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NSW NET ZERO COMMISSION

2025 CONSULTATION PAPER

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NSW MINERALS COUNCIL

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1 Introduction

The NSW Minerals Council (NSWMC) is the peak industry association representing the state's mining industry, including companies involved in the exploration and production of coal, metals and critical minerals, together with associated service providers.

The Net Zero Commission's 2025 Consultation Paper contains some brief discussion on the resources sector, with a focus on emissions from coal mining.

While the metals and critical minerals sector in NSW is an important and growing part of the NSW mining industry, this submission focuses on the NSW coal mining sector to address the questions posed in the Consultation Paper.

2 The NSW coal mining industry

NSW produces high quality thermal and metallurgical coal used in power generation, steel production and other industrial applications. NSW predominantly exports coal to power stations and steel mills in Asia, as well as supplying NSW electricity generators, the BlueScope steelworks in Port Kembla and other domestic customers.

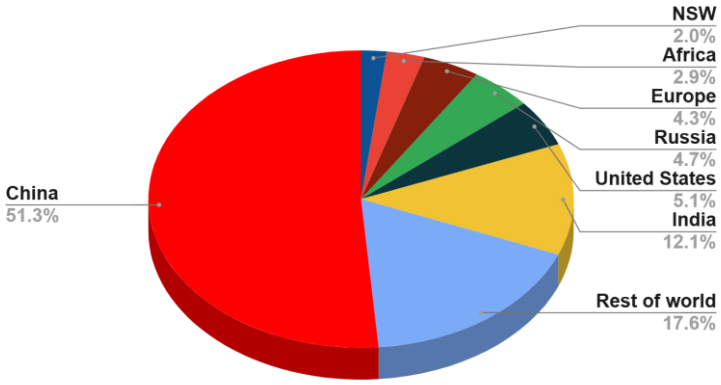
Coal is NSW's most valuable export and is central to the economies of the Hunter, Newcastle, Illawarra, North West and Central West regions. Coal mine employment is at near-record levels of close to 27,000 people, supporting indirect employment of approximately five times that number. The industry supports 5,251 NSW businesses that supply the industry, ranging from large equipment and contracting suppliers to small local businesses. Last financial year, the industry directly spent $19.6 billion on wages, suppliers, taxes and royalties in NSW.[1]

Figure 1 NSW Mining Economic Survey Data

[1] NSWMC Economic Survey Data

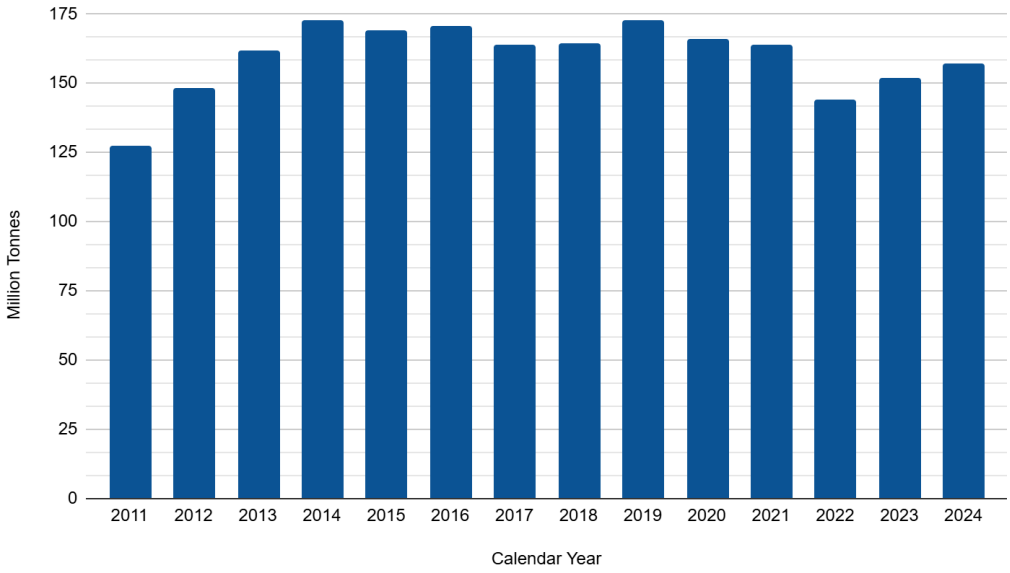
While coal is NSW's most valuable export, NSW produces just 2% of global coal production. Despite being such a small share of global coal production, NSW's coal exports are essential to the energy security of our customers, who in many cases lack domestic sources of energy and value NSW as a reliable, trusted supplier of high quality energy resources.

