

Economic impact of the proposed Dartbrook Mod 7

9 April 2019

Marsden Jacob Associates

Introduction

Thank you for the opportunity to present.

Marsden Jacob Associates (Marsden Jacob) has been commissioned by HTBA to review the social and economic assessments of the Dartbrook Coal Mine Modification 7 application

In preparing this presentation Marsden Jacob has reviewed the social and economic impact assessments, the response to submissions and the NSW Government assessment report. Marsden Jacob has also drawn upon previous submissions and recent expert review reports.

Summary Points

Marsden Jacob's review finds that the:

- The economic analysis is biased in favour of the mine, because a number of key assumptions either over-estimate the benefits (e.g. coal prices and product coal) or under-estimate the costs (e.g. capital costs, operating costs and externality impacts).
- The social impact assessment is biased in favour of the mine, because cumulative impacts are not considered.
- More realistic assumptions result in negative economic outcomes at national and NSW scales.

Economic benefits of the project are overstated (National scale)

National level cost benefit analysis claims a net social benefit of \$236m.

Independent experts have identified that:

- Costs have been underestimated:
 - Capital costs should be significantly higher \$162 million (not \$15m).
 - Operating costs would be 10% higher due to increased FTE count required.
 - If the coal washery were required, to ensure the coal product meets market requirement, this would increase the mining cost.

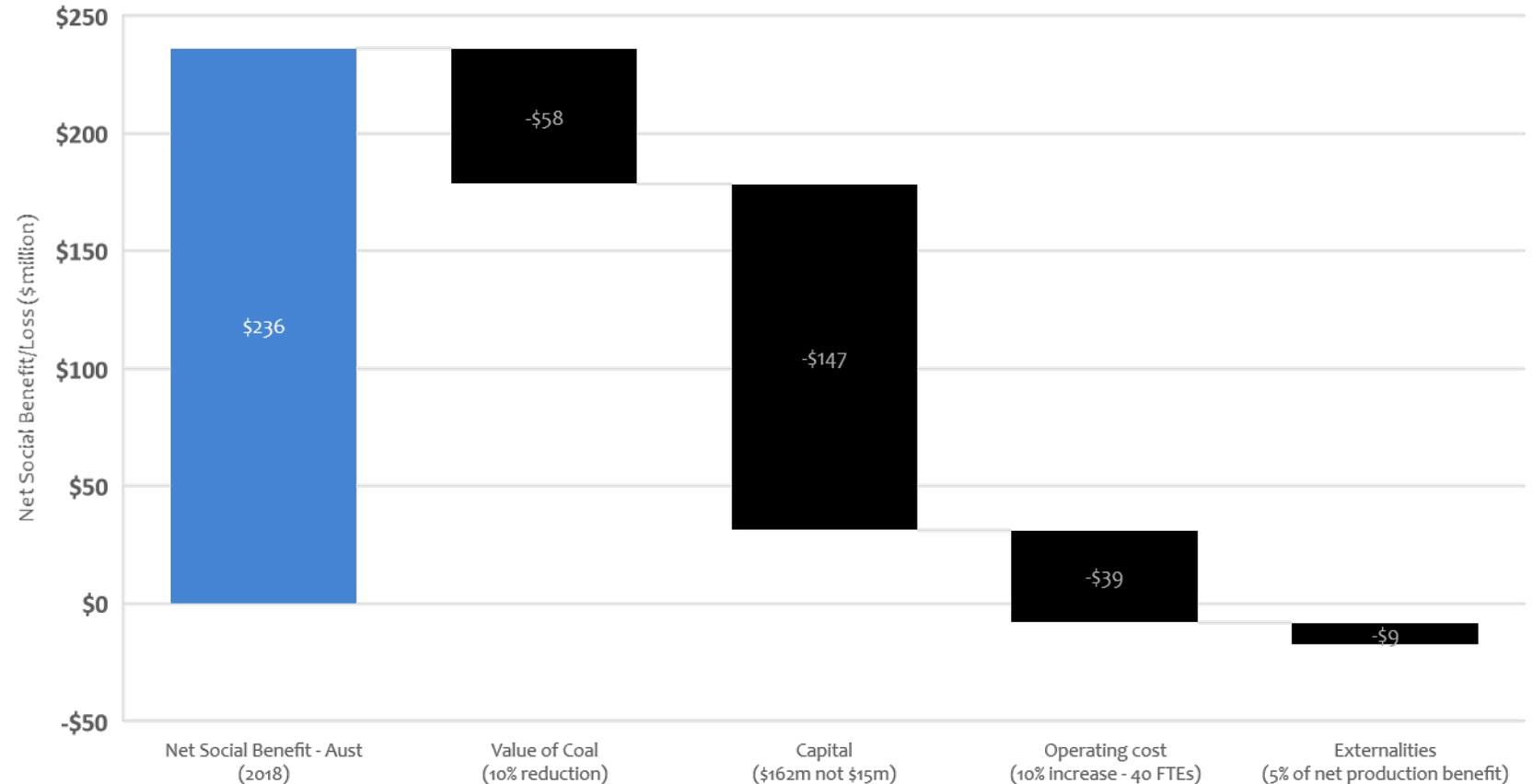
- Revenue is overestimated:
 - The assumed coal price of USD\$75 per tonne is at risk, due to the coal having a high ash content.
 - The present value outcome is very sensitive to the assumed coal production schedule.
 - Environmental risks could also impede the operation of the mine.

