

Submission to NSW EPA: Climate change licensee requirements

This report presents recommendations to the NSW Environmental Protection Agency on proposed requirements for large greenhouse gas emitters in NSW, with a particular focus on coal mine methane reporting, abatement, and evaluation.

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About Ember

Ember is an independent, not-for-profit energy think tank that aims to shift the world to clean electricity using data. It gathers, curates and analyses data on the global power sector and its impact on the climate, using cutting edge technologies and making data and research as open as possible. It uses data-driven insights to shift the conversation towards high impact policies and empower other advocates to do the same. Founded in 2008 as Sandbag, it formerly focused on analysing, monitoring and reforming the EU carbon market, before rebranding as Ember in 2020. Its team of electricity analysts and other support staff are based around the world in the EU, UK, Türkiye, India, China and Indonesia.

Acknowledgement of Country

Ember acknowledges the Traditional Custodians of the many nations across Australia and their enduring connection to Country and the lands, seas and skies. We pay our respects to Elders past and present and extend that respect to all Indigenous Peoples today.

Summary

NSW EPA Climate Change Requirements represents an important step towards aligning environmental regulation and emissions reduction at state level. However, more ambitious targets and comprehensive mitigation measures are needed to drive effective coal mine methane reduction and support NSW's net zero goals.

New South Wales (NSW) contributes around [38% of Australia's coal mine methane emissions](#). However, our recent analysis using satellite data indicates that actual emissions could be [up to twice of the official figure](#). This discrepancy underscores the urgent need to enhance the Monitoring, Reporting and Verification (MRV) system, not only to improve accuracy of facility-level emissions data, but also to ensure state-level inventories reflect the true scale of emissions.

Improving MRV and implementing robust mitigation measures are essential not only for meeting government and corporate climate commitments, but also in response to industry and market expectations for more comprehensive and transparent emissions reporting. For example, [the EU Methane Regulation](#) now requires metallurgical coal exporters to monitor and mitigate methane emissions, signaling a clear shift toward stricter global standards.

The New South Wales Environmental Protection Agency's [proposed requirements for NSW's large greenhouse gas emitters](#) present an important step in aligning environmental regulation with NSW's ambitious Net Zero Emissions (NZE) targets. These requirements should complement the existing federal schemes by strengthening the focus on improving MRV as well as broader implementation of on-site abatement to ensure that companies deliver tangible, verifiable emissions reductions rather than relying solely on reporting or offsets.

For Climate Change Licensee Requirements and Climate Change Mitigation and Adaptation Plan (CCMAP), Ember calls for more ambitious targets by following measures:

1. Extend requirements to all coal mines, regardless of reported emissions.
2. Enhance reporting and data transparency
3. Set ambitious baseline and continuous review, including public inputs
4. Ensure facility-level emissions data and mitigation plan in CCMAPs
5. Embed reporting improvement and closure strategies in CCMAPs

To ensure effective CMM abatement, Ember recommends that the Greenhouse Gas Mitigation Guide for NSW Coal Mines should be strengthened through following adjustments:

1. Include pre-mine drainage for open cut coal mines
2. Ensure coal mines implement VAM mitigation at the earliest possible through consistent project planning
3. Include abandoned mine methane (AMM) emissions management and mine closure strategy
4. Develop appropriate incentives and support mechanisms to encourage proactive mitigation actions.
5. Define clear evaluation criteria and consequences for non-compliance.

The proposed climate change requirements provide a solid basis for CMM management in NSW. However, stronger targets and comprehensive mitigation measures are needed to ensure that NSW's largest emitters play their part in achieving NSW's Net Zero target.

Dody Setiawan

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Introduction

Ember welcomes the NSW EPA's proposed requirements for large greenhouse gas emitters. These requirements should strengthen Monitoring, Reporting and Verification (MRV) and on-site abatement efforts to ensure that the relatively small group of high-emitting licensees deliver measurable and verifiable reductions.



Ember welcomes the opportunity to make a submission to the New South Wales Environmental Protection Agency on [proposed requirements for NSW's large greenhouse gas emitters](#). These proposed requirements represent a critical step in aligning environmental regulation with NSW's ambitious Net Zero Emissions (NZE) targets and in ensuring that licensees actively contribute to decarbonisation goals.

The EPA's climate change requirements should complement the existing National Greenhouse and Energy Reporting (NGER) scheme and Safeguard Mechanism by strengthening the focus on improving monitoring, reporting and verification (MRV) as well as broader implementation on-site abatement to ensure that companies deliver tangible, verifiable emissions reductions rather than relying solely on reporting or offsets.

The proposed requirements will apply to around 10% of environment protection licensees, emitting 25,000 tonnes or more of CO₂-equivalent (CO₂-e) in Scope 1 and Scope 2 emissions each year. Despite their small number, these licensees are responsible for approximately 50% of all NSW Scope 1 emissions.

1.1 Proposed climate change licensee requirements

The NSW Environmental Protection Agency is preparing three documents to encourage emissions reduction from large licensed facilities in New South Wales. These documents are:

- Climate change licensee requirements
- Climate change mitigation and adaptation plans (CCMAPs)
- GHG mitigation guide for NSW coal mines

Here is the summary of the objectives of aforementioned proposed guidelines.

