



New South Wales Government
Independent Planning Commission

Mangoola Coal Continued Operations Project (SSD 8642)

Statement of Reasons for Decision

Professor Snow Barlow (Chair)
Mr Peter Cochrane

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Mangoola Coal Continued Operations Project (SSD 8642) Final Report ©
State of New South Wales through the Independent Planning Commission 2021

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EXECUTIVE SUMMARY

Mangoola Coal Operations Pty Limited (the **Applicant**) has sought development consent to establish a new open cut mining area (**Northern Extension Area**) to the north of the existing Mangoola Coal Mine. The Mangoola Coal Continued Operations Project (the **Project**) before the Commission (the **Application**) involves the extraction of an additional 52 Mt of run-of-mine (**ROM**) coal in the proposed Northern Extension Area. Mining operations would use and be connected to the existing Mangoola Mine Coal Handling and Process Plant (**CHPP**) by a new private haul road overpass to be constructed over Wybong Road and Big Flat Creek. The Applicant is seeking to maintain the annual extraction rate of 13.5 million tonnes per annum (**Mtpa**) under the Existing Approval (PA 06_0014) and would require approximately eight years to mine the additional coal resource. The Applicant is seeking approval to undertake mining operations at the Site until December 2030, which equates to a 13 month extension beyond the Existing Approval.

On 3 December 2020, the Minister for Planning and Public Spaces (**Minister**) requested that the Commission conduct a Public Hearing into the Project and determine the Application (**Minister's Request**). On 29 January 2021, the Department of Planning, Industry and Environment (**Department**) finalised its whole-of-government assessment of the State significant development application (**SSD 8642**). Under section 4.5(a) of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**), the Independent Planning Commission (**Commission**) is the consent authority for this Application because the Department received more than 50 'unique' objections during exhibition of the Applicant's environmental impact statement (**EIS**).

Professor Snow Barlow (Panel Chair) and Commissioner Peter Cochrane were appointed to constitute the Commission in determining this SSD application. They met with the Applicant, Department, Muswellbrook Shire Council and conducted a site inspection and locality tour.

The Commission conducted an electronic public hearing over two days on 3 March 2021 and 4 March 2021 (the **Public Hearing**) as requested by the Minister to listen to the community's views. The Commission heard from 29 registered speakers in total via video conference and telephone. Key concerns raised at the Public Hearing included: air quality impacts, noise impacts, Greenhouse Gas (**GHG**) emissions and climate change, traffic and transport impacts, socio-economics, aboriginal cultural heritage, rehabilitation, biodiversity and impacts on water resources. The Commission received a total of 895 written public submissions including 776 submissions in support, 107 objections and 12 neutral comments on the Application. The majority of written submissions received by the Commission were in support of the Project and anticipated positive impacts on the local economy, largely through the provision of jobs.

As a result of the concerns raised during the Public Hearing and in written comments regarding air quality, the Commission met with the Environment Protection Authority (**EPA**), NSW Health and the Department to discuss air quality trends and impacts in the Upper Hunter. The Commission reopened public comments on the additional material provided to the Commission in this meeting and received a total of 18 written submissions.

In determining this State significant development application, the Commission has taken into consideration the submissions made regarding the merits and impacts of the Mangoola Coal Continued Operations Project.

The Commission finds that the Project would result in negative amenity impacts and environmental disturbance associated with the establishment of the Northern Extension Area. As set out in this Statement of Reasons, the Commission is of the view that these impacts can be appropriately managed and mitigated in accordance with the applicable guidelines, policies and conditions imposed by the Commission.

Notwithstanding the concerns raised by the Commission in relation to the overstatement of worker and supplier benefits, the understatement of GHG costs attributable to the Project and the Project's social impacts, the Commission finds that on balance and when weighed against the impacts under the current policy and regulatory framework, the Project would generate net positive social and economic benefits for the local area, Hunter region and to NSW. This includes up to 400 ongoing and 80 operational positions and 145 construction jobs and royalty payments up to \$129 million Net Present Value (**NPV**).

The Commission is of the view that the Project represents a reasonable 'brownfield' extension of the existing Mangoola Coal Mine that would enable the economic and beneficial reuse of existing infrastructure and an orderly and economic use of land.

The Commission finds that on balance, and when weighed against the objects of the EP&A Act, ecologically sustainable development (**ESD**) principles, the current policy frameworks, and socio-economic benefits, the impacts associated with the Project are acceptable and the Project is in the public interest.

For the reasons set out in this Statement of Reasons, the Commission has granted development consent to the Application. In reaching its decision, the Commission carefully considered the Application, the Department's Assessment Report, advice from relevant government agencies, submissions from Muswellbrook Shire Council and concerns raised by interested individuals, groups and organisations at the Public Hearing and in written submissions.

The Commission has imposed conditions to ensure that the Project complies with the relevant criteria and standards, its impacts are consistent with the predictions in the Applicant's EIS (including supplementary material) and that residual impacts are minimised, mitigated and – where relevant – compensated.

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DEFINED TERMS

ABBREVIATION	DEFINITION
AAIA	Aboriginal Archaeological Impact Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHMP	Aboriginal Cultural Heritage Management Plan
Additional Material	Additional material received by the Commission set out in paragraph 60
AEP	Annual Exceedance Probability
AIP	Aquifer Interference Policy
Applicant	Mangoola Coal Operations Pty Limited
Application	State Significant Development Application 8642
Approved Methods	<i>Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales</i> (EPA, 2016)
Approved Project Area	Mangoola Coal Mine
AQGGMP	Air Quality and Greenhouse Gas Management Plan
AQIA	Air Quality Impact Assessment
BDAR	Biodiversity Development Assessment Report
BIA	Blasting Impact Assessment
BOS	Biodiversity Offset Strategy
BSAL	Biophysical Strategic Agricultural Land
BMP	Biodiversity Management Plan
CBA	Cost Benefit Analysis
CCPF	<i>NSW Climate Change Policy Framework</i>
CHPP	Mangoola Mine Coal Handling and Process Plant
Commission	Independent Planning Commission of NSW
Council	Muswellbrook Shire Council
DCP	Development Control Plan
Department	Department of Planning, Industry and Environment
Department's AR	Department's Assessment Report
Economic Guidelines	<i>Guidelines for the economic assessment of mining and coal seam gas proposals</i> (NSW Government, 2015)
EIA	Economic Impact Assessment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
Existing Approval	Approval PA 06_0014 with subsequent modifications
Existing Operations	Mining operations under the Existing Approval
GDE	Groundwater Dependent Ecosystem
GHGEA	Greenhouse Gas and Energy Assessment
GHG Emission	Greenhouse Gas Emissions
GIA	Groundwater Impact Assessment
GMP	Groundwater Management Plan
HHA	Historic Heritage Assessment
IESC	Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development
LEA	Local Effects Analysis

LEP	Local Environmental Plan
LGA	Local Government Area
Mandatory Considerations	relevant mandatory considerations, as provided in s 4.15(1) of the EP&A Act
Material	The material set out in section 4.5
MEG	Mining, Exploration and Geoscience division within the Department of Regional NSW
Minister	Minister for Planning and Public Spaces
Minister's Request	Request from the Minister for Planning and Public Spaces on 3 December 2020 set out in paragraph 1
Mining SEPP	<i>State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007</i>
MLEP	<i>Muswellbrook Local Environment Plan 2009</i>
MNES	Matters of National Environmental Significance
Mtpa	Million tonnes per annum
NDC	Nationally Determined Contributions
Net Zero Plan	<i>NSW Net Zero Plan Stage 1: 2020–2030</i>
NGERS	National Greenhouse and Energy Reporting Scheme
NIA	Noise Impact Assessment
Northern Extension Area	The new open cut mining area north of Wyong Road
NPV	Net Present Value
Original Approval	Approval PA 06_0014
PHA	Preliminary Hazards Analysis
PNTL	Project Noise Trigger Levels
Project	Mangoola Coal Continued Operations Project
RAPs	Registered Aboriginal Parties
Regulations	<i>Environmental Planning and Assessment Regulations 2000</i>
ROM Coal	Run-of-mine coal
RR	Resources Regulator
RtS	Response to Submissions
SEPP	State Environmental Planning Policy
SEPP SRD	SEPP (State and Regional Development) 2011
SIA	Social Impact Assessment
SIA Guideline	<i>Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development</i>
SIMP	Social Impact Management Plan
Site	The Approved Project Area and the Additional Project Area as defined in Section 2.1
SSD	State Significant Development
SVC	Site Verification Certificate
SWA	Surface Water Assessment
TSP	Total Suspended Particulate
TTIA	Traffic and Transport Impact Assessment
UNFCCC	United Nations Framework Convention on Climate Change
VLAMP	Voluntary Land Acquisition and Mitigation Policy
VPA	Voluntary Planning Agreement
WMP	Water Management Plan

1 INTRODUCTION

1.1 The Minister's Request

1. On 3 December 2020, the Minister made a request (**Minister's Request**) under section 2.9(1)(d) of the EP&A Act for the Commission to conduct a Public Hearing and determine the Application within 12 weeks of receiving the referral of the Department's Assessment Report (**Department's AR**).

1.2 The Department's Referral

2. On 29 January 2021, the Department referred the Application to the Commission for determination. The referral was received by the Commission on 1 February 2021. The Application seeks approval for the Mangoola Coal Continued Operations Project located in the Muswellbrook Local Government Area (**LGA**) under section 4.36 of the EP&A Act.
3. The Commission is the consent authority in respect of the Application under section 4.5(a) of the EP&A Act and clause 8A of the *State Environmental Planning Policy (State and Regional Development) 2011 (SEPP SRD)*. This is because the development is declared to be SSD under clause 8(1)(b) of the SEPP SRD and the Application received more than 50 submissions by way of objection.

1.3 The Commission Panel

4. Professor Mary O'Kane AC, Chair of the Commission, nominated Professor Snow Barlow and Mr Peter Cochrane to constitute the Commission Panel determining the Application.

2 THE APPLICATION

2.1 Site and Locality

5. Paragraph 1.1.1 of the Department's AR, dated 29 January 2021, states: "*The Mangoola Coal Mine (the Mangoola Mine) is an operating open cut coal mine located 20 kilometres (km) west of Muswellbrook in the Upper Hunter Valley of NSW*".
6. Paragraph 1.1.2 of the Department's AR states:

Glencore is proposing to extend the life of the existing Mangoola Mine through the establishment of a new open cut satellite pit (the Northern Pit) to the north of the existing operations ... This new mining area ... would act as a brownfield extension to the existing open cut operations, utilise a range of existing infrastructure at the Mangoola Mine and would be connected to the existing Mangoola Mine site via a proposed haul road over Wybong Road.
7. The location of the Mangoola Mine Approved Project Area (**Approved Project Area**) and the Additional Project Area (**Additional Project Area**) is illustrated in Figure 1 below. The 'Site' for the purposes of this Statement of Reasons is defined as the Approved Project Area and the Additional Project Area.

Figure 1 – The Mangoola Mine Project Area and the Northern Extension Area
 (Source: Department's AR)

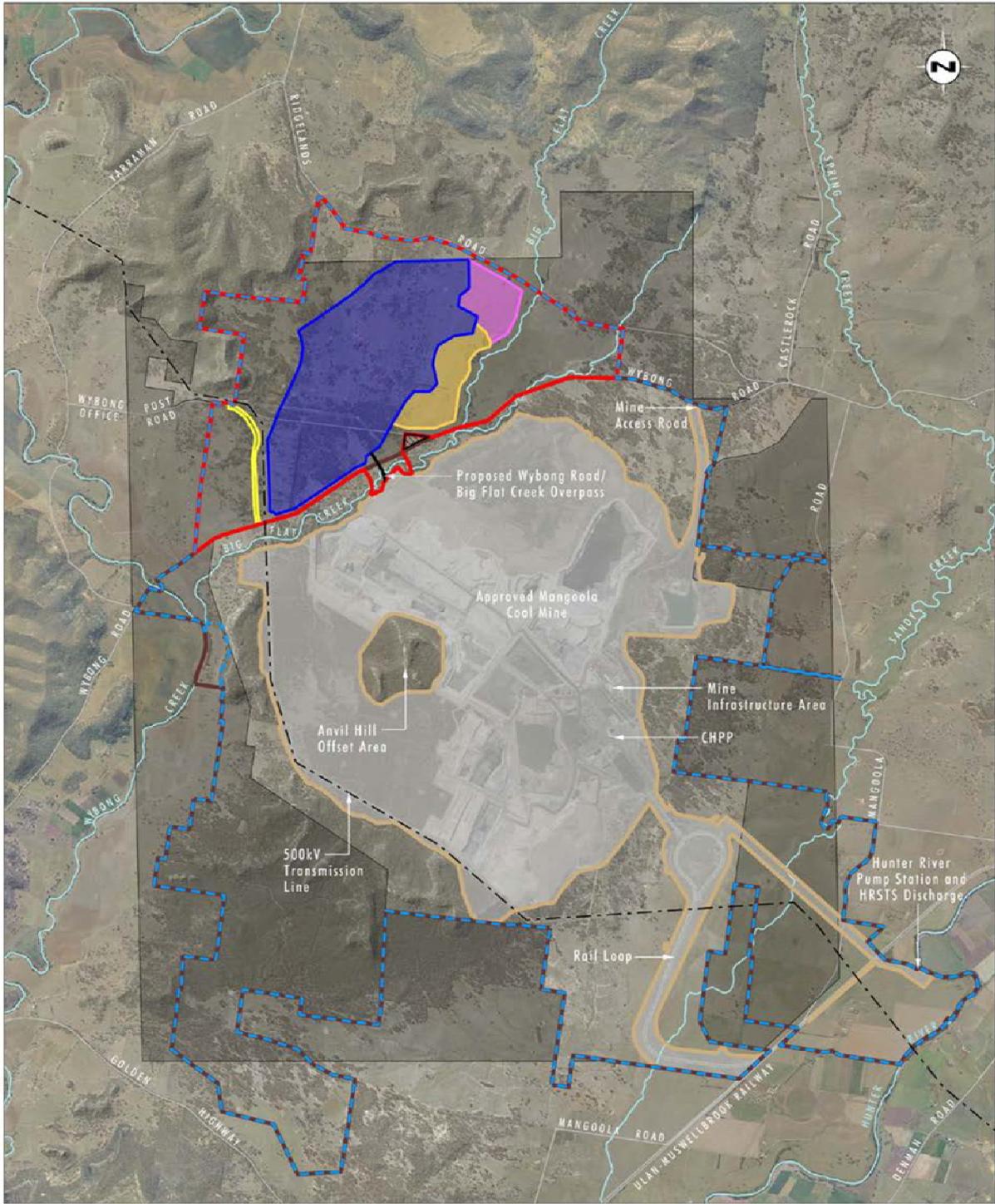


Image Source: Glencore (April 2018)
 Data Source: Glencore (2019)

- MCCO Project Area
- Approved Project Area
- Approved Mangoola Coal Mine Disturbance Area
- MCCO Additional Project Area
- Proposed Additional Mining Area
- Proposed Emplacement Area
- Proposed Topsoil Stockpile Area
- Wybong Post Office Road Realignment
- Crown Land (TSR) Excluded from MCCO Project Area
- Assessment Lease 9

2.2 Existing Operations

8. Approval for the Mangoola Mine (PA 06_0014) (**Original Approval**) was granted by the then Minister for Planning on 7 June 2007 under the EP&A Act. The Mangoola Mine commenced operations in September 2010, and the Applicant has since modified the Original Approval on 8 occasions (**Existing Approval**). Under the Existing Approval, mining operations are approved to continue until November 2029 (**Existing Operations**).

2.3 The Project

9. The key elements of the Project are described below and set out in Table 8 of Appendix A.
10. Paragraph 2.1.2 of the Department's AR states that the Project involves the extraction of an additional 52 Mt of ROM coal by establishing the Northern Extension Area to the north of Wybong Road. Mining operations would be connected to the existing Mangoola Mine CHPP by a new private haul road overpass to be constructed over Wybong Road and Big Flat Creek.
11. The Applicant is seeking to maintain the annual extraction rate of 13.5 Mtpa under the Existing Approval and requires approximately eight years to mine the additional coal resource. Paragraph 2.1.3 of the Department's AR states that the Applicant is seeking approval to undertake mining operations at the Site until December 2030, which equates to a 13-month extension beyond the Existing Approval.
12. The Project would continue to use the same truck and excavator open cut mining methods implemented under the Existing Operations and would use the existing CHPP, rail loop and mining fleet.
13. The Applicant proposes to construct a haul road overpass across Big Flat Creek and Wybong Road to link the Existing Operations with the Northern Extension Area. The Department's AR states that this would enable haulage of ROM coal to the CHPP as well as allowing some overburden from the Northern Extension Area to be hauled to the Approved Project Area to improve topographic relief and reduce the size of the final void in the Approved Project Area.
14. Paragraph 2.4.12 of the Department's AR states that the Application also includes the relocation of the following infrastructure:
 - *realignment of the local Wybong PO [Post Office] Road;*
 - *realignment of an 11 kV Ausgrid electricity transmission line along Wybong Road;*
 - *relocation of linear telecommunications infrastructure; and*
 - *movement of existing Mangoola Mine water management infrastructure, including water storage and distribution, diversion and sediment control structures.*
15. The Department has set out the justification for the Project in section 2.5 of the Department's AR.

3 COMMUNITY PARTICIPATION & PUBLIC SUBMISSIONS

3.1 Community Group Attendance at the Site Inspection

17. On 2 March 2021, the Commission conducted an inspection of the Project Site. The Commission invited representatives from community groups to attend and observe the Site Inspection at which the following groups were represented:
- Wybong Concerned Landholders Group; and
 - Hunter Environment Lobby Inc.

3.2 Public Hearing

18. The Commission conducted a Public Hearing over two days on 3 March 2021 and 4 March 2021. The Public Hearing was held electronically with registered speakers presenting to the Commission via telephone or video conference. The Public Hearing was streamed live on the Commission's website.
19. The Commission heard from the Department, the Applicant, various community group representatives and individual community members. In total, 29 speakers presented to the Commission during the Public Hearing.
20. Presentations made at the Public Hearing have been considered by the Commission as submissions and are referenced below in section 3.3.

