LOCK THE GATE ALLIANCE

AUSTRALIANS WORKING TOGETHER TO PROTECT OUR LAND, WATER, AND FUTURE

14 February 2025

Submission to the Joint Standing Committee On Net Zero Future re. the Net Zero Commission's 2024 Annual Report

Dear Committee members,

Thank you for conducting this inquiry.

NSW is not on track to meet climate targets. In November 2024, the NSW Productivity and Equality Commission bluntly stated that *"[b]ased on current policy settings, the state is projected to fall short of all its targets – 2030, 2035, and 2050"*. About two weeks later, the NZC's first report warned that *"[u]nless action is accelerated, NSW may not reach net zero by 2050 and we will fail to meet our nearer term targets."* The NZC's finding in regard to interim targets is of particular concern:

> *"An overarching theme arising from the Commission's initial assessment is that a considerable upscaling and acceleration in activity will be required if NSW is to stay in reach of its emissions targets. As noted earlier, unless faster and more significant progress is made, the target for 2030 will not be achieved, the 2035 target could be out of reach …"*

To get back on track, the NSW Productivity and Equality Commission has clear advice for the NSW Government: *"take a more active role in guiding the transition …[t]he longer we wait, the more it will cost us to fix the emissions shortfall. The easy decisions have already been made."* The Commission's advice is that *"[m]any activities need policy change to reduce emissions"*, including *"fugitive emissions from coal mining."* NSW Minister for Climate Change, Penny Sharpe, acknowledged this last year, telling a Budget Estimates hearing on 29 August 2024 that *"[f]ugitive emissions are a big problem. They will impact on our ability to meet our targets. There is no doubt about that."*

Emissions from the NSW coal mining sector are a major problem

As both the NSW Productivity Commission and NSW Net Zero Commission note, coal mine expansions are highly problematic in terms of NSW being able to meet climate change targets and warrant close and immediate scrutiny.

The NZC stated that emissions from 22 proposed coal mine extensions and expansions *"pose a major challenge for the state's regulatory arrangements"* and that any emissions

associated with extended coal projects would *"require all other sectors to make greater emissions reductions"*.

In response to that finding, the focus of our submission is on GHG emissions attributable to the existing coal sector in NSW and the threat that significant additional emissions from 21 coal-mine expansions pose to meeting the 2030 and 2035 targets.

Coal mining poses major challenges for NSW, not only to the achievement of NSW climate change targets but also to limiting global temperature rise to as near as possible to 1.5 degrees as set out in the purpose of the *Climate Change (Net Zero Future Act) 2023* (CCNZF).

On current projections, by the early 2030s, *mining* coal (primarily for export) is forecast to add more emissions to the NSW GHG inventory than *burning* coal in NSW power stations, therefore NSW planning authority decisions which greenlight additional, emissions-intensive coal mining, are consequential.

Coal supply in NSW

In regard to any concerns that Committee members may have about security of coal supply, we note that NSW exports most thermal coal and has plenty for domestic power needs (~85% of thermal coal extracted in NSW is exported, and only ~15% is currently burnt for domestic power generation).

In regard to the ongoing viability of jobs in the sector, we note that most NSW coal mines already have approvals to extend long beyond 2030. Of 42 coal mines currently operating in NSW, 27 already have existing approvals that continue beyond 2030, and many extend long beyond 2030. Despite this, at least 19 coal mines are now seeking to extend their approvals even longer (see Table 1 below), many well beyond 2040. Most of the expansions are for export, and at least 6 are for extensions that will not even *start* until post-2030. It seems very clear that mining companies are 'gaming the system' and seeking to exploit the current weak regulatory environment in order to bank approvals for the future.

New coal projects compete with housing and renewable energy for skilled labor

The NSW Productivity Commision - in their first Net Zero report - warned that construction sector capacity will impact the cost and timing of the energy transition. Coal mine expansions - in a tight labor market - compete for the same skilled labor required to build housing, public infrastructure and the rapid build-out of renewable energy projects.

As a key participant in the National Housing Accord, NSW has committed to delivering 377,000 dwellings over five years to 2029. NSW also has *"a large pipeline"* of public infrastructure projects to be built (over the 2024-25 Budget and Forward Estimates period, a record $119.4 billion capital program is afoot). As the NSW Productivity Commision point out:

> *"Not everything can be built at once. Constraints in labour, materials, and equipment have been the subject of significant stakeholder commentary, as an overstretched construction sector suffers surging costs and delivery delays (Infrastructure Australia, 2023)."*

The net zero transition is facing challenges recruiting and retaining skilled workers because of *"unprecedented pressure"*. Tradespeople can move between infrastructure projects—energy, water, roads, freight, and public transport—and private residential, commercial, and industrial developments. *"Workers in professional roles such as engineering, architecture, and procurement are also able to move between construction subsectors."*

Essentially what the Productivity Commission is saying is that there is an opportunity cost that NSW is paying when new coal expansions are approved. These projects will inevitably impact high-priority developments in the housing, public infrastructure and renewable energy sectors. A report prepared by EY for the HVO coal mine expansion in May 2024 confirms this analysis. In their economic assessment of the proposal, EY found that *"75 per cent of the workers at the HVO Complex reside in Lower Hunter, where the remainder are sourced from the rest of NSW. This represents a migration into the region, increasing the labour supply in Lower Hunter and* ***reducing the labour supply in the rest of NSW (our emphasis)****."*[1] EY determined that *"should the proposed development not go ahead, those who would have been employed at the HVO Complex would instead find alternative work at the average wage afforded to their occupation in NSW."*

Summary of issues with coal mining and its contribution to climate change in NSW

We have analysed in detail the emissions profile and trajectories of current and proposed coal mines in NSW against NSW emission reduction targets. The information and analysis provided below and attached is based on referenced data that coal companies have already provided to the Clean Energy Regulator or included in environmental assessment or Annual Review reports or that have been provided by the NZEM modelling team.

