

DENDROBIUM MINE EXTENSION PROJECT: SUBMISSION

Background

In February 2021, the NSW Independent Planning Commission stopped coal mine expansion plans at Dendrobium, *“finding the proposed mine design risks long-term and irreversible damage to Greater Sydney and the Illawarra’s drinking water catchment.”*

Now South32 has submitted a smaller, revised plan. This revised plan would still result in losses to the drinking water catchment, a tripling of direct GHG emissions and potentially 'irreversible' damage to 16 endangered swamps. The NSW Deputy Premier claims the Project is justified *“given its importance to Port Kembla steelworks”*, however South32 has conceded that *“BlueScope may be able to source alternate supplies of metallurgical coal locally”* (which could avoid further damage to the drinking water catchment).

Impacts on Illawarra and Sydney’s drinking water

- Civil society has long called for an end to longwall mining inside the Special Areas of Sydney and the Illawarra’s drinking water catchment due primarily to the impact of subsidence on fresh water supply to reservoirs.
- WaterNSW maintains that the *“Special Areas are pristine areas of bushland that have been specifically set aside for drinking water supply, and protected from human access and activities since the 1880s.”*
- Mining in Area 5 is predicted to result in the loss of about 428 ML/yr. This will compound the predicted ‘take’ from surface watercourses up to 1450 ML/yr from the whole of Dendrobium Mine, including Area 5.¹
- Groundwater take is predicted to peak at about 5,600-5,900 ML/yr. This predicted inflow is an **increase** on historical inflows at Dendrobium Mine.²
- The NSW IPC found the last time South32 proposed longwall mining in the same area, that there was a risk of *“potentially irreversible impact upon the quantity and quality of surface water in perpetuity”*.

¹ APPENDIX B, Groundwater Assessment, <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-33143123%2120220427T061045.250%20GMT>, pg 183

² APPENDIX B, Groundwater Assessment, <https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-33143123%2120220427T061045.250%20GMT>, pg 183

South32 wants to mine the water catchment Special Area using the longwall mining method which results in the greatest subsidence

- Due to the refusal by the NSW IPC to allow longwall mining at Russell Vale, Wollongong Coal made a commitment that all future mine planning at Russell Vale *“would be based on non-caving bord and pillar mining methods”*.³ Russell Vale is very close to the proposed Dendrobium Extension and in the same water catchment Special Area.
- When NSW DPIE assessed the Russell Vale mine’s plan to mine using bord and pillar, they found that *“the proposed bord and pillar mining method significantly reduces potential impacts on groundwater resources and stream baseflow, when compared to the previously proposed longwall mining method.”*⁴
- South32 has ruled out bord and pillar mining for this Project, claiming *“it is uneconomic ... at depths from the surface that are greater than about 200 m.”* NSW DPIE and NSW IPC found otherwise, approving a bord and pillar plan at Russell Vale that mines *only* at depths greater than 200 m, and finding that this plan is economic.

Endangered and nationally-significant swamps will be undermined

- 16 swamps listed as ‘threatened’ will be undermined by longwall mining.
- Scientists warn of ‘irreversible’ damage to endangered swamps near Sydney if longwall mining continues.⁵
- Not only are the swamps a repository for a lot of really important biodiversity, like the giant dragonfly and threatened plant species, they also function as a giant sponge, which contributes to a stable supply of drinking water.
- When the NSW IPC refused consent for the previous longwall proposal, they concluded that there was *“no documented, reliable and practical rehabilitation technique for returning the pre-mining water balance to the impacted swamps”*.

Jobs

- If any further mining inside the Special Area can be justified, bord and pillar mining would not only result in less damage to the catchment, it would also create significantly more employment than longwall mining.
- South32 says that *“[i]n comparison to existing and recent bord and pillar operations in Australia, bord and pillar operations in Area 5 are forecast to require approximately two times the labour hours per tonne of coal mined.”*⁶

³ Russell Vale Revised Underground Expansion Project (MP09_0013) | Secretary’s Final Assessment Report, September 2020, pg 6

⁴ NSW IPC, Russell Vale SoR, 8 December 2020, 177, pg 26

⁵ ABC Illawarra, Kelly Fuller, 22 Mar 2021, ‘Scientists warn of ‘irreversible’ damage to endangered swamps near Sydney if longwall mining continues’, <https://www.abc.net.au/news/2021-03-22/coal-mining-causing-irreversible-damage-to-endangered-swamps/13262840>