3.3 Public Submissions

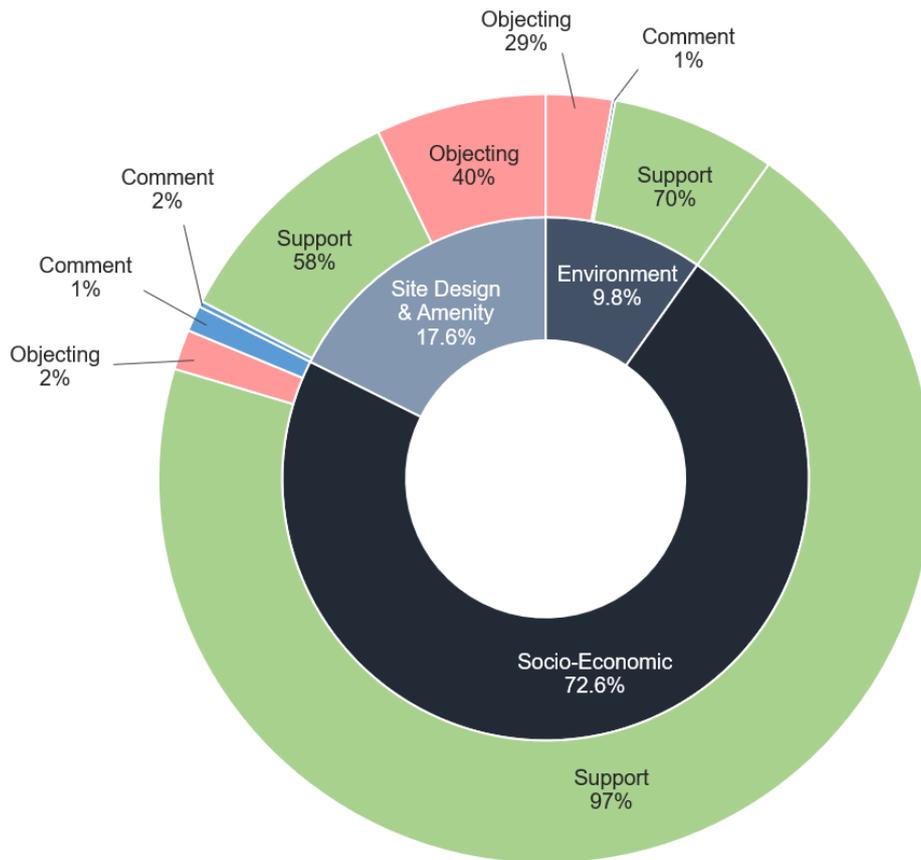
21. As part of the Commission's consideration of the Project, the public was offered the opportunity to make written submissions to the Commission until 5pm, Thursday 11 March 2021.
22. The Commission received a total of 895 written submissions on the Application comprising:
- 776 submissions in support;
 - 107 objections; and
 - 12 comments.
23. In addition to reviewing the text of written submissions, a supplementary analysis of those submissions was undertaken to identify the key themes raised. The analysis of the key issues raised is set out in Table 1 below.

Table 1 – Key issues and themes raised in submissions to the Commission

Key Issue	Key Theme Raised in Submissions (%)	Themes Include
Socio-Economic	72.6	Employment, job certainty, flow-on benefits to local business, local community benefits, social impacts and community enhancement.
Site Design and Amenity	17.6	Visual, air quality, noise, vibration, proximity to dwellings, lighting, transport and traffic.
Environmental	9.8	Biodiversity, sustainability, water resources, climate change, flooding, bushfire, rehabilitation, final landform and mine closure.

24. Figure 2 below illustrates the key topics raised in submissions and the nature of those submissions. The majority of submissions made to the Commission related to socio-economic impacts and of these submissions, approximately 97% were in support of the Project. The Commission observes that the majority of the objections made were in relation to site design and amenity impacts.

Figure 2 –Topic Modelling of Submissions made to the Commission



3.3.1 Public Comments

25. The submissions referred to below are not an exhaustive report of the submissions considered by the Commission – they reflect and illustrate common themes, and key issues raised in the submissions.

Noise

26. The Commission heard from speakers at the Public Hearing and received written submissions regarding the potential noise impacts associated with the Project. The following speaker comments and written submissions were received by the Commission:

...the project will result in increased unacceptable noise impacts on the community and residents in proximity to the mine.

Noise can be heard constantly at varying levels, disturbing the previously peaceful environment... The current levels of both noise and dust are unsatisfactory and dangerous levels, further increases to this will be of major concern to us and the surrounding community.

There are already numerous times when we are negatively impacted at our home by Mangoola Mine noise. Our background noise levels were measured in 2011 at a nearby property at 22 decibels, and that was done by a Mangoola consultant. At our residence, the project maximum noise level for night is going to be 37 decibels, and that's not bush noise. That'll be mining noise. That increase of 15 decibels means it will be almost three times as loud, and it will be mining noise.

27. A local business adjoining the Northern Extension Area raised concerns regarding the impacts of noise and dust on their operations:

- We hereby object to the extension of this mine due to noise and dust which would impact our operations. In our view it is appalling that this proposed extension should impact a large portion of prime farming land in the Wybong area of the Upper Hunter.*
28. A local landowner stated that Existing Operations were audible and raised concerns regarding increased noise impacts as a result of the Project:
- With this proposed expansion, we would be 800 to 1000m away from the pit and being extremely close poses quite a few concerns, amongst those concerns are the noise, the noise would be unbearable, I can not imagine the noise of the mining machinery working so close to our property as we are presently a couple of kilometres away and I can hear the machinery quite clearly.*
29. At the Public Hearing, a speaker noted that the existing landform to the north of the Additional Project area provided a “convenient corridor for dust and noise to spill further up the Wybong Valley”. The speaker also noted that landowners to the north and the north-west were aware of the noise and dust impacts when the prevailing strong southerly winds blow through these complex landforms and stated that no modelling can possibly predict the effects.
30. A speaker at the Public Hearing raised concerns regarding noise and impacts on property value:
- Noise impacts are part of the impacts on our communities living near the mine and along the rail chain. The project will result in increased unacceptable noise impacts on the community and residents in proximity to the mine in particular. Impacts to 45 land values, as you’ve heard, the project will directly negatively impact land values within the area.*
31. The Commission notes that concerns were raised at the Public Hearing and in written submissions regarding lack of mitigation or acquisition rights afforded for residents who reside on or outside the 40 decibel noise contour line.
32. Submissions received by the Commission noted that blasting activities have noise impacts on the surrounding area and contribute to poorer air quality conditions.

Air Quality

33. The Commission heard from speakers at the Public Hearing and received written submissions regarding the air quality impacts associated with the Project and the current air quality of the Muswellbrook area and Upper Hunter Region.
34. A representative of the Hunter Environment Lobby stated in their written submission to the Commission:
- Upper Hunter air quality will continue to be a problem while ever we are digging up, dumping, transporting coal and overburden and burning coal. I know there will be more expert presentations about air quality and health, physical and mental, human and livestock. As a resident I have met and worked with people who are obviously affected and some who have had to leave the area. The rest of us live in the knowledge that our longevity stats are reduced. Muswellbrook house prices are relatively low, speaking volumes about the impact of air and visual pollution on the perceived liveability of this town.*
35. Written submissions made to the Commission stated:
- The Upper Hunter air quality is already the worst in the State. We must be planning to make it better not worse.*
- The air quality in the Hunter is already notoriously poor, we cannot be adding any more particle matter to it. It is urgent that we start to reduce emissions not add to them in any way, no matter how little the increase in emissions will be. The serious health outcomes from poor air quality is well researched and acknowledged.*

36. Specific concerns were raised at the Public Hearing regarding the decrease in air quality over time in the Muswellbrook area:

Despite the very effective monitoring of air pollution through the network, we are making no headway in improving the air quality of this area... In fact, it is significantly worse in places now than a decade ago and the greatest impacts are occurring in areas of the greatest open-cut coal mining activity. This is evidenced by data generated from nearly 10 years of air quality monitoring by the network. Annual PM_{2.5} levels in Muswellbrook have never been at or under the eight micrograms per cubic metre NEPM benchmark since monitoring began in 2012, with no prospect of that ever being achieved. There is no safe level of air pollution, yet the New South Wales government is content to allow the exacerbation of air pollution in our region by facilitating ongoing expansion of open-cut coal mining.

37. Specific concerns were raised regarding the cumulative impacts of mining operations in the Upper Hunter. A local landholder stated:

...due to the already existing multiple mining operations, the Upper Hunter currently experiences regular air quality exceedances. Our airshed is already overburdened by existing mining operations with cumulative impacts including increased incidence of respiratory disease (especially asthma) and low birthweights for babies. Our local sustainable agricultural industries rely on the clean, green and pristine air which our area has been known and valued for. We do not need or want to be increasing the footprint of existing mining operations. This will only lead to greater air quality issues and exceedances, putting our communities and their health at even greater risk; and further threatening our other sustainable agricultural industries.

38. The Commission notes that concerns were raised in written submissions and at the Public Hearing regarding the impacts of poor air quality on health and well-being. Specific concerns were raised regarding the negative impacts this has on non-mining industries:

...we already regularly experience air quality exceedances within the area, by allowing expansion it will be further impact on the community's health and well-being. This also negatively impacts our alternative and sustainable industries including agriculture, thoroughbreds and wine.

We see and live the air pollution signs every day, the physical layers of dust on our homes, our washing, our cars and in the air, community health impacts from asthma, bronchitis, chronic pulmonary disease, premature deaths.

Greenhouse Gas (GHG) Emissions and Climate Change

39. Written submissions made to the Commission raised concerns regarding the impacts of the Project and the cumulative impacts of mining on climate change:

I object to the cumulative impacts of mining in the Upper Hunter in a declining industry which contributes to environmental degradation and climate change.

With the long term effects on the environment, climate change, decline of the coal industry and cumulative impacts of mining in the Upper Hunter this project should be declined.

It is the year 2021 and we are in the midst of a global climate crisis. Australia as a responsible member of the global community must take the lead in reaching a net zero carbon economy. Climate change is real and it is not going away, as we have all recently experienced too close to home with our nation on fire.

40. A speaker at the Public Hearing stated:

This volume of carbon emissions is untenable when the carbon budget requires no new coal extraction if we are to meet the global target of 1.5 degree increase in temperature as Australia supported in the Paris agreement. The overall total increase in emissions has been forecasted over 400 million tonnes for the life of this mine of carbon equivalent emissions. This is far too much.

41. At the Public Hearing, the Lock the Gate Alliance stated that the recommended conditions do not require the Applicant to “prevent and mitigate the direct emissions that will occur as a result of methane escaping from the coal seams exposed by this project”. The Lock the Gate Alliance was also concerned that the assessment did not consider “the possibility that Glencore should be required to offset the 100 million tonnes of greenhouse pollution this project will add to the atmosphere”.
42. Public submissions raised concerns regarding inter-generational equity. A written submission stated:

... we need to act now, we cannot keep destroying our environment for selfish short-term economic pursuits to the detriment of our future generations and to our environment.
43. A number of submissions to the Commission raised concerns regarding the assessment of GHG emissions and how they are currently managed in NSW. The Commission also received a number of submissions from people concerned about NSW and Australia’s lack of action and commitment to reducing emissions.

Socio-Economics

44. The Commission notes that the majority of submissions were in support of the Project due to the provision of jobs and anticipated positive impacts on the local economy. Written submissions stated:

Jobs are the corner stone of any towns economic future. The prospect of 480 new jobs for an area that has already suffered since 2013 down turn in coal prices, would only add to the revitalisation of Muswellbrook, not the deterioration of the town. Since 2013, jobs, reduction of housing prices and businesses in the town have suffered. 480 new jobs in the community would be of enormous economic and social benefit. More housing would be required, businesses would receive an upturn with more customers. Overall, the whole town would receive an uplift.

Being one of thousands directly and indirectly employed by Glencore and other mining companies in the Muswellbrook shire who would lose their jobs if one of the current mines close would leave the area to find other work. We support the local community and businesses every day. Many industries and community groups would suffer in the event that Mangoola or any of the local mines have expansions rejected and close.

I wish to express my support for the Mangoola Coal Continued Operations Project for continued employment of our workforce. The mine makes a significant contribution to the local economy through employment of 51% of people from the Muswellbrook LGA and over 30% from Singleton and Upper Hunter Shires. This is in addition to the support of local businesses and suppliers and indirect spend from workers and their families. Mangoola is committed to managing environmental impacts and best practice mine rehabilitation.
45. The Australia Institute in its submission to the Commission, dated March 2021, raised the following concerns regarding the Applicant’s assessment of economic impacts and benefits:
 - worker benefits are overstated;
 - supplier benefits are overstated; and
 - tax revenue is overestimated.

46. A local resident in their submission to the Commission stated:
- There is a misconception that the mine provides jobs in the local area, the majority of employees of the mines don't live in the local area, they live in Newcastle or surrounds. This misconception is being driven by the mine themselves to mislead the media, mislead the broader community and people that have no knowledge of the area. This in effect is deceiving the local town, it's economy, the towns growth and local businesses outside of mining.*
47. Concerns were raised in written submissions to the Commission regarding the future viability of coal and the need to transition away from coal mining:
- The economic future for coal mining is very bleak. Rural NSW needs new projects that are clean, sustainable, serving community and also economically viable in the long term. Other countries are making the transition and looking after coal workers as they do so. NSW can do it too. The Hunter needs a detailed transition plan not more destructive coal mining.*
- There are too many mines to be sustainable in the future. We need diversification and invest in long term renewable energy. This extension will only weaken the future economy of this region.*
48. The Commission received written submissions raising concerns regarding the potential social impacts of the Project and its impact on the local community. Specific concerns were also raised regarding the potential negative impacts on the surrounding agricultural industry:
- The negative social impacts of the project far outweigh any social benefits. The once thriving community of Wybong has been decimated by the mine since it began with a large depopulation of the area and a loss of many highly valued agricultural farms. A further expansion and extension of longevity will only perpetuate this impact and will greatly decrease the areas potential for recovery with sentiment amongst the community at an all time low. The Social Impact Assessment fails to adequately address many issues, and as a neighboring resident to the mine we are yet to experience many of the stated actions that this document details.*
- The local Wybong community has been decimated by the existing Glencore, Mangoola operation, we do not want another mine in our district. We want to start to rebuild, repair and protect our environment so future generations can live and prosper here.*
- The social impacts cannot be underestimated with many small communities to the west of the town having been drained of residents through land acquisitions This latest proposal is set to ensure more residents will leave. It is also important to remember that the agricultural and livestock industries will last longer than any mine. I strongly object to this project.*
49. The Commission heard from speakers at the Public Hearing and received written submissions raising concerns regarding the impacts of the Project on property values and the ability of surrounding landowners to sell their property. Written submissions stated:
- We are older and will most likely need to sell our property in the very near future - who will want to purchase a home with a Coal mine next door and there is no chance that Mangoola will purchase the property because apparently we aren't in the affected zone.*
- ...the project will directly negatively impact land values within the area. Values will decrease and lead to an inability for some residents to sell their properties due to the negative impacts (air quality/noise/light) from the project encroaching on their properties.*

Traffic and Transport

50. The Commission received written submissions and heard from speakers at the Public Hearing raising concerns regarding the potential impacts of the Wybong Post Office (**Wybong PO**) Road realignment. A written submission stated:

This extension is going to cause additional issues for us in relation to Yarraman Rd and our usage of Post office rd. There is no clear plan for either one of these roads in Mangoola's submission. Yarraman road is 20 meters from our front door - any realignment or modification will severely impact us.

The assessment report notes the proposed closure of Wybong Post Office Road and goes on to further state that all properties whose access is directly affected by this mine are mine owned. This is not the case, as there are a number of private landholders who are also affected. They have grave concerns regarding the proposed upgrade to Yarraman Road and access to their properties in times of flood, potentially also affecting the provision of emergency services and rerouting of... school buses.

51. Written submissions received by the Commission raised concerns regarding road safety. Written submissions stated:

I feel there has been significantly more accidents on our local roads due to fatigue. Not only is this an increased risk to my life but also the possible psychological effects of coming across one of these accidents. While I acknowledge this is not all from Mangoola, there is an accumulative effect (from Mt Pleasant, Mangoola and Bengalla) mine workers driving to and from home on the same road.

The traffic would be increased to what is already over the desired amount on the local roads and some of them are one lane and one and a half lane roads and in the condition of the roads this would be unsatisfactory. Again there would be a safety issue as well, the roads which are not in great state at the moment, with increased traffic on the pot holed bumpy roads cannot cope with the increased traffic load.

Rehabilitation and Final Void

52. The Commission received many submissions supporting the Applicant's approach to rehabilitation at the Site. Written submissions stated:

The natural landform approach to rehabilitation, coupled with the revegetation strategy of establishing specific vegetation communities in the appropriate location in the landscape, is providing not only an aesthetic landform, but is also transitioning well to the re-creation of a functioning ecosystem.

Mangoola has a good track record with environmental management and excellent rehabilitation.

I was extremely impressed with their professional approach towards rehabilitating to an even higher level than pre mining. The expansion of mangoola mines benefits vastly outweigh the cons.

I have been over the rehabilitation land at Mangoola, really pleased with the efforts they are making to restore the land. As a traditional owner I am very proud of it.

53. The Commission received written submissions and heard from speakers at the Public Hearing raising concern regarding the proposed final voids. Impacts on intergenerational equity were also raised as part of these submissions. Written submissions stated:

...this project will see the creation of another permanent final void in the Hunter Valley landscape. Mangoola currently has approval to leave one final void of 52 hectares. If this expansion goes ahead, the final voids will be 130 hectares. It is estimated that a final void of this size will take 200 years to fill with what will become saline water.

The final void will leave permanent irreversible damage with exposed coal seams and contaminated water. Over time this void will reach equilibrium with the natural water table and then leech contaminants into the surrounding water courses.

Leaving a second large final void should not be allowed if this project gets approval. It appears the only reason for doing this is economic. It is not fair to future generations to leave this legacy, there are far too many final voids in the Hunter already approved, we cannot be approving more.

Biodiversity

54. The Commission received written submissions in support of the Project, noting the Applicant's success in achieved flora species diversity at the Approved Project Area. A written submission stated:

The extent of flora species diversity currently being restored at Mangoola is unparalleled in the coal mining industry, and is resulting in a rapid return of fauna into rehabilitation areas. Independent ecological monitoring is now showing a significant increase in flora and fauna species diversity within rehabilitation areas compared to surrounding biodiversity offset areas. Several local threatened bird species are now regularly observed in the rehabilitated areas, which is evidence that the ecosystem restoration is on a positive trend.