We offer the following points in summary (see Attachment 1 for more detail and graphs):

1. **Abatement is failing at existing coal mines** - reported Scope 1 emissions from the top 27 highest-emitting NSW coal mines *increased* by ~1 Mtpa CO2e in FY23 (the last FY for which data was available as at the time of writing this submission).

2. **Coal fugitive emissions are predicted to increase to 2030** - NZEM projections show coal fugitive emissions increasing by 2030, not reducing by 50% in accordance with NSW targets nor by 75% as recommended by the International Energy Agency.

3. **Coal fugitive emissions are likely to be far larger than predicted and reported** - preliminary results from Open Methane, which analyses methane satellite data, has found that coal-mine methane emissions in Australia may be around double what has

[1] EY, May 2024, Economic Impact Assessment of the Hunter Valley Operations continuation project HV Operations Pty Ltd

been reported.[2]

4. **There is a significant pipeline of proposed coal mine expansions** - 21 coal mine expansions are proposed in NSW that will produce about 2.2 billion tonnes of lifecycle greenhouse gas emissions, contrary to the temperature goals and principles of CCNZF Act.

5. **Avoiding emissions from proposed projects will reduce climate target shortfall** - direct emissions from just 6 of the proposed projects have been modelled, but these equate to at least 1.8Mt CO2e emissions in 2030, which if avoided would help address the 8.5Mt CO2e shortfall predicted in meeting NSW's 2030 climate target.

6. **Modelling is opaque and the situation will worsen when an additional 14 proposed expansions are modelled** - only a small subset of coal expansions have been modelled in the Emissions Dashboard and there is no transparency about what has been modelled and at what level.

7. **Coal mines are seeking to 'bank' approvals for expansions that don't start until the 2030s** - at least 7 coal companies are seeking to take advantage of the weak regulatory environment by seeking approval now for expansions that will not start until well after 2030 and which will have a major impact on our ability to meet targets.

8. **Emissions failures at coal mines shifts the burden to other sectors** - the NSW Climate Change Minister has stated that every sector must do its part to meet targets, but the current approach shifts the burden from coal onto every other sector of the NSW economy.

Conclusion

One of the reasons that coal-mine expansions are controversial, is that **no-one in government can explain how a 50% cut in emissions will be achieved by 2030 if these new and additional, high-emitting projects go ahead**. This is why Lock the Gate argues in this submission that new coal project decisions should be paused whilst the Net Zero Commission conducts a short, sharp review to assess the risk from coal mining to NSW climate change targets in detail.

In the context of all of these expansions and extensions, we note that **global thermal coal use also needs to reduce rapidly to meet Paris temperature goals**. Under the International Energy Agency 'Net Zero Scenario', world coal demand needs to plunge by 43% by 2030, by 71% in 2035 and over 90% by 2050.

Given the scale of the threat posed by coal mine emissions (particularly fugitive methane emissions), an assessment of GHG issues in the coal sector should feature strongly as a key issue in the Joint Standing Committee On Net Zero Future's (JSC) report to Minister Sharpe. This is warranted for all the reasons set out below, but especially because of the

[2] https://www.superpowerinstitute.com.au/news/new-groundbreaking-satellite-monitoring-tool-shows-significant-underestimation-of-methane

enormous global warming potential of methane in the short-term which makes it the single biggest opportunity to avoid near-term tipping points.

Additional scrutiny is needed not only to meet the intent of the CCNZF but also to safeguard every other economic sector in NSW so that they do not shoulder a greater burden of emissions reduction whilst coal mines continue business as usual.

The extraordinary scale of proposed coal mine expansions in NSW represent potential lifetime emissions that are more than 16 times NSW current annual emissions. Addressing those expansions is therefore undoubtedly the single greatest opportunity NSW has to make a genuine difference on climate change on a global scale.

Therefore, we urge the JSC to consider and make recommendations on this vital issue in your upcoming Committee report and make it the subject of more dedicated scrutiny and investigation once that report is complete.

RECOMMENDATIONS

1. **The NSW Government should request a specific, dedicated report from the NZC on the risks that coal and gas expansions pose to NSW climate targets**, to be completed by June 2025. The report should include advice on a coal sectoral target to drive emissions reduction in the coal sector. In the meantime, approvals of new coal expansions should be paused until such advice has been provided by the NZC.

2. **A Regulation under the CCNZF Act should be created to place a duty on key planning decision-makers to meet the 2030 and 2035 targets** and to consider downstream emissions in the context of the Paris temperature goals (as per the purpose of the Net Zero Act).

3. **The Net Zero Commission should be asked to provide specific advice and make recommendations to decision makers on all large proposed high-emitting coal mine expansions** in NSW, as per s15 (3) of the CCNZFA.

4. **The Net Zero Commission should be asked to advise on a carbon budget to 2030 and 2035, as a matter of high priority.**

ATTACHMENT 1 - ANALYSIS OF NSW COAL MINE EMISSIONS AND PROJECTIONS

1 - Abatement is failing at existing coal mines in NSW

Lock the Gate Alliance has analysed Safeguard facility data reported to the Clean Energy Regulator in Canberra in FY22 and FY23. Facilities that emit more than 100,000 tonnes carbon dioxide equivalent (CO2-e) of covered emissions in a financial year report to the CER.