Requirement	Who it applies to	Timeframe for implementation
Annual Climate Change Emissions Reports to be submitted to the EPA	Coal mines emitting more than 25,000 tonnes of CO ₂ -e (scope 1 and scope 2) per annum	28 February 2026
Climate Change Mitigation and Adaptation Plans (CCMAPs) to be published on licensees' websites and updated every three years	Coal mines emitting more than 25,000 tonnes of CO ₂ -e (scope 1 and scope 2) per annum	31 October 2026
10-year emissions projections are to be submitted to the EPA	Coal mines emitting more than 25,000 tonnes of CO ₂ -e (scope 1 and scope 2) per annum	31 October 2026

Requirement	Who it applies to	Timeframe for implementation
Gas drainage with flaring or utilisation to destroy methane at underground mines.	Active (operational) underground mines that: - are located outside of the Western coalfields, and - emit (or are likely to emit) >25,000 tonnes carbon dioxide equivalent per year (t CO₂-e/year) (scope 1).	July 2027
Avoid VAM by fixing methane leaks from old mine workings	Active (operational) underground mines that emit (or are likely to emit) >100,000 t CO ₂ -e/year (scope 1)	July 2027
VAM abatement is installed on mine shafts. In 2028, the EPA will review whether the safety issues for VAM regenerative thermal oxidation (RTO) have been resolved before implementing mandatory requirements.	Underground mines that: - will be in an active (operational) mining phase beyond July 2032, and - emit (or are likely to emit) >100,000 t CO₂-e/year (scope 1).	July 2030, subject to review

Requirement	Who it applies to	Timeframe for implementation
Regional GHG monitoring equipment networks will be established by NSW Gov. Facility-level measurement requirements to be implemented once the regional networks have collected several years of data		No deadline provided.
Continuous monitoring of ventilation air methane at underground mines.	Underground coal mines that emit more than 25,000 tonnes of CO ₂ -e per year, including mines in suspended operations (care and maintenance).	31 October 2026
Greenhouse gas emissions limits on licences to be imposed, subject to emissions measurement, sector-based greenhouse gas budgets and CCMAPs being in place.	All licensees	Longer-term requirement, with no deadline provided.

1.2 Relevant Ember assessments

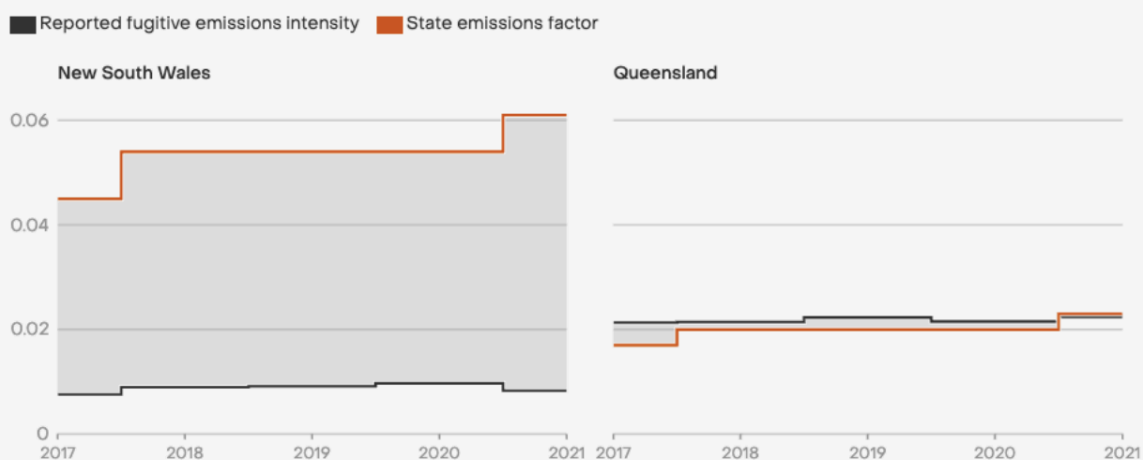
1.2.1 CMM mitigation is possible and cost effective

In 2024, [Ember's assessment](#) of eight currently operating and two proposed coal mines identified millions of tonnes of CO₂-e reductions that had occurred as a result of an accounting shift towards site-specific measurement. Additional research from energy insights firm Reputex has since evaluated the [impact of recent accounting shifts on open-cut coal mines](#) across the country.

Their findings estimate that recent shifts from state-led emissions factors to company-led estimates have consistently decreased reported fugitive methane emissions reporting by 65 to 70%. This shift has significant implications on a mine's obligations under the reformed Safeguard Mechanism. The influence of this reporting shift is especially significant in NSW. In [this recently published report](#), we utilised the National Greenhouse Accounts, to compare collectively reported fugitive emissions for surface coal mines, against annual coal production estimates, reported at the state level.

NSW open cut fugitive emissions intensity is six times lower than state-based estimates

Fugitive emissions intensity (t Co₂-e/ROM t) compared to state emissions factor



Source: National Greenhouse Account, Queensland annual coal statistics, NSW Coal Services Annual Report

Fugitive emissions intensity is ratio of reported fugitive emissions to coal production in NSW open cut coal mines.