Figure 2 Global coal production (IEA, NSW Coal Services)



NSW coal exports have remained relatively stable over the past decade. The industry expects this trend to continue over the medium term. While global coal demand is expected to fall over the longer term, coal will remain an important source of energy in Asia. Market analysts expect demand for high quality Australian thermal coal to remain robust in the seaborne market, with demand for lower quality coal from other jurisdictions likely to experience earlier declines.

Figure 3 NSW coal exports (NSW Coal Services)



Even with expected declines in coal demand over the longer term, resource depletion at existing Australian mines is likely to outpace the decline in demand in our export markets. This necessitates extensions of existing mines to meet ongoing demand for our high quality coal to maintain energy security, reliability and affordability in our customer markets.

3 NSW coal mining greenhouse gas emissions

The coal mining industry's emissions reductions align with NSW's targets

Greenhouse gas emissions across the mining industry fell by 33% between 2005 and 2022[2]. The Safeguard Mechanism will drive further reductions in emissions across the NSW coal mining sector that will closely align the coal mining industry's net emissions reductions with the NSW Government's net emission reduction targets.

Approximately 95% of NSW coal mining emissions are covered by the Commonwealth's Safeguard Mechanism. Analysis undertaken by the NSW Net Zero Modelling team demonstrates the impact of the Safeguard Mechanism on net emissions in the NSW coal sector (Figure 4). The analysis indicates the industry's net emissions will fall to approximately 10 million tonnes CO2-e in 2030 – approximately 50% of the industry's Scope 1 emissions in 2005. This reduction aligns with the NSW Government's net emissions reduction target of 50% by 2030.

Figure 4 NSW DCCEEW analysis of the impact of the Safeguard Mechanism on net emissions in NSW coal mining sector[3]

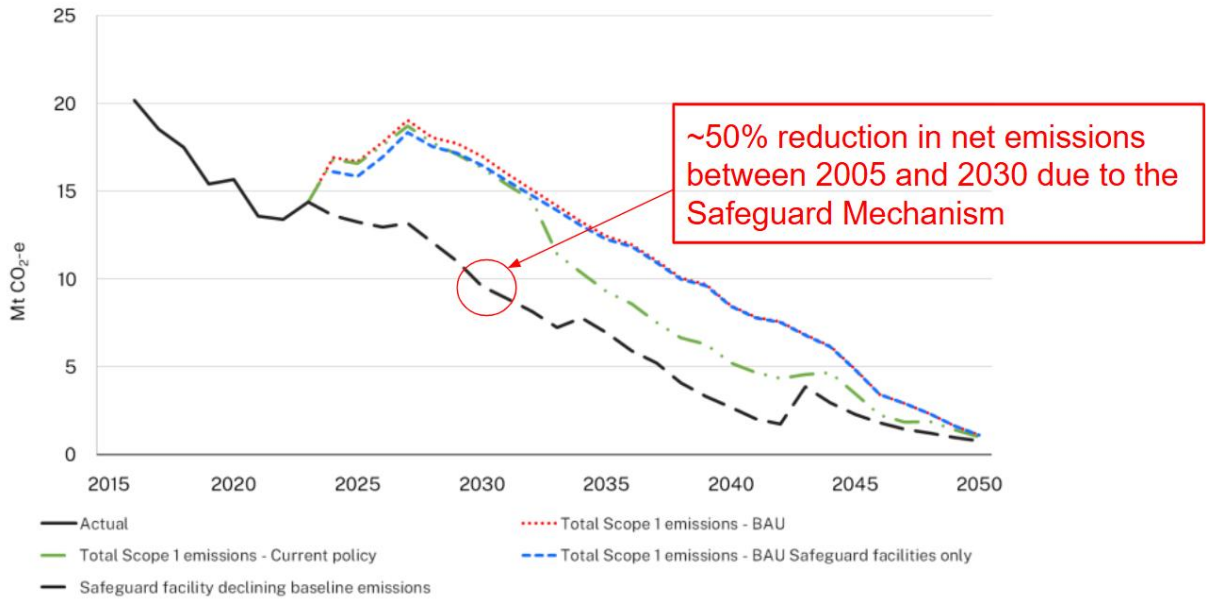


Figure 24 Scope 1 emissions for coal mining showing inventory estimates (1990 to 2022), scope 1 BAU and current policy emissions projections, scope 1 emissions for Safeguard coal mines only, and the Safeguard declining baseline for the coal mining sector (2023 to 2050)

Furthermore, as highlighted in the next section, the NSW Net Zero Model has significantly overestimated coal mining's gross emissions for 2023-24, and once this is rectified, the forecast reduction in net emissions will increase.

