

Memorandum

To: Hunter Thoroughbred Breeders Association

From: Rod Carr, Director

Date: 14 March 2021

Regarding: High Level Review of the Mt Pleasant Operation Mine Optimisation Modification Environmental Assessment, 2021

Background

This high-level review memorandum has been prepared at the request of the Hunter Thoroughbred Breeders Association. Marsden Jacob was engaged to identify and comment on any economic assessment related issues contained in the modification application reports.

The following documents have been considered in the preparation of this review memorandum:

- NSW Government, Guidelines for the economic assessment of mining and coal seam gas proposals, December 2015
- NSW Government (2017) Guide to Cost-Benefit Analysis, TPP17-03
- Analytecon (2021) Mount Pleasant Optimisation Project, Economic Assessment prepared for MACH Energy Australia Pty Ltd

Summary points

Marsden Jacob Associates has undertaken an independent expert review of the economic analysis of the Mt Pleasant Operation Mine Optimisation Modification Environmental Assessment. In summary, our review finds that:

- The benefits from coal production may be over-stated because an ideal production schedule and stable coal price outlook appear to have been used in the analysis when in reality mines change their production schedule to reflect prevailing market conditions.
- The externality impacts have been under-estimated. Under the base case (business as usual), the mine will be closed more than 20 years earlier. The option case analysis assumes that all of the visual, noise and air quality impacts are fully mitigated despite the blasting schedule needing to increase significantly, the duration of the mine life is significantly longer, the size of the overburden increasing by 110 metres, and the project proximity to the NSW Equine Critical Industry Cluster and other sensitive receptors.
- The greenhouse gas impacts (Scope 1 and 2) are not estimated in a manner that reflects the full cost of the mine, because the value applied is low and the approach externalises over 99% over the cost.
- Royalty benefit calculation will be sensitive to both coal price and production schedule assumptions.

Further analysis needs to be undertaken to understand the impact of any reduction or delay to the production schedule or coal price as this could significantly change the amount of royalties that are paid and their present value benefit.

- Company income tax benefit is over-stated, because it must be assumed that the mine would take such steps as are lawfully available to it to minimise tax.

Review Findings

1. Economic assessment from NSW perspective is streamlined due to international ownership assumption

The economic analysis is based on the mine being wholly owned by overseas entities with no Australian or NSW ownership. The consequence of this assumption is that the only benefits that accrue from the Project to NSW comprise royalty (stated to be \$684 million, present value at 7% discount rate) and NSW share of company income tax payment (stated to be \$172 million, present value at 7% discount rate) in Section 3.11.2.

“The Mount Pleasant Operation is owned by the unincorporated Mount Pleasant Joint Venture between MACH (95 per cent ownership share), and J.C.D. Australia Pty Ltd (5 per cent ownership share). MACH is, in turn, owned by Droxford International, a subsidiary of Indonesia’s Salim Group, while J.C.D. Australia Pty Ltd is Japanese owned.

Neither of these companies have an Australian ownership share, and no share of the net producer surplus would therefore accrue to NSW. The details of the net producer surplus calculation are reported in Appendix A.” (Analytecon, pg. 22)

If the ownership of the mine changes over the course of the mine life and the new owner is substantially owned by NSW shareholder base, this will materially change the economic analysis results.

The economic analysis should assess the impact of a change in mine ownership, as a sensitivity analysis, to understand the implications of this change on the findings of the economic analysis.

2. Externality impacts are under-estimated in the analysis

Mining projects cause environmental impacts on air quality, noise (from mining activities and transport of the coal), biodiversity, greenhouse gas emissions, groundwater, surface water, aboriginal heritage, non-aboriginal heritage, visual amenity, and public infrastructure (such as water supply, roads and energy).