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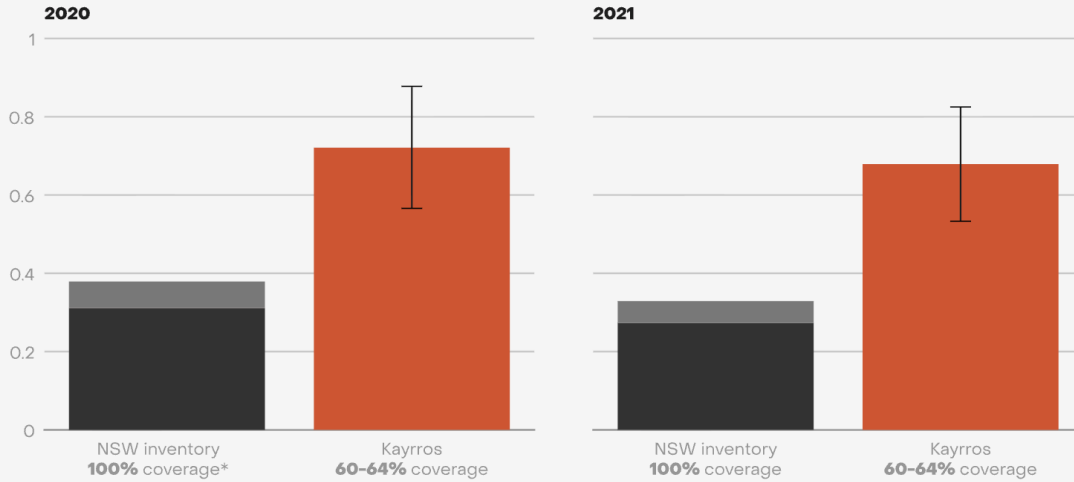
In New South Wales, where the use of site-specific emissions estimates is far more widespread, reported fugitive emissions intensity from open-cut coal mines is around six times lower than the state-based emissions factor. By contrast, fugitive emissions reporting in Queensland is largely consistent with expectations based on the state-based emissions factor, suggesting greater alignment between reported data and estimated methane outputs.

This highlights a clear mismatch between collectively assessed emissions factor averages, compiled by state environmental regulators, and individually reported emissions estimates, compiled by individual mine operators. These results raise the urgent need for [in-depth regulatory and methodological review](#).

Satellite estimates covering half of New South Wales coal production accounts for double reported fugitive emissions

Coal mine methane emissions (million tonnes CH₄)

■ Underground ■ Open cut ■ Satellite analysis



Source: National Greenhouse Accounts, Kayros and Ember analysis

*NSW's total coal production. The study area covers the Illawarra and Hunter Valley coal fields.

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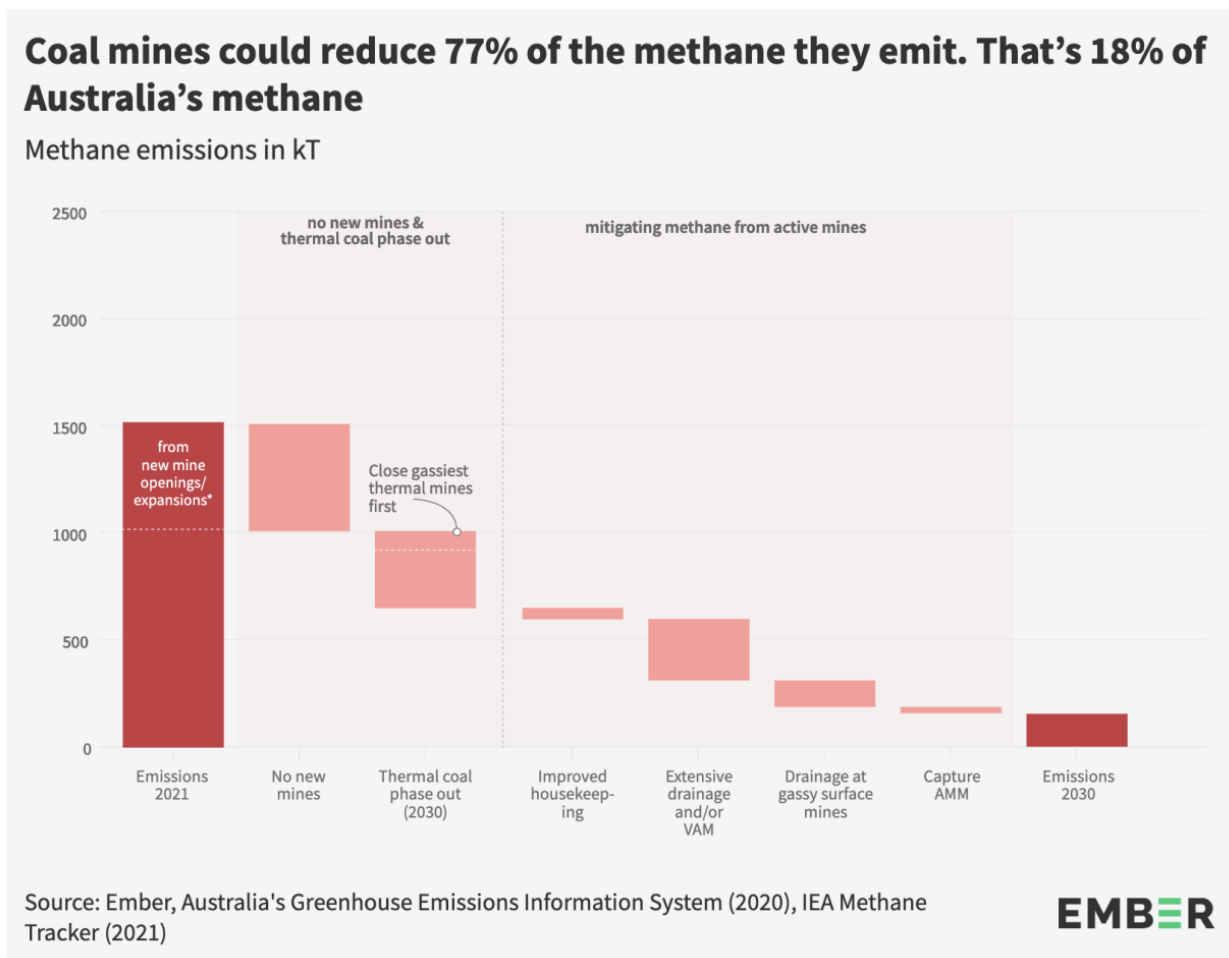
Potential underreporting is also evident at the state level. In our preliminary study, we collaborated with energy intelligence firm [Kayros](#), utilising TROPOMI satellite observations across [six coal mining clusters in Australia](#). Our findings in New South Wales indicate a significant departure from officially reported emissions. While the state reported 379 kt of methane in 2020, our satellite study identified 721 kt of methane that year, while only accounting for approximately 61% of the state's coal production. While this estimate has an uncertainty range of 566 – 876 kt, this still represents a significantly higher figure than official reporting.

