

Review of EPA's Proposed Greenhouse Gas Mitigation Guide for NSW Coal Mines

February 2026

Net Zero Commission

17 February 2026

The Hon Penny Sharpe MLC
Minister for Climate Change, Minister for Energy,
Minister for the Environment, Minister for Heritage
52 Martin Place
SYDNEY NSW 2000

Re: EPA Coal Guide Review request (ref: DOC25/472962)

Dear Minister,

Thank you for requesting that the Net Zero Commission (the Commission) review the NSW Environment Protection Authority (EPA) Proposed Greenhouse Gas Mitigation Guide for NSW Coal Mines (Draft Coal Guide). We welcome this opportunity to provide advice on how the EPA can introduce regulations that help NSW coal mines contribute to the State's legislated emissions reduction targets and the objectives of the *Climate Change (Net Zero Future) Act 2023* (Climate Change Act).

As you know, guided by the Joint Standing Committee on Net Zero Future's recommendation that the Commission provide a further report on "the resources sector, including methane abatement technology and fugitive emissions, as a matter of urgency", the Commission released our Coal Mining Emissions Spotlight Report (Coal Spotlight Report) on 12 December 2025.

The key findings of the Coal Mining Emissions Spotlight are provided in Appendix A and the Commission's review of the Draft Coal Guide is provided in Appendix B.

While our work presented that total resources sector emissions fell 34% between 2004–05 and 2021–22, these reductions were driven largely by the closure of several gassy underground coal mines. The latest available NSW Government projections anticipate future emissions from the resources sector to rise alongside modelled increases in coal production, reversing the historical trend of declining resources sector emissions.¹

Our report revealed that current policy settings under the Commonwealth's Safeguard Mechanism are unlikely to deliver strong enough signals to progress on-site abatement with the urgency required to achieve the legislated targets within the Climate Change Act. Finding 1 states:

"In order for NSW emissions targets to remain achievable, on-site abatement at existing mines is essential, particularly to reduce fugitive emissions. Additional regulatory measures will be required to achieve measurable on-site abatement."

¹ NSW DCCEE 2025, 'NSW greenhouse gas emissions projections 2024: Methods paper', https://www.environment.nsw.gov.au/sites/default/files/2025-06/nsw-greenhouse-gas-emissions-projections-2024-250104_0.pdf, p. 73.

It is well established that methane is responsible for around 30% of current atmospheric warming.² It can be regarded as a ‘super pollutant’. In this context, and based on our analysis, the Commission believes an economy-wide limit of methane emissions from the extraction of fossil fuels is both achievable and would make a significant contribution to achieving the State’s legislated emissions reduction targets.

Despite limited uptake to date, the Coal Spotlight Report noted there are on-site abatement opportunities available to both underground and open cut coal mines in NSW. These include:

- Pre- and post-drainage of methane for flaring or utilisation. These are the simplest activities with both having been implemented at underground mines (including those at Appin, Mandalong and Tahmoor). Pre-drainage is also emerging as an option for open cut mines.
- Regenerative thermal oxidisers (RTOs). These are a proven technology for destroying methane in ventilation air in underground mines. They have been used at coal mines including in the US and China, and it is pleasing to see the Moonbah underground mine at Appin / Bulli already planning a Ventilation Air Methane (VAM) demonstration project.

In addition, there are opportunities to reduce emissions from diesel combustion at open cut and underground mines. These include alternative fuels as well as more efficient, hybrid and, in time, fully electric equipment. Although their use in coal mining is at an early stage, large miners such as BHP and Rio Tinto have begun battery-electric trials of large haul trucks at several iron ore mines in Australia.

The Commission therefore welcomes the EPA’s role. Clear regulations can help drive innovation and measurable emissions abatement. We believe that current technologies and approaches can be adopted and scaled to reduce both fugitive methane and diesel combustion emissions at NSW coal mines. The Commission also considers the Draft Coal Guide could be further enhanced to achieve greater certainty of on-site emissions reductions.

An outcomes-based approach that specifies the amount of on-site abatement required by a set time would allow coal mine operators to determine the best abatement solutions for each site’s specific conditions and limitations. This would minimise the need for exemptions and increase the likelihood of on-site abatement to contribute to meeting NSW’s legislated targets.

Further, to maximise abatement outcomes, the Commission suggests that the EPA’s implementation approach prioritises emissions reductions at the highest emitting group of mines, as these account for a significant portion of emissions.