55. The Commission notes that concerns were raised regarding the impacts of the Application on biodiversity. In their written submission, a local landholder stated:

...if approved, this project will allow the clearing of an additional 570 hectares of woodland/open forest and grassland. There are critically endangered orchids in this area, which is an important wildlife corridor in the Great Eastern Ranges.

56. A written submission made to the Commission also stated:

The proposed biodiversity offsets do not meet current NSW policy, which requires that when endangered habitat is destroyed, its offset must be "like for like". That is, the same area of the same remnant ecosystem must be protected somewhere else. The proponent has not attempted to do this. So called "supplementary measures" (such as paying into a fund) must only be a last resort according to the policy. The 4 NSW listed threatened ecological communities, one of which is also listed as threatened at the Commonwealth level; White Bow, Yellow Box, Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community have not been adequately protected and offset under the current proposal. As a neighbouring resident we have been witness to the increasing amount of local fauna seeking food and habitat on our property and fear that continued loss of habitat will stretch available resources for local fauna unsustainably.

Water Resources

57. Concerns were raised at the Public Hearing and in written submissions regarding the potential impacts of the Project on water resources. Specific concerns were raised regarding availability of water and contamination of the local water supply. Written submissions received by the Commission stated:

Impact on water resources - security of water resources especially in relation to other sustainable industries in the area requiring essential water supplies to continue to operate. This negatively impacts on all across the Hunter.

We have concerns regarding contamination and water reduction to our underground bore water and the water catchment from Wybong Creek, as we use this water to run and operate our Family Businesses income. Contamination and or reduction of this water could possibly leave our property without water, meaning no crops, no feed for our livestock and no water for our livestock which will significantly impact our businesses income.

58. Concerns were raised by a local resident in their written submission regarding the impacts of the Project on the water bore on their property:

Another major concern is our waterbore on our property which is our main source of water, the waterbore is 85 metres deep and connected to the Sydney basin underground river which the Wybong Creek is also connected to. Looking at the underground river map, the proposed expansion runs right through the underground river which would obviously destroy the river, therefore would destroy a valuable water source for us and many, many other people. We have had the water tested and the volume of water that comes out of the bore is huge. Prior to early 2020, the majority of Australia experienced probably the worst drought in living history and the thought of Mangoola Mine digging up a major water source for many people and with this particular underground river which has an extensive volume of water, is absolutely outrageous and if every Australian knew that this was proposed, I am sure there would be absolute outrage. Water is gold. Properties with their own access to readily available water like a bore, river access or creek access are sought after. Because without water – we have no crops, without water – we have no animals, without water we have no life.

59. The Commission also notes that concerns were raised by Lock the Gate Alliance regarding the application of the Aquifer Interference Policy (**AIP**), specifically the application of the AIP to bores owned by the mine and the assessment of the Project against the minimal impact criteria at all water supply works.

3.3.2 Public Submissions on Additional Material

60. The Commission considered that it would be assisted by additional advice on certain matters and requested public submissions on the following **Additional Material**:
- the transcript of the Commission’s meeting with representatives from the Environment Protection Authority (**EPA**), NSW Health and DPIE on 25 March 2021;
 - the EPA and DPIE presentation material at the Commission’s meeting on 25 March 2021; and
 - the Applicant’s Response to the Commission, dated 30 March 2021;
61. In accordance with the Commission’s ‘Additional Material’ policy, the Commission re-opened public comments on this Additional Material (with submissions permitted via email) between Wednesday 31 March 2021 and 5pm on Monday 12 April 2021.
62. The Commission received a total of 18 submissions on the Additional Material. A summary of submissions on the Additional Material is provided below. The submissions referred to below are not an exhaustive report of the submissions considered by the Commission.

Public Comment on Additional Material

63. Submissions raised concerns regarding the comparative air quality data presented to the Commission in its meeting with EPA, NSW Health and the Department. Friends of the Upper Hunter, in its submission to the Commission stated:

To compare the annual PM 2.5 of Muswellbrook, a country town, with Liverpool, an urban centre with a far greater population, as an example just serves to highlight the significant issues to be dealt with in respect to fine particulate matter-derived air pollution in both urban centres and rural regions impacted by heavy industry. It does not remove the significant problem being experienced by residents of the UH because residents of Liverpool are also being impacted by fine particulate matter pollution driven by different mechanisms.

64. Submissions raised concerns regarding the proximity of mining to the Muswellbrook township and the cumulative impacts of mining on air quality. A submission received by the Commission stated:

Community members of the Upper Hunter region of NSW have become alarmed at the level of encroachment of open-cut coal mining activity in extraordinarily close proximity to our population centres, particularly surrounding the township of Muswellbrook in recent years. Illustration of the level of dust generated by mining activity in close proximity to residential dwellings is clearly captured in the EPA presentation by Mr Gilligan to the Commission on 31.3.202 (slides 22-23).

65. Submissions raised concerns that the material presented to the Commission relied on 2012 data to allocate source PM_{2.5} contributions as set out in the Upper Hunter Fine Particle Characterisation Study 2013. This concern was also reflected in Muswellbrook Shire Council's (**Council**) submission to the Commission referenced in paragraph 71 below. A written submission to the Commission made by a member of the public stated:

Muswellbrook's population has remained static from 2012 to the present. Mining has increased significantly over the same time frame. One could assume that with Public Health campaigns having been run around emissions from wood fired heating and open wood fires that their use may have declined somewhat. However the reality is we don't know because there is no recent data to quantify wood heater usage in Muswellbrook.

66. Submissions received by the Commission raised ongoing concerns regarding the health impacts of air pollution:

There is no safe level of air pollution. Long and short-term exposures to both PM 10 and PM 2.5 are detrimental to human health, as shown by large scale population studies on the effects of air pollution throughout the world.

The higher than acceptable air pollution in Muswellbrook increases the risk of additional cases of asthma and poor lung development in children. Regardless of comparison to other regions, this is modifiable risk attributable to increased mining activity in the region.

67. The Commission also received submissions in support of the Project noting that the Additional Material provided them with clarification on the contributing factors to air quality and the misconceptions around coal mine dust compared to woodfired smoke.

4 THE COMMISSION'S CONSIDERATION

4.1 The Department's Assessment Report

68. The Department's AR was prepared to set out the Planning Secretary's whole-of-government assessment of the Application. As part of this assessment, the Planning Secretary, through the Department, considered amendments to the Application with regard to the relevant statutory obligations, supplementary information provided by the Applicant, public submissions and submissions by Government agencies.
69. The Department, on page XIV of its AR states:

Overall, the Project would deliver wide-ranging economic benefits for the region and the State, and is expected to generate net benefits to NSW of over \$408 million NPV. The Department considers that the Project is in the public interest, and is approvable, subject to comprehensive conditions.

4.2 The Commission's Meetings

70. The Commission met with various persons as set out in Table 2. All meeting and site inspection notes were made available on the Commission's website.

Table 2 – Commission's Meetings

Meeting	Date of Meeting	Transcript/Notes Available on
Department	23 February 2021	24 February 2021
Applicant	23 February 2021	24 February 2021
Council	24 February 2021	1 March 2021
Public Hearing	3 March 2021 & 4 March 2021	8 March 2021
Site Inspection	2 March 2021	10 March 2021
NSW Health, EPA and the Department	25 March 2021	31 March 2021

4.3 Muswellbrook Shire Council Comments

71. The Commission met with representatives of Council on 24 February 2021 to hear Council's views on the Project. In this meeting the Commission was advised that Council opposed the granting of development consent to the Application and that the main reason for Council's opposition is set out in the report prepared for Council by Dr Cherie McCullough from Mine Lakes Consulting dated 24 November 2020 (**Mine Lakes Report**). The Mine Lakes Report raises concerns regarding rehabilitation, contamination, instability and safety associated with the final void. The Commission was advised that these issues exacerbate the ecological impacts identified in the 'Critical Review of the Assessment of Impacts to Terrestrial Ecology' prepared by Ziggy Anderson, dated December 2020 (**Critical Review Report**).
72. Council in its submission to the Commission on the Additional Material dated 12 April 2021, raised concerns "that the documents that the different government agencies are referring to are old and do not reflect contemporary circumstances, mine approvals or operations". Council raised concerns regarding the impacts on air pollution on human health and also stated:

...compounding impacts of multiple intensive mining operations and coal fired power stations concentrated around a residential area stretch environmental, social, human and economic capital. The conventional mine-by-mine approach to assessment, management and mitigation does not provide confidence for the local communities impacted in a location with multiple active mines.

73. Council in its submission to the Commission requested that, if the Project is approved, the Applicant contribute funding to a number of studies and EPA monitoring. Council also suggested potential amendments to the Department's recommended conditions of consent.

74. The issues raised by Council have been considered by the Commission in section 4.9 below.

4.4 Public Submissions

75. The Commission has given consideration to the public submissions as identified in section 3 above. The issues raised in submissions have been considered by the Commission in section 4.9 below.

4.5 Material Considered by the Commission

76. In this determination, the Commission has carefully considered the following material (**Material**):

- the Applicant's EIS dated, 1 July 2019;
- all public submissions on the EIS made to the Department during public exhibition;
- all Government Agency comments on the EIS;
- the following information provided by the Applicant to the Department:
 - the Applicant's Response to Submissions (**RtS**), dated 18 December 2019;
 - the Applicant's Response to IESC Advice, dated 14 February 2020;
 - the Applicant's Additional Information, dated 17 March 2020;
 - the Applicant's Additional Information, dated 1 April 2020;
 - the Applicant's Additional Information, dated 19 June 2020;
 - the Applicant's comments on Council's Mine Affected Road Network Plan, dated 27 July 2020;
 - the Applicant's Additional Information, dated 11 September 2020
- the Department's AR, dated 29 January 2021;
- the Department's draft Development Consent, dated 29 January 2021;
- comments and presentation material at meetings with the Department, Applicant, Council, EPA and NSW Health as referenced in Table 2 above;
- the following information provided by Council to the Commission:
 - the Mine Lakes Report, dated 24 November 2020;
 - the Critical Review Report, dated December 2020;
 - comments on recommended Conditions, dated 26 February 2021;
- all speaker comments made to the Commission and material presented at the Public Hearing;
- the Department's response to questions on notice, dated 11 March 2021;
- all written comments received by the Commission up until 5pm, 11 March 2021;
- the following information provided by the Applicant to the Commission:
 - the Applicant's response to questions on notice, dated 5 March 2021;
 - the Applicant's response to the Commission's meeting with Council, dated 11 March 2021;
 - the Applicant response to Council's suggested Conditions, dated 11 March 2021;
 - the Applicant's response to the site inspection question on notice, dated 11 March 2021;
 - the Applicant's response to Commission, dated 30 March 2021; and
- all written comments on the Additional Material received by the Commission between 31 March 2021 up until 5pm, 12 April 2021.

4.6 Statutory Context

4.6.1 Permissibility

77. The Additional Project Area is located in the Muswellbrook LGA and is located on land zoned RU1 Primary Production and E3 Environmental Management under the *Muswellbrook Local Environment Plan 2009* (**Muswellbrook LEP**).
78. The Commission notes that under the Muswellbrook LEP, open cut mining is permissible with consent on land zoned RU1 Primary Production. The Commission also notes that under the Muswellbrook LEP mining is prohibited on land zoned E3 Environmental Management. However, clause 7(1)(b)(i) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (**Mining SEPP**) provides that open cut mining is permissible in the relevant zone and this takes precedence over the Muswellbrook LEP.
79. The Commission agrees that open cut mining within the Additional Project Area is permissible with development consent.

4.6.2 Surrender of Consent under section 4.63 of the EP&A Act

80. Paragraph 4.7.2 of the Department's AR states:

If the Project is approved, Glencore would be required to surrender the Mangoola Mine project approval prior to starting mining operations in the Northern Extension Area, and all mining operations on the site would be regulated under a single contemporary development consent.

81. The Commission notes that the development consent for the Existing Approval is proposed to be surrendered under conditions A15 and A16 of the development consent for the Project. The development consent for the Project also provides for the continuation of development authorised by the consent for the Existing Approval. Section 4.63 of the EP&A Act therefore applies to the Application.
82. Section 4.63 of the EP&A Act states that the Commission is not required to re-assess the likely impact of the continued development to the extent that it could have been carried out but for the surrender of the consent. However, section 4.63 of the EP&A Act does not prohibit the Commission undertaking such an assessment. In this Statement of Reasons, the Commission has considered, where relevant, the cumulative impacts of the development under the Existing Approval and the Project.
83. For the reasons set out in this Statement of Reasons, the Commission has determined to approve the Project and has therefore imposed conditions A15 and A16 which require the Applicant to surrender the Existing Approval within 12 months of the date of commencement of development under the Project consent.

4.6.3 Site Verification Certificate (SVC)

84. The Commission notes that the Applicant obtained a Site Verification Certificate (**SVC**) on 10 December 2019 which verified that the subject land is not Biophysical Strategic Agricultural Land (**BSAL**).

4.6.4 IESC Advice

85. The Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (**IESC**) provided advice on the Project in response to requests from the Department. The Department's consideration of the IESC advice is set out in section 5, section 6 and Table E3 of the Department's AR.
86. The Commission agrees with the Department's assessment and is of the view that the IESC recommendations have been addressed by the Applicant or are capable of being addressed through conditions of consent.

4.6.5 Integrated and other NSW Approvals

87. As per section 4.5 of the Departments AR, the Commission notes the Department has consulted with the relevant government authorities that are responsible for providing integrated and other approvals. The Commission acknowledges that the Applicant may also require other approvals which are not integrated into the SSD process, including those listed in paragraph 4.5.3 of the Department's AR.

4.6.6 Commonwealth Approval

88. The Commission notes that on 21 January 2019, a delegate of the Commonwealth Minister for the Environment determined that the Project is a 'controlled action' under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) on the basis that the Project is likely to have a significant impact on Matters of National Environmental Significance (**MNES**), as stated in paragraph 4.6.1 of the Department's AR.

89. Paragraph 4.6.2 of the Department's AR states:

The Commonwealth Government has previously accredited the State's environmental assessment processes under the EP&A Act, via a Bilateral Agreement between the Commonwealth and NSW Governments. As part of its controlled action determination, the Department of Agriculture, Water and Environment (DAWE) advised that the assessment of the Project would be undertaken by the NSW Government in accordance with the Bilateral Agreement.

90. The Commission notes that the Commonwealth's decision-maker maintains a separate approval role, which will be exercised following the Commission's determination of this Application.

91. Paragraph 4.6.4 of the Department's AR states:

The Department has assessed the potential impact of the Project on the relevant MNES in accordance with the requirements of the bilateral agreement. This assessment is provided in Sections 6.7 and 6.8 and Appendix E of this report and includes sufficient detail for the Commonwealth decision-maker to fully consider these impacts when determining whether to approve the controlled action.

92. The Commission agrees with the Department and adopts the analysis in the Department's AR of matters under the EPBC Act. The Commission has given further consideration to biodiversity matters in section 4.9.7 of this report.

4.7 Mandatory Considerations

93. In determining this application, the Commission is required by section 4.15(1) of the EP&A Act to take into consideration such of the following matters as are of relevance to the development the subject of the Application (**mandatory considerations**):

- the provisions of:
 - any environmental planning instrument;
 - any proposed instrument that is or has been the subject of public consultation under the EP&A Act and that has been notified to the Commission (unless the Planning Secretary has notified the Commission that the making of the proposed instrument has been deferred indefinitely or has not been approved);
 - any development control plan;
 - any planning agreement that has been entered into under s 7.4 of the EP&A Act, and any draft planning agreement that a developer has offered to enter into under s 7.4;
 - the *Environmental Planning and Assessment Regulations 2000* (**Regulations**) to the extent that they prescribe matters for the purposes of

- s 4.15(1) of the EP&A Act;
that apply to the land to which the Application relates;
- the likely impacts of the development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;
- the suitability of the site for the development;
- submissions made in accordance with the EP&A Act and Regulations; and
- the public interest.

In accordance with s 4.15(1), the Commission has considered the mandatory considerations. They are addressed in the following sections.

94. The mandatory considerations are not an exhaustive statement of the matters the Commission is permitted to consider in determining the Project. To the extent that any of the Material does not fall within the mandatory considerations, the Commission has considered that Material where it is permitted to do so, having regard to the subject matter, scope and purpose of the EP&A Act.

4.7.1 Relevant Environmental Planning Instruments

95. Per Appendix F.3 of the Department's AR, relevant EPIs include:
- *State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)*;
 - *SEPP No. 33 – Hazardous and Offensive Development (SEPP 33)*;
 - *SEPP No. 2020 – Koala Habitat Protection (SEPP 2020)*;
 - *SEPP No. 55 – Remediation of Land (SEPP 55)*;
 - SRD SEPP;
 - Mining SEPP; and
 - Muswellbrook LEP.
96. The Commission agrees with the Department's assessment of EPIs as set out in Appendix F.3 of the Department's AR and has also addressed some of the EPIs, in particular cl 14 of the Mining SEPP, in the reasons below.

4.7.2 Relevant Development Control Plans

97. Clause 11 of the SRD SEPP states that development control plans (DCP) do not apply to SSD. Accordingly, DCPs do not apply to the Project.

4.7.3 Relevant Planning Agreements

98. The Commission notes that the Applicant has already entered into an existing Voluntary Planning Agreement (VPA) with Council for the Existing Approval as stated in paragraph 6.10.32 of the Department's AR.

4.7.4 Relevant Draft Planning Agreements

99. The Department's AR states that the Applicant has proposed a further VPA to Council, which would provide for ongoing contributions over the operational mine life in the order of \$5 million and includes funding for a community enhancement program and road maintenance. The Commission notes that Council has not accepted the VPA on terms offered by the Applicant and advised the Commission in the meeting on 24 February 2021 that "*Council has not yet received a VPA that's acceptable to it*".
100. The Commission agrees with the Department in paragraph 6.10.41 of the AR and has imposed condition A17 which requires the Applicant to enter into a VPA with Council within six months of commencement of the development. The Commission has also imposed condition A18 which states that if the Applicant and Council do not enter into a VPA within the timeframe under condition A17, then within a further three months, the Applicant must make a s 7.12 EP&A Act contribution to Council of \$525,688.

