MANGOOLA
OPEN CUT

GLENCORE

5 March 2021

Commissioner Prof. Snow Barlow
Commissioner Peter Cochrane
Office of the Independent Planning Commission
201 Elizabeth Street
Sydney NSW 2001
Via email to: ipcn@ipcn.nsw.gov.au

Dear Commissioners,

Re: Response to Questions from Applicant Meeting - Mangoola Coal Continued Operations Project (SSD-8642)

On the 23 February 2021 a meeting was held between Mangoola Coal Operations Pty Limited (the Applicant) and the Independent Planning Commission (IPC) Panel. In response to this meeting, on the 25 February 2021 the IPC provided some questions, via email, requiring clarification by the 5 March 2021 (inclusive of one day extension). This correspondence addresses those questions.

1. **Have the nest boxes installed in previously rehabilitated areas been utilised by Swift Parrots? (*pg12 of transcript*)**

   The presence of the Swift Parrot has not been recorded at Mangoola (nor within areas of surrounding habitat) despite extensive survey efforts conducted as part of various biodiversity assessments for approvals and during operational monitoring. It has not been recorded in nest boxes at the site.

   The Swift Parrot breeds (and nests) in Tasmania during the warmer months and migrates north to parts of south eastern Australia during the winter to forage.

2. **Can you provide further clarity on 'success criteria' for rehabilitation?**

   As you would have seen firsthand on the IPC panel site inspection and locality tour earlier this week, Mangoola has industry leading rehabilitation practices with many examples of what can be considered a success. As requested during the IPC panel site inspection and locality tour a copy of the published journal article titled '*Translocation of threatened terrestrial orchids into nonmined and post-mined lands in the Hunter Valley of New South Wales, Australia*' (Bell 2020) can be obtained from https://onlinelibrary.wiley.com/doi/epdf/10.1111/rec.13224. Bell 2020 describes what is the largest known orchid translocation program (and the only one translocating into mine rehabilitation) involving the progressive re-location and monitoring of 3,030 mature orchids (*Diuris tricolor* and *Prasophyllum petilum*) into biodiversity offsets and mine rehabilitation.

   Further information regarding our innovatory rehabilitation methodologies and the success of our rehabilitation can be viewed in our short documentary available on the home page of the Mangoola website.

Mangoola's existing Project Approval (PA) 06_0014 includes specific rehabilitation objectives (Schedule 3, Condition 58) and the requirement for the development of a Rehabilitation Management Plan (Schedule 3, Condition 60). These requirements have been incorporated into the Mangoola Mining Operations Plan (MOP) prepared in accordance with the Department of Trade and Investment, Division of Resources and Geoscience's *ESG3 – Mining Operations Plan Guidelines* (DRG 2013) and to address conditions of Mining Lease (ML) 1626 and ML 1747 as granted under the *Mining Act 1992*. Should further detail be required the Mangoola MOP is available on the Mangoola website at https://www.glencore.com.au/operations-and-projects/coal/current-operations/mangoola-open-cut/approvals-documents.

The MOP includes performance indicators and completion criteria which are representative of the current knowledge from monitoring data and operational experience relating to the proposed final landform at Mangoola. These indicators and criteria will be refined over time as more information is obtained from monitoring programs or knowledge gained from industry and operational experience.

Mangoola conducts monitoring programs on both analogue and rehabilitated sites. This information is presented in the Annual Review (required as per PA 06_0014 Schedule 5, Condition 6) and is available on the Mangoola website. Data from this monitoring program will be used as the mine progresses towards closure to further refine the specific performance indicators where knowledge gaps exist to develop measurable relinquishment criteria. The refinement of these indicators and criteria will be conducted in consultation with relevant stakeholders in accordance with Project Approval requirements. Monitoring undertaken to date against the current performance criteria contained within the MOP indicates that the site has either met or is trending towards meeting criteria.

Specifically for the MCCO Project the Biodiversity Assessment contained draft completion criteria for the ecological rehabilitation proposed as part of the Project. These can be found in Section 7.4.3 of the Biodiversity Assessment Report which was Appendix 13 of the EIS.

Should the MCCO Project be approved the Mangoola MOP will be updated in line with the requirements of the proposed conditions of SSD 8642 and will incorporate completion criteria for the MCCO Additional Project Area.

3. **Slide 26 of the presentation states that 91% of Scope 1 emission occur as a result of diesel use, but Assessment Report states that approximately 70% of residual Scope 1 and Scope 2 emissions are actually fugitive emissions (paragraph 6.3.44). Could you please clarify the 91%? We would prefer emissions figures to be stated as emissions in CO2-e rather than percentages for easier understanding of their magnitude (*pg14 of transcript*).**

Fugitive emissions in the Environmental Impact Statement (EIS) (and discussed in the Department's Assessment Report) were calculated using the Method 1 approach, with regard to the National Greenhouse Accounts (NGA) Factors (2018). This method uses a default emission factor (@ 0.054 t CO2-e per ROM tonne) for NSW open cut coal mines.