The economic analysis needs to consider all of these issues to be compliant with the NSW Guidelines when assessing the net present value to the NSW community in a manner that accounts for all the costs and benefits. The current analysis assumes impacts are either less than the base case (current business as usual) or mitigated, despite the significant increase in coal extraction and operating life of the mine. The report states the following:

“As described in Section 3.9, mine planning activities for the Project have proceeded in an iterative manner in order to minimise or eliminate adverse environmental impacts as a result of the Project on the local community. Where such impacts are predicted to occur, affected third parties would be ‘made whole’ by MACH” (Analytecon, page 70)

The report assumes that incremental noise, air, groundwater and surface water impacts are mitigated, as follows:

1. **Noise:** the staged increases to coal extraction would minimise potential noise impacts to the majority of privately owned receptors surrounding the Mount Pleasant Operation. No material residual noise impacts are predicted after the implementation of the noise mitigation measures in accordance with the NPfl and the VLAMP.
2. **Air:** the Project would either not breach the NSW EPA air quality criteria, or that, where breaches might occur, these could be mitigated by MACH purchasing the affected land. The Human Health Assessment (EnRisks, 2020) identified no health risk issues of concern for the township of Muswellbrook or village of Aberdeen.
3. **Groundwater:** the Project would have a negligible effect on groundwater quality or groundwater dependent ecosystems, and that one actively used bore of a total of six bores would experience a greater than 2 m drawdown. MACH would make whole the affected landowners, and purchase the required water licences.
4. **Surface water:** the potential impacts of the Project would likely be negligible, and that no third parties would be affected.

Further analysis should be undertaken on externality impacts, for instance, see the following comments on greenhouse gases and other externalities.

Greenhouse gases

Where greenhouse gas (GHG) emissions are concerned, very conservative assumptions are used. Appropriately only Scope 1 and 2 emissions are included, but where the total greenhouse gas cost is estimated to be \$183 million in present value terms, only \$0.7 million (present value at 7% discount rate) is attributed to NSW.

To support this outcome, the Analytecon report states that *“the NSW share of costs associated with increased GHG emissions has therefore been calculated with reference to NSW GSP as a percentage of world gross domestic product (GDP), which is around 0.31 per cent.”* (page 37).

As a result, the economic analysis doesn't reflect the true cost of the Scope 1 and 2 greenhouse gas emissions from the Project. Particularly as greenhouse gas values used in the different scenarios are not stated and because in addition to the emissions over the mine life, surely the mine will continue to emit fugitive emissions even after it has been closed and no attempt has been made in the economics to value this legacy impact.

Marsden Jacob's review of the various NSW Government guidelines for economic appraisal confirms that this approach (only including a NSW share) runs counter to the approach commonly applied by the NSW Government. For instance, the Transport for NSW: Transport Economic Appraisal Guidelines identify a carbon value of over \$57.30 per tonne¹, and no factor adjustment is recommended to be applied.

The NSW Government has endorsed the Paris Agreement and has committed to "Implement emission savings policies that are consistent with achieving the Commonwealth Government's interim and long-term emissions savings objectives and are fair, efficient and in the public interest"². So, Marsden Jacob finds that the approach being used to value the externality cost of greenhouse gases, which effectively externalises nearly all of the cost, is biased in favour of the Project and does not align with the NSW Government's declared policy position on greenhouse gases.

Marsden Jacob's finding is further confirmed in the paper by Professor Peter Abelson³ (2015) Cost-Benefit Evaluation of Mining Projects, which states that *"with regard to carbon emissions, common practice is to include the global costs of carbon emissions that occur due to mining even though nearly all the costs are borne outside Australia. This may be justified as an obligation to the global community. But the costs of carbon emissions in the transport and end use of the coal are not normally included in project evaluation because the surpluses associated with transporting and burning coal are not counted."* (page 9).

The GHG impact analysis should be revised with the Scope 1 and 2 emissions valuation accruing to NSW and fugitive emissions assumed both over the mine life and post closure.

Given the key benefit stream relates to royalties, it would also be informative to understand how the royalty benefits compare to the anticipated cost of offsetting the greenhouse gas impacts to understand the implications of a net zero policy environment.

Other externalities

The NSW scale economic analysis does not quantify any costs associated with noise, air quality, biodiversity, aboriginal heritage or historic heritage, and it only includes a very small value for surface and groundwater impact. Instead, it is assumed that all impacts have been mitigated.

