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To NSW Department of Planning and Environment

Dendrobium Mine Extension Project, SSI-33143123[1]

Submission

Climate Change Balmain-Rozelle (CCBR) is an independent community group in inner west Sydney with over 1100 supporters. We campaign to promote local and national action to reduce fossil fuel use, increase the adoption of renewable energy, and head off catastrophic global warming.

Our concerns relate to the Greenhouse Gas emissions and to the potential damage to the hydrogeology.

Recommendation

We strongly believe that the Department should

- refuse approval of the mine extension for the reasons we summarise below; or failing that,
- apply strong and enforceable conditions that mandate increasing ambition in Greenhouse Gas emission reductions, and
- prohibit longwall mining

Key points

Remedial actions

There seems to be no commitment to undertake any remedial action, there being a blanket get-out.

Water resource

The project is still an unacceptable threat to water resources.

Greenhouse gases

We have questions around

- How the proposal fits with present Federal Government policies
- Monitoring of methane emissions
- The net benefit to NSW

[1] https://www.planningportal.nsw.gov.au/major-projects/projects/dendrobium-mine-extension-project-0

We further caution readers of the proposal against being swayed by certain specious comparisons and appeals to circumstantial benefits.

Our more detailed explanation of these points follows. All specifically cited clauses are in the Environmental Impact Statement.

Submission prepared on
behalf of CCBR Committee

Jun 9, 2022

Re Section 7, Environmental Assessment

Remedial actions

There seems to be no commitment to undertake remedial action, there being a blanket get-out. Everything is qualified by practicability.

p 7-44

> *"Where physical damage is observed in sections of streams for which setbacks have been proposed, this damage would be remediated, where practicable"*

p 7-86

> *"IMC would continue to assist with facilitation of access to the Project area and surrounds (where practicable) for Aboriginal stakeholders"*

p 7-88

> *"IMC would avoid disturbance of known Aboriginal heritage sites where practicable"*

p 7-112

> *"refinement of on-site noise mitigation measures and mine operating procedures, where practicable"*

p 7-154

> *"flaring of pre- and post-drainage gas to the greatest extent practicable"*

Who determines whether a remedy is practicable? What penalties would apply if there are none?

Water resource

The project is still an unacceptable threat to water resources.

In the case of the nearby Russell Vale mine, the IPC found that the bord-and-pillar mining method "*significantly reduces potential impacts on groundwater resources and stream baseflow, when compared to the previously proposed longwall mining method."*

If the potential impacts are significantly reduced, they must have been significant to start with. The proposal counters:

p 7-72

> *"While bord and pillar mining is an underground mining technique that can be viable for some shallow coal seams, it is uneconomic in Australia to use bord and pillar mining as the primary production method at depths from the surface that are greater than about 200 m (Department of Planning, 2008)."*

The view that it is not viable below 200m conflicts with that at the Russell Vale mine. Wollongong Coal has committed to using this method as a condition of approval for the Wonga East portion of Russell, and that mine is at depths 200m to 320m[2]. (It abandoned plans for Wonga West, which goes to 400m.)

In February 2021, the NSW Independent Planning Commission stopped an earlier and larger version of the expansion at Dendrobium, finding "*the proposed mine design risks long-term and irreversible damage to Greater Sydney and the Illawarra's drinking water catchment*."

South 32 appears intransigent on a matter that relates to minimising its impact on groundwater and biodiversity if the mine is approved.

How does the proposal fit with present Federal Government policies?

p 7-150

> *"The Commonwealth Government has also committed to reducing greenhouse gas emissions by 26 to 28% below 2005 levels by 2030, as part of the Paris Agreement (Commonwealth of Australia, 2015). "*

The new government has a mandate to reduce emissions to 43% below 2005 levels by 2030.

p 7-151

> *"The Safeguard Mechanism sets a baseline level of emissions for facilities that emit over 100,000 tonnes of carbon dioxide equivalent (tCO_2-e) per year "*

The new government has a mandate to lower the threshold progressively.