The Draft Coal Guide does not propose any requirements on open cut mines to reduce fugitive emissions. It is the Commission’s view that this represents a potentially missed opportunity and we encourage the EPA to consider requirements for open cut mines as pre-drainage emerges as a feasible solution.

The Commission recognises that there are safety, regulatory, technical and economic challenges to implementing on-site abatement at NSW coal mines. We are not suggesting this is easy. But those challenges which exist are not insurmountable.

Introducing new regulatory requirements and ensuring they are coordinated between the EPA and the Resources Regulator could overcome constraints and achieve the successful implementation of on-site abatement technologies.

² See, for example: Global Methane Pledge n.d., The Imperative for Methane Action’, <https://www.globalmethanepledge.org/imperative-methane-action>.

More than helping achieve the State's legislated targets, the measures suggested by the Commission would help NSW support Australia's firm commitment to the Global Methane Pledge and its goal to reduce global emissions by at least 30% below 2020 levels by 2030. Given NSW is not the only state that mines coal in Australia, the Commission also notes that national harmonisation of coal methane abatement requirements is important to support Australia's commitment to the Global Methane Pledge.

We would, of course, be pleased to brief you on this review at your convenience.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Nick Rowley', with a horizontal line extending to the right.

Nick Rowley
Chair, Net Zero Commission

Appendix A – Findings of the Net Zero Commission’s Coal Mining Emissions Spotlight Report

Finding 1	In order for NSW emissions targets to remain achievable, on-site abatement at existing mines is essential, particularly to reduce fugitive emissions. Additional regulatory measures will be required to achieve measurable on-site abatement.
Finding 2	The Commonwealth and NSW Governments are working to improve the accuracy of fugitive emissions reporting at open cut coal mines. Collaboration across these efforts could accelerate and strengthen outcomes.
Finding 3	Consistent with the objectives of the Climate Change Act, NSW consent authorities need to meaningfully consider greenhouse gas emissions and their impacts in all planning decisions, including those for additional coal mining.
Finding 4	Continued extensions or expansions to coal mining in NSW are not consistent with the emissions reduction targets in the Climate Change Act or the Paris Agreement temperature goals it gives effect to.
Finding 5	NSW Government will need to prioritise its consideration of policies that systematically prepare for the decline of coal extraction and provide for a just and orderly transition for coal-producing communities and impacted regional economies.

Appendix B – Net Zero Commission Review of NSW EPA Proposed Greenhouse Gas Mitigation Guide for NSW Coal Mines (Draft Coal Guide)

1. Draft Coal Guide section – Scope 1 emissions: fugitive methane

By July 2027 - Destroy methane in drainage gas at underground mines by requiring gas drainage with flaring or utilisation is in place for active (operational) underground mines that:

- are located outside the Western coalfields, and
- emit (or are likely to emit) >25,000 tCO₂-e annually (scope 1).

By July 2027 - Minimise methane entering ventilation air by addressing methane leaks from old mine workings at underground mines, by requiring methane leaks have been detected and managed for active (operational) underground mines that:

- emit (or are likely to emit) >100,000 tCO₂-e annually (scope 1).

By July 2030 - Destroy ventilation air methane (VAM) at underground mines, by requiring VAM abatement is installed on mine shafts for underground mines (contingent on safety assurances for RTOs) that:

- will be active (operational) beyond July 2032, and
- emit (or are likely to emit) >100,000 tCO₂-e annually (scope 1).

Commission's response

The Commission supports the Draft Coal Guide's intent to introduce requirements for fugitive methane abatement at NSW coal mines. Coal mines have site-specific conditions and limitations that influence their gas profile and thus ability to implement abatement measures. Therefore, the most effective regulatory intervention is likely to be an outcomes-based approach that focuses on maximising on-site abatement in line with clear timeframes, rather than the Draft Coal Guide's approach that prescribes specific solutions.

To maximise abatement outcomes, the Commission suggests that the EPA's implementation approach prioritises abatement outcomes at the highest emitting group of mines, as these sites account for a significant portion of emissions. The top five emitting underground coal mines produce about 44% of NSW's fugitive emissions from coal mining.³

However, it is the Commission's view that open cut coal mines should also be required to reduce fugitive methane emissions where possible. Open cut coal mines also produce significant volumes of fugitive methane; Mount Thorley and Warkworth open cut mines (combined) and Bengalla open cut mine are the fourth and seventh highest fugitive methane emitting coal mines in NSW, respectively.⁴

Whilst gas pre-drainage is not standard practice for open cut mines, which do not have the same explosion risk as underground mines, this is emerging as a viable option to reduce methane emissions at open cut mines. The Commission notes that New Hope Group is

³ Net Zero Commission 2025, 'Coal Mining Emissions Spotlight Report', https://www.netzerocommission.nsw.gov.au/sites/default/files/2025-12/NZC_Coal_Spotlight_Report_2025.pdf, Figure 4, p. 17.