4.7.5 Applicable Regulations

NSW Dark Sky Planning Guideline

101. Under clause 92 of the EP&A Regulation, the Commission is required to give consideration to the NSW Dark Sky Planning Guideline for “*State significant development ... on land less than 200 kilometres from the Siding Spring Observatory*”. The Commission notes that the Project is located approximately 185km from the Siding Springs Observatory and has therefore given consideration to the NSW Dark Sky Planning Guideline in section 4.9.10 below.

4.7.6 The Likely Impacts of the Development

102. The likely impacts of the Project have been considered in section 4.9 below.

4.7.7 The Suitability of the Site for the Development

103. The Commission has considered the suitability of the Site for the Project. The Commission finds that the Site is suitable for the Project for the following reasons:
- the Project represents a reasonable ‘brownfield’ extension of the existing coal mine that would enable the economic and beneficial reuse of existing infrastructure;
 - the proposed extraction of coal resources at the Site is consistent with the orderly and economic use and development of land;
 - the Site is not located on BSAL;
 - impacts on water resources would be minimised and mitigated;
 - impacts on surrounding land uses have been minimised and are capable of being further mitigated through conditions of consent; and
 - notwithstanding the final voids proposed as part of the Project, the Site is capable of being rehabilitated in accordance with Government policy.

4.8 Additional Considerations

104. In determining this Application, the Commission has also considered:
- *NSW Noise Policy for Industry (NPfi)*;
 - *Interim Construction Noise Guideline (ICNG)*;
 - *NSW Road Noise Policy (RNP)*;
 - *NSW Aquifer Interference Policy (AIP)*;
 - *Voluntary Land Acquisition and Mitigation Policy (VLAMP)*;
 - *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (EPA, 2016) (Approved Methods)*;
 - *NSW Risk Assessment Guideline for Groundwater Dependent Ecosystems (NOW, 2012) (GDE Guideline)*;
 - *Guidelines for the economic assessment of mining and coal seam gas proposals (NSW Government, 2015) (Economic Guidelines)*;
 - *Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development (SIA Guideline)*;
 - *NSW Climate Change Policy Framework (CCPF)*;
 - *NSW Net Zero Plan Stage 1: 2020–2030 (Net Zero Plan)*; and
 - Australia’s International Climate Change Commitments.

4.9 Key Issues

4.9.1 Noise

105. The Commission acknowledges that there were concerns raised at the Public Hearing and in written submissions regarding the potential noise impacts resulting from the Project as set out in paragraphs 26 to 31 above.

Existing Operations

106. The Commission notes that the Existing Approval currently identifies three remaining private receivers with voluntary acquisition rights as a result of the residual noise impacts at the Existing Operations. The Commission also notes that 15 receivers are currently eligible for mitigation upon request due to the operational noise arising from the Existing Operations and that a further three receivers along Wybong Road are also eligible for mitigation rights on the basis of approved traffic noise impacts under the Existing Approval (Department's AR paragraphs 6.2.13 and 6.2.14).

Project Noise Trigger Levels

107. The Applicant's EIS was accompanied by a Noise Impact Assessment (**NIA**), prepared by Global Acoustics Pty Ltd and dated 10 May 2019. Paragraph 6.2.29 of the Department's AR stated the NIA:

...identified and established a range of contemporary assessment criteria in accordance with the NPfl. Importantly, the NPfl conservatively establishes Project Noise Trigger Levels (PNTLs) based on the more stringent value of the project intrusiveness noise level and project amenity noise level. Using the more stringent level ensures that intrusive noise is limited, and amenity protected.

108. Paragraph 6.2.35 of the Department's AR states that construction noise is predicted to be less than the Project Noise Trigger Levels (**PNTL**) for the majority of receivers. The Commission notes that eight receivers are predicted to experience construction noise above the PNTL but within the ICNG noise affected criterion (i.e. between 40 and 45 dB) during adverse meteorological conditions.
109. Of the eight receivers, three receivers are predicted to experience construction noise greater than the ICNG noise affected criterion during adverse weather conditions (receivers 66, 148 and 130). Paragraph 6.2.36 of the Department's AR states that these three receivers are already eligible for voluntary mitigation and acquisition rights due to the Project's operational noise and would have the opportunity to request noise mitigation or acquisition during the construction period.
110. The Commission notes that the remaining eight receivers predicted to experience an exceedance of the PNTL would also be eligible for either mitigation or acquisition for operational noise as stated in paragraph 6.2.37 of the Department's AR. The Commission notes that the EPA did not raise any concerns with the PNTLs for the Project. The Commission agrees with the Department and is satisfied with the proposed PNTLs.

Construction Outside of Standard Hours

111. The Commission notes that the Applicant proposes to undertake works outside of standard construction hours as it would "*reduce overall construction time and limit impacts to the local community (i.e. road users during peak traffic periods) and may be necessary to ensure the integrity of structures or to minimise environmental impacts (i.e. continuity of concrete pours)*" as stated in the Department's Assessment Report paragraph 6.2.39.
112. The Commission notes that the EPA, in its letter to the Department dated 28 August 2019, advised that it required additional information regarding the assessment of construction noise impacts out of standard hours. The EPA in its letter to the Department dated 31 January 2020 stated that the RtS provided additional information on the matters raised by the EPA and recommended conditions of approval for the Project.

113. The Commission agrees with the Department that the Applicant has justified the need to complete some construction activities outside of standard construction hours. The Commission also acknowledges that the EPA was satisfied with the Applicant's assessment in the RtS. The Commission has therefore imposed condition B3 which requires the Applicant to seek the Planning Secretary's agreement to a temporary construction noise limit, which must also include a Construction Noise Protocol to the satisfaction of the Planning Secretary.

Operational Noise

114. The Commission notes that the Applicant's NIA predicted that with the application of relevant noise mitigation measures discussed above, the worst-case noise from the mining operations would exceed the PNTLs at a number of private receivers at least once over the four modelled operational years (Department's AR paragraph 6.2.45). The Commission agrees with the Department and recognises that most of these exceedances are predicted to be negligible in nature and are unlikely to result in a discernible difference from the PNTLs (i.e. less than 2 db above the PNTL).
115. The Commission agrees with paragraph 6.2.48 of the Department's AR:
- ...while a development should aim to achieve its PNTLs, it is not always possible to achieve these levels and residual noise impacts may sometimes occur. The VLAMP provides that in such circumstances voluntary acquisition and/or mitigation rights can be afforded for private receivers to reduce the operational noise impacts of a development where there is a broader public interest argument to justify these impacts.*
116. The Commission understands that the Project is predicted to result in six new receivers experiencing significant exceedances of more than 5 dB above the PNTL, relative to the existing operations, and eight new receivers experiencing marginal exceedances of between 3 to 5 dB above the PNTLs (Department's AR paragraph 6.2.51). The Commission notes that when considered together with the receivers impacted by existing operation, the overall impact of the Project would result in significant exceedances at seven residences and marginal exceedances at 18 residences (see Table 3 below). The Commission has therefore imposed condition C1 and C2 to afford these receivers with acquisition and/or mitigation rights.

*Table 3 - Private receivers subject to acquisition or mitigation for noise impacts
(Source: Department's AR)*

Receiver ID	Existing Acquisition or Mitigation rights under PA 06_0014	VLAMP Significance Category	Recommended Voluntary Acquisition / Mitigation Rights
66	Acquisition rights lapsed, eligible for mitigation	Significant	Acquisition Rights
83	Acquisition rights		
110, 130 and 148	Mitigation rights		
139, 205	N/A		
25	Acquisition Rights	Marginal	Acquisition rights under PA 06_0014 to be retained
154, 176, 109A, 109B, 109C, 109D, 109E, 109F, 134A	Mitigation Rights		Mitigation Rights

128,144, 171,193,261,263,125A ,182B	N/A		
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117. The Commission notes that the Project would be expected to result in negligible exceedances of up to 2 dB above the PNTLs at 31 receiver locations in the broader Project area. According to the VLAMP, exceedances of this magnitude would not be discernible by the average person and would not be distinguishable above the PNTLs. The Commission agrees with the Department and is of the view that further mitigation measures or treatments in addition to those set out in the VLAMP are not required at these receiver locations.
118. In relation to road traffic noise, the Commission agrees with the Department (in AR paragraph 6.2.821) that the Project would not be required to implement further mitigation for road traffic noise and that these impacts can continue to be managed in line with a revised Noise Management Plan. The Commission is also satisfied that the rail noise impacts would not result in any additional impacts to receivers and could continue to be managed through the existing mitigation measures.
119. The Commission agrees with the Department and is satisfied that the Applicant has reduced the Project's operational noise impacts where possible, through mine design and planning and through the required mitigation measures. The Commission has imposed conditions B1 and B7 which require the Applicant to comply with specific noise criteria and operating conditions.
120. The Commission agrees with the Department and has required that the Applicant's commitments to manage, monitor and mitigate noise impacts be detailed in the Noise Management Plan for the Project. The Commission has therefore imposed conditions B8 – B10 which require the Applicant to prepare and implement a Noise Management Plan for the Project.

4.9.2 Air Quality

121. The Commission acknowledges that there were concerns raised at the Public Hearing and in written submissions regarding the impacts of mining and the Project on air quality in the Muswellbrook area and Upper Hunter Region (paragraphs 33 to 38 above).
122. The Applicant's EIS included an Air Quality Impact Assessment (**AQIA**), prepared in accordance with the EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods, 2016).
123. The Commission notes that the AQIA predicts that the incremental 24-hour, annual average and cumulative annual average PM₁₀ and PM_{2.5} levels would meet applicable criteria at all private receiver locations for all stages of the mine as stated in paragraph 6.3.29 of the Department's AR.
124. Paragraph 6.3.31 of the Department's AR states that the AQIA predicts that, with the application of all appropriate measures to minimise off-site air quality impacts, the cumulative annual average Total Suspended Particulate (**TSP**) matter, dust deposition and Nitrogen Dioxide (**NO₂**) levels (associated with blast fumes and diesel emissions) would meet the applicable criteria at all private receiver locations for all stages of the Project, including during adverse weather conditions.

125. The Commission agrees with the Department's assessment and is satisfied that with the implementation of the mitigation measures committed to by the Applicant and the development of an Air Quality and Greenhouse Gas Management Plan (**AQGGMP**), the Project would be able to operate in accordance with the air quality criteria outlined in the Approved Methods (Department's AR paragraph 6.3.31). The Commission also agrees with the Department that dust impacts during construction could be adequately managed through the implementation of industry standard operational management and mitigation measures (Department's AR paragraph 6.3.25).
126. The Commission heard from speakers at the Public Hearing and in submissions made to the Commission raising concerns regarding air quality in Muswellbrook and the surrounding area. In response to concerns raised at the Public Hearing and in public submissions, the Commission held a meeting with the EPA, NSW Health and the Department on 25 March 2021 to discuss air quality trends and impacts in the Upper Hunter. Material presented at that meeting showed that annual average trends for PM_{2.5} and PM₁₀ concentrations in Muswellbrook between 2011 and 2020 were consistent with trends in other areas of NSW. The Commission heard that regional air quality was significantly impacted by high temperatures, drought and bushfires over this period.
127. The Commission is of the view that the potential air quality impacts of the Project have been adequately assessed and has imposed conditions requiring mitigation and management of these impacts. The Commission has imposed conditions B27, B28 and B30 which set out specific air quality criteria and operational conditions for the Project. Condition B31 and B33 imposed by the Commission require the Applicant to prepare and implement a detailed AQGGMP to the satisfaction of the Planning Secretary.

4.9.3 Greenhouse Gas Emissions

128. GHG emissions are categorised into three different types:
- Scope 1: direct emissions from owned or controlled sources of an organisation/ development;
 - Scope 2: indirect emissions from the generation of purchased energy electricity, heat and steam used by an organisation/development; and
 - Scope 3: all other upstream and downstream emissions related to an organisation/ development.
129. Clause 14(1)(c) of the Mining SEPP requires the Commission, "*before granting [any] consent*" to "*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 greenhouse gases are minimised to the greatest extent practicable*".
130. Clause 14(2) of the Mining SEPP requires the Commission, "*in determining a development application for development for the purposes of mining, petroleum production or extractive industry*" to "*consider an assessment of the greenhouse gas emissions (including downstream emissions) of the development, and must do so having regard to any applicable State or national policies, programs or guidelines concerning greenhouse gas emissions*".
131. Other provisions of the Mining SEPP are considered in Section F.3 of the Department's AR. The Commission has given consideration to GHG emissions below.
132. The Commission acknowledges that there was concern raised at the Public Hearing and in written submissions regarding the Project's GHG emissions and its contribution to climate change (see paragraph 39 to 43 above).

Climate Change Policy Framework and Net Zero Plan

133. The Commission notes that the NSW Government released the NSW Climate Change Policy Framework (**CCPF**) in June 2016. The Commission acknowledges that the aim of the NSW CCPF is to “*maximise the economic, social and environmental wellbeing of NSW in the context of a changing climate and current and emerging international and national policy settings and actions to address climate change*” with the aim to achieve net-zero emissions by 2050 and for NSW to be more resilient to a changing climate. The Commission notes that the CCPF sets policy directions for government action. The CCPF does not set prescriptive emission reduction targets.
134. The Commission notes that the United Nations Framework Convention on Climate Change (**UNFCCC**) and related rules specify that all emissions associated with an activity within Australia’s borders count towards Australia’s total emissions. The Commission notes that the Project’s Scope 3 emissions will be accounted for in the consumer countries’ GHG emission accounts. The Commission notes that with the adoption of the Paris Agreement, almost all countries have committed to track their progress with the aim to reduce global GHG emissions. The Commission also notes that the National Greenhouse and Energy Reporting Scheme (**NGERS**) is a national reporting framework for reporting on energy production, consumption and emissions reported by major emitters and State of origin and has been designed to support the Government’s international reporting obligations. The Commission notes that NGERS does not require reporting of Scope 3 emissions.
135. The Commission notes that the NSW Government released the Net Zero Plan Stage 1: 2020–2030 (**Net Zero Plan**) in March 2020. The Commission notes that the Net Zero Plan builds on the CCPF and sets out a number of initiatives to deliver a 35% cut in emissions by 2030, compared to 2005 levels. The Net Zero Plan also provides that “*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*”.

Project Emissions

136. The Applicant’s EIS included a Greenhouse Gas and Energy Assessment (**GHGEA**), prepared by Umwelt (Australia) Pty Limited (**Umwelt**) that provides greenhouse gas emissions projections for the Project.
137. The Commission notes that the Project would generate approximately 3,650,000 t CO₂-e of Scope 1 and 2 emissions primarily from the combustion of diesel, release of fugitive emissions and the use of electricity over the life of the mine and is also forecast to be associated with approximately 107,940,000 t CO₂-e of Scope 3 emissions as set out Table 4 below.

Table 4 – Estimated GHG Emission’s from the Project (Source: Department’s AR)

GHG	Annual Average Emissions (t CO ₂ -e)	Total Emissions (t CO ₂ -e)
Scope 1	410,000	3,250,000
Scope 2	5,000	400,000
Scope 3	13,040,000	104,290,000
Total	13,500,000	107,940,000

138. The Applicant, in its response to the Commission dated 30 March 2021, provided additional information regarding the methane content of the coal seams in the Northern Extension Area. The Commission notes that the highest methane content is that of the Upper Pilot Seam measured at 0.243 m³/t.

Mitigation and Management

139. The Commission notes that the Applicant has proposed a range of management and mitigation measures for Scope 1 and Scope 2 GHG emissions as set out in paragraph 6.3.40 of the Department's AR:
- *limiting the length of material haulage routes, thereby minimising transport distances and associated fuel consumption;*
 - *optimising haul road ramp gradients and payload to reduce diesel usage;*
 - *selecting equipment and vehicles that have high energy efficiency;*
 - *scheduling activities so that equipment and vehicle operation is optimised (e.g. minimising idle times and in-pit servicing);*
 - *improving extraction and processing energy use through implementation of through seam blasting;*
 - *energy efficiency initiatives to reduce indirect electricity consumption Scope 2 emissions;*
 - *implementation of the existing emissions cap for the Mangoola Mine in accordance with the Safeguard Mechanism under the Australian national greenhouse gas mitigation policy framework; and*
 - *participation, monitoring and reporting within the Commonwealth Government's National Greenhouse Energy and Reporting Scheme (NGERS), which includes ongoing review of technologies and measures to further minimise GHG emissions.*
140. Paragraph 6.3.45 of the Department's AR states that the Department is of the view that the Applicant has applied reasonable and feasible measures to reduce its Scope 1 and 2 emissions through the design and operation of the Project.

Commission's Findings

141. The Commission has considered the matters in cl 14(1)(c) and 14(2) of the Mining SEPP and finds that the Project's Scope 1 and Scope 2 GHG emissions have been estimated using the recommended methodologies consistent with current national and NSW policy settings and commitments. The Commission finds that the Project includes a range of practical measures for minimising and managing Scope 1 and Scope 2 GHG emissions. The Commission notes that there are uncertainties regarding the largest component of the Project's Scope 1 emissions – fugitive emissions from coal seams. The Commission was concerned about the mitigation of post-mining fugitive emissions from exposed coal seams, particularly from the (high methane content) Upper Pilot Seam (see paragraph 138 above). The Commission has therefore included a specific objective in Table 9 of condition B85 which requires the Applicant to minimise post-mining fugitive emissions from exposed coal seams.
142. The Commission acknowledges the Applicant's commitment in paragraph 139 above to the ongoing monitoring and management of GHG emissions and energy consumption from the Project through the Applicant's participation in the NGERS. The Commission acknowledges that GHG emissions would be measured and reported as required under the NGERS.
143. The Commission is of the view that the Project is not inconsistent with the CCPF, the Net Zero Plan or Australia's current obligations under the Paris Agreement in respect of Australia's current Nationally Determined Contributions (**NDC**).

144. The Commission has imposed condition B30 ‘Air Quality Operating Conditions’ requiring the Applicant to take all reasonable steps to “(a)(iii) improve energy efficiency and reduce greenhouse gas emissions of the development”. The Commission has also imposed conditions B31 and B33 which require the preparation and implementation of an AQGGMP. The Commission has imposed condition B31(c)(ii) which requires the Applicant to ensure best practice management is employed to minimise air quality impacts, minimise Scope 1 and 2 GHG emissions and improve the Project’s efficiency of energy use.
145. The Commission is required to consider downstream, or Scope 3 emissions of the Project under the Mining SEPP. The Commission agrees with the Department’s assessment that while the Project’s Scope 3 emissions would contribute to global climate change, they are more appropriately regulated and accounted for through broader national policies and international agreements (such as the Paris Agreement).
146. For the reasons set out above, the Commission is of the view that the GHG emissions for the Project have been adequately estimated and are permissible when weighed against clause 14(1)(c) and clause 14(2) of the Mining SEPP, the relevant climate change policy framework, objects of the EP&A Act, ESD principles (section 4.10), the Project’s socio-economic benefits (section 4.9.9) and conditions B30, B31, B33, B34 and B85 imposed by the Commission.