The creation of separate, State based emission reduction targets is complicating the regulatory framework, creating additional uncertainty, higher costs and greater complexity, with questionable benefits. This is exacerbated when State based targets do not align with Australia's international commitments.

[2] NSW Net Zero Dashboard
[3] NSW Greenhouse Gas Emissions Projections 2024 Methods Paper

However, even with NSW's stronger targets, it is incorrect to presume that additional regulation beyond the Safeguard Mechanism is required for the mining industry to align with the State's net emission reduction targets.

The NSW Government's forecasts overestimated NSW coal mining emissions by 3 million tonnes in 2023-24

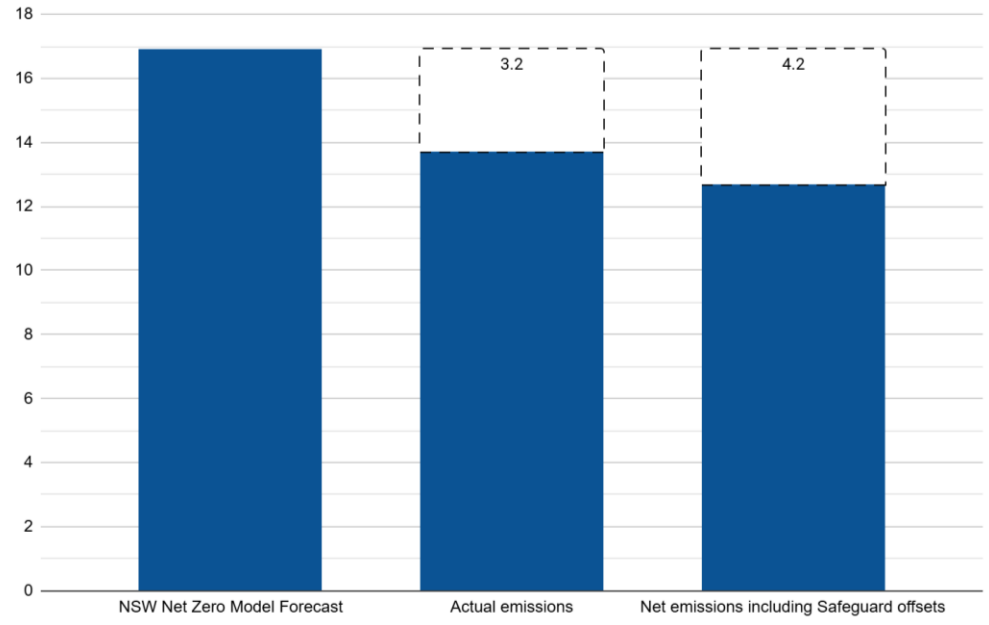
The NSW Government's Net Zero model significantly overestimated emissions from coal mining last financial year, confirming that further work is needed before the model's forecasts for the industry can reliably inform policy making.

The latest NSW Net Zero model update includes historical data up to 2021-22 and then forecasts emissions from 2022-23 onwards. However, the Commonwealth Government has already released *actual* emissions data for 2022-23 and 2023-24, allowing a comparison between what the NSW Net Zero Model forecast would happen, and what actually happened.

The Commonwealth's Safeguard Mechanism data, together with estimated emissions for coal mines not covered by the Safeguard Mechanism, indicates total NSW coal mining gross Scope 1 emissions were approximately 13.7 million tonnes in 2023-24.

The NSW Net Zero Model forecast for NSW coal mining gross Scope 1 emissions was approximately 16.9 million tonnes over the same period - 3.2 million tonnes, or 23%, higher.

Figure 5 NSW Net Zero Model 2023-24 coal mining Scope 1 emissions forecasts compared to actual emissions (Mt CO2-e)[4]



While a lot of attention has focused on the Net Zero Model's forecast of a 4.5 million tonne CO2-e, or 45%, increase in fugitive emissions over the five years from 2022-2027, it appears this is a significant overestimate. This increase is equivalent to adding in the total annual emissions from 9 average Safeguard-covered coal mines.

[4] NSWMC analysis based on NSW Net Zero Dashboard and Methods Paper, Clean Energy Regulator

The 3.2 million tonne overestimate of emissions for 2023-24 provides an indication that the subsequent forecasts are also overestimated, meaning that policy and regulatory settings are being guided by inflated emissions forecasts for the coal sector.

The NSW Net Zero Model does not fully capture the industry's net emissions reduction obligations under the Safeguard Mechanism

As NSWMC has highlighted to the Commission on several occasions, the full extent of net emissions reductions for facilities covered by the Safeguard Mechanism are not reflected in the Net Zero Model forecasts. Accounting for the additional 1 million tonnes in net emissions reductions delivered by the coal sector under the Safeguard Mechanism in 2023-24 increases the difference between the Net Zero Model forecast for 2023-24, and the industry's actual net emissions, to 4.2 million tonnes, or 25%.