As data in Figure 1 (below) demonstrates, Scope 1 emissions at a majority of high-emitting coal mines in NSW *increased* their Scope 1 emissions in FY23. In total in FY23, Scope 1 GHGs at coal mines in NSW which pollute more than 100,000 t CO2-e increased by 9.4% or more than 1 Mt CO2-e. Over the same period, and at the same mines, raw coal production *decreased* by ~5.5% from 205,839,387 t in FY22 to 194,441,660 t in FY23. In summary, **in FY23, significantly more GHG pollution was emitted to mine 5% less coal**.[3]

Furthermore, the NSW Government's Net Zero Emissions Modelling (NZEM) team's latest 2023 Methods Paper (published 9 October 2024) cautions that roll out at scale of critically important abatement measures for diesel and VAM emissions at coal mines are predicted to be significantly delayed, stating that:

> *"Given the slow pace of trialling options for diesel replacement on mine sites, the turnover progress for mine site vehicle fleets was modelled to happen at a slower pace in the 2023 projections (i.e. starting at 5% in 2033 and reaching 100% turnover of the fleet by 2043) compared to the 2022 projections where turnover was modelled to be 40% by 2033 and 100% by 2036.*
>
> *As discussed earlier, the deployment of VAM abatement technology at some gassy underground mines was pushed back to 2033 in the 2023 projections compared to 2028 in the 2022 projections. This is assumed to happen under NZIIP incentives or Safeguard Mechanism requirements."*[4]

NSW Minister for Climate Change - Penny Sharpe - told a Budget Estimates hearing on 29 August 2024 that *"Fugitive emissions are a big problem. They will impact on our ability to meet our targets. There is no doubt about that."* In NSW, about 95% of fugitive emissions are from coal mining.

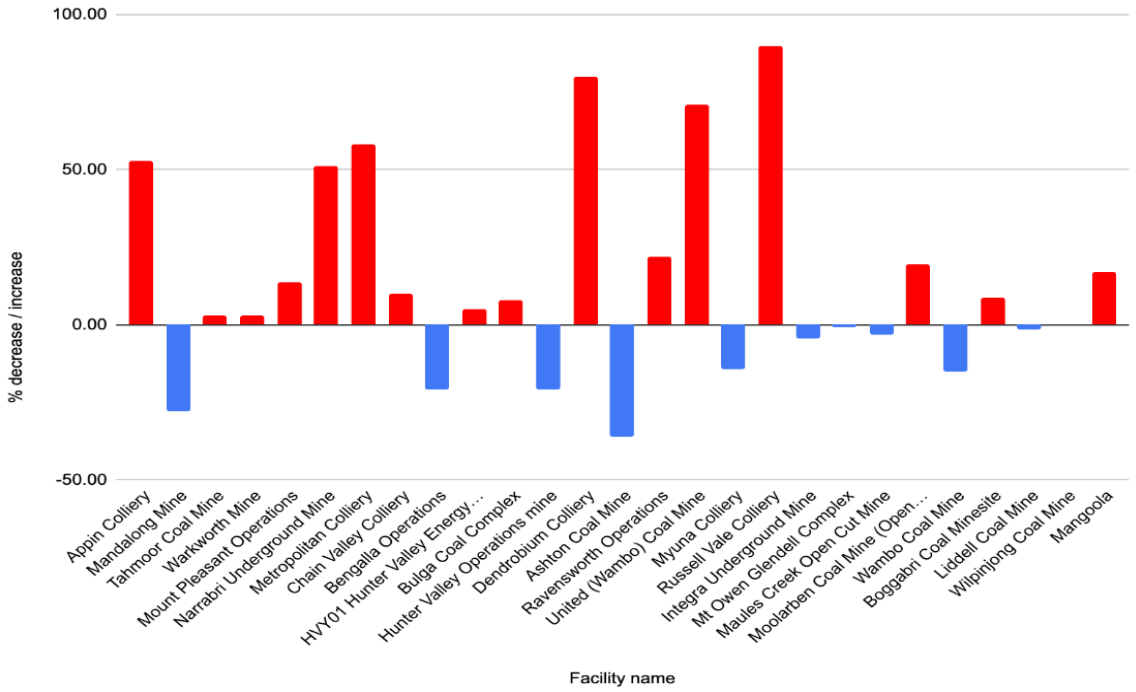
In regard to VAM abatement of fugitive emissions (VAM is far the largest source of fugitive emissions in NSW), we note the release of a major new report this week by the United Nations Economic Commission for Europe which found that *"mitigating Ventilation Air Methane (VAM) emissions from coal mines presents a highly effective and readily available opportunity to slow down climate change."* The report - UNECE Best Practice Guidance on

[3] Data was sourced from Scope 1 GHGs reported to the Clean Energy Regulator's Safeguard facility reported emissions data and from Coal Services data (subscription service) for ROM coal production.
[4] DCCEEW, October 2024, NSW greenhouse gas emissions projections 2023, Methods Paper, pg 76

Ventilation Air Methane Mitigation, February 2025 - *"highlights the cost-effectiveness of VAM mitigation, noting that advanced technologies, such as Regenerative Thermal Oxidation (RTO), have been successfully deployed in large-scale, long-term projects, proving the technical viability of VAM mitigation."* In NSW, there is an industry 'go-slow' on VAM abatement with only 1, small-scale trial project funded despite a 2021 report commissioned by the NSW government which identified "*the potential for VAM destruction"* at 7 of 8 sites studied.[5]

GHG emissions from the combustion of diesel fuel at coal mines are also a significant problem. NZEM predicts that by 2030, *"over 80% of the stationary energy emissions within the energy industries category are projected to be from diesel consumption at primarily open-cut coal mines."* [6]

Figure 1: Percentage change in Scope 1 GHG emissions at NSW coal mines covered by the Safeguard Mechanism: FY22 to FY23



Data source: Clean Energy Regulator's Safeguard facility reported emissions data

In order to give JSC Committee members a more granular view of the ongoing failure to abate emissions at existing mines, we provide - at Appendix 1 - a snapshot of Scope 1 emission abatement problems at five of the top emitting NSW coal mines.