1.2.2 CMM mitigation is possible and cost effective

In 2023, Ember outlined [a pathway for coal mine methane \(CMM\) reduction in Australia](#), showing that an 18% reduction in methane emissions by 2030 is achievable from coal mines alone. The pathway is built on three key strategies: 1) Halting the development of new coal mines and mine expansions, 2) Phasing out

existing thermal coal mines, and 3) Implementing onsite methane abatement measures at operating mines.

While the EPA's proposed licensee requirements focus primarily on onsite CMM abatement, achieving NSW's Net Zero targets and meeting the Global Methane Pledge (GMP) will also require the government to evaluate and incorporate the other two strategies. A comprehensive approach that integrates all three actions will deliver deeper and more sustained methane reductions across the sector.



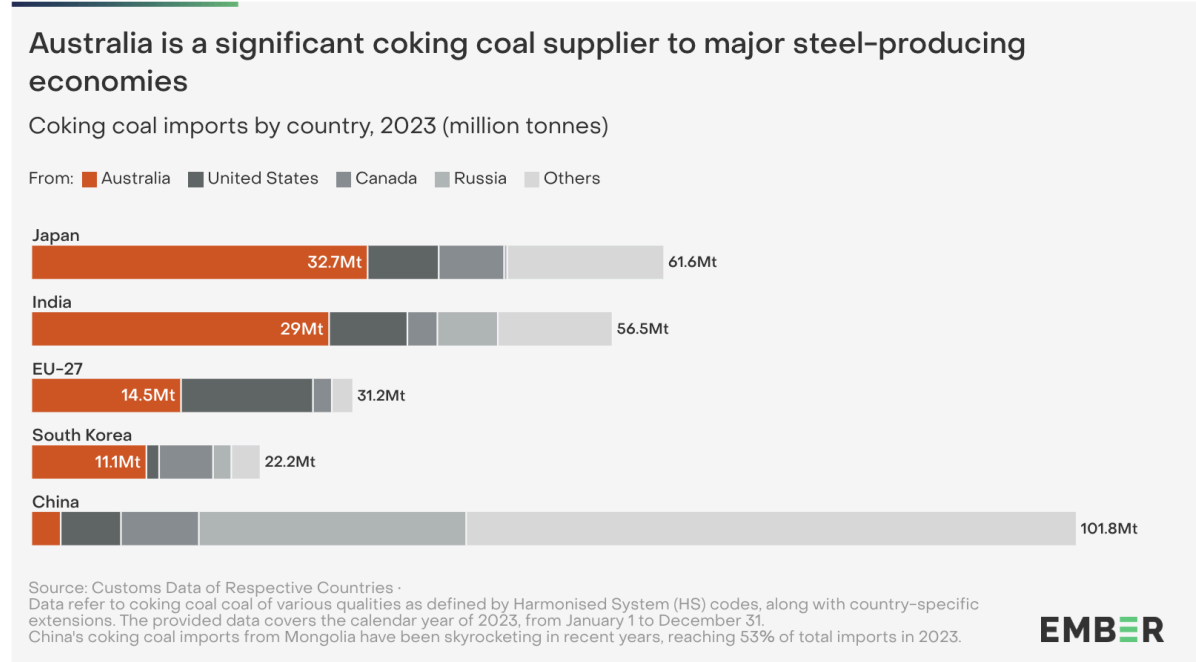
Onsite coal mine methane abatement is both technically feasible and economically viable. The [IEA estimates](#) that a total 40% (685 kt) of methane emissions from coal mines in Australia could be abated using existing methods,

including capture and utilisation as well as [VAM \(Ventilation Air Methane\) oxidation](#). 32% (542 kt) of total emissions could be cut at a cost lower than the market price of [Australian Carbon Credit Units \(ACCUs\)](#), making them cost-effective to address.

We also recommended extending the [Coal Mine Waste Gas method](#) to include CMM mitigation activities with low economic viability, such as drainage from open-cut coal mines and ventilation air methane (VAM) mitigation.

Emissions from Australian coal mines in the steel supply chain

Coal production releases methane during mining, but it is coal-consuming industries’ (i.e., steel, cement, aluminum, etc) demand that drives these emissions. Ember analysis revealed that the extraction-related emissions of Australia’s coal could [add 10-17% to the short-term climate impact of steel production](#).