- Externality impacts are either ignored or under-estimated, because the incremental impact of the project will lead to:
 - exceedance of both air and noise criteria
 - significant hydrological risk
 - significant visual impacts for local residents, tourists, travellers and agricultural industries
 - significant greenhouse gas emissions
 - material impacts on equine and viticultural CICs

CBA Result – National (ex GHG)

Net social benefit at national scale is negative, when the following changes are made to the assumptions:

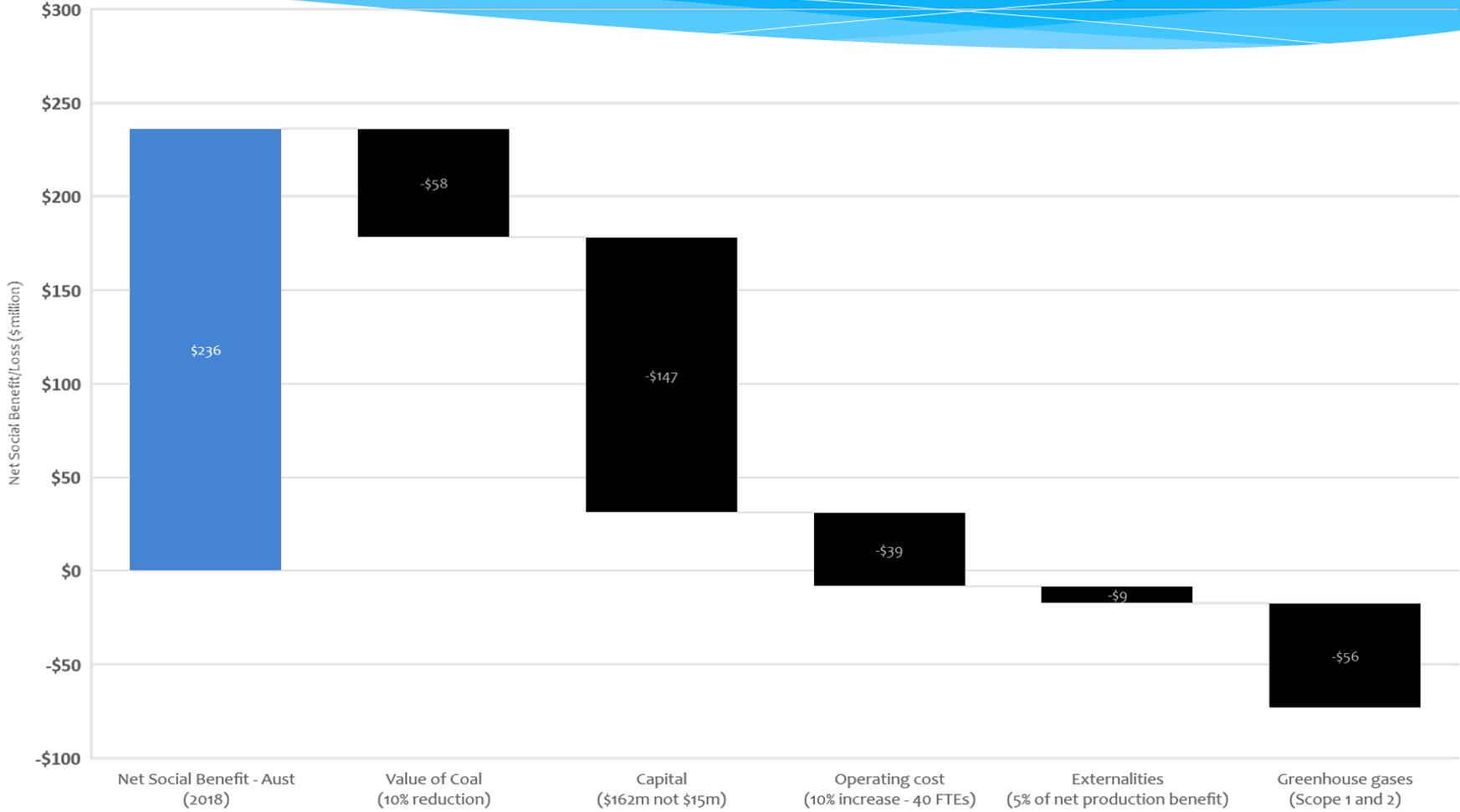
- Value of coal = 10% lower (USD\$67/tonne)
- Capital cost = \$162m (PV)
- Operating cost = 10% lower
- Externalities = 5% of net production benefit