4.9.4 Water Resources

Water Balance

147. The Commission notes that the Applicant holds water licences for the Existing Approval under the *Water Management Act 2000* and *Water Act 1912* as set out in Table 5 below.

*Table 5 - Existing Surface Water Allocation Licences Held by the Applicant
(Source: Department’s AR)*

Water Source	Share Component Held (ML)
Wybong Creek Unregulated Water Access Licence (WAL)	861
Hunter River Regulated General Security WAL	2,758
Hunter River Regulated High Security WAL	17

148. The Commission notes that the EIS included a detailed Site Water Balance which integrated the requirements of the Existing Operations with the additional water requirements associated with development of the Northern Extension Area. Paragraph 6.8.6 of the Department’s AR states: “*The Site Water Balance predicted annual average inflows and outflows would be similar to that of the existing operations, with the key change being the capture of additional rainfall runoff from the Project catchment area*”.
149. Paragraph 6.8.8 of the Department’s AR states that under the simulated worst-case scenario, there is a low risk of the Project being subjected to a shortfall in water supply given the Applicant’s existing water licence entitlements. The Department also stated that should a shortfall occur, the Applicant has committed to the following measures:
- *purchase additional WALs (if available);*
 - *reduce CHPP demand by increasing bypass coal;*
 - *reduce site water demand by scaling back production; and/or*

- *investigate sourcing alternative water supplies.*

150. The Commission agrees with the Department in paragraph 6.8.9 of the AR and notes that the Applicant has advised that they have sufficient water to meet the operational water requirements of the Project. The Commission has therefore imposed condition B36 which states that the Applicant must ensure that it has sufficient water for all stages of the development, and if necessary, reduce the scale of the development to match its available water supply. The Commission has also imposed conditions B50 – B52, which require the Applicant to prepare and implement an updated Water Management Plan (**WMP**). Condition B50(e)(i) requires the Applicant to include a Site Water Balance as part of the WMP.

Surface Water

151. The Commission notes that several submissions received during the Department's exhibition and the Commission's submission period raised concerns with the potential for surface water losses and impacts on the surrounding agricultural industry.
152. The Commission notes that there is no proposed change to the existing water management discharge arrangements as a result of the Project and that surface water monitoring at the Existing Operations is undertaken in accordance with the approved Surface Water Monitoring Program (Department's AR paragraphs 6.8.22 and 6.8.23).
153. The Commission notes that the development of the Northern Pit would result in a number of changes to the existing catchment areas, with reduced catchment yields in Big Flat Creek and Wybong Creek. According to the Applicant's Surface Water Assessment (**SWA**), prepared by Hydro Engineering and Consulting Pty Ltd, the worst-case scenario of a 1.2% reduction in catchment area (during year eight of the Project) would equate to a reduction in annual average flow of approximately 317 ML. The Department's AR states that with an annual average flow of 26,455 ML in Wybong Creek, this represents an equivalent 1.2% reduction in annual average flow (Department's AR paragraph 6.8.23).
154. The Department's AR states that following the completion of mining an area of approximately 7.32 km² would be permanently removed from the catchment of Big Flat Creek and Wybong Creek, equating to a loss of approximately 1.1% (291 ML) of the Wybong Creek catchment area upstream of and including Big Flat Creek (Department's AR paragraph 6.8.27). The Commission agrees with the Department and is of the view that this is unlikely to materially affect flows in Wybong Creek.
155. The Commission agrees with the Department and finds that the predicted surface water losses would not be significant in the context of the broader catchment areas and that there would be minimal cumulative impacts to downstream water users as a result of the Project.
156. For the reasons set out above, the Commission finds that, subject to implementation of the mitigation and monitoring measures, the Project would not significantly increase the existing scale and extent of impacts to surface water catchments or watercourses. In order to ensure the adequate management of surface water impacts, the Commission has imposed condition B50(e)(iv) which requires the Applicant to prepare an updated Surface Water Management Plan as part of the WMP prepared prior to commencement mining operations north of Wybong Road.

Flooding

157. The Applicant's EIS included a flood modelling assessment, completed by Hydro Engineering and Consulting. The flood modelling indicated that while Project would result in some increase in areas of inundation upstream of the Big Flat Creek overpass, there would be no inundation on any land (other than land owned by the Applicant), up to and including the 1:100 Annual Exceedance Probability (**AEP**) event (Department's AR paragraph 6.8.48). The Commission notes that the Applicant is proposing to construct a flood levee between the Northern Extension Area and Big Flat Creek to a level equal to the 1:1,000 AEP flood level plus 0.5 m freeboard (Department's AR paragraph 6.8.51).
158. The Commission agrees with the Department and is satisfied that with these measures in place the Project would not result in any significant increases in flow velocities in Big Flat Creek, and so the risk of increased erosion associated with the Project is negligible.
159. The Commission notes that the flood modelling also assessed the impact of the Project on flood levels over Wybong Road. Paragraph 6.8.53 of the Department's AR states: *"The assessment determined that the Project would not result in a material increase in the rate or level of flooding over Wybong Road, which would remain unaffected by flood events up to the 1:100 AEP event"*.
160. The Commission agrees with the Department and finds that the Project would not materially impact the existing flood risk for Wybong Road or any other public road in the area. To ensure that erosion as a result of flooding is appropriately managed, the Commission has imposed condition B50(e)(iii) which requires the Applicant to prepare an Erosion and Sediment Control Plan as part of the WMP, prior to commencement of mining operations north of Wybong Road. Condition B52 imposed by the Commission requires the Applicant to implement the WMP as approved by the Planning Secretary.

Groundwater

161. The EIS included a Groundwater Impact Assessment (**GIA**) completed by Australasian Groundwater and Environmental Consultants. The Commission notes that the groundwater model was peer reviewed on behalf of the Applicant by Dr Noel Merrick of HydroSimulations who concluded that the model was fit for purpose.
162. The Commission notes that the Existing Operations already result in drawdown in excess of 1 m along a thin zone that follows the shallow alluvial and colluvium deposits of Wybong Creek, Sandy Creek and Big Flat Creek and that the proposed Northern Pit extension is predicted to extend this drawdown slightly further upstream along Big Flat Creek (Department's AR paragraph 6.8.93). The Department's AR states that the Northern Pit extension would also be expected to extend the envelope of drawdown within the unweathered conglomerates and Permian coal measures to the north. Paragraph 6.8.94 of the Department's AR states: *"Despite this, the GIA identifies that this predicted increase in drawdown would primarily affect the deeper and less productive Permian groundwater aquifers and would only result in minimal incremental impacts to the areas of overlying Wybong Creek alluvium"*.
163. The Commission notes that the reduced groundwater flux into the overlying Wybong Creek Alluvium would also reduce the rate of groundwater baseflow into the overlying Wybong Creek. According to the Department's AR, the GIA predicts this could result in a cumulative reduction in flows in Wybong Creek of a further 2 ML/year as a result of the Project. The Department notes that Wybong Creek has a recorded mean annual flow of 28,287 ML/year. The Commission agrees with the Department and is of the view that the predicted change in baseflows to Wybong Creek is likely to have a minimal impact on overall flow volumes.

164. The Commission notes that the GIA identified that Big Flat Creek is already likely to have become disconnected from the groundwater system due to the existing Mangoola Mine and the Northern Pit extension would not be expected to exacerbate the existing baseflow losses to Big Flat Creek (Department's AR paragraph 6.8.99).
165. The Commission notes that there were concerns raised at the Public Hearing and in written submissions regarding the potential impacts of the Project on surrounding bores. The Commission notes concerns were also raised in relation to the Application of the AIP (see paragraphs 57 to 59 above).
166. In relation to impacts on private groundwater users, the GIA identified eight privately-owned bores located within 3 km of the Project. The Commission notes that one bore has been decommissioned and one bore has been converted to a government monitoring bore. Of the remaining six bores, one bore (GW078502) is predicted to experience drawdown of more than 2m. The Department's AR notes that bore GW078502 is located on land owned by Receiver 83 who is already afforded acquisition rights under the existing approval (Department's AR paragraph 6.8.107). The Commission notes that the Applicant has committed to monitor these six bores (if requested by the relevant landowner) and, if Project related impacts are detected, offer compensatory measures to ensure that an alternative long term supply of water is provided.
167. The Commission agrees with the Department (in AR paragraph 6.8.109) and finds that the proposed monitoring and mitigation measures are an appropriate response to the potential groundwater impacts of the Project. The Commission has imposed condition B38 which provides that the Applicant must notify the owners of the six bores that they may request monitoring of the listed bores to determine the level of drawdown from the Project. In the event that monitoring data records drawdown of more than 2 metres as a result of the Project, the Applicant must provide compensatory water in accordance with conditions B40 to B44 imposed by the Commission.

Final Void

168. The Commission notes that in addition to the final void that is already approved to be retained at the Mangoola Mine, the Applicant is proposing to leave a second final void in the Northern Extension Area. The Commission understands that following the completion of mining, the final voids would eventually form permanent pit lakes and act as localised groundwater sinks (Department's AR paragraph 6.8.12).
169. According to the GIA, equilibrium levels in the pit lakes would be reached over a period of more than 200 years, with long term water take estimated at approximately 23 ML/year over this period and comprising 10 ML/year from the existing Mangoola Mine void and 13 ML/year from proposed Northern Pit void. Paragraph 6.8.122 of the Department's AR states:

The modelling also predicts that surrounding Permian aquifer groundwater levels would gradually recover to reach a final equilibrium level somewhat lower than that was present pre-mining. The Department notes that given the saline nature of groundwater, this is unlikely to significantly impact the availability of regional groundwater resources.
170. The Commission agrees with the Department and is satisfied that the final voids (including the associated catchment areas) have been designed in a manner to ensure that saline water inflows are largely contained within the final voids and do not present a risk of overflows to the surrounding environment.

171. The Commission has included a specific water management performance measure in condition B48 which requires the Applicant to ensure adequate freeboards within all mine water storage dams and voids at all times to minimise the risk of discharge to surface waters. Condition B50 imposed by the Commission requires the Applicant to prepare detailed plans, design objectives and performance criteria for the final voids and a program to monitor and evaluate water loss/seepage from water storages into the groundwater system, including from any final voids, as part of the WMP.

4.9.5 Aboriginal Cultural Heritage

172. The EIS included an Aboriginal Cultural Heritage Assessment Report (**ACHAR**) which incorporated an Aboriginal Archaeological Impact Assessment (**AAIA**) assessing the archaeological values of sites identified within the Northern Extension Area. The Commission notes that the ACHAR assessed 74 Aboriginal sites within the Additional Project Area. The ACHAR concluded that there are 26 Aboriginal sites (15 artefact scatters and 11 isolated finds) within the Northern Extension Area that could be impacted by the Project.
173. BCD, in its response to the Department dated 5 September 2019, recommended that salvage of the 26 Aboriginal sites be undertaken in consultation with the Registered Aboriginal Parties (**RAPs**) and in accordance with the protocols outlined in the existing approved Aboriginal Cultural Heritage Management Plan (**ACHMP**). BCD, in its review of the Applicant's RtS Report (undated), stated that test excavations should not be undertaken at Aboriginal sites that occur outside of the disturbance footprint and that the Rockshelter Complex (AHIMS 37-2- 5443, 37-2-5444, 37-2-5445, 37-2-5446 and 37-2-5447) and any associated artefact sites or PADs should be preserved intact and should not be subjected to unnecessary test excavation.
174. The Commission notes that the Applicant's response to the Department dated 17 March 2020 stated: "*In recognition of BCD's comments, Mangoola no longer proposes test excavations at these locations as part of the MCCO Project unless otherwise agreed with BCD at a later date*".
175. The Commission agrees with the Department (in AR Table 23) that the Aboriginal cultural heritage impacts of the Project are likely to be minimal and could be suitably managed. The Commission has imposed condition B65 to ensure that the Project does not cause direct or indirect impact on any identified heritage items located outside the Northern Extension Area, beyond those predicted in the EIS and associated documents. The Commission agrees with the BCD as stated in paragraph 173 above and is of the view that the 26 Aboriginal sites should be salvaged in accordance with the protocols outlined in the existing approved ACHMP. The Commission has imposed conditions B68 – B70 which require the Applicant to prepare and implement an updated ACHMP.

4.9.6 Blasting and Vibration

176. The Applicant's EIS included a Blasting Impact Assessment (**BIA**) prepared by Enviro Strata Consulting Pty Ltd (**ESC**). The Commission notes that the modelling indicated that there are no predicted exceedances of the ground vibration criteria as stated in paragraph 6.4.9 of the Department's AR.

177. Paragraph 6.4.10 of the Department's AR states: "*the airblast overpressure modelling predicted that an increase in overpressure impacts would be experienced at private residences to the north of the proposed extension area, in line with the progressing mine front*". The Commission notes that in the absence of mitigation measures, the Project would exceed the airblast criteria at up to 17 private residences in year eight of operations. The Commission notes that the Applicant proposes to design blasts and use lower charge masses and bench size to ensure that airblast overpressure criteria at any privately-owned residence are not exceeded.
178. In relation to impacts on historic heritage items in the surrounding area, the Commission notes that according to ESC, a vibration limit of 5 mm/s and an airblast overpressure criteria of 133 dB would limit structural damage and that the modelling predicts that there would be no exceedance of the ground vibration criteria or airblast overpressure at any of the heritage structures.
179. The Commission notes that there are a number of Aboriginal rock shelters and two rock formations of European heritage significance located in close proximity to the Approved Project Area. The Department is of the view that the existing measures have been successful in protecting rock structures from the impacts of the Existing Operations. According to paragraph 6.4.20 of the Department's AR, ESC states that while there is no set vibration limit for rock shelter sites or rock formations, existing reports have identified a safe ground vibration limit of 50 mm/s. The Commission notes that the predicted ground vibration at the rock formations or rock shelters near the Additional Project Area would be well below this limit.
180. In relation to impacts on infrastructure, paragraph 6.4.23 of the Department's AR states: "*no exceedances of Dam Safety Committee's (DSC) vibration limit of 50 mm/s for on-site prescribed dams, or the Resources Regulator's limit of 100 mm/s for prescribed tailings dams are predicted to occur under the Project*". The Commission notes that the Applicant also has an existing agreement with Transgrid to modify the original ground vibration limits to 125 mm/s for suspension pylons and 60 mm/s for tension pylons. The Commission notes that TransGrid has confirmed that the existing ground vibration agreement can be extended to include the Northern Extension Area providing that the Applicant operates within these specific limits.
181. In relation to flyrock, the Department in paragraph 6.4.33 of the AR states: "*the risk from blasting flyrock would be sufficiently mitigated by the distance from residential receivers and grazing land and the proposed standard management and monitoring measures*". The Commission notes that the Applicant proposed to operate an exclusion zone to manage the effects of flyrock when blasting within a 500 m radius of Wybong Road, Wybong PO Road and Ridgeland Road, powerlines and Crown land.
182. The Commission agrees with the Department in paragraph 6.4.36 of the AR and is of the view that the BIA has satisfactorily assessed the Project's potential ground vibration, air blast overpressure and fly rock impacts and is unlikely to result in material impacts to nearby privately-owned residences, heritage items or infrastructure.

183. The Commission finds that the Project's blasting and vibration impacts can be mitigated and managed through conditions of consent. The Commission has therefore imposed condition B11 which sets blasting criteria including air blast overpressure and ground vibration limits at specific locations surrounding the Project. The Commission is of the view that this condition is appropriate in order to protect privately owned residences, historic heritages sites, Aboriginal Rock Shelter Sites, rock formations and surrounding infrastructure. The Commission has also imposed condition B21 which sets out specific blast operating requirements and condition B22 which states that the Applicant must not undertake blasting on the site within 500 metres of any public road or any land outside the Site not owned by the Applicant, unless there is an agreement with the relevant authority or landowner in place.
184. The Commission notes that the Applicant has committed to offer, prior to blasting, a property inspection to all private landholders located within 2 km of the proposed extension area to establish the baseline condition of privately owned structures. The Department has recommended that this commitment be formalised as a condition of consent. The Commission agrees with the Department and has therefore imposed conditions B16 and B17.
185. The Commission also imposed conditions B23 – B25 which require the Applicant to prepare and implement a Blast Management Plan to the satisfaction of the Planning Secretary.

4.9.7 Biodiversity

186. The Commission notes that concerns were raised regarding the impacts of the Project on biodiversity. The Commission also notes that there was support in submissions received by the Commission stating that the Applicant had been successful in achieving flora species diversity at the Approved Project Area (see paragraphs 54 to 56 above).

Impacts, Avoidance and Mitigation Measures

187. The Commission notes that the Project has been sited to largely avoid the highest quality remnant forest and woodland communities to the north and north-west of the Northern Extension Area and considers this to be demonstration of reasonable and feasible measures to avoid impacts to biodiversity (Department's AR paragraphs 6.7.14 and 6.7.15).
188. The Applicant's EIS included a Biodiversity Development Assessment Report (**BDAR**), prepared by Umwelt. According to the BDAR, the Project would result in the clearing of 570 ha of native vegetation, consisting of 356 ha of woodland or open forest and 214 ha of derived native grassland in the Northern Extension Area (Department's AR paragraph 6.7.19). The Commission notes that the direct biodiversity impacts of the Project on vegetation communities and the biodiversity credits required to be offset to compensate for this loss are summarised in Table 14 of the Department's AR.
189. The Commission notes that the Applicant has committed to implementing a wide range of mitigation and control measures to minimise the residual biodiversity impacts of the Project. Paragraph 6.7.16 of the Department's AR states that these key measures include:
- *comprehensive vegetation and habitat clearing protocols;*
 - *dust, noise, lighting, and erosion and sediment controls;*
 - *fencing and access restrictions;*
 - *feral animal and weed management strategies;*
 - *habitat enhancement measures such as the installation of nest boxes, salvaged hollows, fallen timber, hollow logs and rocks to supplement mine rehabilitation; and*

- *progressive rehabilitation and stabilisation of disturbed land.*

190. The Commission agrees with the Department that “*the biodiversity impact mitigation measures proposed are based on best available practices and have been successfully used to mitigate the impact of coal mining developments elsewhere in the Hunter Valley and NSW*” (Department’s AR paragraph 6.7.18).