2 - Coal fugitive emissions are predicted to increase to 2030

Fugitive emissions (mostly methane) from coal mining are projected to increase to 2030, rather than decrease. The NSW Government's Net Zero Emissions Modelling (NZEM) team -

[5] Palaris, 27 August 2021, 'Opportunities of fugitive emissions abatement' (Client: Department of Planning & Environment).
[6] NSW Greenhouse gas emissions projections 2022 Methods paper, 2023, pg 30

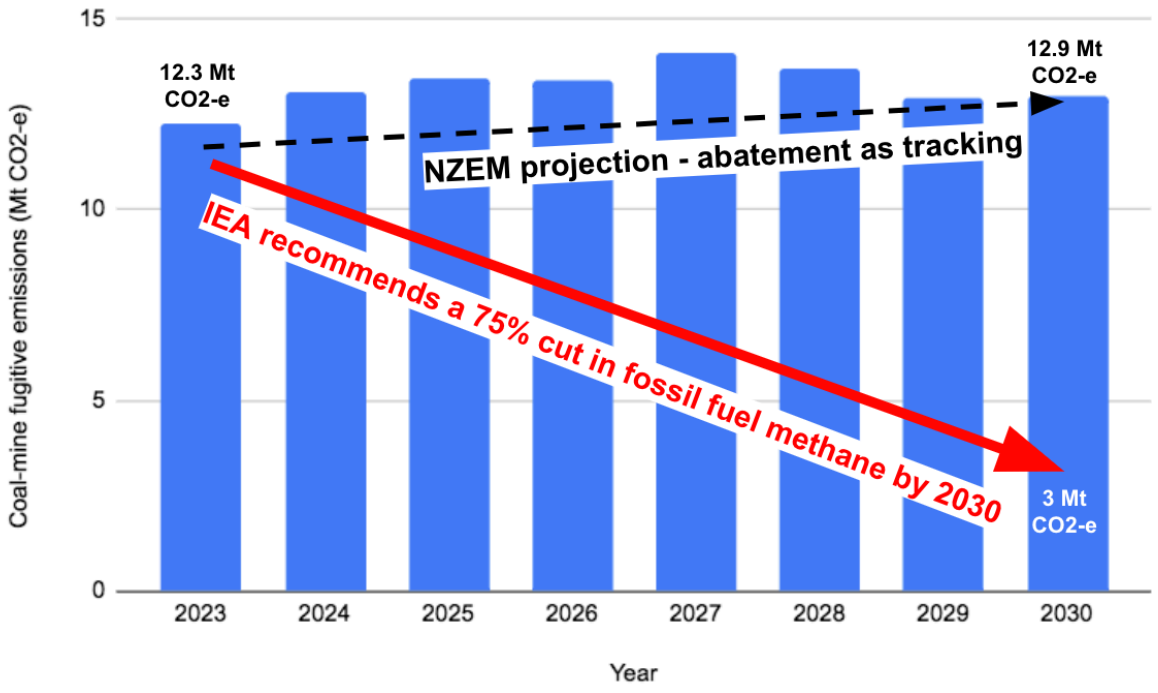
in their 2022 Methods Paper - projected significant growth:

> *"Annual fugitive emissions from coal mining and gas production and supply are projected to grow by 37% over 2020–2030, primarily as a result of coal mine extensions and mining of more methane-rich coal seams."* [7]

The graph below is produced from the data provided in the NSW Emissions Dashboard. The trajectory of fugitive emissions from coal mining (existing and proposed) runs directly counter to NSW climate change targets, which should nominally see each sector at least achieving something in the order of 50% emissions reduction by 2030, and to Australia's commitment to the Global Methane Pledge which seeks a 30% economy wide reduction by 2030.

However, due to the difficulties of achieving rapid reductions in methane emissions from agriculture, the International Energy Agency has stated that limiting global warming to 1.5 degrees will actually require methane emissions from fossil fuels to decline by 75% by 2030.[8] The IEA's most recent global methane tracker has found that "*global methane emissions remain far too high to meet international climate targets*".

Figure 2: NSW Fugitive emissions (coal mining) - 2023 to 2030



Data source: NSW NZEM's April 2024, 'Abatement as tracking' scenario (Mt CO2-e)

3 - Fugitive emissions are likely to be far larger than predicted and reported

[7] NSW Greenhouse gas emissions projections 2022 Methods paper, 2023, pg 10, https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-greenhouse-gas-emissions-projections-methods-paper-2022-230092.pdf

[8] https://www.iea.org/news/after-slight-rise-in-2023-methane-emissions-from-fossil-fuels-are-set-to-go-into-decline-soon

On 30 April 2024, the Superpower Institute published research based on a combination of atmospheric modelling and satellite measurements to develop its new monitoring tool – Open Methane – which found Australia's coal mines are responsible for almost double the fugitive methane emissions than those reported to the Australian Government.[9]

Commenting on this research to the AFR on 30 April 2024, Professor Rod Sims said:

> *"I think we've got a problem … I think it's fair to say that most open cut coal mines have got more emissions than are being reported. I don't think there's any other conclusion you can reach out of that."*[10]

An October 2024 Briefing from Reputex, found that:

> *"[m]ultiple independent studies have estimated Australia's coal mine methane emissions to be significantly higher than reported, with the IEA estimating that Australia could be under-reporting coal mine methane emissions by around 90%, while other peer-reviewed studies estimate coal mine methane emissions could be 59-122% higher than reported, with open-cut mines the main source of "missing" emissions."*[11]

In order for the NSW Government to be able to design an appropriate policy and regulatory response to drive down GHG emissions at NSW coal mines, it is critically important to properly identify the abatement problem that needs to be solved.

If - as Reputex have found - open-cut coal mine methane emissions are 59-122% higher than reported, then this becomes material to meeting legislated emissions reduction targets and temperature goals in NSW. In 2030, the NZE Dashboard forecasts open cut coal's fugitive emissions at 1.91 Mt CO2-e ('abatement as currently tracking' scenario). If those emissions are doubled to account for a methane under report, then this would add another 1.91 Mt to the current 8.5Mt CO2-e gap to *increase* the size of the abatement gap from 8.5Mt CO2-e to 10.41Mt CO2-e in 2030.

If this problem is not examined and understood, measures that avoid and abate fugitive emissions at open-cut mines will not be prioritised.