⁴ As above, Figure 3, p. 16.

already exploring pre-drainage at Bengalla mine.⁵ In Queensland, Stanmore's South Walker Creek will capture coal seam gas for electricity generation and Coronado Global Resources is implementing pre-drainage at Curragh open cut mine.⁶

The Commission sees an opportunity for NSW Government agencies, including the EPA and Resources Regulator, to collaborate and align requirements to support the introduction of the Draft Coal Guide's fugitive methane abatement requirements. For example, the NSW Resources Regulator could assist with demonstrating how VAM abatement technology can be best implemented while maintaining mine safety.

- Safety, regulatory, technical and economic barriers to fugitive methane abatement exist, but are not insurmountable.
- Alongside collaboration between the EPA and Resources Regulator, continued stakeholder collaboration, such as that demonstrated by the EPA's Draft Coal Guide workshops, would be beneficial in helping overcome barriers and expedite full-scale deployment of RTOs at NSW's highest-emitting gassy underground mines.

⁵ New Hope Group 2024, 'Sustainability Report 2024: Extract from 2024 Annual Report', <https://www.newhopegroup.com.au/wp-content/uploads/2024/09/J240435-NHG-SR-Extract-2024-Online.pdf>, p. 39.

⁶ Queensland Treasury 2025, 'Low Emissions Investment Partnerships', <https://www.treasury.qld.gov.au/policies-and-programs/investment/leip>; Coronado Global Resources 2024, 'Curragh Bord and Pillar Mine Project EAR GHG Report', [Curragh Bord and Pillar Mine Project EAR GHG Report 16 October 2024](#).

2. Draft Coal Guide section – Scope 1 emissions: diesel combustion

To reduce fossil diesel emissions, require for all mines that emit (or are likely to emit) more than 25,000 tCO₂-e annually (scope 1):

- **By July 2030:** 5% of fuel used is a low carbon alternative to fossil diesel
- **By July 2035:** 10% of fuel used is a low carbon alternative to fossil diesel
- **By July 2040:** 25% of fuel used is a low carbon alternative to fossil diesel and 75% of large mining machinery and vehicles (>560 kW capacity) are zero emissions
- **By July 2050:** 25% of fuel used is a low carbon alternative to fossil diesel and 100% of large mining machinery and vehicles (>560 kW capacity) are zero emissions

Commission's response

The Coal Spotlight Report noted that current policy settings including the Commonwealth Government's Safeguard Mechanism are insufficient to drive abatement in NSW commensurate with meeting the emissions reductions targets legislated by the Climate Change Act. The Commission therefore supports the Draft Coal Guide's intent to require mines to reduce emissions from on-site diesel combustion. Diesel combustion emissions contributed 25% of NSW coal mining emissions in 2022–23.⁷

The Commission notes that emissions reduction through electrification is contingent on grid decarbonisation and/or renewable energy procurement by mine operators. As with the requirements for reducing fugitive methane emissions, the Commission considers that an outcomes-based approach that focuses on maximising on-site abatement outcomes is likely to be more successful than prescribing certain technologies or approaches.

- An outcomes-based approach that allows operators to choose the most effective mix of diesel alternatives, equipment upgrades and improved management practices at each site to achieve the required abatement outcome. For example, electrification or liquid fuel targets would not incentivise operators to improve diesel engine efficiency, which can reduce emissions.
- This approach could better support practical and timely emissions reductions by allowing mines to use available technology and bridging solutions not currently proposed as requirements in the Draft Coal Guide—such as trolley-assist systems and hybrid or more efficient engines that can be retrofitted to existing internal combustion engine machinery with reduced capital expenditure (and lower embodied carbon implications) relative to complete replacements.

Finally, the Commission suggests that the EPA's requirements for diesel combustion abatement should apply to all on-site diesel fuel use, rather than being limited to large (>560 kW capacity) machinery and vehicles.

⁷ Net Zero Commission 2025, 'Coal Mining Emissions Spotlight Report', https://www.netzerocommission.nsw.gov.au/sites/default/files/2025-12/NZC_Coal_Spotlight_Report_2025.pdf, Table 1, p. 15.