Aquatic Ecology

191. The Commission notes that in order to address potential impacts on aquatic ecology, the Applicant has committed to ensure that the design of works within or near the creek would provide for the retention of natural functions and maintenance of fish passage in accordance with relevant NSW Department of Primary Industries guidelines for fish passage and waterway crossings (Department’s AR paragraph 6.7.23).

192. The Commission notes that the IESC advice, dated 4 October 2019 (**IESC Advice**) recommended that the final landform be designed to manage potential changes in surface water flow paths that could impact the presence of ground orchids surrounding the Site (Department’s AR paragraph 6.7.24). The Commission agrees that the Applicant’s final landform design should minimise impacts on populations of orchids. The Commission has therefore included a specific objective in Table 9 of the consent to ensure that impacts on ground orchids are minimised.

Groundwater Dependent Ecosystems

193. The Commission notes that the IESC provided advice on Groundwater Dependent Ecosystems (**GDE**): “*The project will cause some increase in the total area of impact. Moreover, GDEs that are still present are likely to have been stressed by the existing drawdown*”.

194. The Commission notes that the Applicant disagreed with the IESC’s advice referenced above and noted:

...annual ecosystem monitoring undertaken at a potential GDE location along Big Flat Creek does not indicate any observable adverse impacts on the flora, despite the water table being drawn down below the root zone as a result of existing mining operations....

...groundwater modelling undertaken for the Project indicates that the existing groundwater drawdown in the upper strata that has occurred as a result of the current Mangoola Mine is unlikely to be materially exacerbated by the Project.

195. The Department’s AR stated that the combined groundwater take of the Project and the Existing Operations are likely to result in sustained lower groundwater levels in the locality for a long period of time (Department’s AR paragraph 6.7.40). Paragraph 6.7.41 of the Department’s AR stated:

Overall, while the Department considers that the Project would be unlikely to result in significant incremental impacts on GDEs in the short term, it believes that the Project would benefit from the adoption of detailed monitoring and response plans to track and manage potential impacts to GDEs over time. The Department considers that predicted indirect impacts on GDEs could be appropriately managed through a comprehensive monitoring regime and adaptive management measures, including specific trigger levels for remedial action and/or offsetting.

196. The Commission agrees with the Department above and finds that predicted indirect impacts on GDEs could be appropriately managed through a comprehensive monitoring regime and adaptive management measures.

Matters of National Environmental Significance

197. The Applicant's EIS Assessment of Commonwealth Matters (**ACM**), prepared by Umwelt, assesses the Project's potential impacts on MNES for listed threatened species and communities.

The Project's direct impacts on MNES are summarised in Table 6 below:

Table 6 - Direct biodiversity impacts on MNES (Source: Department's AR)

EPBC Act Species / Community	Direct Impact Area (ha)
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC)	24
Tarengo leek orchid (<i>Prasophyllum</i> sp. Wybong)	691 individuals
Regent honeyeater (<i>Anthochaera phrygia</i>).	147.97
Swift parrot (<i>Lathamus discolor</i>);	27.4
Grey-headed flying fox (<i>Pteropus poliocephalus</i>)	162.6

198. The Department's assessment of MNES is summarised below:
- the Project's impacts on the *White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland* CEEC habitat represents a very small proportion (0.0009%) of remaining habitat for this CEEC, when considered in the context of the broader range of the community in NSW (approximately 250,729 ha);
 - impacts on Tarengo leek orchids could be mitigated through the application of a translocation program in place under the Existing Approval and have been fully considered in the Applicant's proposed offset package;
 - it is considered unlikely that the clearance of approximately 148 ha of potential foraging habitat for the Regent honeyeater would result in significant impact on the population or long term survival of this species;
 - the Swift parrot has not been recorded within the Northern Extension Area or the immediate locality and would be unlikely to have a strong affiliation with the habitats that exist within the proposed disturbance area;
 - the Grey-headed flying fox has not been recorded within the Northern Extension Area or the immediate locality and would be unlikely to have a strong affiliation with the habitats that exist within the proposed disturbance area;
199. According to paragraph 6.7.56 of the Department's AR, the Applicant's ACM confirmed that the residual impacts of habitat loss associated with the *White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland* CEEC and Regent honeyeater, and the direct clearing of Tarengo leek orchids would be compensated for under the proposed Biodiversity Offset Strategy (**BOS**) and rehabilitation program.
200. The Commission agrees with the Department's assessment above and has given further consideration to biodiversity offsets below.

Biodiversity Offset Strategy

201. According to paragraph 6.7.59 of the Department's AR:

The BDAR indicates that the proposed additional Mangoola offset sites are strategically located such that the properties adjoin existing Mangoola Mine biodiversity offset areas and facilitate the expansion of a movement corridor linking offset and rehabilitation areas to the north and west.

202. Paragraph 6.7.59 of the Department's AR stated:

The Department endorses the location of the proposed additional offset areas and notes their proximity to existing local offsets, nature reserves and remnant vegetated ridgelines, as well as their location within a strategic biodiversity corridor identified by the NSW Government as a focus for the establishment of future connected conservation areas.

203. The Commission agrees with the Department above and endorses the location of the proposed additional offset areas. The Commission notes that the land based offset areas identified under the Existing Approval must be retired before the Existing Approval can be surrendered and the final rehabilitation of the Site would need to be incorporated into any development consent for the Project (see section 4.6.2).

204. The Commission notes that according to the BDAR, the Applicant would need to retire 17,718 ecosystem credits to account for clearing of native vegetation and associated fauna habitats and foraging resources. The Commission also notes that the Applicant would also need to retire 26,268 species credits, including 26,221 for flora species and 47 for fauna species (Department's AR paragraph 6.7.63). The Applicant's proposed method to satisfy the ecosystem and species credit requirements associated with the Project is set out in Table 16 of the Department's AR.

205. Paragraph 6.7.65 of the Department's AR states:

...the Department recognises that Glencore has exceeded the minimum offsetting requirements of the FBA by committing to retire all available credits for the Tarengo leek and Pine donkey orchids that would be generated from the offset properties. This approach would result in a significantly larger offset for these species than is required under the FBA and would provide a substantial and beneficial conservation outcome.

206. The Commission notes that there were concerns raised in public submissions and in Council's submission to the Commission regarding the impacts on orchid populations. The Commission agrees with the Department above and is of the view that the Applicant's approach to offsetting would provide a substantial and beneficial conservation outcome for the Tarengo leek and Pine donkey orchid species.

207. The Commission notes that the Applicant proposes to account for a small number of residual species credits (9 credits) required to compensate for impacts on the Southern myotis through payment into the Biodiversity Conservation Fund (Department's AR paragraph 6.7.69).

Commission Findings

208. The Commission agrees with the Department and is of the view that the Project has been designed to avoid, mitigate and manage biodiversity impacts where practicable. The Commission finds that where impacts to biodiversity would occur, sufficient ecosystem and species credits could be obtained and appropriately retired to sufficiently compensate for residual biodiversity impacts.

209. The Commission has imposed a range of biodiversity management conditions. Condition B53 imposed by the Commission sets out Biodiversity Credits required for the Project and condition B55 sets out specific requirements for the management of threatened species. The Commission has imposed condition B57 which requires the Applicant to prepare a Biodiversity Management Plan (**BMP**) to the satisfaction of the Planning Secretary. The Applicant will be required to include details of the biodiversity impact mitigation measures as part of the BMP. The Commission has also imposed condition B57(l)(ii) which requires the Applicant to identify the measures that would be implemented to ensure the continued implementation of the biodiversity offset and rehabilitation requirements identified under the Existing Approval with a particular focus on the re-establishment of significant and/or threatened plant species, including orchid species. Condition B59 imposed by the Commission requires the Applicant to implement the BMP as approved by the Planning Secretary. The Commission has also imposed condition B60 which requires the Applicant to lodge a Conservation Bond with the Department to ensure that the Biodiversity Offset Strategy is implemented in accordance with the performance and completion criteria in the BMP.
210. To ensure that predicted indirect impacts on GDEs are appropriately managed through a comprehensive monitoring regime and adaptive management measures, the Commission has imposed condition B50(v) which requires the preparation of a Groundwater Management Plan (**GMP**) as part of the WMP. The GMP will be required to include detailed baseline data of groundwater levels, yield and quality for groundwater resources and GDEs potentially impacted by the Application. The GMP will also be required to include a program to monitor and evaluate impacts on GDEs. Condition B52 imposed by the Commission requires the Applicant to implement the WMP including the GMP.
211. The Commission finds that with these measures in place, the Project could be undertaken in a manner that would result in acceptable short-term impacts on biodiversity and result in the recovery of biodiversity values in the medium to long term.

4.9.8 Final Landform and Rehabilitation

Final Landform

212. The Commission notes that under the Existing Approval, the Applicant is already approved to retain a 52 ha final void to the southwest of Anvil Hill. Paragraph 6.6.5 of the Department's AR states:
- The proposed final landform seeks to optimise the use of overburden recovered from the Northern Pit area by transferring around 50 Mbcm of overburden to the Mangoola Mine. In this way, while the Project would involve the retention of an additional final void in the landscape, the overburden recovered from the Project can be transferred to the Mangoola Mine site to assist in reducing the size of the final void that is already approved to be retained under PA 06_0014 and improve final landform drainage features*
213. The Commission notes that concerns were raised by the public (see paragraph 53 above), the Mining, Exploration and Geoscience division within the Department of Regional NSW (**MEG**) and the Resources Regulator (**RR**) regarding the need to retain two final voids as part of the final landform.
214. The Applicant commissioned Xenith Consulting to conduct an expert analysis of the final landform options (**Final Landform Analysis**) from a mining engineering perspective, and also commissioned IEMA to peer review the full scope of the Mine Plan Options Report (**Final Landform Peer Review**). The comparative analysis of alternative final landform scenarios is summarised in Table 13 of the Department's AR.

215. According to the Department's (AR paragraphs 6.6.9 and 6.6.10), the Applicant concluded:

... the retention of two final voids would result in an overall benefit by improving landform topography, relief and drainage. The alternative of creating a final landform with either no or one final void in the landscape would require the use of overburden that would otherwise have been used to create an undulating free draining landform. Importantly, should this occur, the resulting landform would have a reduced capacity for drainage and increased potential for ponding, and would result in a flatter and less visually variable landscape.

... the location of the final voids and highwalls would be in areas with minimal visibility from the public domain including Wybong Road.

216. The Commission notes that these outcomes are supported by the Final Landform Analysis. The Final Landform Peer Review also noted the preferred option is an improvement on the final void for the Existing Approval and the principles adopted by the Applicant are consistent with those for the Existing Operations (Department's AR paragraphs 6.6.10 and 6.6.11).
217. The Commission notes that the RR, in its submission on the RtS dated 23 January 2020, stated that sufficient information had not been provided regarding the various case options. The RR advised that it could not comment on the appropriateness of the preferred final landform. According to paragraph 6.6.15 of the Department's AR, the Applicant provided "*supplementary information to indicate the proposed highwall profile at the Northern Pit would be consistent with Mangoola Mine...and a commitment to review the use of berms in consultation with Resource Regulator*".
218. The Commission agrees with the Department (AR paragraph 6.6.17) and is of the view that the preferred option finds an appropriate balance between efficient mining operations and providing a safe and stable landform with suitable relief over the majority of the Site. The Commission has therefore imposed condition B85 which sets out rehabilitation objectives specific to the final voids. The Commission has imposed condition B88 which requires the preparation of a Rehabilitation Strategy in consultation with the RR and Council. Condition B90 imposed by the Commission requires the Applicant to implement the Rehabilitation Strategy as approved by the Planning Secretary. Condition B91 also imposed by the Commission requires the preparation of a Rehabilitation Management Plan in accordance with any relevant RR Guidelines. The Commission agrees with the Department (AR paragraph 6.6.16) and finds that the concerns raised by the RR in paragraph 217 above can be addressed as part of the mine closure process required under the Rehabilitation Strategy.

Rehabilitation

219. The Commission notes that the Applicant has rehabilitated approximately 490 ha of land as part of its Existing Operations. Rehabilitated areas were observed by the Commission at the Site Inspection. The Commission also notes that a number of submissions were received by the public supporting the Applicant's rehabilitation activities to date (see paragraph 52 above).
220. Paragraph 6.6.20 of the Department's AR states that the application of its recommended conditions pertaining to rehabilitation performance criteria and management plan requirements would adequately address the ongoing rehabilitation of areas disturbed by mining operations. The Commission agrees with the Department and has consequently imposed condition B85 which sets out rehabilitation objectives which must be consistent with the rehabilitation strategy required under condition B88 imposed by the Commission. As set out in paragraph 218 above, the Commission has also imposed condition B91 which requires the preparation of a Rehabilitation Management Plan.

221. The Commission notes that the Applicant has committed to remediate and rehabilitate those parts of Big Flat Creek impacted by the construction and operation of the haul road overpass. As set out in paragraph 156 above, the Commission has imposed condition B50(e)(iv) which requires the Applicant to prepare an updated Surface Water Management Plan. The Commission agrees with the Department's views expressed at AR paragraph 6.6.22 and has required the Applicant to include detailed plans and objectives for rehabilitation of the section of Big Flat Creek that would be impacted by the Project as part of the Surface Water Management Plan.
222. Paragraph 6.6.26 of the Department's AR states:
- ...the drainage lines within the Northern Extension Area have been designed to convey flows to the sediment basins constructed during mining operations to manage the potential for any erosion and offsite sedimentation risk. Rehabilitation of the final landform to replicate native woodland communities, with trees, shrubs and grasses would further stabilise the surface of the landform and enable effective controls of surface water flows without the need to use reinforced rock-lined drop structures. The progressive rehabilitation of the drainage lines and emplacements during mining operations would be monitored to determine the success of these features and ensure the final landform is stable and non-polluting.*
223. The Commission agrees with the Department above and has imposed condition B50 which requires the WMP to establish performance criteria for post-mining water pollution from rehabilitated areas of the site and a monitoring program to verify the ongoing success of these measures. The Commission is of the view that this will assist in ensuring that the objective of maintaining a non-polluting landform over the long term is achieved.

Final Land Uses

224. Paragraph 6.6.29 of the Department's AR states: "*...the Applicant is proposing to establish final land use outcomes for the project that are consistent with the existing Mangoola Mine. This includes an intention to return the majority of the site to rehabilitated woodland and open forest, with areas of native grassland that are capable of sustaining low intensity agricultural land uses such as grazing*".
225. The Commission notes that concerns were raised in submissions to the Department during exhibition and to the Commission regarding final landform and loss of agricultural land. The Commission also notes that Council raised concerns regarding the final landform in its submission to the Department dated 16 September 2019.
226. Paragraph 6.6.32 of the Department's AR states that in response to the concerns raised, the Applicant indicated that it intended to address these matters in line with the requirements of the Existing Approval, which requires detailed consideration of final land use options to be undertaken during the mine closure planning phase, which would commence approximately five years prior to the completion of mining operations.
227. The Commission notes that the Applicant has also committed to further refine and improve its final void management and final landform designs throughout the mine life, to reasonably minimise the extent of the final void and deliver a more natural appearance to the final landscape.

228. To ensure that these activities are undertaken, the Commission has imposed condition B88 which requires the Applicant to give specific consideration to mine closure, final landform and post-mining land uses as part of the Rehabilitation Strategy. Condition B90 imposed by the Commission requires the Applicant to implement the Rehabilitation Strategy. The Commission has also included specific Rehabilitation and Mine Closure Objectives in condition B85 of the consent. The Commission is of the view that the above conditions would be sufficient to ensure that mine closure planning is given appropriate consideration and is progressively reviewed and updated throughout the life of the Project. The Commission has also imposed these conditions to ensure that appropriate parties, including Council, are consulted as part of any final land use planning decisions.

4.9.9 Socio-Economics

229. The Applicant's EIS included an Economic Impact Assessment (**EIA**) prepared by Cadence Economics (**Cadence**). Paragraph 6.9.1 of the Department's AR states that this assessment has been prepared: "...in accordance with the NSW Guidelines for the economic assessment of mining and coal seam gas proposals 2015... and Technical Notes supporting the guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals (Technical Notes)".
230. The Commission notes that the EIA included a cost benefit analysis (**CBA**) that estimates the Project's net benefits to NSW and a local effects analysis (**LEA**) which considers the potential costs and benefits that may accrue to the Upper Hunter region.
231. The predicted benefits and costs are set out in Table 7 below:

Table 7 – Predicted Costs and Benefits of the Project (Source: Department's AR)

Aspect	Predicted costs and benefits \$ million (NPV)
Benefits to NSW	
Direct Benefits	
• Royalty payments	129.5
• Company Tax	43.5
Indirect Benefits	
• Benefit to NSW workers	107.6
• Benefit to NSW suppliers	129.0
Total Project Benefit	409.6
Costs to NSW	
• Loss of surplus to other industries	0.93
• Greenhouse Gas Emissions	0.031
• Transport	0.067
Incremental Indirect Cost	1.03
Net Benefit to NSW	408.6

Employment

232. The Commission notes that the NSW coal industry employs just over 22,700 people, with the Hunter Coalfield accounting for approximately half of the coal mining jobs in NSW. According to the Department's AR, the Project represents a secure employment opportunity for the continuation of mining jobs at the Site with up to 400 ongoing and 80 operational positions and 145 construction jobs (AR paragraph 3.2.7).

233. The Commission notes that there was considerable support for the Project in submissions due to the provision of jobs and potential positive impacts on the local economy as a result of the Project (see paragraph 44 above). The Commission also notes that there was criticism of the economic and employment benefits as a result of mining in submissions to the Commission (see paragraphs 45 and 46 above).

234. In assessing the benefits to NSW based workers, the Applicant's EIA states that:

To measure the opportunity cost compared to the non-mining sector, the wages earned by NSW-based Mangoola workers was compared to the average wage paid on average in NSW. This implies that should the approval not go ahead, those who would have been employed by Mangoola would find alternative work at the average wage paid in NSW.

