LOCK THE GATE ALLIANCE
AUSTRALIANS WORKING TOGETHER TO PROTECT OUR LAND, WATER, AND FUTURE

EIS Submission - Chain Valley Colliery Consolidation Project

16 December 2022

Thank you for the opportunity to make a submission on the EIS for the Chain Valley Colliery Consolidation Project.

Lock the Gate Alliance **objects** to this project to extend mining for an additional two years to 2029.

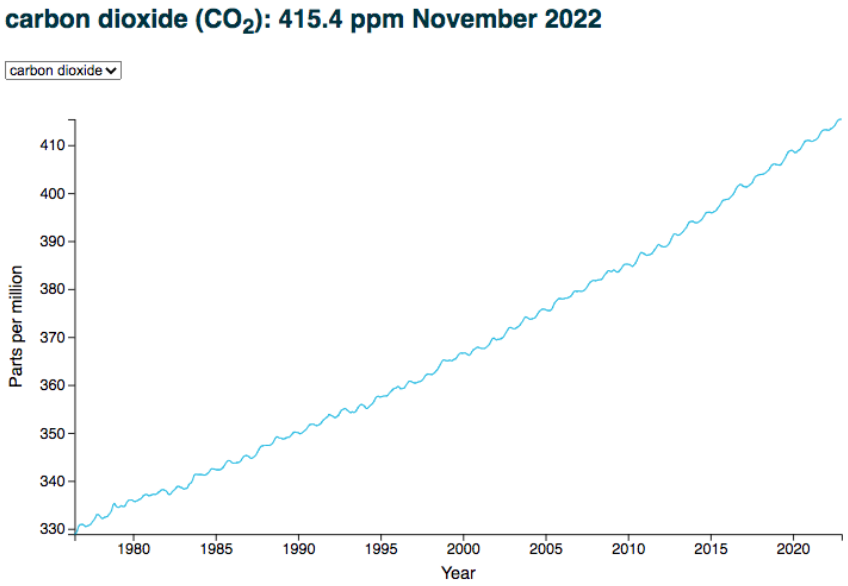
Please note that due to time and capacity constraints, we are only able to make brief comments on the greenhouse gas issues associated with this development. As an opening comment, we note that global heating will not stabilise at any temperature until the world gets to net zero. Approval of this Project - which would add ~ 25.7 Mt CO2-e in lifetime emissions - is not consistent with the goals of the Paris Agreement. We note that in 2016, the NSW Government endorsed the Paris Agreement and pledged *to "take action that is consistent with the level of effort to achieve Australia's commitments to the Paris Agreement."*[1] Approval of new coal capacity in NSW which adds to NSW and global GHG emissions is consistent with global CO2 emissions continuing to rise, and not with abatement that would halt global temperature rise between 1.5℃ and 2℃.

As the Project's GHG Assessment clearly states: "The Project as a stand-alone entity could be considered as a large emissions source, as it may produce annual Scope 1 emissions of up to 792,000 t CO2-e."[2] There is also a very significant "legacy emissions" issue from past mining of 515,348 t CO2-e/ year.[3]

[1] NSW Climate Change Policy Framework, November 2016, https://www.energy.nsw.gov.au/sites/default/files/2022-08/nsw-climate-change-policy-framework-160618.pdf

[2] APPENDIX 14, Greenhouse Gas and Energy Assessment, Chain Valley Colliery Consolidation Project, DRAFT, July 2022, accessed 16 December 2022, pg 16, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-17017460%2120220928T105740.505%20GMT

[3] APPENDIX 14, Greenhouse Gas and Energy Assessment, pg 9



Source: Cape Grim Greenhouse Gas Data, https://capegrim.csiro.au/

Summary of GHG issues and recommendations

1. **Scope 1 emissions**

   a. This Project would be a large emissions source. On average, annual Scope 1 GHG emissions are likely to be about 705,450 t CO2-e. This appears to represent a substantial **58% increase in Scope 1 emissions** over the 447,364 to CO2-e reported in 2020-21. At this point of the climate crisis, no responsible authority should be contemplating approval of a new coal project which significantly increases Scope 1 emissions in NSW.

   b. Prior to determination, NSW DPE and/or NSW IPC should require Delta to explain - in detail - their considerations regarding whether VAM abatement would be possible and practical at Chain Valley. NSW DPE should also clarify its own position on the viability and cost of VAM abatement in NSW. The NSW Government should also end it's practice of 'approve now, require a study of abatement later'.

   c. The issue of "legacy emissions" from past mining of 515,348 t CO2-e/ year[4] is significant. NSW DPE / NSW IPC should require a detailed abatement plan for legacy emissions.

   d. Methane abatement at the existing mine appears to be non-existent. Delta has stated that it has "no plans to install pre or post gas drainage infrastructure at this time." Delta should be required to transparently review

[4] APPENDIX 14, Greenhouse Gas and Energy Assessment, pg 9

this position and should consider technologies including the enrichment of gas to enable flaring and nitrogen injection for enhanced recovery. For Narrabri Underground Stage 3, Whitehaven Coal's consultant's stated that "it is highly likely a solution for low methane gas flaring could be identified for further consideration." Could a solution for low methane gas flaring be identified at Chain Valley?

e. Just last month, The BOM and CSIRO released State of the Climate 2022. The report found that in 2020 and 2021, atmospheric methane concentration increased by 13 and 20 ppb, respectively. "Increases of these sizes are unparalleled in three decades of direct atmospheric measurements." We note that the IEA - in their Net Zero by 2050 report - called for the "elimination of all technically avoidable methane emissions by 2030". No further approval of ANY coal mining at Chain Valley should be contemplated without a credible, binding plan to eliminate all technically avoidable methane emissions at this site.