3. Draft Coal Guide section – Scope 2 emissions

No proposed mandatory requirements.

EPA strongly encourages mining companies to implement energy efficiency measures and to reduce the emissions intensity of their grid electricity consumption through measures such as a power purchase agreements (PPA) and the installation of onsite renewable electricity generation.

Commission's response

The Commission is supportive of the Draft Coal Guide's focus on scope 1 emissions and supports there being no mandatory requirements for scope 2 emissions at this stage. As highlighted in the Draft Coal Guide, scope 2 emissions from NSW coal mines totalled 1.5 Mt (2023–24). This is less material than the 14.5Mt (2022–23) scope 1 emissions.⁸

Given the electrification of on-site mining machinery and vehicles would increase electricity demand, the Commission suggests that the EPA monitors coal mining scope 2 emissions and considers whether further regulation is required in the future.

The Commission supports the Draft Coal Guide's strong encouragement of energy efficiency measures, procurement of renewable energy and on-site installation of renewable energy. Many of these actions should also make economic sense for the mine operators.

⁸ Net Zero Commission 2025, 'Coal Mining Emissions Spotlight Report', https://www.netzerocommission.nsw.gov.au/sites/default/files/2025-12/NZC_Coal_Spotlight_Report_2025.pdf, Table 1, p. 15.

4. Draft Coal Guide section – Scope 3 emissions

No proposed requirements.

EPA strongly encourages mining companies to implement a variety of measures to reduce scope 3 emissions, including purchasing green explosives.

Commission's response

The Commission supports the Draft Coal Guide's strong encouragement for mining companies to reduce scope 3 emissions that are within their control. We suggest that the final Coal Guide includes guidance for coal mine operators to adopt procurement measures that reduce upstream scope 3 emissions. For example, replacing conventional explosives with green ammonia nitrate, which is made via electrolysis using renewable energy. Mines could also reduce upstream scope 3 emissions by applying standards for high-emissions inputs like steel and cement, and reporting on initiatives to influence upstream emissions from suppliers.

Downstream scope 3 emissions associated with the combustion of NSW coal are considerable and contribute to local and global climate impacts.⁹ At this stage, the Commission considers the planning system to be the key point of intervention for the consideration and minimisation of downstream emissions. The Commission's letters to the Department of Planning, Housing and Infrastructure and to the Independent Planning Commission encouraged consideration of scope 3 emissions in project assessments, given their capacity to influence climate outcomes in NSW.¹⁰

⁹ Net Zero Commission 2025, 'Coal Mining Emissions Spotlight Report', https://www.netzerocommission.nsw.gov.au/sites/default/files/2025-12/NZC_Coal_Spotlight_Report_2025.pdf, Section 4, pp. 43-46.

¹⁰ Net Zero Commission 2025, 'Letter to Department of Planning, Housing and Infrastructure', <https://www.netzerocommission.nsw.gov.au/publications/letter-department-planning-housing-and-infrastructure>; Net Zero Commission 2025, 'Letter to NSW Independent Planning Commission', <https://www.netzerocommission.nsw.gov.au/publications/letter-nsw-independent-planning-commission>.

5. Draft Coal Guide section – Exemptions and time extensions

The EPA proposes that the pre-feasibility assessment should consider technical, logistical and financial feasibility. The exemptions may be time limited or ongoing. This may depend on site-specific circumstances.

If a mine intends to implement a mitigation measure but cannot do so in the timeline set by the EPA, it can apply for a time extension. These will be as short as possible and will need to be supported by evidence that efforts have been made to meet the timeline.

Due dates for exemptions and timeline extensions will be published with the final version of the Coal Guide.

Commission's response

The Commission does not support the Draft Coal Guide's proposed exemption and time extension provisions. As noted in the Coal Spotlight Report, the most effective regulatory approach for reducing emissions from coal mining is likely to be an outcomes-based approach that strongly limits offsets and exemptions.

Mines have site-specific conditions and limitations that influence their ability to implement abatement solutions. As such, the Commission considers that the prescriptive requirements currently proposed in the Draft Coal Guide that mandate technology uptake by a particular point in time are likely to lead to a large volume of exemption requests.

The Commission considers that an approach that gives mines operational flexibility in how they achieve regulated on-site abatement outcomes will reduce the need for exemptions and be more effective at reducing coal mining emissions and support NSW legislated targets.

We stress that any exemptions process should be limited to exceptional circumstances. Financial feasibility concerns in isolation should not be considered exceptional circumstances.