⁶ South32, Appendix 11 - Consideration of Alternatives of their EIS, pg A11-24

Greenhouse gases

- As the Project is proposing to extract from Area 5 which has “a higher gas concentration”, the Extension project would **more than triple current direct (Scope 1) GHG emissions**.
- In 2020-21, 33 industrial facilities in NSW reported emitting more than 100,000 t CO₂-e of GHG emissions (excluding electricity generation). Of these 33 facilities, **24 (~70%) were coal mines**.⁷
- Despite comprising a significant chunk of NSW’s contribution to greenhouse gas emissions and climate change, there is no effective regulation to drive down direct and indirect (Scope 1 and 2) emissions from coal mining. The NSW Department of Planning admitted in February 2022 in its assessment of GHG emissions at the Narrabri Underground Stage 3 coal project, that “*there is no clear guidance on how to assess potential mitigation or abatement measures (e.g. what measures are considered ‘reasonable and feasible’ or ‘best practice’), both for current and future activities*”.⁸
- In total, the Dendrobium Extension Project would result in ~88Mt CO₂-e of GHGs. The Extension would add between 12.2 Mt - 15.5 Mt CO₂-e of direct Scope 1 and 2 GHGs to the NSW GHG inventory over the life of the Project.
- Based on the average Scope 1 emissions (assuming flaring) of 789,551 tonnes CO₂-e per annum, the Dendrobium Extension could become the 4th highest emitting coal mine in NSW
- These emissions will primarily be fugitive methane emissions, which must be urgently reduced. The International Energy Agency - in their [Net Zero by 2050](#) report - has called for the “elimination of all technically avoidable methane emissions by 2030”.

Bluescope’s plan to transition to low carbon steel raises questions about future demand for Dendrobium’s coal for steel making at Port Kembla

- Bluescope produces about 3Mt of steel at Port Kembla, which requires the use of around 2.9Mt of coal (2.5Mt of hard coking coal and 0.4Mt of PCI coal). Of the total coal use, 2.4Mt is sourced locally from the Southern Coalfield while the remainder is supplied from Queensland.⁹
- In FY19, saleable coking coal from the Southern Coalfields was approximately 11Mtpa, being the combined output from Appin, Metropolitan, Tahmoor and Dendrobium. Since FY19, new coking coal capacity has been approved at Russell Vale and Wongawilli.
- South32 has conceded that without the Dendrobium Extension “*BlueScope may be able to source alternate supplies of metallurgical coal locally*”. When the IPC refused the last Dendrobium longwall project, they stated that “[t]he Commission is of the

⁷ The largest Scope 1 GHG emitting facilities in Australia (excluding the electricity sector) are covered by the Australian Government’s Safeguard Mechanism. Facilities that emit more than 100,000 t CO₂-e per annum are required to report to the Clean Energy Regulator.

⁸ NSW DPE, January 2022, **Narrabri Underground Mine Stage 3 Extension Project** (SSD 10269) | Assessment Report, pg 55

⁹ BAEconomics Report, pg 5 here:

<https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-8194%2120201102T060302.347%20GMT>

view that the dependence of BlueScope on Wongawilli Seam coal from the Dendrobium Mine is unclear ...”

- In March 2022, Bluescope described measures under development likely to reduce coal consumption:
 - BlueScope are currently investigating the use of sustainably sourced biochar as a replacement for pulverised coal
 - BlueScope is investigating a pilot-scale 10-megawatt renewable hydrogen electrolyser.
 - Bluescope has signed an MoU with Rio Tinto to explore using renewable hydrogen to replace coking coal to directly reduce iron ore.
 - Bluescope is planning to replace blast furnace PCI coal consumption with coke oven gas, which contains 60% hydrogen.¹⁰

Restoring independence to the assessment process for Dendrobium

- In February 2021, the state’s Independent Planning Commission blocked expansion plans for Dendrobium, *“finding the proposed mine design risks long-term and irreversible damage to Greater Sydney and the Illawarra’s drinking water catchment.”*¹¹ This same Project was recommended for approval by NSW DPE. Without scrutiny from the NSW IPC, this project would likely have been approved.
- Although the new project is significantly smaller than the project refused last year by the IPC, significant questions remain.
- Now - for the first time ever for a coal mine expansion application - this new proposal has been declared State Significant Infrastructure (SSI) because - as the NSW Deputy Premier suggests - of *“its importance to Port Kembla steelworks”*.¹²
- As described above, however, the dependence of the Port Kembla steelworks on future coal supply from Dendrobium remains unclear. Given this, please include a request in your submissions that NSW Minister for Planning Anthony Roberts exercises his power under S. 2.9 (1) (c) of the EP & A Act to task the NSW IPC with reviewing independent reports being commissioned by NSW DPE (including security of coal supply for Bluescope). This section of the Act allows the IPC *“to advise the Minister or the Planning Secretary on any matter on which the Minister or the Planning Secretary requests advice from the Commission”*.

¹⁰ 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%2120220307T040033.538%20GMT>

¹¹ NSW IPC, 05.02.2021, Mine expansion blocked by Commission over significant catchment concerns, <https://www.ipcn.nsw.gov.au/news/2021/08/mine-expansion-blocked-by-commission-over-significant-catchment-concerns>

¹² Media release, Deputy Premier Paul Toole, 4 Dec 2021, Coal certainty delivers job security, <https://www.nsw.gov.au/media-releases/coal-certainty-delivers-job-security>