CBA Result – National (incl GHG)

Net social benefit at national scale is even more significantly negative if Australia takes responsibility for the costs associated with the greenhouse gas emissions (Scope 1 and 2) from the mine.

**Net social loss =
-\$73 million**



Coal price

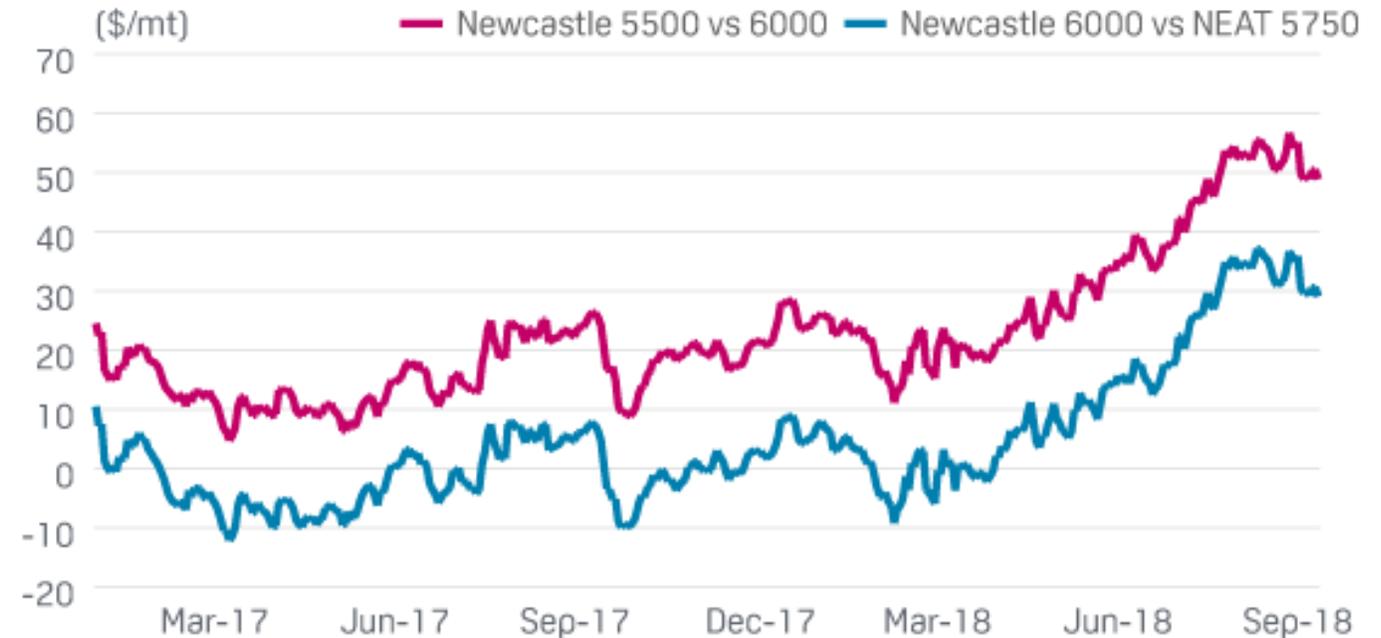
World bank (Oct 2018) is forecasting that the benchmark price for Australian coal will fall:

