Submission No 9

INQUIRY INTO EMISSIONS FROM THE FOSSIL FUEL SECTOR

Organisation: Carbon Logica

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Carbon Logica

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NSW Joint Standing Committee on Net Zero Future Submission

1. Introduction

Carbon Logica submits this feedback to the Joint Standing Committee on Net Zero Future to assist its inquiry into emissions from the fossil fuel sector in New South Wales.

Since 2015, Carbon Logica has been actively involved in reducing emissions from coal mine waste gas (CMWG) and related coal mine methane streams. We support policies and projects that **capture and abate fugitive methane emissions**, particularly through electricity displacement and ventilation air methane (VAM) abatement initiatives, as these deliver measurable near-term reductions in greenhouse gas emissions.

Carbon Logica also advocates for the **responsible, continuing operation of metallurgical coal mines in Australia**. Maintaining domestic production ensures global steel demand is met under high safety and environmental standards, avoiding the outsourcing of emissions-intensive production to jurisdictions with weaker regulatory frameworks on emissions.

Our focus is on advancing projects that:

- ✓ Reduce methane emissions from coal mines;
- ✓ Displace electricity generated from conventional fossil fuels, supporting grid stability and the renewable transition;
- ✓ Create regional employment and economic activity; and
- ✓ Align with national reporting and abatement frameworks, including the Safeguard Mechanism and NGERs.

As an owner and operator of coal mine abatement projects, Carbon Logica is committed to working with government and industry stakeholders to **maximise emissions reductions from CMWG**, support NSW's net zero ambitions and ensure that metallurgical coal production remains responsible, safe and environmentally compliant.

2. About Carbon Logica

Carbon Logica is actively **developing, investing in and operating projects that abate greenhouse gas emissions from coal mining** across Australia, with a focus on NSW and QLD. Our work targets CMWG and VAM from metallurgical coal operations, converting methane into low-emissions electricity and reducing fugitive emissions.

Carbon Logica recently commissioned the **5MW Ironbark CMWG project near Moranbah, QLD**, with plans to expand to 20MW – enabled by the Australian Government's Australian Carbon Credit Scheme. In the region we are also integrating CMWG systems at our **13MW Moranbah Power Station** and actively constructing an additional 5MW CMWG project nearby also enabled by the Coal Mine Waste Gas Carbon Credit Scheme. These projects are designed to scale as incidental gas volumes increase, displacing conventional fossil-fuel generation, supporting grid stability and contributing to state and national emissions reduction objectives.

Our pipeline of CMWG to electricity projects totals **130MW of capacity that has been registered with the Clean Energy Regulator for development. We have projects in both QLD and NSW**, which could deliver approximately **1,000,000 tonnes of carbon dioxide equivalent (tCO_2e) in annual abatement**. While our operational projects are in QLD, the technical expertise, operational experience and abatement

methodologies are directly applicable to NSW coal mining operations, particularly in regions with metallurgical coal production.

With over **20 years of experience** in CMWG and VAM project development across NSW and QLD, Carbon Logica is committed to advancing **practical, scalable emissions reduction solutions** for **responsible metallurgical coal production in Australia**. We welcome the opportunity to share insights with the Committee to inform the inquiry and guide evidence-based policy development.

3. Coal Mine Waste Gas (CMWG) Abatement – A Critical Opportunity

Methane emissions from coal mining are one of the largest contributors to NSW's fugitive greenhouse gas profile. VAM and CMWG are particularly significant, as these gases are often released directly into the atmosphere.

Key considerations:

- ✓ **Global Warming Potential:** Methane is 84 times more potent than carbon dioxide (CO_2) over a 20-year horizon, making its rapid abatement critical to meeting NSW's emission reduction targets.
- ✓ **Commercially viable technologies exist today** – including power generation from CMWG and catalytic oxidation for VAM – but deployment is fragmented and under-supported.
- ✓ **Dual benefits:** Projects can deliver both emissions reductions and firmed electricity supply, supporting the grid during the renewable transition.
- ✓ **Policy gaps:** Without dedicated policy or financial mechanisms, large volumes of methane will continue to be vented to atmosphere, representing missed opportunities for cost-effective abatement.