235. The Australia Institute's submission to the Commission dated March 2021, raised concerns with the methodology used to determine worker benefits. The Australia Institute submission stated:

The approach taken by Cadence was to assume that workers in the Mangoola project would earn at least \$180,000 per year if the project proceeds (substantially above the average mining industry wage of 137,000 per year). On the other hand, if the project is not approved, workers would earn the average NSW wage of \$66,401 per year. This results in a present value benefit to these workers of \$107.6 million, more than a quarter of the total estimated net present value of the project.

This approach assumes that workers in mines are not compensated for their skills and qualifications, or for the disutility of working in mines. Cadence base this assumption on aspects of mining industry awards that suggest low additional loadings for "dirty work" in underground mines. This ignores the fact that these workers are already working in a mine, likely including overnight shift work, and not comparing their employment to working in an office or a café, which Cadence effectively does.

This approach of comparing (inflated) mining wages to NSW average wages is clearly contrary to NSW guidelines...

236. The Commission notes that Section 6.2 of the Economic Guidelines state:

The economic benefit to workers is the difference between the wage paid in the mining project and the minimum ... wage that the workers would accept for working elsewhere in the mining sector... The minimum wage reflects the employment opportunity costs, skill level required and the relative disutility of an employment position.

237. The Australia Institute's submission to the Commission, dated March 2021, also raised concerns with the methodology used to determine supplier benefits. The Australia Institute submission stated:

Under standard cost-benefit analysis assumptions, supplier benefits are taken to be zero, while the Cadence estimate in the Mangoola assessment is \$129 million. This is derived by assuming that 84 percent of mine inputs are sourced from NSW and applying an undisclosed (but approximately 20%) margin to \$757 million in mine spending.

238. The Commission notes that the Department has accepted the Applicant's EIA and that the Department is of the view that it has been prepared in accordance with the Economic Guidelines as referenced in paragraph 229 above. However, the Commission considers that the Australia Institute submission above has raised valid criticisms of the approach taken in the Applicant's EIA, that the worker benefits have been substantially overstated and have not been prepared in accordance with the Economic Guidelines as extracted in paragraph 236 above. The Commission is of the view that should mining cease at the Site, workers would likely gain employment elsewhere in the mining industry, noting that the Hunter Coalfield accounts for approximately half of the 22,700 coal mining jobs in NSW. In determining the economic benefit to workers, the Commission therefore finds that the methodology should compare opportunity costs based on the average mining industry wage rather than the average NSW wage. The Commission notes that the Department did not comment on this in the AR and that there is no guidance under the Economic Guidelines that supports the approach adopted in the EIA for employment salary comparison.
239. The Commission notes that the Applicant applied a similar logic to the calculation of supplier benefits and that the Australia Institute submission to the Commission has also raised valid criticisms of the approach taken in the Applicant's EIA. The Commission is of the view that local suppliers will earn similar margins relative to what they receive under the base case such that there are no additional benefits to suppliers in NSW. The Commission considers that the suppliers benefits in the Applicant's EIA have overestimated. The Commission notes that this methodology has received consistent criticism for overstating employee and supplier benefits. The Commission notes that the Department's AR stated that the Applicant's EIA was prepared in accordance with the Economic Guidelines.
240. For the reasons set out above, the Commission does not accept the Applicant's methodology and findings for benefits to NSW based workers. Notwithstanding, the Commission finds that although the worker and supplier benefits are overstated, the Project will have a positive economic impact in relation to employment through the provision of up to 400 ongoing positions, 80 operational positions and 145 construction jobs as referenced in paragraph 232 above. The Commission also acknowledges that a large portion of workers' salaries would be reinvested and circulated within the region and NSW more broadly and that this would have a positive economic contribution to the Upper Hunter Region and to NSW.

CBA Sensitivity Analysis

241. The Commission notes that the Economic Guidelines state that a discount rate of 7% per annum with sensitivity testing at 4% and 10% per annum should be used in the sensitivity analysis of the CBA. According to the Applicant's EIA, the Project is expected to generate \$408.6 million of net benefit using a 7% discount rate. Using a 4% discount rate increases the net benefit to \$515.5 million, conversely a 10% discount decreases the net benefit to \$327.1 million.
242. The Commission notes that to assist in the consideration of the Project's economic impacts, MEG has reviewed the EIA's estimated royalties and assumptions about future coal prices for thermal coal. Paragraph 6.9.10 of the Department's AR states: *"MEG identified that based on its consideration of realistic coal prices, the Project could be expected to deliver around \$35 million/year in royalties, equating to around \$160 million NPV over the life of the Project"*.

243. The Commission agrees with the Department (AR paragraph 6.9.8) and notwithstanding the Commission's findings in paragraphs 238 and 240 above, the Commission is of the view that the EIA sensitivity analysis adequately captures reasonable variability in long term coal prices. However, the Commission is of the view, elaborated further below, that the sensitivity analysis did not adequately address variability in the Project's costs.

Income Tax

244. In relation to company tax attributable to NSW, Section 2.4.2 of the EIA states:

A company tax rate of 30% is used to estimate the tax payments made to the Australian Government under the assumption that all the profit generated by the mine is subject to company tax in Australia (for example, ignoring financing costs).

...it is estimated the MCCO Project will generate \$419.7 million in total profit in NPV terms over the period 2019 to 2030. At a company tax rate of 30 percent, the company tax estimate is \$135.9 million in NPV terms, of which \$43.5 million is attributable to NSW.

245. The Commission acknowledges that the company tax attributable to NSW is based on the State's share of the national population, which is 32 per cent and that this is consistent with the Economic Guidelines.
246. According to the Australia Institute submission, the total tax payments from Existing Operations between 2013-2014 and 2018-2019 represents 13% of its taxable income. The Australia Institute is of the view, and the Commission agrees, that the approach taken by the EIA of applying a 30% tax rate to what it estimates as profit is likely to heavily overestimate this benefit.

Capital Expenditure

247. In relation capital expenditure, the Commission agrees with the Department that the Project represents a reasonable and efficient 'brownfield' extension of the existing coal mine, substantially using existing equipment and infrastructure that would enable its economic and beneficial reuse (Department's AR pg XIV). The Commission is of the view that the Project represents an orderly and economic use of land.

Predicted Costs

248. Paragraph 6.9.13 of the Department's AR states:

In total, the predicted incremental costs of the Project to the community of NSW are predicted to be in the order of \$1.03 million NPV and comprise:

- *\$0.93 million in lost agricultural output due to changes in land uses;*
- *scope 1 and 2 greenhouse gas emissions proportioned to NSW of \$0.03 million; and*
- *additional travel time for users of Wybong PO Road of \$0.067 million.*

249. In relation to GHG costing, the Applicant's EIA states:

The impact of GHG emissions are global in nature, as a result, apportioning the whole costs of CO₂e associated with the MCCO Project overstates the cost to NSW. To estimate the impacts on NSW, it is appropriate to apportion a component of the total global costs to NSW. The approach adopted is to apportion the global GHG costs estimated to NSW using the ratio of NSW population to global population.

On a global basis, the total estimated GHG cost is \$29.1 million in NPV terms, see Table 18. Attributing the GHG costs based on the NSW population, consistent with the Guidelines, results in an attributed GHG cost of \$0.03 million to NSW in NPV terms.

250. The Commission notes that the EIA multiplies the cost of climate impacts by the ratio of NSW population to global population. The Commission does not accept the methodology for calculating GHG impacts and costs referenced above. The Commission notes that this approach, in particular for addressing the costs of Scope 1 and 2 emissions, is not consistent with international rules, as these emissions are entirely accounted for where they are generated and emitted (i.e. in NSW) and by the emitting entity. The Commission has therefore disregarded the EIA's estimate of the indirect cost of fugitive emissions and is of the view that that all Scope 1 and Scope 2 emissions should be fully costed in the economic analysis because they are emitted in NSW, and therefore attributable to NSW and the Project. The Commission finds that the total estimated GHG cost attributable to the Project is \$29.1 million in NPV terms as stated by the Applicant in paragraph 249 above. Furthermore, as mentioned above, the EIA's sensitivity analysis fails to consider potential variation in the cost and impacts of GHG emissions, which the Commission notes may increase over the life of the Project. This total estimated GHG cost does not however, under current policies and regulatory frameworks, in the Commission's view materially alter the Project's net benefit to NSW.
251. The Commission has given consideration to the economic impacts as a result of additional travel time for users of Wybong PO Road and the loss of agricultural output due to changes in land uses. The Commission is of the view that the \$1 million cost estimated in the EIA associated with these impacts would not significantly alter the Project's net benefits to NSW. The Commission has given consideration to these costs when weighing the impacts and benefits of the Application.
252. The Commission notes that the Applicant has advised that around 73% of current employees at the Mangoola Mine live within the Muswellbrook and Upper Hunter LGAs and approximately 84% of the Mangoola Mine inputs are sourced from NSW-based supplier (Department's AR paragraph 6.9.30). The Commission agrees with the Department and is of the view that this is an appropriate basis for assessing the likely workforce distribution. The Commission acknowledges the Applicant's commitment to continuing to aim to use reasonable endeavours to source its workforce from the local area.
253. The Commission also notes that mitigation costs for landholders (i.e. as required by the VLAMP and AIP) had been included in the CBA in accordance with the Economic Guidelines, including a range of costs associated with mitigation measures at nearby residences in response to noise impacts (Department's AR paragraph 6.6.31). The Commission is of the view that these costs have been appropriately considered.

Social Impacts

254. The Commission notes that the EIS included a Social Impact Assessment (**SIA**) prepared by Umwelt. The Department states that the SIA was prepared in accordance with the SIA Guideline (AR paragraph 6.10.1).
255. Paragraph 6.10.8 of the Department's AR states:
- The SIA identified that those landholders located closest to the Project (ie in the areas of Mangoola, Castle Rock, Wybong and Manobalai) perceived the Project as likely to result in negative social outcomes, principally related to:*
- *environmental, amenity, health and wellbeing impacts related to air quality, noise, blasting, visual, water and transport impacts;*
 - *personal and property rights; and*
 - *impacts on rural lifestyle and sense of community.*

256. The Commission notes that concerns were raised at the Public Hearing and in submissions to the Commission regarding the impacts of the Project on property value, and the ability for owners to sell their properties.
257. Paragraph 6.10.12 of the Department's AR states:
...the Department notes that the NSW Land and Environment Court has consistently held that concerns regarding property devaluation can be given little weight in the absence of supporting evidence and the EP&A Act does not provide any compensation mechanism for development which is permissible under relevant planning controls.
258. According to paragraph 6.10.14 of the Department's AR, the SIA concluded:
...mining operations have the potential for both positive and negative impacts on property values and did not find evidence to support assertions that the Project would detrimentally impact property values. In particular, this analysis found that there were no discernible property value impacts on surrounding properties that met relevant assessment criteria (ie noise and air quality)
259. The Commission also notes that properties subject to exceedances of the relevant noise and air quality assessment criteria would also be afforded appropriate protection from reductions in property values through application of the VLAMP (i.e. application of voluntary mitigation and acquisition rights – which include a compensation component).
260. A public submission made to the Commission was accompanied by a property valuation report which identified a negative impact on the value of the submitter's property located to the north of the Site as a result of the Existing Operations and the Project. The Commission notes that according to the valuation report the impact on property value attributable to the Existing Operations and the Project is estimated as a 26% reduction. The Commission notes that this valuation report attributes a portion of the decrease in property value to established mining operations under the Existing Approval. The Commission finds that the Project has the potential to impact property values and has given this consideration when weighing the costs and benefits of the Project. The Commission is of the view that adverse effects on property values are also likely to be as a result of amenity and other environmental impacts resulting from the Project. The Commission has given consideration to these impacts in this Statement of Reasons and where appropriate, has recommended conditions of consent to minimise and mitigate further impacts. The Commission notes that mining is a transitional land-use and that under the imposed conditions of consent, there are strategies and objectives in place specific to rehabilitation, mine closure and final landform. The Commission is of the view that this will assist in ensuring that the medium to long term impacts of the Project on the Site and surrounding area are managed. The Commission also notes that the EP&A Act does not provide any compensation mechanism for development which is permissible under relevant planning controls as stated by the Department above in paragraph 257.
261. The Commission notes that the Applicant has proposed to develop a Community Enhancement Program. According to the Applicant's RtS, the key objectives of the Community Enhancement Program would include:
- *working collaboratively with near neighbours/proximal landholders to develop environmental and community benefits for the Wybong district that enhance local values of the area*
 - *facilitating enhancement initiatives for those residents living in the management zone*
 - *addressing perceived issues relating to property devaluation given close proximity to the mining operation*

- *contributing to the local community and better targeting community investment spend locally.*
262. The Commission finds that the Community Enhancement Program with these objectives would assist in addressing concerns regarding the social impacts of the Project.
263. As stated in paragraph 98 above, the Commission notes that the Applicant has entered into an existing VPA with Council for the Existing Approval. The Commission notes that the Applicant has offered terms for a new VPA to Council and that Council has not accepted those terms of offer. As stated in paragraph 100 above, the Commission has imposed condition A18 which states that if the Applicant and Council do not enter into a VPA within the timeframe set under condition A17, then within a further three months, the Applicant must make a section 7.12 EP&A Act contribution to Council of \$525,688.
264. The Commission notes (Department's AR paragraph 6.10.30) that the Applicant has proposed to develop and implement a Social Impact Management Plan (**SIMP**) to:
- *identify opportunities to enhance positive social and economic impacts while mitigating the negative impacts;*
 - *describe adaptive management and mitigation strategies that would be applied for the Project;*
 - *identify appropriate stakeholder responsibilities;*
 - *monitor, report and review on the outcomes of the plan; and*
 - *outline an engagement process to collaborate with the community and record their observations and experiences.*
265. The Commission agrees with the Department (AR paragraph 6.10.31) and is of the view that the SIMP is "*an important part of continuing to work with the community to implement the proposed mitigation strategies and monitor the effectiveness over time and has recommended a condition to give effect to this commitment*". The Commission has therefore imposed condition B108 which requires the Applicant to prepare a SIMP in consultation with Council, the CCC, local affected communities and other interested stakeholders. Condition B110 imposed by the Commission requires the Applicant to implement the SIMP as approved by the Planning Secretary. The Commission is of the view that this is appropriate in ensuring that social impacts are monitored and appropriately managed throughout the life of the Project.

Commission's Findings

266. As set out above, the Commission does not accept the Applicant's methodology in determining the benefits to NSW based workers or supplier benefits, finding them to be significantly overstated.
267. As set out in paragraph 250 above, the Commission does not accept the Applicant's methodology for calculating GHG costs. The Commission has therefore disregarded the EIA's approach to the allocation of the costs of fugitive emissions and the Commission is of the view that that all fugitive Scope 1 and Scope 2 emissions should be fully costed in the economic analysis because they are emitted in NSW, and therefore attributable to NSW. The Commission accepts that the total estimated GHG cost attributable to the Project is \$29.1 million in NPV terms and the Commission has given consideration to these costs when weighing the impacts and benefits of the Application.
268. The Commission is of the view that the \$1 million cost associated with the additional travel time for users of Wybong PO Road and lost agricultural output due to changes in land uses would not significantly alter the Project's net benefits to NSW.

269. Notwithstanding, the Commission finds that although the Project's benefits are substantially overstated, the Project will have a net positive economic impact in relation to employment through the provision of up to 400 ongoing positions, 80 operational positions and 145 construction jobs as referenced in paragraph 232 above. For the reasons set out above, the Commission is of the view that the benefits resulting from the Project are likely less than half of those stated in Table 7 above.
270. The Commission is of the view that overall the Project represents a reasonable 'brownfield' extension of the existing Mangoola Mine that would enable the economic and beneficial reuse of existing infrastructure. The Commission is of the view that the Project represents an orderly and economic use of land.
271. The Commission notes that a VPA has not yet been agreed upon and has therefore imposed condition A18 which states if the Applicant and Council do not enter into a VPA within the timeframe under condition A17, then within a further three months, the Applicant must make a contribution to Council of \$525,688.
272. The Commission notes that many submissions expressed concerns in relation to property values and noise and air quality impacts which have the potential to affect people's health and wellbeing, both directly and indirectly. The Commission notes that although the air quality and noise impacts may comply with regulatory requirements, the Commission acknowledges that they may still be perceptible by and of concern to local residents. The Commission is of the view that the Applicant's proposed Community Enhancement Program would assist in addressing concerns regarding the social impacts of the Project, including property devaluation for the reasons set out above (paragraphs 261 and 262 above). To ensure that social impacts are monitored and appropriately managed throughout the life of the Project, the Commission has imposed condition B108 which requires the Applicant to prepare a SIMP in consultation with Council, the CCC, local affected communities and other interested stakeholders. Condition B110 imposed by the Commission requires the Applicant to implement the SIMP as approved by the Planning Secretary.
273. Overall, the Commission finds that on balance and when weighed against the impacts, the Project would generate net positive social and economic benefits for the local area, Hunter region and to NSW through continued employment opportunities, royalties and tax revenue.

4.9.10 Other Issues

Traffic and Transport

274. The Commission notes that the EIS includes a Traffic and Transport Impact Assessment (TTIA) by GHD which investigated the potential impacts of the Project. Paragraph 6.5.10 of the Department's AR states that the TTIA was prepared in accordance with the RMS *Guide to Traffic Generating Developments*, Austroad's *Guide to Road Design* and *Guide to Traffic Management*.
275. The Commission notes that the Existing Approval restricts the transport of product coal from the Site to the existing rail loop only, with no road transport of coal permitted. The Existing Approval also permits up to 20 train movements per day which would remain unchanged under the proposed Project (Department's AR paragraph 6.5.1).