Specious comparisons

p 7-153

> *"**Project Greenhouse Gas Emission Intensity***
>
> *The emissions intensity during Area 5 longwall mining for the Project … compares with other coal mining operations in the Illawarra Region recently approved by the IPC,"*

and

p 7-154

> *"The Project's Scope 1 and Scope 2 emissions represent a relatively small contribution to Australian emissions, representing between approximately 0.34% and 1.3% of the estimated total greenhouse gas emissions in NSW from 2019 "*

A project must be assessed on its own merits, not on whether it is more or less injurious than other projects.

p 7-154

> *"If the Project does not proceed, global demand for coal could be satisfied by other sources and, therefore, there would not be a corresponding reduction in global greenhouse emissions in the atmosphere. "*

That is known as the Drug Dealer's Defence. Each coal producer could make the same argument independently, resulting in no progress in reduction in the use of coal.

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[2] https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=MP09_0013%2120200915T064719.367%20GMT, p26

Monitoring

No mention of how fugitive emissions are to be monitored, nor by whom, nor of what action would be taken should expectations be exceeded.

Studies show fugitive methane emissions are still being grossly underestimated[3,4]. In 2021, the International Energy Agency found Australian coal mines were emitting double the methane reported[5].

Re Section 8, Justification of the Project

Invoking circumstantial benefits, but not the costs

p 8-27

> *"While the value of externalities from indirect (Scope 3) greenhouse gas emissions are not considered in the net benefit to NSW, neither are the economic benefits [6]associated with the ongoing use of this coal for steelmaking and other uses"*

That is indeed a fair approach. The steelworks has to use its economic benefits to justify its own emissions. The mine proposer cannot claim those same benefits but dodge the emissions downside. Unfortunately this honesty is betrayed by repeated appeals to such benefits throughout the proposal. The proposer is trying to consume cake and possess it concurrently:

p 7-142

> *"... However, the economic contribution of the steelmaking industry to the regional and Australian economies is acknowledged by the Australian Competition and Consumer Commission (ACCC) (Commonwealth of Australia, 2017a) and by the Review of the Economic Interactions between the Dendrobium Mine and Related Entities in the Wollongong Region prepared by BAEconomics (2020) (Section 8.2)."*

p 7-143

> *"It is also noted that the operations of Dendrobium Mine support manufacturing employment at the Port Kembla Steelworks and Whyalla Steelworks"*

Similarly, *Table 7-38, Strategic Context; p 7-145 Community; p 7-147 Mine Closure; p 8-27 Conclusion*. Likewise in *Appendix L, Economic Assessment: 2 Cost-Benefit Analysis; E.4 Concluding remarks.*

Moreover, there are reasons to doubt the steelworks in question will continue to depend on metallurgical coal for 19 years. BlueScope

- is investigating the use of sustainably sourced biochar as a replacement for pulverised coal;
- is investigating a pilot-scale 10-megawatt renewable hydrogen electrolyser;
- has signed an MoU with Rio Tinto to explore using renewable hydrogen to replace coking coal to directly reduce iron ore;
- is planning to replace blast furnace PCI coal consumption with coke oven gas, which contains 60% hydrogen.

Separately from the above, in its earlier rejection of the proposed extension, the Commission also queried Bluescope's need for it.

Re Appendix L – Economic Assessment

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[3] https://www.resilience.org/stories/2020-02-20/methane-emissions-from-fossil-fuels-severely-underestimated 2020

[4] https://airqualitynews.com/2021/03/30/methane-emissions-may-have-been-underestimated-by-up-to-90/ 2021

[5] https://ember-climate.org/insights/research/tackling-australias-coal-mine-methane-problem 2022

[6] GHD, Blast Furnace No. 6 Reline Project, Greenhouse Gas Report, BlueScope Steel (AIS) Pty Ltd, 07 March 2022, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-22545215%21202203 07T040033.538%20GMT

Overestimated net benefit to NSW

"Appendix F" (in Appendix L) calculates costs of the project's emissions to NSW based on various parameters:

- Low, medium and high "social cost of carbon" prices based on current US standards. Each consists of a price today and an annual growth rate.