- 2020 = USD\$89.9 (2010 dollars)
- 2021 = USD\$84.9 (2010 dollars)
- 2025 = USD\$67.3 (2010 dollars)
- 2030 = USD\$50.3 (2010 dollars)

This means the assumed coal price of USD\$75/t is high, particularly when you take into consideration (i) high ash content (26%), and (ii) declared coal product of 5,500 kcal/kg¹.

S&P Global Platts identifies that the price differential between 6,000 and 5,500 kcal/kg is \$20-\$30/t.

PRICE DIFFERENTIALS



Source: S&P Global Platts

1. Australian Pacific Coal (2018) Dartbrook Mine, Modification 7, Response to Submissions, page 46

Economic benefits of the project are overstated (State scale)

NSW level cost benefit analysis claims a net social benefit of \$130m.

Independent experts have identified that:

- Externality costs – noise, air, water, GHG – have been underestimated (currently only \$0.1 m).
- Company tax benefit (currently \$14m) is overestimated, because the economic analysis assumes a 30% company tax rate, whereas recent analysis has shown that mining companies pay significant less tax (2.7% - 6.8%) because they actively minimize this cost.
- Producer surplus (currently \$50m) are overstated, because (i) increased capital and operating costs, and reduced revenue all reduce the producer surplus, and (ii) the analysis attributes 32% of the net producer surplus without justifying the NSW share of project ownership*.
- Royalty payments (currently \$38m) are overstated, with two key issues (i) assumed coal price and (ii) NSW share of project ownership both affecting this calculation.
- Economic benefit to suppliers (currently \$52m) is based on generalized assumptions and might not accrue to the state, particularly if the business chooses to source non-labour inputs from interstate or overseas.

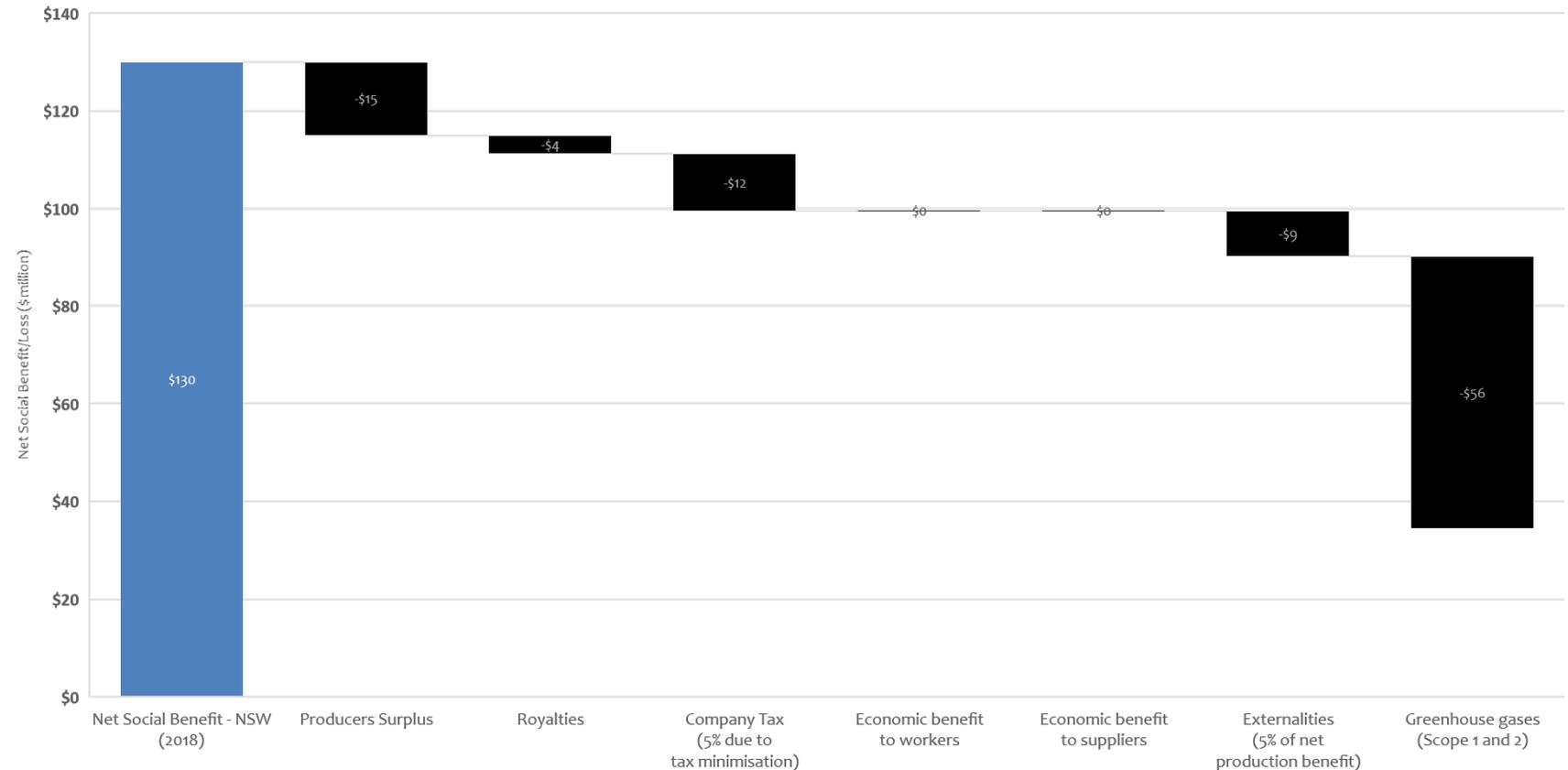
In this review we have not attempted to undertake a detailed recalculation of the NSW net social benefit but the above highlights a consistent optimism bias in the analysis. The following figures highlight how sensitive the result is to key assumptions.