Key externalities that need further consideration, include:

1. **Property value impacts for the residents and businesses** that are affected by both the extended mine life and extent, which will lead to a significantly larger overburden stockpile height which will be 110 metres higher than the one previously proposed.

¹ Transport for NSW (2018) Principles and Guidelines for Economic Appraisal of Transport Investment and Initiatives, https://www.transport.nsw.gov.au/system/files/media/documents/2018/Principles_and_Guidelines_for_Economic_Appraisal_of_Transport_Investment_and_Initiatives_Combined_0.pdf

² <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-climate-change-policy-framework-160618.pdf>

³ Principal Economics Advisor (part-time) to the NSW Treasury

2. **Critical industry cluster:** The Project is located in the middle of two NSW Government recognised Critical Industry Clusters (CICs): Equine CIC and Viticulture CIC.

Despite its close proximity, the current analysis effectively assumes no impact for either residential or other industries, even though there is clear evidence that many of these industries consider the Project is adversely affecting business certainty and resulting in delayed investment.

Impacts on thoroughbred, tourism, services and other sectors are critically important considerations for the economic analysis, because economic diversity is critical to maintaining the economic resilience of the region. Particularly as the time is approaching when it will start transitioning away from mining and coal fired power stations. Illustrating this, AGL has announced that it will be closing down Liddell and Bayswater power stations in 2022 and 2035, respectively.

The critical importance of the CIC and sustainable long term economically diverse industries in the Upper Hunter are reflected in numerous NSW government planning documents and decisions.

3. Royalty benefit calculation will be sensitive to both coal price and production schedule assumptions

The royalty benefit calculation will be sensitive to the assumptions around both price and production. The economic analysis is based on coal price forecasts developed by Wood Mackenzie and what appears to be an ideal production schedule which assumes that production will ramp up and peak production levels are maintained for nearly a decade (2034 to 2043).

The reality is that coal mines ramp up and down their production depending on a variety of factors, including:

- International market conditions: There are numerous examples of mines in the Hunter Valley that actively ramp up and down their production reflecting international conditions. For instance, as recently as August 2020, ABC⁴ reported mass job losses at Hunter Valley mine as industry reacts to plummeting thermal coal price.
- Operational risks: Various operational risks have not been considered or mitigated, so there are considerable risks to the mine operating according to the idealised production schedule. For instance, water resources in the Hunter are drought prone. How will the mine continue to maintain full production if another significant drought occurs over the mine life?

Further analysis needs to be undertaken on the production schedule, along with testing the sensitivity to price outlooks because any reduction in production or delay to the production schedule will significantly change the amount of royalties that are paid and their present value benefit.

⁴ <https://www.abc.net.au/news/2020-08-19/hunter-valley-coal-mining-feels-the-impact-of-plunging-price/12573370>

4. Company income tax benefit is over-stated

In the NSW scale economic analysis, annual company income tax payable is included as a benefit of \$172 million (present value).

The direct benefits from company income tax are over-stated because:

- the economic analysis assumes a 30% company tax rate, whereas recent analysis identifies that based on a review of “information on mining companies’ total income and tax payments for the last three financial years (2014, 2015 and 2016) and found that the tax paid by these companies ranged from around 2.7% to 6.8% on total income”. (Section 583)⁵
- it must be assumed that the mine would take such steps as are lawfully available to it to minimise the tax that it had to pay. For instance, the economic analysis acknowledges that “subsidence costs would reduce the estimated company tax” (page 18).

Concluding remarks

Under the *Environmental Planning and Assessment Act 1979*, the consent authority must evaluate a number of factors, with both the quantitative and qualitative findings of the economic analysis to be included – alongside other information.

While the economic methodology used in the economic analysis aligns with the guidelines, Marsden Jacob’s review has identified a number of important issues with the cost (externality valuations) and benefit (royalty and taxation) assumptions that underpin the analysis, which need to be carefully reviewed and assessed as they are based on assumptions that consistently favour the Project.

⁵ Gloucester Resources Limited v Minister for Planning [2019] NSWLEC 7, <https://www.caselaw.nsw.gov.au/decision/5c59012ce4b02a5a800be47f>