Trajectory	Low	Medium	High
AUD Today	19.10	69.70	103.9
% Annual growth	2.8	1.7	1.4

  Beyond that, even the high trajectory price in the US standards is widely regarded as too low. Most recent studies arrive at a figure in the USD200-300 range, with some topping USD3000[7]

- The expected emissions over the life of the project. Although this is calculated elsewhere as 12.2Mt or 15.5Mt according to the use of flaring, 15.0Mt appears to have been used.
- A 7% discount rate to calculate the Net Present Value ("NPV")..
- Taking the cost calculated from the other parameters as a cost to Australia, an apportionment of 32% to NSW.

Using the medium value for carbon cost, for example, it arrives at a cost of $212m over the project life.

There are two serious flaws in that calculation.

- A 7% discount rate may be appropriate for anticipated income, but is generally considered too high for GHG impacts. Rates of 2%-3% are widely accepted[8. 9. 10]. The US standard that Appendix L relies upon for its three trajectories specifies corresponding discount rates:

  "The new price per ton is accompanied by discount rates of 2.5 percent, 3 percent and 5 percent"[11]

- Current practice is to consider the whole of Scope 1 and 2 emissions as a cost to the people of NSW. As the IPC reported regarding a Glencore proposal::
  538. "In particular, the Department notes that the approach to allocating costs associated with GHG emissions varies significantly between the assessment undertaken by Glencore and the review undertaken by CIE. While Glencore has apportioned a component of the total global costs to NSW, CIE consider that the full cost of Scope 1 and 2 emissions should be attributed to NSW"[12]

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[7] Kikstra, Jarmo S.; Waidelich, Paul; Rising, James; Yumashev, Dmitry; Hope, Chris; Brierley, Chris M. (2021-09-06). "The social cost of carbon dioxide under climate-economy feedbacks and temperature variability". *Environmental Research Letters*. **16** (9): 094037. Bibcode:2021ERL....16i4037K. doi:10.1088/1748-9326/ac1d0b. ISSN 1748-9326.

[8] http://piketty.pse.ens.fr/files/DruppFreeman2015.pdf

[9] https://iopscience.iop.org/article/10.1088/1748-9326/ab3cc9

[10] https://www.lse.ac.uk/granthaminstitute/explainers/what-are-social-discount-rates/

[11] https://www.politico.com/news/2021/02/26/biden-carbon-price-climate-change-471787

[12] https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2022/02/glendell-continued-operations-project-ssd-9349/referral-from-the-department-of-planning-and-environment/glendell-cop--assessment-report-recom

The result of correcting these flaws is shown in the table below.

	Appendix F			Corrected		
carbon cost trajectory	low	medium	high	low	medium	high
years	19	19	19	19	19	19
discount rate	7.00%	7.00%	7.00%	2.00%	3.00%	5.00%
carbon cost now, $/t	19.1	69.7	103.9	19.1	69.7	103.9
growth rate	2.80%	1.70%	1.40%	2.80%	1.70%	1.40%
ratio[13]	95.60%	94.58%	94.30%	100.74%	98.65%	96.33%
factor[14]	0.69	0.63	0.62	1.07	0.89	0.73
$MtCO_2e$[15]	15	15	15	15	15	15
NPV[16] $m	197.01	663.12	967.36	306.52	927.6	1136.66
NSW's fraction	0.32	0.32	0.32	1	1	1
NSW's NPV $m	63.04	212.2	309.56	306.52	927.6	1136.66
underestimate $m	243	715	827			
net benefit of project to NSW $m	586	437	340	343	-278	-487

mendation.pdf, p98

[13] The 'ratio' is the effective annual multiplier, (1-discount rate)x(1+growth rate)
[14] The 'factor' is the net effect of applying the above ratio to successive years
[15] Millions of tonnes of CO_2 equivalent
[16] Net Present Value = (total tCO_2e)x(year 1 carbon cost/tCO_2e)x(factor)