276. The Commission notes that the Project would require the closure of a 2.7 km section of Wybong PO Road from its intersection with Wybong Road and that the Applicant proposes to realign Wybong PO Road to traverse the western boundary of the Northern Extension Area adjacent to the realigned 500 kV transmission line easement. The Commission acknowledges that concerns were raised by Council and in public submissions regarding the potential impacts of increased traffic movements and associated impacts to travel time due to the realignment of Wybong PO Road. The Commission observed the indicative location of the road realignment at the Commission's site inspection.
277. The Commission has given consideration to the environmental, economic and social impacts of the realignment throughout this Statement of Reasons. The Commission agrees with the Department noting that Wybong PO Road is not heavily trafficked and that alternate routes to Wybong Road are available for nearby residents and that the potential future upgrade of Yarraman Road by Council is yet to be endorsed or approved (Department's AR paragraph 6.5.28). The Commission has therefore imposed condition B102 which states that prior to undertaking mining operations within 200 m of Wybong PO Road, unless otherwise agreed to by the Planning Secretary, the Applicant must close the affected section of Wybong PO Road and either realign the affected section of Wybong PO Road or provide a financial contribution to Council at least equivalent to the cost of the works of the realignment.
278. In relation to construction traffic, the Commission notes that the Project is not seeking to change the currently approved maximum production rate (i.e. 13.5 Mtpa) or existing approved operational workforce numbers. The Commission agrees with the Department and is satisfied there would be no increase in operational traffic volumes compared to those permitted under the Existing Approval. The Commission notes that the Project would extend the duration of mining activities by up to 13 months. The Commission is of the view that this can be appropriately managed by imposition of condition B104, which requires the Applicant to prepare a Traffic Management Plan in consultation with TfNSW and Council. Condition B107 imposed by the Commission requires the Applicant to implement the Traffic Management Plan as approved by the Planning Secretary
279. The Commission notes that the Project would require the construction of a private haul road overpass of Big Flat Creek and Wybong Road in order to provide access between the Approved Project Area and the Additional Project Area. The Commission notes that in response to comments from Council, the Applicant has increased the clearance height of the overpass to accommodate the specifications of oversized vehicles that can currently use the road (Department's AR paragraph 6.5.44). The Commission agrees with the Department and is satisfied that the revised design of the haul road overpass would maintain the ability of Wybong Road to accommodate the passage of heavy vehicles (and not cause any significant impacts to traffic flows, subject to the implementation of traffic controls to be described in the Traffic Management Plan required under condition B104 imposed by the Commission).
280. In relation to road safety, the Commission notes that the TTIA concluded that there are no significant safety deficiencies in the road network near the Project-related intersections (Department's AR paragraph 6.5.48). The Commission notes that the Applicant will be required to implement safe driving practices and training for its employees and will be required to minimise traffic safety issues under the Traffic Management Plan.
281. Overall, the Commission agrees with the Department and is of the view that the traffic and transport aspects of the Project can be managed through the implementation of the comprehensive monitoring and management measures required by the conditions imposed by the Commission.

Visual Impacts

282. The Commission agrees with the Applicant's EIS and the Department's Assessment that the Project would not be visible from private residences and would not result in any direct material impact to the visual amenity of private receivers (Department's AR Table 23).
283. The Commission notes that the Project would be visible from the surrounding road network. The Commission agrees with the Department and supports the Applicant's commitments to progressively rehabilitate overburden emplacement areas to reduce visual impacts, undertake planting for the purposes of visual screening along Wybong PO Road and Ridgeland Road and also to construct a visual bund along Wybong Road.
284. The Commission finds that with these mitigation measures in place, on balance, the visual impacts associated with the Project are acceptable and would be appropriately managed. The Commission has therefore imposed conditions B74 and B75 to ensure that the Applicant takes all reasonable steps to minimise the visual impact of the Project and to ensure that specific measures to be implemented are set out in a Visual Impact Management Plan. To further ensure that visual impacts at private receivers are minimised, the Commission has imposed condition B73 which requires the Applicant to implement additional reasonable and feasible visual impact mitigation measures if requested by receivers listed in condition B73, Table 8. Condition B76 and B78 imposed by the Commission requires the Applicant to prepare and implement a Visual Impact Management Plan as approved by the Planning Secretary.

Lighting

285. The Commission notes that the existing infrastructure operating in the Approved Project Area is located with 200km of the Siding Springs Observatory and that no changes are proposed to the existing approved lighting arrangements.
286. The Commission agrees with the Department that through a combination of distance, screening effects and the proposed mitigation measures, the Project would result in minimal lighting impacts to private receivers and the Observatory (Department's AR Table 23).
287. The Commission has imposed condition B74 which requires the Applicant to take all reasonable steps to minimise the off-site lighting impacts of the Project. The Commission has also imposed condition B75 which requires the Applicant to set out the measures to be implemented to minimise and manage off-site lighting impacts.

Historic Heritage

288. The Applicant's EIS included a Historic Heritage Assessment (**HHA**). The Commission notes that no items of historic heritage significance were identified within the Northern Extension Area as stated by the Department in Table 23 of the Department's AR. The Commission acknowledges that the nearest historic heritage items are located 1,680m and 3,490m from the Northern Extension Area and that the potential impacts to these sites from the Project's blasting operations are well below the relevant impact criteria. The Commission therefore finds that the Project would have negligible impact on historic heritage.
289. The Commission notes that the Applicant has proposed to continue to implement the Conservation Management Strategy for the Existing Operations, which includes protocols in the event of unexpected finds. The Commission notes that Heritage NSW supports these proposed measures and the Commission has therefore imposed conditions B71 and B73 which require the preparation and implementation of a Heritage Management Plan to the satisfaction of the Planning Secretary.

Bushfire

290. The Commission notes that parts of the Additional Project Area contain bushfire prone land (including areas that are currently cleared or proposed to be cleared of vegetation), as identified by Council's Bushfire Prone Land map. The Commission notes that the Applicant has committed to continue managing bushfire risk through a revised Bushfire Management Plan. The Commission agrees with the Department in Table 23 of the AR and is of the view that the following bushfire management procedures would be reasonable to respond to bushfire risks in the surrounding area: *"identifying asset protection and buffer zones, maintaining existing roads and fire trials, ensuring there is sufficient water available for a bushfire response, and establishing an emergency management procedure in the event of a bushfire event"*.
291. The Commission has therefore imposed condition B82 which requires the Applicant to implement asset protection zones in accordance with the *Planning for Bush Fire Protection 2019* guideline, ensure there is suitable firefighting equipment available on Site and assist the RFS and emergency services in the event of a bushfire emergency. The Commission has also imposed conditions B83 and B84 which require the Applicant to prepare and implement a Bushfire Management Plan for the Project in consultation with RFS, giving specific consideration to on-site biodiversity offset areas.

Hazards and Waste

292. The Commission notes that the Project is predicted to generate waste streams during the construction and operational phases, including concrete and steel waste from construction. The Commission notes that the Applicant currently implements a Waste Management Plan for the Existing Operations and proposes to revise and extend this plan to incorporate the Project. The Commission agrees with the Department in Table 23 of the AR and is of the view that the Applicant's proposed waste management practices would ensure that waste is minimised and re-used, recycled or disposed of appropriately. The Commission has therefore imposed condition B79 which requires the Applicant to take reasonable steps to minimise the waste (including coal rejects and tailings) generated by the development and to ensure that all waste is disposed of at appropriately licensed waste facilities.
293. The Commission notes that the Applicant's Preliminary Hazards Analysis (PHA) identified that if explosive materials were stored a minimum of 500 m from off-site land users then there would be no off-site impacts of an explosive incident and that a buffer of at least 1000 m would ensure that no off-site impacts would result from any fire incident from the storage of explosive materials. The Commission notes that the Applicant's PHA concluded that the Project would not be defined as hazardous under SEPP 33. The Commission agrees with the Department in Table 23 of the AR that with the implementation of appropriate buffers, any off-site impacts would be very unlikely to occur. The Commission has imposed condition B81 which states that the Applicant must ensure that the storage, handling, and transport of dangerous goods and explosives is undertaken in accordance with the relevant standards and requirements.

4.10 Objects of the EP&A Act and Public Interest

4.10.1 Objects

294. The Commission has assessed the Project against the relevant Objects of the EP&A Act in this Statement of Reasons, as summarised below.
- (c) ***to 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.***
- (d) ***to promote the orderly and economic use and development of land.***

295. The Commission agrees with the Department's assessment in Table F1 of the Department's AR and is of the view that the extraction of coal as part of the Project is an orderly and economic use of the land. The Commission finds that the Project will provide ongoing socio-economic benefits to the people of NSW and employment opportunities for the members of the local community.
- (b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.**
296. The Commission agrees with the Department's assessment in Table F1 of the Department's AR and is of the view that the Project can be carried out in a manner that is consistent with the principles of ESD as set out in paragraph 300 below.
- (e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.**
- (f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).**
297. The Commission agrees with the Department's assessment and is of the view that the Project avoids and minimises, to the greatest extent practicable, impacts on threatened species and communities and key habitats. The Commission is of the view that the Project's impacts on Aboriginal cultural heritage are likely to be minimal and could be suitably managed.
- (i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State;**
- (j) to provide increased opportunity for community participation in environmental planning and assessment.**
298. The Commission notes that the Department has consulted with Council and other relevant NSW Government authorities and has given consideration to the issues raised by these agencies in the Department's assessment. The Commission notes that the Department publicly exhibited the Application and the Commission has held a Public Hearing to hear the public's views on the Project.
299. For the reasons set out above, the Commission is of the view that the Project is in accordance with the Objects of the EP&A Act.

Ecologically Sustainable Development

300. The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*, as follows:
- ecologically sustainable development requires the effective integration of social, economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:*
- (a) the precautionary principle...*
- (b) inter-generational equity...*
- (c) conservation of biological diversity and ecological integrity... and*
- (d) improved valuation, pricing and incentive mechanisms.*
301. The Commission has considered the principles of ESD in its determination as set out below.
- (a) the precautionary principle**

302. The Commission finds that the precautionary principle has been appropriately applied through the application of mitigation and management measures set out in the Application, the Department's AR and the recommended conditions of consent. The Commission has proposed additional measures as set out in this Statement of Reasons to further mitigate the impacts of the Project.

(b) inter-generational equity

303. The Commission has considered inter-generational equity in its assessment of the potential environmental, social, and economic impacts of the Project, including by imposing conditions seeking to mitigate the potential long-term environmental impacts of the Project and providing for appropriate post-closure rehabilitation of the Site.

(c) conservation of biological diversity and ecological integrity

304. The Commission acknowledges that the Project does require the direct destruction and removal of native vegetation and fauna habitat. However, the Commission is of the view that the Project has been designed to avoid, mitigate and manage biodiversity impacts where practicable. The Commission finds that where impacts to biodiversity would occur, sufficient ecosystem and species credits could be obtained and appropriately retired to sufficiently compensate for residual biodiversity impacts. The Commission finds that any potential impacts would be reasonably mitigated and/or offset to enable acceptable long-term biodiversity outcomes to be achieved for the region. The Commission finds that the conservation of biological diversity and ecological integrity can be achieved through avoiding, minimising and offsetting biodiversity impacts.

(d) improved valuation, pricing and incentive mechanisms

305. Notwithstanding the concerns raised by the Commission in relation to the overstatement of worker and supplier benefits, the GHG costs attributable to the Project and the Project's social impacts, the Commission finds that on balance and when weighed against the impacts under the current policy and regulatory framework, the Project would generate net positive social and economic benefits for the local area, Hunter region and to NSW.

306. In summary, the Commission finds that the Project is not inconsistent with ESD principles, because the Project, if approved, would achieve an appropriate balance between relevant environmental, economic and social considerations.

4.10.2 Public Interest

307. A summary of the Commission's community participation and public submission process is set out in section 3 of this Statement of Reasons. Through the Public Hearing and submissions process, the Commission received a large volume of submissions on the Project which are summarised in section 3.3. Consideration has been given to these submissions in the Commission's determination of the Application as set out particularly in the Key Issues section of this report (see section 4.9).

308. The Commission finds that on balance, and when weighed against current policy and regulatory frameworks, the objects of the EP&A Act, ESD principles and socio-economic benefits, that the impacts associated with the Project are acceptable and overall, the Project is broadly in the public interest. The Commission finds that the matters raised in the submissions made to it can be satisfactorily addressed by the conditions of consent imposed by the Commission.

309. For the reasons set out above, the Commission is of the view that approval of the Project is in accordance with the EP&A Act and is in the public interest.

5 THE COMMISSION'S FINDINGS AND DETERMINATION

310. The views of the community were expressed through public submissions and comments received (as part of exhibition and as part of the Commission's determination process), as well as in oral presentations to the Commission at the Public Hearing. The Commission carefully considered all of these views as part of making its decision.
311. The Commission has considered the Material before it as set out in section 4.5 above. Based on its consideration of the Material, the Commission finds that the Project should be approved subject to conditions of consent for the following reason:
- the Project is a legal and appropriate use of the land under the applicable EPIs;
 - the Applicant will be required to comply with operational noise criteria and specific operating conditions;
 - the potential air quality impacts have been adequately assessed and can be adequately managed through the implementation of mitigation, monitoring and management measures required under the conditions of consent;
 - GHG emissions for the Project have been adequately estimated and are permissible in the context of the current climate change policy framework;
 - blasting activities can meet airblast overpressure and ground vibration criteria at privately-owned residences, Aboriginal rock shelters and at heritage sites;
 - the Project has been designed to avoid, mitigate, manage and offset biodiversity impacts where practicable;
 - the preferred final landform finds an appropriate balance between efficient mining operations and providing a safe and stable landform with suitable relief over the majority of the Site;
 - the Applicant has rehabilitated approximately 490 ha of land as part of its Existing Operation and that the imposed conditions pertaining to rehabilitation performance criteria and management plan requirements would adequately address the ongoing rehabilitation of areas disturbed by mining operations;
 - while employment and supplier benefits have been overstated, the Project is projected to generate net social and economic benefits for the local area, Upper Hunter region and to NSW. This includes up to 400 ongoing and 80 operational positions and 145 construction jobs and royalty payments up to \$129 million NPV;
 - the Project represents a reasonable 'brownfield' extension of the existing coal mine that would enable the economic and beneficial reuse of existing infrastructure and therefore the Project represents an orderly and economic use of land;
 - the Project will not present significant additional adverse visual impacts, particularly with implementation of the proposed visual mitigation measures. The Applicant will also be required to take all reasonable steps to minimise the visual and off-site lighting impacts of the development;
 - the Site is suitable for the development;
 - the Project is in accordance with the Objects of the EP&A Act;
 - the Project is not inconsistent with ESD principles, because it would achieve an appropriate balance between the relevant environmental, economic and social considerations; and
 - the Project is in the public interest.
312. For the reasons set out in paragraph 311 above, the Commission has determined that the consent should be granted subject to conditions. These conditions are designed to:
- prevent, minimise and/or offset adverse environmental impacts;

- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the development.

313. The reasons for the Decision are given in this Statement of Reasons for Decision dated 26 April 2021.

A handwritten signature in black ink, appearing to read "Snow Barlow", with a horizontal line underneath the name.

Professor Snow Barlow (Chair)
Member of the Commission

A handwritten signature in black ink, appearing to read "Peter Cochrane".

Peter Cochrane
Member of the Commission

APPENDIX A

Table 8 - Main Components of the Project (Source: Department's AR)

Aspect	Existing Approval	The Project
<i>Total Recoverable Reserve</i>	150 million tonnes of ROM coal	52 million tonnes of additional ROM coal
<i>Extraction Rate</i>	Maximum of 13.5 Mtpa ROM coal	No change
<i>Disturbance Area</i>	Approximately 2,294 hectares (ha)	Approximately 623 ha of additional disturbance
<i>Life of Mine</i>	21 years from approval of Mining Lease 1626 (ie until November 2029)	An approximate one year extension to the existing mine life, until December 2030 (representing 8 years of mining in the Northern Pit if mining commences in 2022)
<i>Mining Methods</i>	Open cut mining using truck and excavator	No change
<i>Mine Infrastructure and Equipment</i>	Mine infrastructure includes: <ul style="list-style-type: none"> - CHPP; - stockpiles; - train loading facilities - administration and amenities buildings - workshops; and pipelines and power systems.	Continued use of existing mine infrastructure Construction of a haul road overpass over Wybong Road and Big Flat Creek. Construction of additional water truck fill points Ongoing relocation of mining support infrastructure as mining progresses
<i>Operating Hours</i>	24 hours per day, 7 days per week	No change
<i>Operational Employees</i>	Up to 540 full time equivalent (FTE) employees (annual variation of employee numbers based on operations, currently 400 FTE employees)	Continued employment of existing Mangoola Mine employees, with peak employment of 480 operational employees
<i>Construction Employees</i>	200 construction employees	145 construction employees
<i>Blasting</i>	A maximum of 2 blasts per day and 6 blasts per week (when averaged over a calendar year). Blasting may occur between 9 am and 3 pm Monday to Saturday (Blasting until 5 pm approved by EPA). Blasting is not permitted on Sundays or public holidays.	No change in blast frequency or restrictions on blasting on Sundays and public holidays. Blasting proposed to occur between 9 am and 5 pm Monday to Saturday.
<i>Rehabilitation and Final Landform</i>	Development of a final landform incorporating appropriate natural landform design principles. Retention of a 52 ha final void. Progressive rehabilitation of the site including establishment of woodland habitat and native grassland areas.	Development of a final landform incorporating appropriate natural landform design principles. Overburden material to be distributed between the Northern Pit and Mangoola Mine. Retention of an 82 ha void in the Northern Pit and a 48 ha void at the existing Mangoola Mine. Progressive rehabilitation of the site including establishment of woodland habitat and native grassland areas.
<i>Tailings and Rejects</i>	Tailings emplaced in approved tailings dams. Coarse reject disposal within overburden emplacement areas.	No change in tailings or coarse reject management. Approved tailings dams have capacity to accommodate additional tailings streams.

<i>Transport</i>	Rail transport of product coal from Mangoola train loading facility, up to 10 trains per day.	No change
<i>Site Access</i>	Mine access from Wybong Road. Mine related traffic not to use Reedy Creek Road, Mangoola Road, Roxburgh Road or Castlerock Road.	No change in primary road transport arrangements. Realignment (or closure) of a section of Wybong Post Office Road (Wybong PO Road). Additional access via Wybong PO Road and Ridgeland Road for construction activities, environmental monitoring and property management.
<i>Power</i>	11 kilovolt (kV) powerlines located outside of existing mining areas, servicing mine-owned and private properties.	Relocation of sections of 11 kilovolt (kV) powerlines to remain outside the proposed Northern Extension Area.
<i>Water Management</i>	Mine water management system involving dams and pipelines. Approval to discharge excess water to Hunter River through Hunter River Salinity Trading Scheme (HRSTS). Water abstraction as required as authorised by water licences.	Continued use of existing water management infrastructure and HRSTS discharge point. Construction of additional water management infrastructure including mine water and sediment dams, flood protection from Big Flat Creek and mine water reticulation system.
<i>Gravel</i>	Crushing of 50,000 tonnes (t) per year of gravel for operational requirements.	No change to existing gravel crushing rates during operations Short term increase in gravel crushing of up to 200,000 t for construction. If not sourced on-site, gravel may be imported via truck along Wybong Road and the Mangoola Site Access road.