The European Union, one of Australia's key importers of metallurgical coal, has introduced robust methane rules to drive down fossil fuel emissions, including from coal. Adopted in 2024, [the EU Methane Regulation](#) establishes new requirements for monitoring, reporting and verification (MRV) of methane emissions from coal mines – both within the EU and for imports.

Specifically, starting from 2027, foreign coal suppliers will be required to meet monitoring and reporting standards [equivalent to those for EU coal mines](#). Imported coal will also need to comply with a maximum methane intensity, to be established by the EU by August 2030, or face additional fees.

- Supply contracts signed after the regulation enters into force are subject to MRV measures equivalent to the EU.
- Contracts signed before the regulation enters in force, importers must show they have taken “all reasonable efforts” to ensure MRV equivalence, including amendment of supply contracts.

While the relevant standards are still to be set, it seems likely that, to mitigate regulatory risk related to high-methane mines in their supply chain and avoid future penalties, EU-based steelmakers will require their coal suppliers to provide accurate and verifiable emission data.

Furthermore, international standards, such as [IFRS Sustainability Disclosure Standards \(ISSB Standards\)](#), are increasingly adopted by jurisdictions around the world, demanding financial institutions to actively prepare for disclosure requirements of their [financed emissions](#). The recently launched SBTi's [Financial Institutions Net-Zero Standard](#) also suggests to include higher-quality emissions data for setting alignment and sector-specific transition targets.

Responses to proposed documents

This section of the submission provides responses to each of the EPA's proposed documents on reducing greenhouse gas emissions from NSW's large licensed facilities.



2.1 Climate change licensee requirements

Ember strongly supports the EPA's initiative to introduce climate change requirements for existing licensees as a key mechanism to strengthen emissions accountability and align NSW with its legislated [Net Zero targets](#). To maximise the effectiveness and integrity of these requirements, we recommend including all coal mines, regardless of their annual emissions level.

1. Extending requirements to all coal mines

Coal mining is a significant source of methane emissions in NSW, yet there remains notable variability and uncertainty in reported emissions across facilities and when compared to [state-level inventories](#) as well as [satellite assessment](#). By extending the climate change requirements to all coal mines, including those emitting below 25,000 tCO₂-e per year, the EPA can build a more comprehensive and accurate picture of the sector's emissions profile. This broader coverage would strengthen the monitoring, reporting, and verification (MRV) framework and support the design of more targeted and effective abatement measures.

Capacity differences can be recognised by implementing a phased approach. Mines emitting below the 25,000 tCO₂-e threshold could be included in **a second tranche on 28 February 2027**. This staged implementation would allow smaller operators additional time to develop reporting systems and build technical capacity, while still ensuring that all coal mines eventually contribute to transparent emissions reporting.

2. Enhancing reporting and data transparency

To improve data quality, emissions reports should be required to include detailed assumptions, activity data, and calculation methodologies used to estimate emissions. Transparent documentation of data sources and estimation methods will enable more rigorous verification and comparability across sites.

This level of detail is especially important for facilities surface/open cut mines which rely on emission factors developed using Method 2. While Method 2's site-specific nature is meant to provide more accurate reporting, [Ember's analysis](#) of its historical implementation has shown that critical measurement, a lack of independent verification and transparency gaps have undermined its potential. Method 2 currently lacks requirements for regular updates, robust sampling protocols, or independent verification. Additionally, the current modelling requirements are inadequate for capturing the true complexity of gas migration in geologically dynamic regions.

We recommend that the EPA complement self-reported data with independent verification tools, including satellite-based methane detection and targeted follow-up through ground-based monitoring networks. Satellite observations can help identify methane hotspots and potential underreporting, particularly from open-cut mines where fugitive emissions are more diffuse and harder to measure.

[Ember analysis](#) identified that Australia has optimal conditions for satellite observations, with 91% of coal production with favourable conditions for satellite methane monitoring.

Where discrepancies are identified, the EPA should use these findings to adjust reported emissions and refine estimation methods to reflect real-world conditions more accurately.

3. Setting ambitious baseline and continuous review

Finally, to ensure emissions reduction requirements drive meaningful action, the EPA should establish ambitious emissions baselines informed by verified data and sectoral best practice. Baselines should not merely reflect historical averages but should incorporate progressive improvement expectations aligned with NSW's emission reduction trajectory. These baselines should be periodically reviewed and updated as more accurate data becomes available, ensuring that licensees are continually incentivised to improve abatement performance.

2.2 Climate change mitigation and adaptation plans (CCMAPs)

The EPA's proposal to require Climate Change Mitigation and Adaptation Plans (CCMAPs) should be a central tool for driving measurable emissions reductions.

A well-designed CCMAP framework can provide the necessary structure and accountability for regulated entities to plan, implement, and transparently report their climate mitigation actions. However, to ensure their effectiveness, the EPA should clarify expectations on content, evaluation, and review processes, and ensure that the CCMAPs are used not just as compliance documents but as instruments for genuine decarbonisation.

Ensuring facility-level emissions data and mitigation plan in CCMAP

We agree that a single CCMAP may be prepared for multiple licensed premises operated by the same entity within NSW, provided that the plan includes a clear breakdown of emissions and mitigation measures for each facility. This approach supports consistency across operations while ensuring that the unique characteristics and mitigation opportunities at each site are properly addressed.