Scope 1 emissions are reported annually for the existing Mangoola Coal Mine through the National Greenhouse and Energy Reporting scheme (NGERs). Scope 1 numbers reported annually in NGERs are based on the higher order Method 2 – Extraction of Coal, as defined in the National Greenhouse

and Energy Reporting (Measurement) Determination, Subdivision 3.2.3.2—Fugitive emissions from extraction of coal. This Method 2 process utilises exploration and gas testing data at Mangoola to develop a site-specific gas reservoir model. This process goes though the required NGERs auditing. The 2019/2020 Mangoola NGERS data indicates that Scope 1 emissions were attributable primarily to diesel combustion of 112,876 t CO2-e (91%) and fugitive emissions 10,559 t CO2-e (9%).

The same coal seams as the existing operation are proposed to be mined in the MCCO Additional Project Area.

Subsequent to the EIS submission, further gas testing results of coal samples (three cored holes/43 samples) from all coal seams to be mined in the MCCO Additional Project Area found that due to the shallow depths and low seam gas content, the forecast Mangoola fugitive emissions from the MCCO Additional Project Area are estimated to be in the order of 0.001 t CO2-e per ROM tonne or approximately 2% of the default NGA factor for NSW open cut mines.

4. **Have you considered purchasing renewable energy as opposed to generating renewable energy onsite? (*pg16 of transcript*)**

   Glencore has actively considered renewable energy supply options from providers that meet both Glencore's greenhouse gas emission reduction ambitions as well as Glencore's commercial requirements. To date there have been no commercially viable options.

   Glencore continue to research emerging opportunities in the Australian renewable energy market that may meet sustainability and commercial objectives.

5. **For the rehabilitation plan, what measures have you considered to minimise fugitive gas emissions from the rehabilitated site? What measures will be taken to minimise ongoing fugitive emissions and what level of confidence is there that [there would be a minimisation of] they will be effective? (*pg 18 of transcript*)**

   Under the NGERs reporting criteria there are no fugitive gas emissions forecast to be emitted from the rehabilitated site. In accordance with the National Greenhouse and Energy Reporting (Measurement) Determination 2008, fugitive emissions occur during the extraction of coal. In accordance with *Division 3.2.3—Open cut mines* of the NGER Determination, estimates are prepared for fugitive emissions released from the extracted coal as well as from a zone of gas-bearing strata which may be present under the extraction area of the mine.

   Post the mining of a coal seam, the extracted areas are progressively filled with the mined overburden and the surface level rehabilitated as per the requirements of the Development Consent and the commitments made in the approved Rehabilitation Management Plan.

   For Mangoola, the depth of overburden emplacement is in the order of 40m to 120m across the site including the MCCO Project area. The overburden is compacted by the loaded haul trucks and bulldozers in layers as the overburden emplacement areas are developed over time. This process covers any non-mined coal left throughout the mining sequence, such as seams at the extent of mining in the highwalls. Over time, much of the backfilled void space and the final voids will also become saturated.

Diesel emissions associated with rehabilitation activities (albeit at significantly reduced levels from those associated with mining) will continue following cessation of coal mining until final landforms are achieved.

6. **Will the filling of the void with water (which would presumably become a lake post mining) prevent methane release from coal seams left exposed in the void? (*pg 18 of transcript*)**

   Further to the response in Item 3, the methane content within the emissions from the coal seams represent approximately 6% of the total annual Scope 1 emissions and therefore is considered relatively minor.

   Relative to the extent of the mining area, there will only be a minor surface area of exposed coal seams within the face of the final highwalls (if at all) within the voids, subject to the detailed final landform design agreed with the relevant regulator, at the time of detailed mine closure planning. The coverage of the coal seams in the remaining highwalls with water would reduce desorption of gases from any remaining gas bearing strata.

7. **How many local apprentices does Mangoola Mine routinely employ and will this continue for the Project? (*pg 22 of transcript*)**

   Since 2011, Mangoola has commenced 32 electrical and mechanical apprenticeships. Of these 29 (90%) were sourced from the Shires of Muswellbrook, Upper Hunter and Singleton. In practical terms, this represents the employment of between 2-4 apprentices annually, which varies due to operational requirements along with the provision of appropriate training and supervision. All apprentices are selected based on merit. Of the apprentices who have served their full term, 78% have been provided full time trade roles at Mangoola upon completion of their apprenticeship.

   All past and current apprentices play an important role at our current operations and the future of the mining industry more broadly. Mangoola will continue to provide apprenticeship opportunities in line with operational needs if the MCCO Project is approved.

8. **Can you provide details regarding numbers of people employed at Mangoola Mine since the mine commenced operations and the proposed workforce in annual FTE over the life of the mine?**

   Since the commencement of mining, Mangoola has provided direct full time employment for 717 individuals (excluding full time contract personnel) with varying years of service across the workforce.

   The MCCO Project will provide ongoing employment opportunities for the Mangoola workforce of approximately 400 employees, rising to a peak of approximately 480 at peak production levels.

   Mangoola reviews the life of mine plan and required workforce on an annual basis and may vary year to year dependant on operational needs. Consistent with the information contained within the EIS, **Figure 1** presents the current projected life of mine full time equivalent (FTE) workforce profile. This includes both with and without the Project. **Figure 2** shows the indicative production profile for the MCCO Project, over the corresponding period.