4 - There is a significant pipeline of proposed coal-mine expansions

There are 21 proposed coal expansion projects currently in the NSW Planning system (see Table 1 below). In addition, Lock the Gate is aware of another three projects that have been flagged by proponents as likely to be submitted soon.

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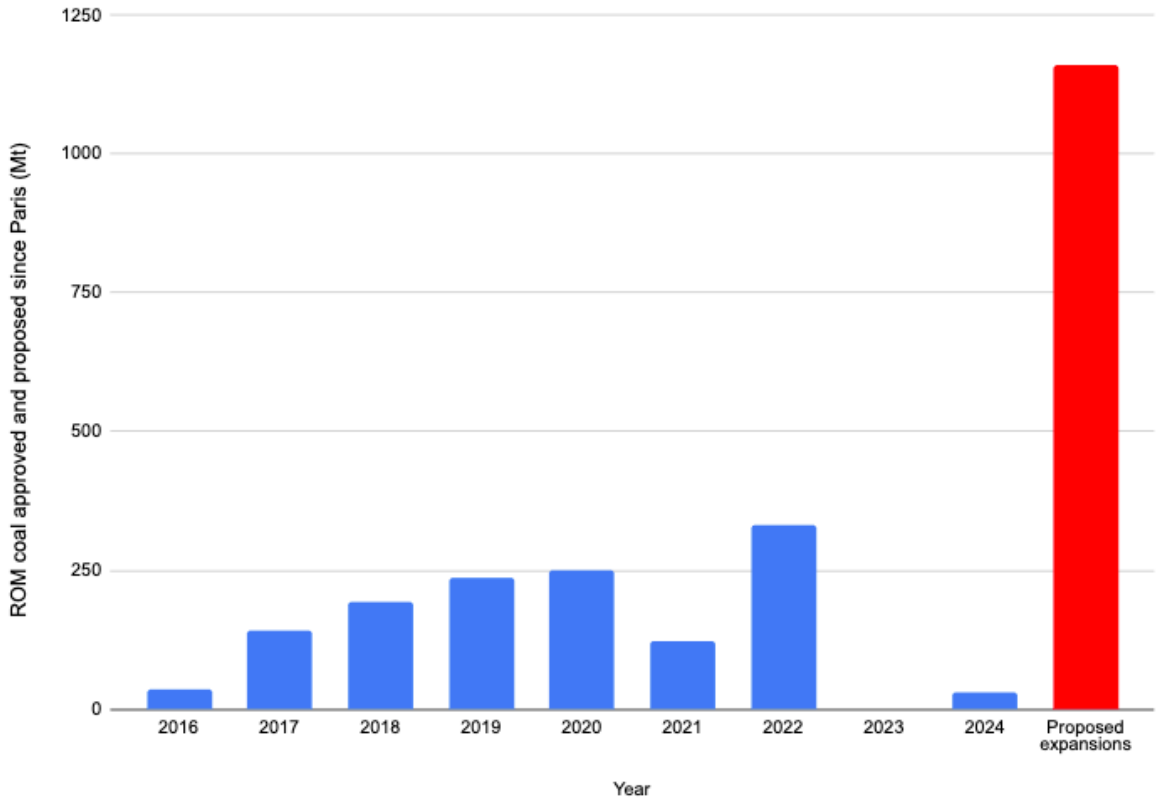
[9] Open Methane's research note is available here: Open Methane's First Results Build the Urgent Case for Improved Emissions Measurement.

[10] AFR, Apr 30, 2024, Ben Potter, Coal mine methane twice official disclosures: Sims, www.afr.com/policy/energy-and-climate/coal-mine-methane-twice-official-disclosures-sims-20240429-p5fnfv

[11] BRIEFING: Coal mine methane emissions reform – Implications for the Safeguard Mechanism market, 21 October, 2024, https://www.reputex.com/research-insights/briefing-coal-mine-methane-emissions-reform-implications-for-the-safeguard-mechanism-market/

Cumulatively, the proposals already in the planning system would - if approved - represent a very significant expansion and time extension of coal mining (see Figure 3 below) and amount to estimated lifecycle greenhouse gas emissions well in excess of 2 billion tonnes CO2e which is more than 16 times NSW total annual emissions from all sources.

Figure 3: Mt ROM coal (life of project) approved in NSW since the Paris Agreement (blue) vs proposed expansions (red) - October 2024



Data source: Lock the Gate analysis of published coal-mine approvals since the Paris Agreement entered into force in November 2016. Red column of proposed ROM coal tonnage sourced from NSW DPHI documents. See Table 1 below for links to references.

Table 1: Coal expansion projects in the NSW Planning system as at 14 Feb 2025

#	Projects being assessed by NSW DPHI (Oct 2024)	Included in NZEM dashboard modelling	Total Scope 1 GHG Mt CO2~e	Total GHGs (lifetime) Mt CO2~e	New ROM coal proposed (Mt)	References
1	Mt Arthur Coal MOD 2 (Pathway to 2030)	Yes	2.52	191.07	**89.8**	Table 2: Scope 3 emission estimates based on the amount of ROM generated, Todoroski, 26 July 2024
2	Chain Valley Colliery Consolidation	Yes	1.97	25.35	**9.5**	Appendix 14 - Greenhouse Gas and Energy Assessment
3	Hunter Valley Operations Continuation Project	Yes	29.31	1,165.02	**684**	Table 7.3, Amendment Report, Nov 2023, pg 86
4	Moolarben OC3 Extension Project	Yes	0.49	64.6	**30**	App J, Addendum EIS GHG Assessment