Embedding reporting improvement and closure strategies in CCMAPs

CCMAP should cover following key components:

- Comprehensive emissions reporting that identifies all major sources and GHG types of Scope 1 and Scope 2 emissions. CCMAP should also include plans to enhance data accuracy using third-party verification and advanced monitoring technologies, such as satellite observations, aerial surveys, and expanded sampling programs.
- A mitigation plan structured around a four-tier strategy (e.g. avoid, reduce, replace, offset), ensuring that offsets are used only as a last resort after all feasible on-site abatement options have been implemented.
- A mine closure strategy for underground coal mines, detailing how abandoned mine methane (AMM) emissions will be monitored and managed for at least 70 years after operations cease.
- A transition plan outlining how the licensee intends to diversify and move towards lower-emissions business models over time.

2.3 GHG mitigation guide for NSW coal mines

The proposed greenhouse gas mitigation guide is a crucial step toward improving methane management across NSW coal mines. However, to deliver meaningful and measurable reductions, the guide should set clear, mandatory requirements for key mitigation technologies, provide a phased implementation framework, and ensure accountability through transparent reporting and performance criteria.

1. Mandate pre-mine drainage for all coal mines, including open cut mines

Pre-mine drainage should be made mandatory for both underground and open-cut coal mines, given its proven potential to significantly reduce methane emissions before extraction begins. Captured methane can be utilised for electricity generation or replace diesel fuel, which will help reduce operational expenses as well as scope 1 and 2 emissions. As a last option, the methane from drainage stations could be flared, if the flare operates to a least 99% efficiency.

For open-cut mines, where application may be more economically challenging, a phased approach is recommended.

- Step 1: Require licensees to conduct pre-feasibility studies. A [gas drainage pilot project](#) is currently developed by Corronado at Curragh open cut mines.
- Step 2: Supplementary incentive scheme. Propose the development of a new ACCU method specifically covering pre-mine drainage from open-cut coal mines to improve the economic viability of these projects. [The latest review of the coal mine waste gas \(CMWG\) method](#) also suggests incorporation of open cut pre-mine drainage and VAM. This incentive should complement, not replace, the regulatory mandate.

2. Ventilation Air Methane (VAM)

Efficient VAM mitigation technologies have been proven in several commercial-sized, long-term projects.

The [United Nations Economic Commission for Europe](#) reports that currently, the average cost of VAM mitigation is \$26 AUD per tonne CO₂e, and commercially viable at \$30 AUD per tonne CO₂e. This cost is lower than Australia Carbon Credit Units (ACCUs), suggesting cost effectiveness in implementing this solution.

Similar to pre-mine drainage for open cut mines, economic feasibility of VAM mitigation could be improved by developing a new ACCU method. China has developed a voluntary carbon credit methodology for [low-concentration gas mitigation](#).

To ensure that licensees meet the VAM abatement target at the earliest, but no later than July 2030, the guide should also require all coal mines to include a detailed timeline with specific milestones for developing VAM mitigation projects within their CCMAP.

3. Abandoned Mine Methane (AMM)

The current draft of the guide does not sufficiently address AMM, which can represent a significant long-term source of emissions. The EPA should mandate that mine closure strategies, as part of each CCMAP, include:

- Detailed plans for post-closure monitoring and mitigation until at least 70 years after coal mining operations cease.
- Sealing or flooding strategies, and/or

- Methane capture or oxidation systems to achieve near-zero AMM emissions.

Venting and flaring of AMM should be explicitly prohibited for coal mines where operations ceased after 1954 , consistent with best international practices such as the [EU Methane Regulation](#).

4. No new coal mines

As outlined in the above strategy to cut 18% of Australia's methane emissions, no new coal mines should be developed. [Our analysis](#) found that if most of Australia's proposed mines go ahead, annual coal mine methane emissions would increase by 50% by 2030. Any reductions to Australia's methane emissions will be severely hindered if the Government's strategy continues to allow new coal mines or expansions.

5. Incentives and support mechanisms

Recognising that some abatement technologies, such as VAM oxidation and pre-mine drainage in open-cut mines, are still emerging or have limited commercial viability, incentive schemes will be essential. These could include:

- Development of new ACCU methods to credit these mitigation actions (led by the Federal Government), while ensuring there is no double counting with SMCs, and
- Technical support for MRV improvements.

6. Compliance, evaluation, and consequences

To ensure accountability, the guide should define clear performance criteria for meeting mitigation targets, such as the Commercial Operation Date (COD) of each mitigation project and outline consequences for non-compliance, including requirements for remedial action plans or penalties. Regular public reporting and independent verification of outcomes will enhance transparency and trust.

7. Other considerations

Coal mines supplying customers in the EU, will need to ensure that they meet standards equivalent to those for EU coal mines. For instance, the EU Methane Regulation requests mitigation measures should be implemented through [a phase-out of venting and flaring](#), and should not lead to the deterioration of the safety of workers. Relevant emissions limits are set to become progressively more stringent over time.

Flaring and venting of methane from drainage	From 1 January 2025, flaring with a destruction and removal efficiency by design level below 99% and venting of methane from drainage shall be prohibited, except in the case of an emergency or a malfunction, or where unavoidable and strictly necessary for maintenance and except venting in accordance with paragraph 2.
Venting through ventilation shafts	From 1 January 2027: thermal coal mines emitting more than 5 tonnes of methane per kilo tonne of coal mined is prohibited, except in the case of an emergency.

