Coal mine methane emissions in Australia

Australia has another hidden coal pollution problem to solve

Methane leaking from coal mines will blow Australia's already weak 2030 climate targets. A guide on the scale of methane emissions leaking from Australia's coal mines and recommended actions to reduce these leaks and mitigate their impact on the climate.

EMBER
COAL TO CLEAN

How big is the problem?

Big. Methane is a powerful but short lived climate pollutant that is under-estimated and underreported. Over a 100 year timeframe, methane traps 28 times more heat than CO_2, over 20 years it traps 82. The Aust. Gov. uses the 100 year multiplier, hiding the higher short term impact.

82 TIMES STRONGER THAN CO_2 over 20 years

Bigger climate impact than cars

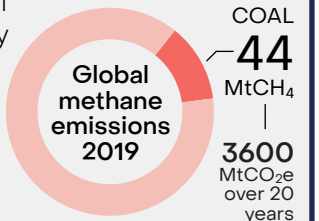
Methane leaking from Australia's coal mines causes almost double the climate impact every year of all Australia's cars and adds 5% to the country's total GHG emissions. The number is also likely an underestimate.

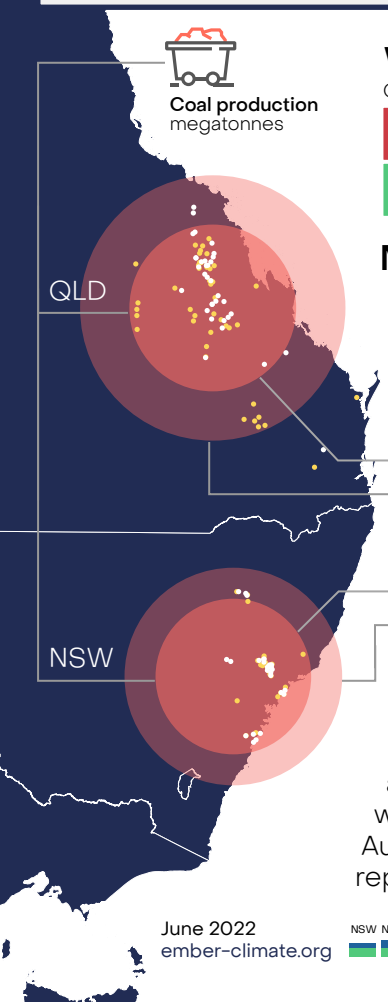
74 $MtCO_2e$ over 20 years

44 $MtCO_2$

Methane is in the global spotlight

Australia is the 6th largest coal mine methane emitter globally and on track to be 3rd worst. Australia refused to join 112 other countries in joining the 2021 Global Methane Pledge – a commitment to reduce methane emissions by 30%





Where do coal mine methane emissions come from?

Official 2019 figures as reported by the Australian Government to the UNFCCC

58% QLD | **42%** NSW

62% UNDERGROUND | **30%** SURFACE | **8%** ABANDONED AND POST MINING ACTIVITIES

The super-emitters

The gassiest 15 mines account for 50% of methane emissions while producing just 10% of Australia's coal.

Mines and emissions are expanding

Australia is on track to be the third worst coal mine methane emitter. The methane emissions from Australia's pipeline of proposed coal mines would make its already weak climate targets unachievable. Australia must focus on transitioning away from coal, not opening new mines.

