

Submission
No 25

INQUIRY INTO EMISSIONS FROM THE FOSSIL FUEL SECTOR

Organisation: Environmental Defense Fund

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Environmental Defense Fund submission to the NSW Joint Standing Committee on Net Zero Future inquiry into Fossil Fuels

Introduction

Environmental Defense Fund (EDF) is a global environmental NGO operating in more than 30 countries. Over the past two years, EDF has been closely engaging with Australian federal and state decision-makers about opportunities to improve the accuracy of energy sector methane reporting and to identify targets for urgent emissions abatement. Our comments on specific terms of reference for the inquiry are set out below.

(a) 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

EDF refers to its comments and recommendations in our [previous submission](#) to the Joint Standing Committee on Net Zero Future.

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

- (i) the accuracy of emissions reporting from coal mines and gas fields; and**
- (iii) current measurement, reporting and verification methods and whether they reflect best practice.**

The current methods used by open-cut coalmines and gas facilities to report methane emissions are factor-based estimates, rather than informed by empirical measured data. Numerous independent studies indicate that emissions from fossil fuel facilities, and open-cut coal mines in particular, could be significantly underreported. None of the three methods available for reporting emissions from open-cut mines—Method 1, Method 2 or Method 3 under the National Greenhouse and Energy Reporting (NGER) scheme—have been scientifically validated, so their accuracy in quantifying actual emissions from a site is not known.

The federal government's decision to phase out Method 1 for reporting methane emitted from open-cut coal mines without mandating a scientifically robust alternative will likely prolong and exacerbate reporting inaccuracies. Method 2, which is widely used in NSW, only requires operators to drill three borehole samples in unspecified areas to determine their emissions factor across an entire mine site. Currently, the data from a company's Method 2 sampling is not shared with the Clean Energy Regulator, which means there is a lack of scrutiny of how those factors are developed.

The federal government is commissioning a study to determine the most effective method for reporting methane from open-cut mines, but that study is unlikely to deliver findings before Q1 2027. In the interim, there is a risk that open-cut mine emissions are underreported, and not properly accounted for under the Safeguard Mechanism. To deter facilities from being highly-selective in their sampling approach in order to produce lower emissions factors, the NSW Government should implement new policies to increase transparency around the use of Method 2.

Recommendation 1: as part of environmental licensing, operators should be required to provide to the NSW EPA their sampling data and 3D gas models (including location and an

explanation of why that location was chosen as being representative, number of boreholes and date of collection) and any analysis associated with it, as well as details of any internal or third-party auditing of the sampling.

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

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

While emissions reporting and policy development at state and federal level in Australia are reported using solely a 100-year GWP, EDF urges this to be expanded to also include a 20-year GWP.

Only considering a 100-year GWP discounts the short-term warming impacts of several important short-lived climate pollutants, including methane, which is 84 times more powerful a warming agent than carbon dioxide over 20 years. Methane mitigation offers the fastest solution to slow the rate of near-term warming and provides immediate environmental and economic benefits.

Recommendation 2: EDF urges policy-makers to consider the paper published in *Science* by its scientists regarding the merits of a two-value reporting standard for GWP [“Unmask temporal trade-offs in climate policy debates”](#). The European Union [Methane Regulation](#) provides a precedent for this, stating that rules for methane MRV should use a 20-year and 100-year time horizon for GWP (preamble clause 9).

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

NSW has the largest number of highly methane intensive underground coal mines in Australia, but these mines are not currently required to install well-proven, mature methane abatement technologies. While the Minns Government has indicated a commitment to regulating methane from coal mines via state pollution licences, there has been no implementation of changes to effect that commitment.

More than half of global coal mine methane emissions can be abated using proven technology. The IEA estimates that 90% of abatable coal mine methane would cost \$20/tonne CO₂-e or less to mitigate (using a global warming potential of 100 years).

Underground coal mines offer significantly greater methane reduction opportunities compared to open-cut mines and should be prioritised through policies that require or incentivise the installation of VAM abatement systems to reduce their scope 1 emissions. For example, environment protection licences could be updated to include methane intensity standards for coal mine methane emissions, limiting the amount of methane that a mine is allowed to emit per unit of produced coal, and a levy could be charged on emissions exceeding the standard, set at a price that drives abatement action. Facilities that exceed the standard should not be allowed to use offset credits. Also, with sufficient safety analysis, the government could introduce direct requirements for mines to install VAM abatement systems as appropriate for the mine type.

EDF's experience from its work in other jurisdictions is that methane action is most effective when it combines different forms of regulation, including performance standards as well as prescriptive measures. Given the current limitations of the Safeguard Mechanism in driving abatement, to ensure meaningful and immediate emissions reduction, we therefore urge the NSW Government to consider implementing direct requirements for abatement technology and work practices, as well as emissions intensity standards.

Considering the current very limited uptake of VAM abatement systems in NSW, near-term subsidies might also be necessary to accelerate deployment and demonstrate the safety of abatement systems. To do this efficiently, a tiered funding scheme could be introduced as part of the High Emitting Industries Fund, allocating a declining proportion of subsidies for project costs to mines which are early adopters of these technologies, for example, the lowest-cost bidder receiving 75%, the second receiving 50%, and the third receiving 25%.

However, before allocating such funds, the NSW Government should commission analysis from the Net Zero Commission or other independent advisory body to assess how VAM abatement would affect a mine's overall lifespan, as installation of VAM technologies should not be used to justify extensions of mines that would otherwise be decommissioned. Such analysis should also take into account the mine's scope 3 emissions impact.

The NSW Government should similarly incentivise open-cut mines to use pre-drainage to reduce methane emissions on-site. Given that pre-drainage at some sites is less cost-effective technically than VAM abatement, financial incentives might need to be offered to catalyse uptake of pre-drainage technology, for example through the use of a reverse auction model whereby the projects that can achieve abatement at the lowest cost are offered a greater proportion of grant funding.

Recommendation 3: Requirements should be introduced for all coal mines to install best available methane abatement technologies within the next two years, and introduce a strong performance standard or levy (complementary to the Safeguard Mechanism) which incentivises mines to take up this technology. Near-term subsidies may also be appropriate for a limited number of mines.