The NSW EPA has indicated that national carbon accounting rules limit their ability to consider offsets in the industry's emissions projections since offsets generated outside NSW do not count towards NSW's emissions inventory. However, other state and territory governments in Australia have addressed this issue.

Section 6 of the *Victorian Climate Change Act 2017* states the definition of net zero emissions is:

> ***net zero greenhouse gas emissions means zero greenhouse gas emissions after***—
>
> *(a) determining the amount of total greenhouse gas emissions attributable to the State, including any removals of greenhouse gas emissions from the atmosphere due to activities within the State; and*
>
> *(b) deducting from the amount described in paragraph (a) any eligible offsets from outside of the State.*

Similarly, the ACT's *Climate Change and Greenhouse Gas Reduction Act 2010* states:

> ***zero net emissions*** *is achieved if any emissions of greenhouse gas in the ACT are balanced by—*
>
> *(a) avoidance and mitigation activities; and*
>
> *(b) emissions offsets outside the ACT but within Australia.*

The Government should work to resolve these issues so that this accounting anomaly does not prevent the industry's full regulatory obligations from being recognised and reflected within the NSW regulatory framework.

The emission estimation techniques for NSW coal mines are scientifically robust

There have been multiple groups questioning the accuracy of fugitive emission estimation techniques for coal mining, particularly in relation to open cut mines.

Much of the criticism has focused on the use of default emission factors to estimate fugitive emissions. This criticism is largely irrelevant in NSW given all NSW open cut mines covered by the Safeguard Mechanism (>95% of coal sector emissions) use the higher order Method 2 under the NGERs reporting framework, which is the best available scientific technique to estimate site-specific fugitive emissions from open cut coal mines.

Method 2 is a scientifically robust methodology that uses proven technologies and has been developed in consultation with Commonwealth Government officials, auditing and laboratory service providers, and the research community, including CSIRO. Method 2 involves direct drilling and sampling across a representative sample of the coal resource to estimate the total volume of in situ gas. Coal and gas samples are laboratory tested, a gas model is developed by a qualified Estimator,

and an independent peer review is undertaken of the model. In addition, annual emissions estimates are subject to the annual audit/assurance requirements of the National Greenhouse and Energy Reporting Scheme and are also subject to ongoing independent audits by the Clean Energy Regulator.

This framework is in stark contrast to the emerging use of 'top down' methodologies such as satellite-mounted sensors, which have a wide range of limitations. As the Clean Energy Regulator has stated, *"There are limitations to satellite-based measurements that prevent this technology being used to estimate emissions reliably at the facility level."*

The industry is supportive of innovation in estimation and monitoring techniques and is investigating the potential of alternative technologies through the industry research body ACARP. We note that the Commonwealth Government has also established an expert panel to investigate the potential for atmospheric measurement approaches and is undertaking a review of Method 2 for surface mining to ensure it remains fit-for-purpose.

With regard to underground mining, all of Australia's underground coal mines use a direct measurement approach (Method 4) to estimate fugitive emissions associated with coal extraction.

Accordingly, Australia's approach to coal mine fugitive reporting is recognised as leading practice. As the Australian Government's response to the Climate Change Authority's 2023 Review of the National Greenhouse and Energy Reporting legislation stated:

> *The current approach to emission estimation under Method 2* [for open cut mining] *is equivalent to the highest (most sophisticated) IPCC* [Intergovernmental Panel on Climate Change] *method tier. Australia is currently the only country in the world to use methods of this tier to estimate fugitive methane and carbon dioxide emissions from both underground and open-cut coal mines.*[5]

The Safeguard Mechanism is incentivising direct emissions reductions

The NSW coal sector has 30 years' experience directly abating greenhouse gas emissions through fugitive methane abatement projects, together with an ongoing focus on the energy efficiency of diesel use and electricity use. This focus has strengthened following the reforms to the Commonwealth's Safeguard Mechanism that came into effect in July 2023.

The Safeguard Mechanism is providing strong, long term signals on carbon liabilities that is incentivising the investigation and adoption of technically and financially viable mitigation measures in the short, medium and long term.

The ability to retire Australian Carbon Credit Units (ACCUs) and Safeguard Mechanism Credits (SMCs) to meet net emission reduction obligations under the Safeguard Mechanism provides important flexibility in circumstances where insufficient direct abatement opportunities are available to meet declining baselines, which is the case in hard-to-abate industries.