5	Newstan Mine Extension Project	Yes	0.58	65.36	**25.8**	GHG info: Table 48, pg 79, Appendix O Air quality and GHG. ROM coal figure sourced from MEG advice, Oct 2021
6	Angus Place West	Yes	no data	*17*	**8.5**	Scoping Report
7	Ulan Coal Mod 6 - u/ground extension	No	0.10	41.81	**18.8**	See Airen Consulting, 23 April 2024, Ulan Complex Modification 6 Amendment, Table 2 Estimated GHG emissions, pg 6
8	Tahmoor MOD 3 - Longwall S7A	No	0.97	5.8	**2**	GHG info: Table 3.8, Modification Report, Appendix L, May 2024, pg 1065 of 1098 pgs / pg 21 of Appendix L
9	Rix's Creek North Continuation Project	No	1.41	*127*	**63.5**	See web page here for ROM coal reference: Rix's Creek North Continuation Project
10	Maules Creek Continuation Project	No	2.84	*240*	**120**	Scoping Report, Oct 2023
11	Clarence MOD 8	No	0.03	*9.4*	**4.7**	12 March 2024 CCC minutes
12	Modification 5 Bloomfield Colliery Continuation Project	No	0.10	*11.6*	**5.8**	Bloomfield webpage here. See Sept 2023 Scoping Report for ROM coal reference.
13	Wilpinjong MOD 3 Pit 3 / 8 extension	No	0.39	*68*	**34**	See Scoping letter for ROM coal reference
14	Metropolitan Mod 4 Longwall 317 and 318 Mod	No	0.69	*5.6*	**2.8**	Oct 2023 Scoping letter
15	Boggabri Mod 10 - Increase to mine footprint and mine life	No	0.79	*60*	**30**	See 17 May 2024 Scoping Letter
16	Mod 8 - Ulan West Continued Operations Project	No	0.13	*76*	**38**	ROM coal reference: Ulan West Continued Operations Project, Scoping Report, September 2024, pg 8
17	Russell Vale Mod 2 mine plan reorientation & coal increase	No	0.82	*3.6*	**1.8**	Nov 2023 Scoping Report
18	HVO Mod 8 - extension of time	No	1.53	34.67	**18.2**	HVO North Modification 8, Submissions Report, January 2025. ROM coal sourced from NSW Resources submission.
19	Dartbrook Mod 8	No	?	?	**36**	Limited data available as at 14/02/25
20	Invincible Colliery - Mod 6	No	?	?	?	Data not available as at 14/02/25
21	Cullen Valley Mine - Mod 5	No	?	?	?	Data not available as at 14/02/25
	Totals		**44.7**	**2,211**	**1,223**	

NOTES

1. Where EIS estimates of total greenhouse gas emissions were not available (as at 14 Feb 2025), LTGA has converted ROM coal to total CO_2-e by multiplying ROM coal x 2. This likely underestimates total GHG emissions.
2. Where EIS estimates of Scope 1 emissions are not yet available, we have used data from the most recent annual report of Scope 1 emissions to the Clean Energy Regulator for the mine as a proxy.
3. Cells coloured yellow indicate that this data has been estimated by Lock the Gate as companies are yet to produce an EIS or Scoping Report for these projects.
4. Emissions attributable to the Hunter Valley Operations Continuation Project are indicative only. Data presented in the table for the HVO expansion is now out of date as the Project is being amended by Yancoal and Glencore.

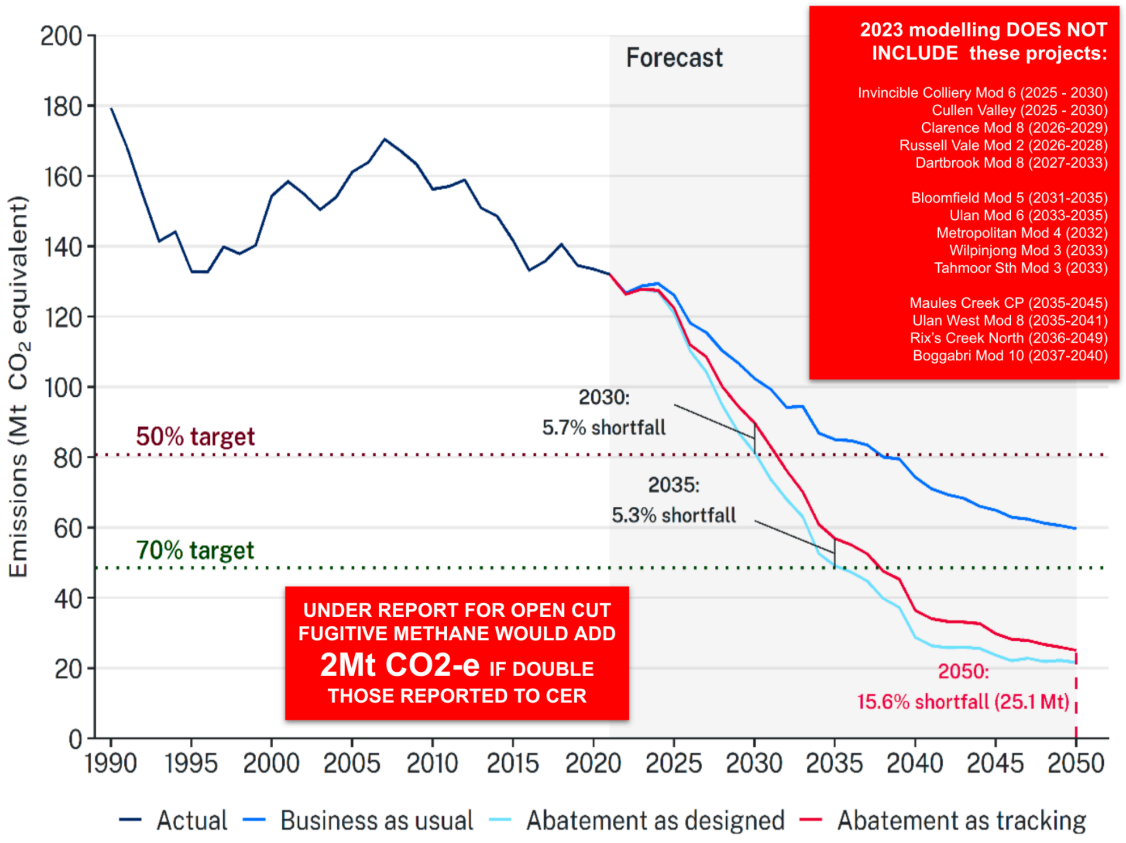
5 - Avoiding emissions from proposed expansions will reduce target shortfall

NSW Government (NZEM) modelling shows that NSW is not on track to meet legislated 2030 and 2035 GHG targets.