Recommendation:
Carbon Logica requests the Committee prioritise **policy incentives, investment support and streamlined approvals** for CMWG abatement projects. These projects are proven, immediately deployable and offer a practical, high-impact pathway toward achieving net zero.

4. Role of Metallurgical Coal in a Net Zero Future

While the global economy transitions to low-emissions energy, **metallurgical coal remains indispensable for steel production**. Current steelmaking technologies rely overwhelmingly on coking coal in blast furnaces. Emerging low-carbon steel technologies (such as hydrogen-based direct reduced iron, to produce steel) are promising but are not yet commercially available at scale.

Key considerations:

- ✓ **Global demand for steel is rising**, driven by infrastructure, renewable energy deployment and urbanisation.
- ✓ **Australia is a world leader** in safe, efficient and environmentally regulated metallurgical coal mining. If production is displaced overseas, steel demand will simply be met by jurisdictions with weaker safety and environmental standards and higher emissions intensity.

- ✓ **Maintaining a domestic metallurgical coal industry** ensures Australia can supply responsibly produced inputs for global steelmaking, while also enabling investment in emerging low-emissions steel technologies and support local jobs.

Premature transition away from metallurgical coal in Australia would not reduce global emissions – it would export them.

Recommendation:
Carbon Logica requests the Committee acknowledge the **ongoing strategic role of metallurgical coal** in global steelmaking and support responsible Australian production aligned with strong safety and environmental frameworks. Regulatory enforcement and Safeguard Mechanism penalties without commensurate support mechanisms (such as capital grants or other cost relief) have the potential to risk viability of the mining operations and could result in emissions being "leaked" to other coal mining jurisdictions.

5. Alignment with Inquiry Terms of Reference

(a) The relevance and consequences of fossil fuel greenhouse gas emissions for achieving New South Wales emissions reductions targets and complying with the guiding principles and purposes of the *Climate Change (Net Zero Future) Act 2023*

Methane from coal mining is one of the largest single sources of emissions in NSW. Tackling these emissions is essential to achieving the State's 2030 and 2050 reduction targets. CMWG abatement represents a proven and cost-effective intervention that can deliver significant, near-term reductions. Without targeted abatement measures, NSW risks falling short of its legislated commitments.

At the same time, the Act requires consideration of economic resilience and a just transition. Metallurgical coal mining, underpinning global steel production, remains critical to both the economy and global decarbonisation outcomes (for example, steel for renewable infrastructure, transmission and urbanisation). Maintaining its responsible production in NSW ensures emissions are minimised compared with offshore alternatives, while continuing to support well-established industry and jobs within NSW.

(b) Quantification and measurement of coal-mine and gas industry methane and related greenhouse gas emissions in New South Wales, including fugitive emissions

(i) Accuracy of emissions reporting from coal mines and gas fields

Current methodologies rely heavily on modelled data rather than real-time measurement, creating uncertainty in emissions inventories. Advanced measurement technologies – such as continuous methane monitoring and aerial surveys – may improve accuracy. Carbon Logica supports greater independent verification and transparency in reporting.

(ii) The relevance of using a twenty-year versus one-hundred-year global warming potential (GWP) to assess short-term climate impact

Methane's short-term potency (84x CO_2 over 20 years) means that using the 20-year GWP metric better reflects its climate risk. Prioritising a 20-year timeframe for fossil-fuel source methane would align NSW with international recognition of methane's importance and highlight the urgency of near-term methane abatement. Policy mechanisms that drive the cost of emissions for coal mine operators would need to be updated under changed GWP considerations to avoid emissions 'leakage' and deindustrialisation in Australia, through coal being produced by other jurisdictions.

(iii) Current measurement, reporting and verification methods and whether they reflect best practice

Carbon Logica requests that NSW ensure alignment with the Commonwealth Government National Greenhouse Emissions Reporting (NGER) Scheme, and advocate for global best practice as future NGERs review processes are completed.

Best practice could include:

- ✓ Direct measurement wherever feasible;
- ✓ Hybrid models integrating field data with emissions inventories; and
- ✓ Transparent publication of emissions data to support community confidence.