This flexibility is a central feature of the Safeguard Mechanism to ensure heavy industry is not forced to reduce production or shut down in order to comply with emission reduction obligations.

The price of ACCUs is expected to rise substantially in the coming years. As ACCU prices rise, the financial viability of abatement measures with higher marginal abatement costs will change. The relative use of direct abatement and offsets will vary between individual mines and over time as technology develops and economics change.

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[5] Australian Government response to the Climate Change Authority's 2023 Review of the National Greenhouse and Energy Reporting legislation, August 2024, page 11 available at https://www.dcceew.gov.au/sites/default/files/documents/government-response-cca-nger-review.pdf

The NSW coal industry directly abated more than 4 million tonnes CO2-e of methane in 2023-24

The coal sector is already undertaking extensive abatement of fugitive methane emissions.

Underground coal mines in NSW directly abated more than 4 million tonnes CO2-e of methane emissions in 2023-24. This abatement was achieved by draining methane from coal seams prior to mining and from goaf areas after mining, and combusting the methane in flares or gas fired power generators. This direct abatement equates to more than a 20% reduction in the coal sector's Scope 1 emissions during 2023-24.

Table 1 Estimated NSW coal mining methane abatement 2023-24 (CO2-e)[6]

Methane flaring	470,216
Methane exported for power generation	4,093,876
Total methane abatement	**4,564,092**

Underground coal mines are implementing ongoing improvements to the efficiency of mine gas drainage systems to increase the volumes of methane captured and abated. These improvements can be delivered through measures such as sealing goafs to capture greater volumes of methane and reduce the volume of air entering mine ventilation air, and increasing the intensity of pre-drainage drilling. For example, Appin Mine has delivered ongoing improvements to its gas management systems to increase capture efficiency from 51.4% in 2014-15 to 67% in 2023-24, delivering significant increases in the volume of methane captured and abated through the mine's gas management infrastructure.

Gas management approaches and the optimal mix of management measures will vary between mine sites. Even within a single mine there can be wide variation in geological and gas reservoir properties, while other variables such as mining methods, the extent of historical mining, local environmental constraints and remaining mine life all influence the site-specific mitigation measures that are feasible.

The industry is also implementing measures to improve the efficiency of diesel equipment, as well as the potential use of alternative fuels while longer term, near-zero emission mining equipment is developed.

The case studies below demonstrate a selection of existing and planned initiatives across the NSW coal mining sector to directly reduce greenhouse gas emissions.

Examples of direct emission abatement measures in the NSW coal sector

- **Appin Mine flares and gas fired power generation**[7] - Appin has extensive gas drainage infrastructure that supplies gas to an 85.5 MW gas fired power station operated by EDL, along with flares that operate when gas cannot be supplied to the power station. Extensive efforts have been made to improve gas drainage efficiency through additional in-seam drilling and sealing of goaf areas, leading to an increase in drainage efficiency from 51.4% in 2014-15 to 67% in 2023-24.
- **Tahmoor Mine flares and gas fired power generation** - Tahmoor supplies methane from pre- and post-gas drainage to a 7.3 MW power station operated by EDL, with flares used to abate gas that cannot be taken by the power station.

[6] NSW Minerals Council analysis
[7] Appin Annual Review FY24

- **Integra Mine flares and gas fired power generation** - Integra supplied drained mine gas to the 12.7 MW Glennies Creek power station, operated by EDL. Integra ceased production in June 2024 and the mine and power station are being decommissioned.
- **Bulga Underground decommissioned mine goaf drainage system** - Bulga Underground is a decommissioned coal mine. Bulga continues to extract methane from the decommissioned workings, which is sent to the post-drainage flaring facility for combustion.
- **Mandalong Mine flares and gas fired power generation** - Mandalong Mine abates methane through a combination of flares and the supply of gas to an 8MW power station that was commissioned in 2023 and operated by EDL.
- **Mandalong Mine gas capture improvements**[8] - Mandalong is investigating options to improve methane gas capture rates that would increase the volume of abatement through its flaring or power generation infrastructure. If the projects are viable, they are expected to commence in 2025 or 2026.
- **Ashton Mine flares** - Gas volumes and composition limit the opportunity for power generation at Ashton Mine. However, Ashton operates flares that are used to abate drained methane when the volumes and concentrations are suitable for flaring.
- **Ashton goaf sealing**[9] - Ashton aims to achieve effective pressure balancing across three active coal seams that will reduce VAM emissions by reducing the volume of emissions from sealed areas that can enter mining areas and the mine ventilation system. The project enables methane collection in specific underground locations, improving gas purity for capture and flaring.
- **Metropolitan Colliery flare investigations**[10] **-** Gas composition at Metropolitan Colliery limits current abatement opportunities. However, higher methane levels are expected as the mine progresses westward. Metropolitan Colliery is in the planning phase of installing a flare unit to be constructed in 2026, which will burn methane from the gas drainage plant once the methane percentage is suitable.
- **Narrabri enclosed flare**[11] **-** Narrabri mine is procuring an enclosed flare system aimed at efficiently burning methane contained in pre-drainage gas that is above the 30% concentration required for flaring. Methane concentrations at Narrabri have historically been below this level, with in-situ gas predominantly carbon dioxide. However, the longwall series at the southern end of the mine has a slightly higher methane composition and is forecast to be greater than 30% in some areas. This is expected to allow flaring to be implemented for pre-drainage gas at times when the concentration exceeds 30%, with latest modelling indicating that this may start to occur at the end of FY25.
- **Narrabri Mine sealing of the northern area -** Narrabri Mine proposes to seal the northern area to reduce fugitive emissions escaping from the goafs. This will minimise fugitive emissions entering VAM from the northern area. Narrabri has sealed LW107 to evaluate the effectiveness of this approach and is monitoring the data to inform next steps.
- **Bengalla open-cut pre-drainage studies**[12] - Bengalla has completed a conceptual study on the potential to drill vertical wells to enable fugitive gas extraction. Bengalla is undertaking