	From 1 January 2031: the prohibition limit will be further reduced to 3 tonnes of methane per kilo tonne, except in the case of an emergency.
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Additionally, [from 1 January 2025 onwards](#), drainage station operators shall notify the competent authorities of all venting events and all flaring events with a destruction and removal efficiency by design level below 99%: (a) caused by an emergency or a malfunction, and (b) occurring unavoidably, due to maintenance of the drainage system.

While acknowledging that effective mitigation of methane emissions from active surface coal mines and closed or abandoned surface coal mines is currently limited by technology, the EU Methane Regulation added that “in order to support research and development in mitigation technologies for such methane emissions in the future, there should be [effective and detailed monitoring, reporting and verification](#) of the scale of those methane emissions”.

[Ember’s previous analysis reveals that](#), of the Australian mines identified as supplying the Luxembourg steelmaker ArcelorMittal, none of the open-cut mines currently meet the [EU-equivalent standards](#).

Specific questions

Q2.1 If surface mines were required to pre-drain gassy seams and destroy methane before mining commences, what factors would impact feasibility?

Pre-draining methane at surface mines relies on the same technologies used in Coal Bed Methane (CBM) extraction, making it technically feasible. Furthermore, [an independent study](#) has found that implementing open-cut mine pre-drainage with new technologies such as subterranean barriers can reduce Australia’s coal mine methane emissions by up to 46%.

Pre-draining a coal seam will require a considerable amount of lead time, up to a couple of years for optimal extraction of methane. It is important that the mining company plans in advance to ensure sufficient time is provided for de-gasification to avoid hindrance for mining operations in the subsequent years, which can lead to delays and increased costs.

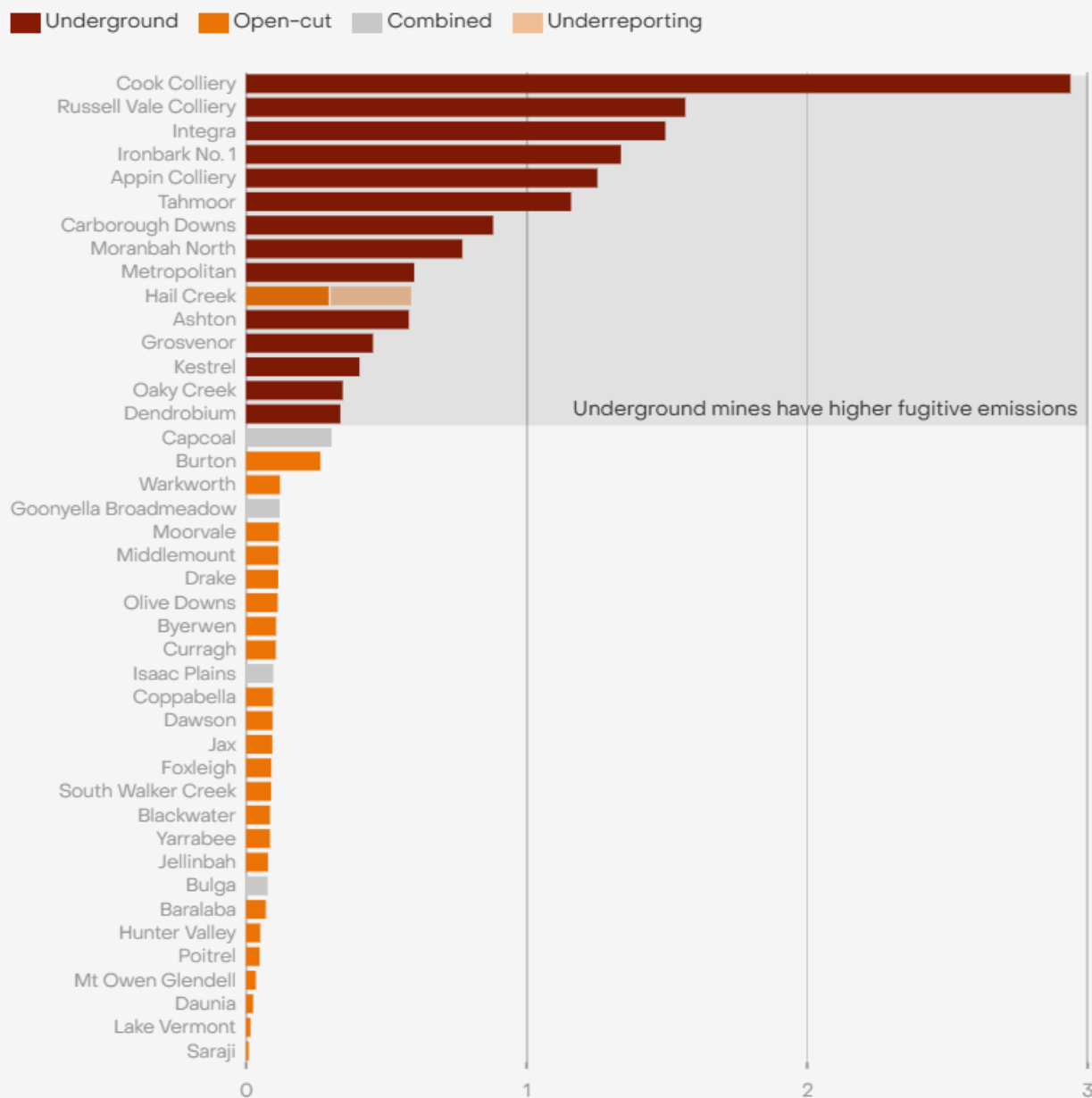
Therefore, the feasibility of methane extraction should not be determined solely by economic considerations. Where technically viable solutions exist, economic feasibility alone is not a sufficient reason to delay or avoid implementation.

