

**Submission
No 19**

INQUIRY INTO EMISSIONS FROM THE FOSSIL FUEL SECTOR

Organisation: Common Capital

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Joint Standing Committee on Net Zero Future

Parliament of New South Wales

netzero@parliament.nsw.gov.au

Submitted electronically

To the Joint Standing Committee on Net Zero Future,

Re: Common Capital submission on the inquiry into emissions from the fossil fuel sector

Thank you for the opportunity to respond to the inquiry into emissions from the fossil fuel sector. Common Capital has conducted a number of recent studies in this space that may be relevant to your inquiry. Below are some key findings from this research directly relevant to your terms of reference. Attached is our recent study, **Unlocking cost-effective methane abatement in the NSW and QLD coal industry¹**, which documents the research, modelling, and analysis that supports these findings.

Common Capital is a specialist climate and energy, policy and economics research organisation. We are public benefit focussed, working with and for governments to help them unlock the benefits and manage the risks of the net zero transition. We help design, implement and improve initiatives to mobilise catalytic public and private capital to accelerate the development and scaled deployment of zero and negative carbon solutions.

Our research set out to answer the question: what, if any, action could the New South Wales government take to complement the Safeguard Mechanism and accelerate coal mine methane abatement within their own state inventory. It sought to understand likely emissions levels under current policy settings and the commercial feasibility, barriers and pathways to adoption of technology options for onsite abatement. Our research identified the potential for significant additional abatement from government actions to help industry overcome these barriers. The research outlined a suite of complementary policies and design considerations to achieve these outcomes.

Key insights are detailed below and are particularly relevant to the following Terms of Reference (ToR) items:

- **ToR (a):** the relevance and consequences of fossil fuel greenhouse gas emissions for achieving New South Wales emissions reductions targets and complying with the guiding principles and purposes of the Climate Change (Net Zero Future) Act 2023
- **ToR (b) (i):** accuracy of emissions reporting from coal mines
- **ToR (b) (iii):** current measurement, reporting and verification (MRV) methods
- **ToR (d):** implementation and feasibility of greenhouse-gas abatement, including ventilation air methane (VAM) abatement
- **ToR (e):** economic costs associated with greenhouse-gas emissions

¹ <https://commoncapital.com.au/publications/>

Summary of relevant key insights:

Key takeaways

- Fugitive emissions from coal mines are significant and likely to rise.
- There is a significant opportunity for emissions reductions through deployment of commercially ready technologies.
- Prioritising nine mines in NSW that produce 65% of emissions is an opportunity for low cost, quick wins.
- State policy could play an important role in complementing the Safeguard Mechanism to unlock this abatement.

There is a significant opportunity for state policy in NSW to complement the Safeguard Mechanism and unlock cost-effective, near-term and on-site fugitive emissions abatement from coal mines. This would materially contribute to state emissions reduction targets and benefit the overall economy at a low (or negative) cost to the mining sector.

Fugitive emissions from coal mines are currently responsible for 9.7 MtCO₂e in NSW (7% of annual emissions). Fugitive emissions could increase significantly, by 75% in NSW (to 17 MtCO₂e). This is due to the potential approval of new coal mines and expansion as well as improvements to methane measurement.

We estimate that there is approximately 5.1 MtCO₂e per year of abatement available in NSW that is likely to be cost-effective (< \$30/tCO₂e). This abatement opportunity is from current technologies deployed at nine of the largest emitting, operational underground mines. These nine mines produce 65% of coal mine fugitive emissions for 11% of coal production. There is likely to be greater feasibility and lower marginal cost of abatement at the gassier mines.

State policy could play an important role in complementing the Safeguard Mechanism to unlock this cost-effective, near-term and on-site abatement opportunity, for two reasons. Firstly, NSW's interim emissions targets are likely to require deeper reductions than those required under the projected Safeguard trajectories. Secondly, there are significant barriers to industry investment in on-site abatement, despite often costing less than \$30/tCO₂e.