[8] Mandalong Annual Review 2024
[9] Yancoal Sustainability Report 2024
[10] Metropolitan Annual Review 2023
[11] Whitehaven Sustainability Report 2024
[12] New Hope Sustainability Report 2024

pre-feasibility assessments and is also in the early stages of investigating another approach that involves a horizontal in-pit drilling technique used in underground coal mining, with gas extracted at a remote vertical well.

- **Mount Thorley Warkworth - diesel efficiency improvements through repowering excavators -** As part of efforts to improve fuel efficiency and reduce diesel-related emissions, Yancoal partnered with Liebherr-Australia to complete the world's first repower of two R 9800 excavators. The repower involved replacing the existing engines with Liebherr's advanced D9812 12-cylinder engines, delivering improved fuel efficiency, enhanced productivity, and reduced maintenance and operational costs. The repowered excavators achieved a 4% fuel burn reduction within the first three months of operation. A sense of the scale and complexity of this initiative can be seen in this video.
- **Moolarben diesel efficiency improvements**[13] - At Moolarben Mine, trucks have been repowered from Cummins to Penske, which has delivered an average of 19% fuel burn saving. Moolarben also installed a Liebherr Power Efficiency (LPE) engine and hydraulic management system in select excavators which has delivered up to 12% in fuel savings.
- **Maules Creek renewable diesel trial**[14] - Whitehaven has recently engaged in the development of a trial of 100% renewable diesel at the Maules Creek Coal Mine using ancillary/support fleet. This trial is planned to commence in 2025 and will gather fuel usage data before, during and after the trial period to evaluate the real-world performance of renewable diesel in the Maules Creek Coal Mine context.
- **Industry collaboration on low-emission mining equipment –** NSW coal mines are participating in broader industry collaborative initiatives to progress efforts towards lower emission mining equipment. One such example is Caterpillar's Pathways to Sustainability initiative[15], a global, four year collaborative program to support customers through the energy transition.
- **Appin VAM abatement project** – Appin Mine is planning the installation of a Regenerative Thermal Oxidation (RTO) unit at Appin mine, to demonstrate the commercial scale application of this technology in a contemporary NSW mining environment and under modern safety management requirements. The successful demonstration of this technology will provide important information on operational parameters and safety systems that will inform broader consideration of this technology.
- **Tahmoor VAM abatement investigations**[16] – Tahmoor Mine is investigating the potential to apply VAM abatement, with an intent to progress to pre-feasibility studies with a potential view to rolling out the technology later this decade depending on whether the process is technically and commercially viable.
- **Industry project to commercialise catalytic VAM abatement** – Through Low Emissions Technology Australia (LETA), the industry is funding a project to commercialise catalytic VAM abatement. Catalytic technologies have the potential to operate at lower methane concentrations and lower temperatures, as well as reduce the size of infrastructure required, which could broaden the number of mines where VAM abatement could be adopted.

[13] Moolarben Annual Review 2024
[14] Maules Creek Continuation Project Greenhouse Gas Assessment
[15] Caterpillar Pathways to Sustainability Program
[16] Tahmoor Mod 3 Response to EPA Submission, 19 December 2024

NGO commentary on industry abatement opportunities is misleading

The mining industry has observed a lot of misleading analysis and commentary regarding greenhouse gas abatement in the NSW coal sector. Several environmental groups and thinktanks purport to have the engineering, geological, technical, operational and financial expertise to advise the industry and governments on fugitive emissions abatement opportunities and related policies.