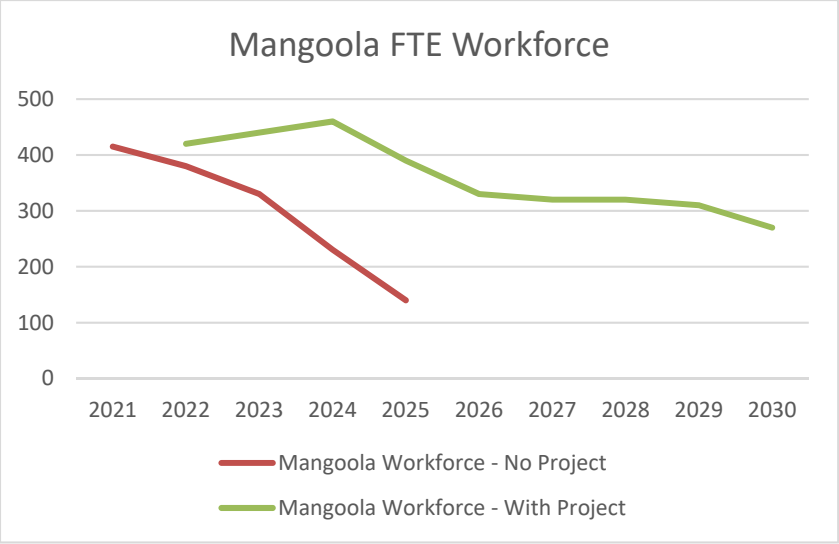

Figure 1 – Indicative MCCO Manning Levels (with and without the MCCO Project)

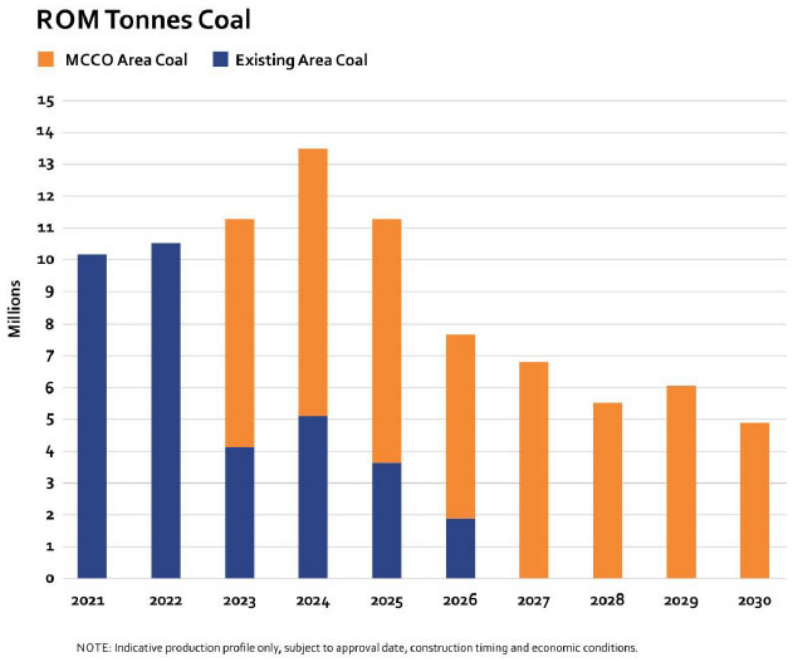

Figure 2 – Indicative Production Profile ***(Source: MCCO Project EIS Chart 3.1)***

We welcome the opportunity to discuss any aspects in this letter with you further, should you require.

Yours sincerely

[redacted]

Brian Pease
Project Manager
Glencore Coal Assets Australia
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E: [redacted]

From: Bradley James
To: [redacted]
Subject: FW: MCCO Project IPC Meeting - Questions on Notice
Date: Thursday, 25 February 2021 10:36:00 AM
Attachments: image001.png
image002.png
image003.png
image004.png

Hi Brian,

Please see the questions taken on notice at Tuesday's meeting below. The Commission have also added some additional questions which we would like a response to.

1. Have the nest boxes installed in previously rehabilitated areas been utilised by Swift Parrots? (pg12 of transcript)
2. Can you provide further clarity on ' success criteria' for rehabilitation?
3. Slide 26 pf the presentation states that 91% of Scope 1 emission occur as a result of diesel use, but Assessment Report states that approximately 70% of residual Scope 1 and Scope 2 emissions are actually fugitive emissions (paragraph 6.3.44). Could you please clarify the 91%? We would prefer emissions figures to be stated as emissions in CO_2-e rather than percentages for easier understanding of their magnitude (pg14)
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8. Can you provide details regarding numbers of people employed at Mangoola Mine since the mine commenced operations and the proposed workforce in annual FTE over the life of the mine?

If you could provide a response to these questions on a letterhead by Thursday, 4 March 2021 that would be much appreciated.

Regards,

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New South Wales Government
Independent Planning Commission

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