Surface mines can emit as much methane as underground mines

As highlighted throughout our response, a number of surface mines likely have significantly higher emissions than currently reported. Our Figure below highlights that Hail Creek Coal Mine, [the only surface mine to date for which there have been on-ground, methane measurements and scientific studies](#), was found to emit methane on par with some of Australia's gassiest underground coal mines, well above that reported to the Safeguard Mechanism.

Greenhouse gases footprint of blast furnace-based steelmaking varies depending on where the coal is sourced

Additional emissions from Australian coal mine (tCO₂e per tonne of steel)



Source: Annual reviews, World Steel, Safeguard Mechanism, Ember calculations using FY2024 data · CO₂ emissions intensity by the Blast Furnace – Basic Oxygen Furnace (BF-BOF) method is assumed as 2.32 per tonne of crude steel cast.

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Ember therefore strongly recommends that feasibility studies for pre-mine drainage at surface mines include on-ground measurements of methane emissions at the active coal seams, and include extensive modelling of methane in place, as developed in our [previous recommendations](#).

Feasibility studies must include detailed information on the methane in place, methane drainage potential, technology/equipment, and detailed cost breakdown.

Q7.1 Do you have any suggestions to improve the robustness and transparency of the pre-feasibility assessment process, and to reduce compliance costs for licensees?

The EPA should develop a standardised guidance and assessment template for pre-feasibility evaluations, aligned with existing reporting systems such as NGER, to ensure consistent, comparable, and high-quality data across all licensees. To enhance transparency and accountability, the EPA's assessment should be made publicly available for review and feedback, with the final pre-feasibility decision incorporating insights from the public consultation.

Q7.2 Should the exemptions process outline the circumstances in which an exemption does not need to be sought on specific technical feasibility grounds?

Exemptions from mitigation requirements should not be permitted. Given the urgency of methane reduction and the sector's significant contribution to NSW's emissions, all licensees must comply with the standards set by the EPA.

Conversely, EPA should specify implications when the licensees cannot meet these requirements. For example, operations should be suspended until compliance is achieved or the facility is closed.

The exemption could be made for facilities which will end operations before the implementation target, and not planning to extend the license. Additionally, the EPA should mandate external verification for all exemptions to ensure authenticity of the claims.

Q7.3 Any exemptions issued by the EPA would be made public. Should any of the information in the pre-feasibility assessment be made public?

While exemptions should not be granted, full transparency remains essential. Any non-confidential information from the pre-feasibility assessment should be made publicly available prior to any exemption decision to allow for meaningful review and input. Public access to this information is critical to enable independent scrutiny, support objective assessment, and strengthen confidence in the regulatory process.

Mandates for exempted licensees on reporting emissions for future AMM regulation

More importantly, for the mines that are scheduled to end operations before the implementation target, mandates should be set in place for active monitoring and reporting of emissions from their facilities up to the license expiration. This information should be made available publicly. The readily available emissions data could prove invaluable for analysing the rate of abandoned mine methane (AMM) and in turn assist in future regulation on AMM in the state.

Q7.4 Should there be an avenue for public input into the exemptions process and, if so, how? Is the publication of CCMAPs and progress against CCMAPs sufficient to provide transparency?

CCMAP should cover following key components:

- Comprehensive emissions reporting that identifies all major sources and GHG types of Scope 1 and Scope 2 emissions. CCMAP should also include plans to enhance data accuracy using third-party verification and advanced monitoring technologies, such as satellite observations, aerial surveys, and expanded sampling programs.
- A mitigation plan structured around a four-tier strategy (e.g. avoid, reduce, replace, offset), ensuring that offsets are used only as a last resort after all feasible on-site abatement options have been implemented.
- A mine closure strategy for underground coal mines, detailing how abandoned mine methane (AMM) emissions will be monitored and managed for at least 70 years after operations cease.
- A transition plan outlining how the licensee intends to diversify and move towards lower-emissions business models over time.

CCMAPs should be periodically updated and reviewed to ensure they remain aligned with evolving regulatory standards, technological advancements, industry best practices and NSW's emissions reduction trajectory. These reviews should assess both the implementation progress and the actual impact on the state's emissions profile, enabling the EPA to track collective progress toward its mitigation targets.

Public transparency will be critical. The EPA should facilitate public review of the CCMAPs and ensure this feedback will be incorporated into the evaluation process.

Furthermore, EPA must outline consequences for the CCMAP evaluation process, e.g. environmental license to be halted until companies implemented recommendations from EPA.

Supporting information

About Ember

Ember is an independent, not-for-profit energy think tank that aims to shift the world to clean electricity using data. It gathers, curates and analyses data on the global power sector and its impact on the climate, using cutting edge technologies and making data and research as open as possible. It uses data-driven insights to shift the conversation towards high impact policies and empower other advocates to do the same. Founded in 2008 as Sandbag, it formerly focused on analysing, monitoring and reforming the EU carbon market, before rebranding as Ember in 2020. Its team of electricity analysts and other support staff are based around the world in the EU, UK, Türkiye, India, China and Indonesia.

Detail of inquiry

The submission was submitted to the NSW EPA email (climatechange.review@epa.nsw.gov.au). The information about public consultation is available [here](#).