Most of these reports are misleading or confuse the issues. The reports tend to vastly oversimplify the available abatement opportunities and the credibility of the reports is diminished by factual errors and misinformation. Some examples from a recent EDO report[17] on the regulation of coal mine methane include:

- *"... the gas engine is suited to gases with less methane content, removing the argument against use where the coal seams are less methane rich."* - the authors appear to be suggesting that methane content is irrelevant when considering the potential application of a gas engine. Methane concentration, together with a range of other gas reservoir, geological, and safety considerations, are all crucial factors that influence the viability of potential abatement measures.
- *"... most underground mines carry out gas drainage via a gas drainage plant consisting of vacuum pumps attached to an underground gas pipe reticulation system via boreholes. The gas is removed to the surface where it will not cause safety issues for the mine and is usually vented to the atmosphere as VAM."* - the authors are confusing gas drainage systems and mine ventilation systems. Gas drainage systems do not 'usually' vent to the atmosphere - the vast majority of methane drained from underground mines in NSW is abated through power generation or flaring.
- *"The Bulga Coal Complex … had drainage infrastructure installed for its underground works. However, this infrastructure was dismantled to make way for further open cut works."* - the Bulga Underground mine, which is decommissioned, still has gas drainage and flaring infrastructure in place and continues to abate methane using this infrastructure.
- *"In practice, the Safeguard Mechanism does little to reduce actual, onsite emissions from coal mines, including coal mine methane emissions."* - it is unclear how the authors have reached this conclusion when the reformed Safeguard Mechanism has only been in place for a single year and there is a wide range of publicly available information about the abatement measures the industry has implemented or is planning. The Safeguard Mechanism is providing strong financial incentives to reduce onsite emissions.
- *"So broad is the range of emissions intensities in the coal mining sector, that this averaging may continue to cancel out even the effect of the annual decline rate to 2030…"* - this statement demonstrates a fundamental misunderstanding of the Safeguard Mechanism design. Suggesting that the averaging of site specific and industry emissions intensities will cancel out the effect of the decline rate on the industry's emissions is incorrect.
- *"Fugitive methane emissions from coal mines … are rising, and will continue to do so…"* - the latest NSW Net Zero Model indicates that fugitive emissions from coal mines continued to fall, with total reductions of 48% between 2005 and 2022. NSWMC questions whether the forecasts for subsequent years are reliable, given the Net Zero Model overestimated coal mining emissions in 2023-24 by more than 3 million tonnes CO2-e.
- *"… Australia lags behind industry practice in, for example, VAM abatement"* – A recurring theme in reports prepared by groups with no apparent expertise in underground coal mining and fugitive emissions abatement is the oversimplification of the potential for VAM abatement in the Australian mining context, pointing to VAM abatement projects in the U.S and China. This demonstrates a lack of understanding of the different gas management practices, VAM concentrations, commercial

[17] https://www.edo.org.au/publication/improving-coal-methane-regulation-in-nsw/

drivers and stringent safety standards that the Australian mining industry operates within. The industry is committed to the safe and effective deployment of VAM abatement, as demonstrated by the multiple projects being progressed and the substantial industry funding supporting this abatement opportunity. However, there are technical, safety and financial challenges specific to the Australian mining industry that need to be addressed.

The one area where the industry agrees with the EDO is their observation that *"The framework for the regulation of coal mines in NSW is complex, multi-layered and duplicative."*

One way to reduce this complexity would be to follow the lead of the Western Australia Government, where an independent review *"highlighted the duplicative nature of state and commonwealth conditions for greenhouse gas emissions, applying an unnecessary administrative burden on regulators and proponents without delivering any additional environmental benefit."*

In response, the Western Australia Government *"has determined that where proposals with significant greenhouse gas emissions are adequately dealt with by other regulatory measures such as the strengthened Safeguard Mechanism, those emissions should not be regulated by the State."*[18]

This is a logical and sensible approach that if applied in NSW would immediately remove a large amount of complexity from the regulatory framework that the evidence suggests delivers very little additional value.

[18] WA Greenhouse Gas Policy for Major Projects

4 Consultation Paper Questions

NSWMC's responses to the Consultation Paper questions in relation to coal mining are outlined below.

Question 16: How could transparency of how coal mines meet their Safeguard Mechanism obligations be improved?

The Safeguard Mechanism data that was released in April 2025 (shortly after the Consultation Paper was released) reported an expanded range of data.