Queensland – major coal methane emitting mines

- 34 (of 54) existing mines currently report over 100 $ktCO_2e$
- 44 proposed expansions

New South Wales – major coal methane emitting mines

- 27 (of 39) existing mines currently report over 100 $ktCO_2e$
- 24 proposed expansions

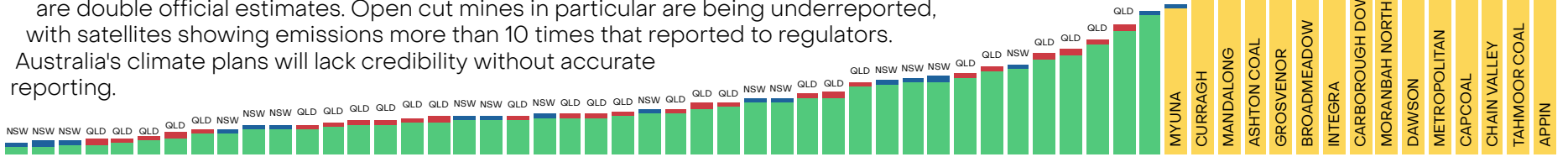
Existing coal mines	All proposed coal mines
5%* OF TOTAL AUSTRALIAN EMISSIONS	**+5%*** ADDITION TO AUSTRALIA'S EMISSIONS

Major mine expansions to be approved

- Glendell Continued Operations (Glencore)
- Mount Pleasant Optimisation Project (MACH)
- Dendrobium Mine Extension (South 32)
- Winchester South (Whitehaven Coal)
- Valeria Coal (Glencore)

Emissions likely underestimated and underreported

The International Energy Agency concluded that Australia's coal mine methane emissions are double official estimates. Open cut mines in particular are being underreported, with satellites showing emissions more than 10 times that reported to regulators. Australia's climate plans will lack credibility without accurate reporting.



June 2022
ember-climate.org

Coal mine methane emissions in Australia

Recommendations to reduce Australia's coal mine methane leaks

Tackling coal mine methane leaks is a low effort, high reward solution in the urgent fight to reduce emissions and halt the climate crisis.
Failure to reduce these leaks will mean that Australia will be unable to get onto a 1.5°C compatible pathway.

EMBER
COAL TO CLEAN

Big Picture

The need to rapidly phase out coal is well understood. It is the fastest way to reduce emissions and the cheapest. Coal mine methane leaks are yet another reason to get on with this urgent task. Banning new mines should be a top priority & closing gassy mines a close second.

Key recommendations

- **No new coal mines**
- **Close super-emitting mines first**
- **Phase out thermal coal, and coal-fired power generation by 2030**
- **Phase out unabated metallurgical coal by 2040**
- **Replace metallurgical coal with green hydrogen**
- **Just transition plan for coal mining communities**

Quick wins

Australia's leaky coal mines need to be plugged and fast. Technology is readily available to capture coal mine methane. Not only can this directly reduce a mines' emissions, it can also offset emissions elsewhere as the captured methane is a valuable fuel.

Key recommendations

- **Sign the Global Methane Pledge**
- **Ban venting**
- **Capture, utilise or destroy methane emissions, especially from:**
  - Drainage methane at all mines
  - Ventilation air methane from underground mines
  - Abandoned mines
- **Legislate and/or use incentives to ensure implementation**

Better understanding

Mining companies and regulators are flying blind as coal mine methane emissions are not measured properly. The Australian Government must mandate companies to improve their monitoring, reporting and verification (MRV) mechanisms.

Key recommendations

- **Legislate to improve MRV**
- **Measure emissions directly**
- **Ban use of default emissions factors**
- **Use satellite monitoring**
- **Report more granular data publicly**
- **Independent verification**
- **Track and report on all inactive mines**

A comprehensive plan

Reducing coal mine methane emissions is a no brainer and should be high up on the agenda. It is up to the Australian Government to legislate a robust and well thought out plan that will rapidly reduce easy to tackle leaks in the short term and phase out coal over the longer term.

Learn more

This brief summary of this important topic only touches on the main points, but for a more detailed picture of the situation and what can be done about it, please visit the links below:

- **Full report**
  www.ember-climate.org/australia-methane
- **Explainer**
  ember-climate.org/insights/commentary/why-the-world-must-act-on-coal-mine-methane/
- **IEA Global Methane Tracker**
  iea.org/reports/global-methane-tracker-2022
- **Video**
  Explainer: EU proposals to tackle Coal Mine Methane