The modelling shows a 2Mt - 8.5Mt CO2-e annual gap between where NSW is currently tracking and where we need to be to meet the targets. Analysis of EIS documents shows that direct emissions from the 6 modelled coal expansion projects is likely to amount to approx 1.8Mtpa CO2e in 2030. Therefore, avoiding those emissions can make a major contribution to reducing the gap and meeting NSW climate targets.

Once the NZEM team models the balance of coal expansions already in the planning system (but not yet modelled on the Dashboard), this emissions gap will grow. When more accurate open-cut coal mine methane data is available, the gap is expected to grow even larger.

Figure 4: shortfalls expected to increase after modelling of methane under report and additional coal expansion projects



6 - Modelling is opaque and situation will worsen when 14 proposed expansions are modelled

Data on which coal mine expansions have been modelled in the Net Zero Emissions Dashboard has only been able to be acquired when NSW Parliamentarians have put Questions on Notice to the NSW Government. These questions have indicated that only 6 of the coal mine expansions currently in the NSW planning system have been modelled in the data currently presented on the Net Zero Emissions Dashboard. However, there is no transparency as to what levels of annual Scope 1 emissions they have been modelled at.

Other proposed coal expansion projects have not yet been modelled, and the status of yet other expansion projects is unclear.

Lock the Gate's view is that Scope 1 emissions from proposed coal expansions which have not been determined, should be presented as a separate category on the Net Zero Dashboard. Full transparency is needed in order for decision-makers to understand the impact of coal expansions on our climate trajectory.

Table 2. Status of proposed expansions in the Emissions Dashboard modelling

Included in current model run	**Will be included in next model run**	**Status uncertain**	**Not yet in planning system so not modelled yet**
Moolarben Open Cut 3 (SSD) Hunter Valley Operations North SSD Hunter Valley Operations South SSD Chain Valley SSD Newstan SSD Mount Arthur Modification 2 Angus Place West SSD	Glendell Modification 5 **(approved)** Rix's Creek North SSD Ulan Modification 6 Bloomfield Modification 5 Clarence Modification 8 Maules Creek SSD Wilpinjong Modification 3 Mount Pleasant Modification 7 Russell Vale Modification 2 Tahmoor South Modification 3 Metropolitan Modification 4	Boggabri Mod 10 - Increase to mine footprint and mine life Mod 8 - Ulan West Continued Operations Project. Dartbrook Mod 8 Invincible Mod 6 Cullen Valley Mod 5	Clarence Continuance Project Mt Thorley Warkworth underground mine expansion Wilpinjong extension (a new extension beyond Mod 3) West Muswellbrook

Note: The answer to QoN 2186 from the NSW Minister for Climate Change, Energy, Environment and Heritage provided the list of projects that will be in the next model run. The same answer provided a list of coal projects not yet determined (as at June 2024) but which have been included in modelling.

7 - Coal mines are seeking to 'bank' approvals for expansions that don't start til 2030s

At least 7 coal mines are seeking to take advantage of the weak regulatory environment and lack of clarity around implementation around the NSW CCNZF by seeking approval now for expansions that will not start until well after 2030. This is problematic on many levels including making decisions *now* about whether these projects will be able to be accommodated within NSW's emissions budget and net zero trajectory in the future. As the latest NZEM Methods paper (2023) notes: *"Future emissions projections beyond 2035 have a higher degree of uncertainty …".* As Table 3 reveals, 4 of the 7 projects seeking approval after 2030 are not seeking to commence until 2035 or later.

Table 3: coal proposals taking advantage of the weak regulatory environment

Project	Proposed date of commencement
Ulan Coal Mod 6 - u/ground extension	2033
MOD 3 - Longwall S7A (Tahmoor)	2033
Rix's Creek North Continuation Project	2036
Maules Creek Continuation Project	2035
Modification 5 Bloomfield Colliery Continuation Project	2031
Mod 10 - Increase to mine footprint and mine life	2037
Mod 8 - Ulan West Continued Operations Project	2035

8 - Emissions failures at coal mines shifts the burden to other sectors

The NSW Climate Change Minister has stated that every sector must do its part to meet targets, but the current approach shifts the burden from coal onto every other sector of the NSW economy.

In her Ministerial Statement: Updates regarding Net Zero Plan Stage 1: 2020-2030 and previous Implementation Updates, Penny Sharpe clarified NSW government policy regarding the level of abatement expected in the coal mining sector:

> *"the Government's policy is that all sectors need to ratchet down their emissions to meet NSW's legislated targets and the targets that will be established for 2040 and 2045 …"*

The NSW EPA's assessment (May 2024) of the proposed Hunter Valley Operations Continuation Project (HVO) found that other parts of the NSW economy would have to decarbonise faster to allow space in NSW's GHG inventory for HVO to go ahead. Having found this to be the case, the NSW EPA immediately warned that ***"the NSW Government does not have a policy framework in place to support shifting the burden of***

decarbonisation from one sector to another". We are of the view that the burden should NOT be shifted from coal mining onto other sectors, but that quite the reverse, coal should shoulder a larger burden because it is a primary cause of global warming and must be phased out if we are to achieve 1.5 degrees, whilst other industries must be given time and space to transition and continue into the future.

APPENDICES

Appendix 1: snapshot of GHG problems at the top 5 emitting coal mines in NSW

1. Appin is NSW's biggest coal-mine polluter. Scope 1 GHGs increased by a hefty 53% in FY23, over the same period that raw coal production decreased by ~20%.