* NSW Government (2015) Guidelines for the economic assessment of mining and coal seam gas proposals, page 12

CBA Result – NSW

Net social benefit at NSW scale is only marginally positive when:

- Producer surplus is negated by higher capital and operating cost and reduced revenue
- Royalties are 10% lower due to reduced coal price
- Company tax paid is assumed to be 5%, due to tax minimisation
- No change to economic benefit to workers or suppliers
- Externalities assumed to be 5% of net production benefit
- Greenhouse gas emissions all attributed to the project¹



1. Scope 1 and 2 emissions are 369,000 t CO₂-e/year. Economics currently externalising most of this because NSW share of the global population is around 0.001. NSW Government has endorsed the Paris Agreement so why are these costs being imposed on others?

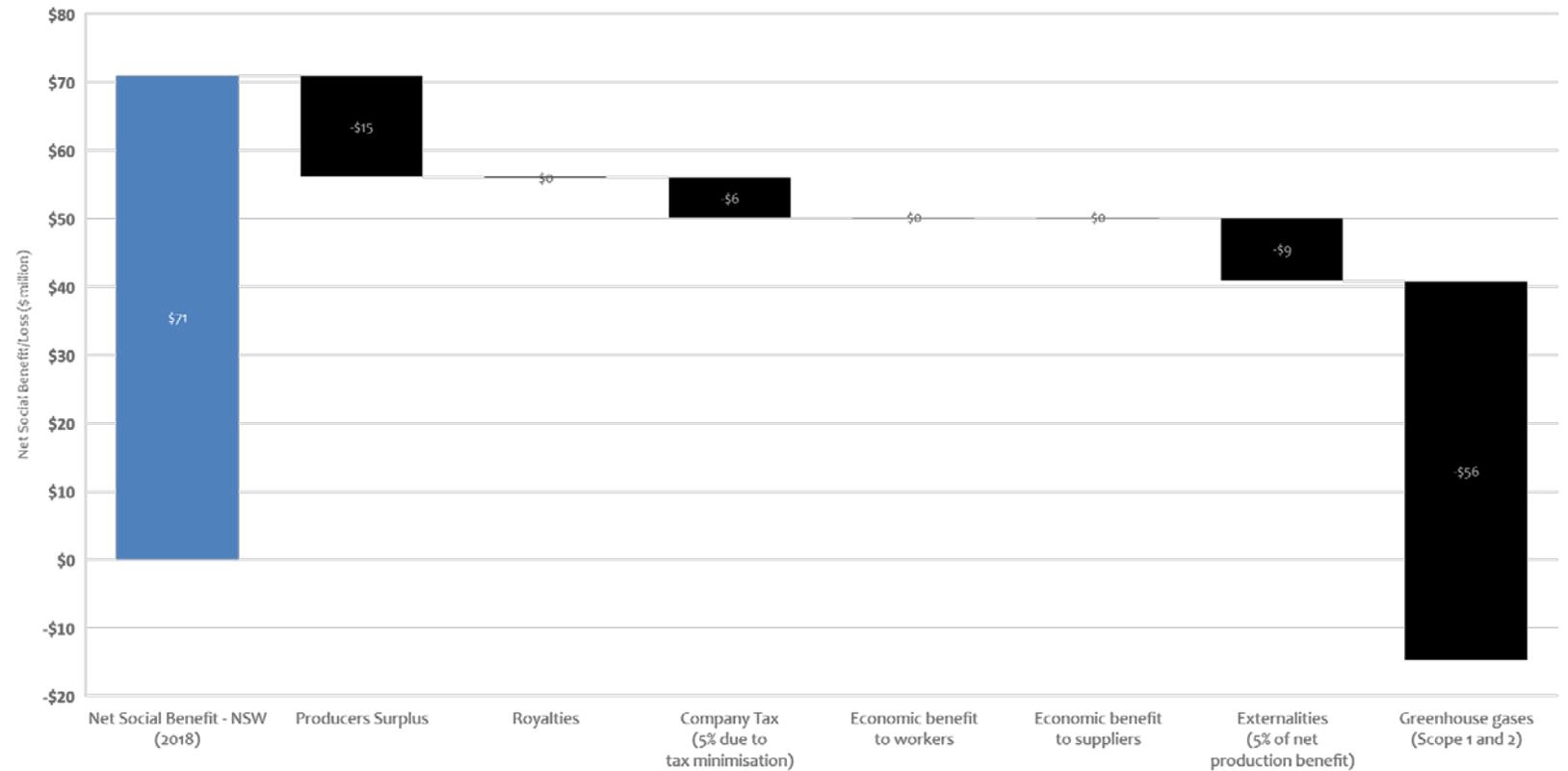
CBA Result – NSW

(Highly sensitive to the assumptions)

Net social benefit at NSW scale is negative, when compared to the revenue sensitivity in the economic analysis:

- Producer surplus is negated by higher capital and operating cost and reduced revenue
- Royalties are 10% lower due to reduced coal price
- Company tax assumed to be 5% due to tax minimisation
- No change to economic benefit to workers or suppliers
- Externalities assumed to be 5% of net production benefit
- Greenhouse gas emissions from the mine¹

Net social loss =
-\$15 million



1. Scope 1 and 2 emissions are 369,000 t CO₂-e/year. Economics currently externalising most of this because NSW share of the global population is around 0.001. NSW Government has endorsed the Paris Agreement so why are these costs being imposed on others?