Carbon Logica recommends supporting ongoing improvements in measurement, reporting and verification methods alongside incentives for abatement projects, helping ensure methane is both accurately measured and actively reduced.

(c) The transparency, timeliness and integrity of NSW's emission modelling and how this modelling is used to inform planning decisions

Carbon Logical seeks that emission modelling serve as a forward-looking tool for decision-making, not only a reporting exercise. At present, delays in publishing modelling data reduce transparency and undermine stakeholder confidence.

Carbon Logica recommends:

- ✓ Public release of emissions models on a timely basis;
- ✓ Greater integration of abatement potential from existing technologies (such as beneficial use of CMWG for electricity generation); and
- ✓ Use of scenario-based planning that reflects global market realities – including ongoing demand for metallurgical coal.

Carbon Logica proposes that planning decisions balance emissions targets with economic needs. Transparent modelling would demonstrate that abatement of fugitive methane is feasible and that metallurgical coal, when responsibly produced, remains aligned with NSW's obligations under the Net Zero Future Act.

(d) The implementation and feasibility of greenhouse gas abatement, including ventilation air methane (VAM) abatement for coal mining

Abatement technologies are already proven:

- ✓ CMWG power projects convert methane into CO_2 while also generating valuable electricity for the grid.
- ✓ VAM abatement systems are commercially operating in parts of the world, including pilot projects in Australia.
- ✓ Hybrid projects integrating CMWG with renewable generation (including batteries) can provide grid stability during the clean energy transition.

The primary barriers faced are economic and regulatory – not technical. Supportive policy settings (such as providing targeted incentives, or initiatives like the extension and expansion of the Australian Government's CMWG ACCU Method and government funding programs) would unlock immediate deployment. Carbon Logica requests that the NSW Government advocate for the expedient remake of the CMWG ACCU Method to reinstate support for such abatement.

The alternative of imposing additional regulation and cost burdens risks mining companies reducing investment in Australia and developing coal mining operations in jurisdictions where costs are lower. This will ultimately creating emissions leakage and undermine the underlying intent of emissions reduction policy which is to reduce global emissions.

Carbon Logica stresses that VAM and CMWG abatement are feasible, scalable and necessary for NSW to achieve its targets.

(e) The economic costs associated with greenhouse gas emissions including indirect costs from climate change related impacts and opportunity costs for other sectors

Failure to abate methane imposes significant economic costs:

- X Economic pressure on Australian coal mining operation from the Safeguard Mechanism Reforms,
- X Climate change-related damage (floods, droughts, health impacts);
- X Lost opportunities to generate low-emissions electricity; and
- X Lost potential to create new jobs in regional abatement industries.

On metallurgical coal, premature withdrawal would:

- X Shift global steel production to higher-emissions jurisdictions due to sustained demand for steel – increasing global costs of climate change.
- X Reduce NSW royalty revenues;
- X Undermine local supply chains; and

Conversely, investment in abatement delivers:

- ✓ Viable abatement that also supports new electricity generation, displacing electricity generated from conventional fossil fuels ;
- ✓ Regional employment in project construction and operations; and
- ✓ Stronger investor confidence in NSW's climate leadership.
- ✓ Premium pricing for Australian produced coal in developed economies as the global steel industry transitions to a supply chain total emissions accounting model.

Maintaining responsible production and promoting abatement activity balances economic stability with climate action.

6. Conclusion

Carbon Logica urges the Committee to recognise the dual priorities of:

1. **Scaling up coal mine waste gas abatement** as an immediate, high-impact emissions reduction opportunity; and

2. **Sustaining responsible metallurgical coal mining in Australia** to ensure global steel demand is met under high safety and environmental standards, while bridging towards future low-emission steel technologies.

Australia is uniquely positioned to lead by example – reducing emissions intensity domestically, while continuing to supply the resources necessary for global infrastructure and the renewable transition.

Carbon Logica notes that the comments within this submission are specifically relevant to the fossil fuel sector and are not applicable beyond this sector, where different considerations apply.

For further information or clarification please contact:

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END OF SUBMISSION