://www.environment.gov.au/epbc/publications/draft-environmental-offsets.html</a></p> <ul style="list-style-type: none"> <li>- the description of any offset package should include how the offset compensates for the residual impacts, when the offset will be delivered and how the offset will be managed;</li> <li>- an assessment of the impact of the offsets on other matters of environmental, economic, or social significance;</li> <li>- analysis of cost, both financial and other, related to offsets.</li> </ul>	<p>Section 10.7</p> <p>Section 10.7</p> <p>Section 10.7</p> <p>Section 10.7</p>
<b>Other approvals and conditions</b>	<p>Any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. Information must include:</p> <ul style="list-style-type: none"> <li>- details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including: <ul style="list-style-type: none"> <li>▪ what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and</li> <li>▪ how the scheme provides for the prevention, minimisation and management of any relevant impacts;</li> </ul> </li> <li>- a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;</li> <li>- a statement identifying any additional approval that is required;</li> </ul>	<p>Chapter 4</p> <p>Chapter 4</p> <p>Chapter 4</p> <p>Chapter 4</p>



**Table 1.3 Summary of Commonwealth environmental assessment requirements (Cont'd)**

Aspect	Key assessment requirements	Reference in EA
	<ul style="list-style-type: none"> <li>- a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.</li> </ul>	Chapter 4
<b>Economic and social matters</b>	A description of the short-term and long-term social and economic implications and/or impacts of the project.	Section 21.5
<b>Environmental record of person proposing to take the action</b>	Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against: <ul style="list-style-type: none"> <li>- the proponent; and</li> <li>- for an action for which a person has applied for a permit, the person making the application.</li> </ul>	Chapter 4 Chapter 4
	Details of the proponent's environmental policy and planning framework.	Section 23.2
<b>Information sources</b>	For information given in an environment assessment, the draft must state: <ul style="list-style-type: none"> <li>- the source of the information;</li> <li>- how recent the information is;</li> <li>- how the reliability of the information was tested; and</li> <li>- what uncertainties (if any) are in the information.</li> </ul>	Provided throughout the EA
<b>Consultation</b>	Any consultation about the action, including: <ul style="list-style-type: none"> <li>- any consultation that has already taken place;</li> <li>- proposed consultation about relevant impacts of the action;</li> <li>- if there has been consultation about the proposed action - any documented response to, or result of, the consultation.</li> </ul>	Chapter 5 Section 5.6, 5.7, .8, 5.9 and 5.10 Section 5.6 Section 5.6
	Identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.	Section 5.6, 5.7, .8, 5.9 and 5.10

## 1.5 Structure of the EA

This EA comprises seven volumes. Volume 1, the main EA, is structured as follows:

### Executive Summary

**Part A Introduction:** an overview of the Project, proponent, need for the Project and the environmental, social and legislative context in which it will be developed.

**Part B Consultation:** the stakeholder consultation process, outcomes from consultation to date and the ongoing stakeholder engagement program.

**Part C Environmental assessment:** impacts to the environment from the Project, moving from the physical (Chapters 6 to 9), to the biological (Chapters 10 and 11), to the human and social environment (Chapters 12 to 21). For each aspect, the assessment objectives, methods and existing environment are described. The management measures that will be implemented are presented followed by the predicted impacts following the implementation of these measures. Finally, environmental monitoring is described which will confirm the accuracy of impact predictions and allow management measures to be refined.

**Part D Risk assessment:** an assessment of the Project against the Hazardous and Offensive Development State Environment Planning Policy, followed by the preliminary hazard and environmental risk assessments.

**Part E Commitments and justification:** a draft statement of commitments that consolidates the key environmental management measures. The Project is justified on social, economic and environmental grounds, taking into account its consistency with objectives of the EP&A Act and relevant Commonwealth and NSW legislation and policies.

References used are at the end of this volume.

Appendix A contains the schedule of lands within the PAA.

Appendix B lists the EA study team.

Volumes 2 to 9 contain supporting specialist studies.

## 1.6 EA study team

This EA is based on mine plans and engineering designs prepared by Engenicom and CHC. It was prepared by EMGA Mitchell McLennan Pty Limited (EMM) with input from a number of external specialists, including leading experts who undertook independent reviews of key studies (see Appendix B).