These barriers incentivise coal mines to purchase Australian Carbon Credit Units (ACCUs) and Safeguard Mechanism Credits (SMCs) to meet Safeguard baselines, which may not represent emissions reductions on NSW's inventory. This may make NSW's emissions targets more difficult to meet in the short to medium term without additional policy measures. Moreover, first movers within each jurisdiction and company face initial technical, cultural, core business, regulatory and cost barriers. Additionally, coal mines are disincentivised from investing in emissions reductions due to the opportunity cost of investing in abatement compared to more profitable allocations of capital, such as coal mine expansion.

Our analysis suggests that nationally coal companies in would pay an average of between \$0.08 and \$0.65 for every tonne of coal produced from 2024 until 2050 to meet their Safeguard baselines with ACCUs and SMCs. In comparison, investing in on-site abatement would yield up to an additional \$2.30 per tonne of coal on average, through the generation of SMCs and the reduction of Safeguard compliance costs. Coal companies returned an average of \$33 in profit per tonne of coal from 2014 to 2021 and are likely to continue to return a similar (or greater) profit into the future. Hence, coal companies have a strong reason to prioritise the purchase of ACCUs and SMCs over on-site abatement, choosing to allocate their limited capital to coal production and other more profitable pathways. Finally, complementary state policies can also provide a backstop to improve investor

confidence and remove risks associated with potential future changes to long term national policy settings.

Through an intensive co-design process, we developed and modelled the benefits of a suite of three complementary policy measures to help industry overcome these barriers and accelerate the adoption of cost-effective, on-site abatement.

- The first is a methane abatement fund in NSW, which supports early adopters of abatement technology by sharing the elevated costs facing first movers across the rest of the industry, which in turn receives the benefits of a de-risked, low-cost technology. QLD has already implemented the Low Emissions Investment Partnerships (LEIP) fund to help bring forward investment in mining abatement projects.
- The second policy measure is a set of regulated emissions intensity thresholds that require mines to reduce emissions intensity under a certain target to drive policy certainty and unlock cost-effective abatement.
- The third measure is a state-wide methane measurement network to support both the continuous adoption and improvement in best practice of integrated methane measurement technologies and validate the efficacy of public and private investments under the policy framework.

We modelled the impact on emissions and the costs and benefits to the broader economy and mining sector within NSW of these three policy measures, with a range of detailed design options and sensitivities. Our analysis found that state policies that complement the Safeguard Mechanism and bring forward fugitive emissions abatement may significantly reduce emissions, benefit the economy and have limited (or negative) costs to the coal mining sector, in NSW.

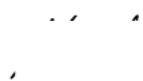
In NSW, combining the most effective design options across all three policy measures may reduce emissions in 2035 by 5.4 – 6.9 MtCO₂e. This contributes \$3.4 – \$4.3 billion to the economy, at a net cost to the mining sector of \$2.70 to \$4.10 per tonne of CO₂e abated. These costs and benefits were modelled for a methane abatement fund with a total cost of \$210 million, which could be raised by a levy of approximately \$0.20 per tonne of raw coal for five years, and a methane measurement network with a total cost until 2050 of approximately \$6 million per mine (\$8 million per year for every mine in NSW), or \$0.03 per tonne of coal. For context, coal companies have produced a long-term average profit of \$33 per tonne of coal.

For NSW, the key takeaways from the cost benefit analysis (CBA) are that many detailed design options for the policy package may result in positive outcomes for emissions and the economy, at a low (or negative) cost to the mining sector. More ambitious policies (a larger methane abatement fund and regulated emissions intensity thresholds that commence earlier) tend to result in more favourable outcomes for the economy and mining sector.

The report also includes a technical appendix on the costs and readiness of abatement and measurement technologies, as well as the sources, assumptions and methodology used to model the cost-benefit analysis, projected fugitive emissions, and coal mine financials.

Should you require further information, please do not hesitate to contact me at henry.adams@commoncapital.com.au.

Yours sincerely,



Henry Adams

Director, Common Capital