The new reporting requirements provide a high level of detail regarding individual facility emissions and Safeguard compliance. The expanded data includes total Scope 1 emissions broken down by gas, baseline emissions, SMCs generated and any SMCs or ACCUs retired in instances where covered emissions exceed baseline emissions. The use of flexible compliance arrangements is also reported, as well as explanations as to why more carbon abatement did not occur at a facility if it surrenders ACCUs equal to or more than 30% of its baseline.

This increased granularity of reporting under the Safeguard Mechanism provides a rich dataset regarding Safeguard compliance and has only been in place for one year. Any further changes to Safeguard Mechanism reporting are best considered during the scheduled review of the Safeguard Mechanism that is due to begin next year, rather than piecemeal additions to Safeguard reporting by state governments.

Furthermore, we note that the NSW EPA is progressing actions under its Climate Change Action Plan that include potential additional reporting and the preparation and publication of Climate Change Mitigation and Adaptation Plans (CCMAPs) by licence holders. These initiatives are likely to impose further requirements around emissions reporting, together with information on mitigation measures that are implemented or being planned at coal mining operations.

These existing measures ensure that coal mines are amongst the most transparent of all industries in relation to emissions reporting, including in comparison to industries that generate much greater volumes of emissions in NSW.

Question 17: What measures would lead to coal mines prioritising on-site abatement over offsetting?

The selection of on-site abatement over offsets is ultimately a question of the relative costs of technically viable and safe abatement measures against the costs of ACCUs and SMCs. This will change over time as technology develops and relative costs evolve.

As demonstrated by the case studies in this submission, mines are undertaking a wide range of onsite abatement. It is broadly expected that the price of ACCUs will rise substantially in the coming years[19], which will influence the viability of abatement measures with higher marginal abatement costs. Mining companies are considering these future changes as they invest in the development of longer-term abatement opportunities.

There appears to be an expectation that coal mines should be forced to immediately implement abatement measures with marginal abatement costs well above the costs of ACCUs. This should only be considered where external sources of funding are available to make the marginal costs of abatement competitive.

The High Emitting Industries Program is important in this regard, and NSWMC supports the continuation of this program. NSWMC understands there have been multiple applications for funding,

[19] Carbon Market Institute

however applications have stalled in a complex and lengthy assessment process. NSWMC anticipates ongoing industry interest in funding opportunities through the High Emitting Industries Program.

A concrete action the NSW Government could take to improve the viability of onsite abatement is to include operational expenditure in emission reduction funding programs. The High Emitting Industries program only funds capital expenditure. This means that the potential use of bio-fuels, which have a significant price premium and a high marginal cost of abatement, are not eligible to receive funding.

Question 18: What measures should be considered beyond the Safeguard Mechanism to reduce emissions of the resources sector, particularly methane emissions, to meet NSW's emissions reduction targets?

This is a leading question based on an assumption that additional measures targeting the resources sector beyond the Safeguard Mechanism are required. For the reasons outlined in this submission, NSWMC does not agree with the premise of the question. In summary:

- Before considering any measures beyond the Safeguard Mechanism, the NSW Government should firstly fully recognise the industry's obligations under the Safeguard Mechanism in the NSW emissions inventory, forecasts and accompanying analysis undertaken by the Net Zero Commission and other agencies. This should include full recognition of the net emissions reduction obligations of Safeguard facilities, including any offsets and SMCs.
- The coal sector is one of the few with regulated emissions reduction requirements under the Safeguard Mechanism, including methane emissions. Regulatory effort would be better directed towards sources of emissions that are currently unregulated.
- The mining industry has already reduced emissions by 33% between 2005 and 2022. The Safeguard Mechanism will deliver further reductions in net emissions that are likely to closely align the industry's emissions reductions with the overall NSW net emission reduction targets for 2030, 2035 and 2050.
- The emissions forecasts for the mining sector in the NSW Net Zero Model should be treated with caution given the 2023-24 forecast overestimated the coal sector's emissions by more than 3 million tonnes, and a further net 1 million tonnes of ACCUs and SMCs retired under the Safeguard Mechanism are not recognised. Further work is needed to refine the model before it can reliably inform decision making.
- Methane oxidation is already the primary method of abatement in the coal sector. The industry abated more than 4 million tonnes CO2-e methane in 2023-24 through existing abatement measures. The case studies in this submission demonstrate that the industry is continually working to increase the proportion of methane captured and abated and is also focusing on the potential for VAM abatement and open cut mine pre-drainage. In this context, it is difficult to see the justification for additional measures beyond the Safeguard Mechanism given it is already clearly incentivising viable methane abatement opportunities at NSW coal mines.

As noted in the previous answer, the ongoing availability of funding for initiatives that do not otherwise stack up financially will help bring forward direct abatement.

NSW Minerals Council