Critical Industry Clusters

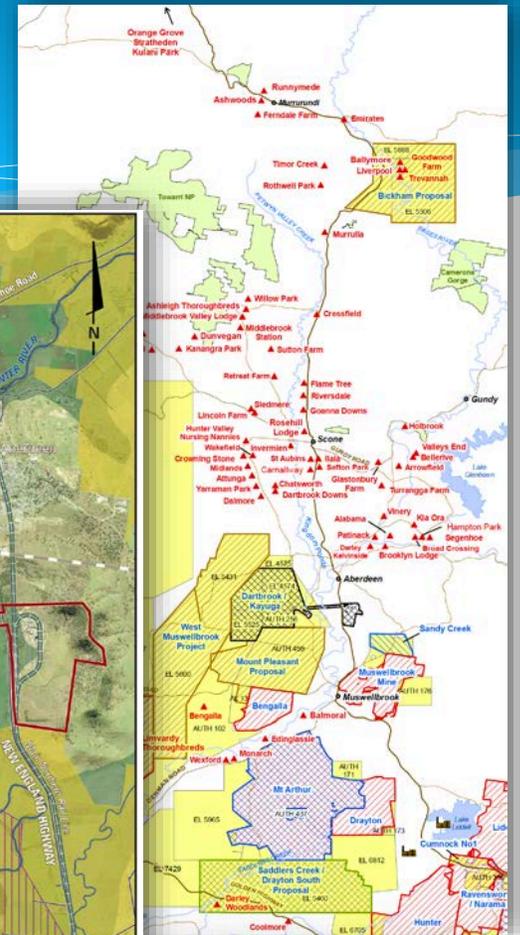
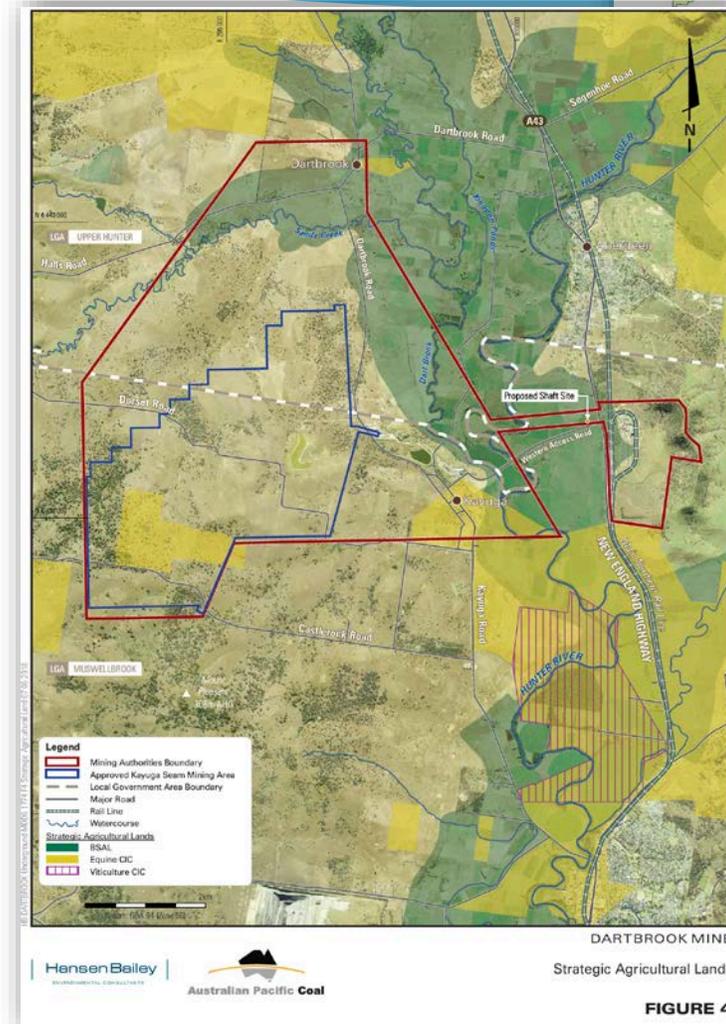
Project is located in the middle of two NSW Government recognised Critical Industry Cluster (CICs):

1. Equine
2. Viticulture

Current analysis effectively assumes no impact, despite close proximity and evidence that both industries consider the project is adversely affecting business certainty and resulting in delayed investment.

Why is this important? Economic diversification is critical to maintaining the economic strength of the region as it transitions away from mining and coal fired power stations.

Importance of the CIC and sustainable long term economically diverse are reflected in numerous NSW government planning documents and decisions.



In conclusion

The EP&A Act the consent authority must evaluate a number of factors, with both the quantitative and qualitative findings of the cost-benefit analysis and local effects analysis to be included – alongside other information – in the evaluation.

Marsden Jacob’s review has identified the assumed costs and benefit are biased in favour of the project. Our review has identified that the project is not economically beneficial:

1. National = -\$73 million (NPV)
2. State = -\$15 million (NPV)

Marsden Jacob finds that the current economic and social impact assessment cannot be relied upon by the IPC.

How can you approve this project when the revenue from royalties (\$4.8-\$6.8 million p.a.¹) is less than the annual greenhouse gas emissions cost alone (\$8.5 million p.a.)?

Particularly when you consider that 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

1. Calculated based on the revenue sensitivity tests in Gillespie Economics (2018)
2. Gillespie Economics (2018) stated Scope 1 and 2 emissions of 369,000t CO₂-e per annum. Assumed value of greenhouse gas emissions is \$25 per tonne CO₂-e.
3. <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-climate-change-policy-framework-160618.pdf>