2. Matt Kean stated in December 2021 that *"[t]here is a need for broader deployment of Ventilation Air Methane (VAM) abatement technologies given VAM is the largest source of coal mine fugitive emissions."* [12] Despite a clear need, VAM abatement is going nowhere fast at the 3 highest-emitting mines in NSW:

    a. **Appin:** A VAM abatement trial is underway at Appin, but if it works, it will only abate ~2% of VAM emissions with no evidence of a timetable, plan or funding to scale this abatement up. Mining at Appin is approved for another 17 years to 2041, so this is a long-term problem.

    b. **Mandalong:** 95% of Scope 1 GHGs in 2023 were fugitive methane. A VAM RAB plant was approved 14 years ago but as at March 2024, the project *"is on hold in its commissioning phase"*.[13]

    c. **Tahmoor:** Tahmoor is the 3rd highest emitting coal mine in NSW. In FY 2023, Scope 1 emissions at Tahmoor increased by 3%. In May 2024 SIMEC projected that their Scope 1 emissions will be 12% higher in FY2030 than they were in FY23. SIMEC's Scope 1 emissions are forecast to increase even more to 1,440,049 t CO2-e in FY33 (ie 45% higher in FY33 than FY23). The relentless increase in emissions proposed at Tahmoor is not aligned with the emissions trajectory required for NSW to meet its legislated 2030 target. VAM emissions are the main problem at this mine. Abatement systems are available to mitigate VAM, but plans to build one are developing at a snail's pace. SIMEC's current plan is for a *"concept study"* with *"intent"* to progress to a *"pre feasibility level study"* which they suggest may - or may not - set them up to implement VAM abatement *"in the late 2020's, depending on whether the process is technically and commercially viable"*.

    Lock the Gate understands that VAM abatement is viable now at Tahmoor. This issue is under scrutiny now by NSW DPHI and the NSW EPA as Tahmoor Mod 3 approaches a determination. It's an important decision as VAM abatement at this site is material to meeting NSW's 2030 GHG target.

3. Warkworth is the highest-emitting open cut mine in NSW (and 4th largest emitter overall). They are operating under a GHG 'abatement' plan with zero abatement

[12] Matt Kean, former Treasurer, Minister for Energy and Environment, correspondence with Lock the Gate, 05/12/21

[13] Mandalong Mine 2023 Annual Review

actions in it.[14] Their Scope 1 GHGs increased by 3% in FY23. The MTW Annual Review 2023 states that the *"increase in emissions can be attributable to an increase in total overburden removed"*. This aligns analysis in the NZC's 2024 Annual Report which found that heavy machinery emissions (diesel) *"have steadily increased since the early 2000s"* as *"coal extraction operations have been expanding and accessing deeper reserves, and machinery is hauling loads over greater distances."*

4. Mount Pleasant is the 5th highest-emitting coal mine in NSW. Fugitives in FY22 were six times greater than diesel emissions but there are zero abatement measures listed for fugitives in their GHG Management Plan.[15] Fugitive emissions are projected to steadily increase at Mt Pleasant over the next 20 years. Mount Pleasant's Scope 1 GHGs increased by 14% in FY23.

APPENDIX 2: Summary of coal emissions problem - Net Zero Commission (Nov 2024)

To assist the Joint Standing Committee to assess the coal emissions problem, Lock the Gate has summarised (below) key statements on coal by the Net Zero Commission in their 2024 Annual report:

1. Direct emissions from the resources sector account for 11% of NSW emissions (13.8 Mt CO2-e in 2022).

2. *"In 2022, fugitive emissions from underground coal mines were estimated at 8.1 Mt CO2-e, while open cut coal mining contributed 2 Mt CO2-e."*

3. *"Emissions from fuel combustion are primarily associated with heavy machinery operation in resources extraction, and approximately 90 per cent of these emissions are from coal mines. These emissions have steadily increased since the early 2000s, mainly due to increases in surface coal mining. Surface coal extraction operations have been expanding and accessing deeper reserves, and machinery is hauling loads over greater distances."*

4. *"Any emissions increases associated with extended or expanded coal projects would require other sectors to make greater emissions reductions if the state is to meet its emissions reduction targets."*

5. *"The potential emissions increases from projects seeking planning determination pose a major challenge for the state's regulatory arrangements."*

6. *"Given the criticality of this sector for achievement of NSW existing and future net zero emissions targets, the Commission will place priority on a deep consideration of these issues in its assessment for 2024-25 …" and "[i]n line with the Commission's statutory responsibility under the Climate Change (Net Zero Future) Act 2023, the*

[14] MTW Air Quality Management Plan (last updated Aug 2022) has no GHG abatement actions in it.
[15] The sum total of abatement measures in Mount Pleasant's GHG Management Plan are 3 diesel GHG dot points: 1) "optimising design of haul roads"; 2) Minimising the re-handling of material" and; 3) Maintaining the fleet in good order.

Commission intends to closely examine developments in the resources sector because of the impact the sector has on the NSW's primary emissions reduction targets …"

7. *"Ninety-nine per cent of the direct emissions from the resources sector are fugitive emissions from coal mining and fuel combustion emissions associated with mining machinery and equipment …"*

8. Abatement in the coal sector to date is largely attributable *"to the closure of several 'gassy' underground coal mines"*, not to abatement measures implemented by the coal industry at their mines.

9. *"Emissions reduction solutions of varying technological and commercial readiness exist for both underground and open cut mines. The barriers to their uptake include supply chain and technical constraints, safety constraints, the high cost of implementing most emissions reduction levers, regulatory inconsistencies and gaps, and workforce and skills shortages."*

10. *"In NSW, the Net Zero Industry and Innovation Program provides grants and facilitation support for a range of abatement projects, including coal mine emissions. To date, including in 2023-24, no coal abatement projects have been funded."*