2. **Scope 2 emissions**

a. This Project would generate an additional 221,637 t CO2-e relative to the current approved mine. Delta Coal state that they can influence reductions in Scope 2 emissions by driving electricity reduction and efficiency initiatives."[5] They have failed to recognise that they can also eliminate emissions entirely by buying renewable energy.

b. As a regulator, NSW DPE's failure to require coal mines to buy renewable energy is unacceptable. The law requires that all 'reasonable and feasible' abatement is implemented at coal mines in NSW. The NSW Minister for Planning agrees that "in general" this is correct. The onus should be on the Proponent to take immediate action on Scope 2 by implementing this measure. See below for a fulsome discussion of this issue.

3. **Immediate action to abate emissions at Chain Valley is important**

As a former Chief Scientist for Australia said: "Every tonne of GHG emission leads to (more) dangerous warming. It is not possible to know which amount, from which source, will precipitate environmental subsystems, including those in NSW, to tip irreversibly." Every viable tonne of GHG abatement of Scope 1 and 2 emissions from coal mining in NSW counts.

4. **Could coal be supplied to Vales Point PS from a mine with lower Scope 1 emissions?**

If yes, would this result in substantially lower Scope1 emissions. This is a question

[5] Exec Summary, Appendix 14, Greenhouse Gas and Energy Assessment, Chain Valley Colliery Consolidation Project, DRAFT, July 2022, accessed 16 December 2022, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-17017460%2120220928T105740.505%20GMT

which should be examined carefully as this proposal has a high Scope 1 footprint.

5. **A steady stream of expert reports over the last two years or so highlights the folly of ongoing approvals of any new coal expansions in NSW:**

    a. The Australian Academy of Science has called for an **acceleration of Australia's transition to net zero**

    b. The International Energy Agency declared that **no new oil, coal or gas projects can be developed anywhere in the world** if we are to meet the Paris Agreement's 1.5 degree temperature goal.

    c. UNEP's 'Production Gap Report' - produced in collaboration with the UN Environment Programme (UNEP) – found that global coal production **"must start declining immediately and steeply to be consistent with limiting long term warming to 1.5°C."**

    d. NSW EPA's NSW State of the Environment 2021 report found that **key trends and indicators are "getting worse"** including annual mean temperature, sea level rise

    e. The Australian Government's 'Australia state of the environment 2021' found that "[o]verall, the state and trend of the environment of Australia are poor and **deteriorating as a result of increasing pressures from climate change**, habitat loss, invasive species, pollution and resource extraction."

    f. The CSIRO found recently that "Global emissions have risen sharply over the past few decades and time series data do not yet show indication of decline."

    g. The Climate Council released The Great Deluge: Australia's New Era Of Unnatural Disasters detailing the rapidly increasing costs of extreme weather.

        i. Storms and floods that affected Southeast QLD and coastal NSW in February and March 2022 caused $5.56 billion in insured losses

        ii. Extreme weather events over the past 12 months cost every Australian household, on average, $1,532. This figure is expected to jump to more than $2,500 a year by 2050.

        iii. The Feb-March 2022 floods in New South Wales badly damaged transport infrastructure costing at least $1.5 billion

6. **The Chain Valley Colliery Consolidation Project would exacerbate the impacts of climate change** and would add to the state's GHG inventory at a time when costs from extreme weather events are rising and urgent and deep reductions in GHG emissions are required.

Background

Chain Valley Colliery (CVC) and Mannering Colliery (MC) are underground coal mines, owned and operated by Great Southern Energy Pty Ltd (trading as Delta Coal). Delta Coal is a wholly owned subsidiary of Delta Electricity Pty Ltd. Existing operations are undertaken in accordance with CVC's Development Consent SSD-5465 (as modified), and MC's Project Approval MP 06_0311 (as modified). Both operations are approved to carry out mining operations to 31 December 2027. Delta Coal operates CVC and MC as an integrated operation.

The operations are approved to provide coal for both export and for domestic power generation however all product coal from the operations is currently supplied to the Vales Point Power Station (VPPS) which is owned and operated by Delta Electricity Pty Ltd.

The Project would provide **an extension of the life of mine for an additional two years to 2029**. This extension would align the life of mining operations at MC and CVC with the planned operational period of the VPPS.

The GHG Assessment (App 14, pg 1) states that "the change in proposed production rates over the remaining life of the Consolidation Project is projected to result in an additional approximately 9.5 Mt of ROM coal being mined at the combined CVC and MC operations."

Existing operations

Reporting

The 2021 Annual Review - Chain Valley Colliery puts Scope 1 emissions in 2020-21 at 447,364 to CO2-e. These very significant emissions do not appear in the CER's 2020-21 Safeguard facilities data. Scope 2 GHG emissions for the Financial Year 2020-2021 period (NGER reporting period) were 20,286 t CO2-e as Scope 1.

Annual Review reporting regarding the consideration and implementation of all 'reasonable and feasible' measures is poor and could be significantly improved.

Methane abatement at the existing mine appears to be non-existent

The latest AR states that "[m]ethane levels in the Fassifern seam of approximately 2 – 4 m3/t is not at a level that allows pre or post gas drainage, and as such all methane from the mining operations are ventilated via the main fans at Summerland Point." The AR goes on to state that "there are no plans to install pre or post gas drainage infrastructure at this time."

In their GHG Management Plan for this mine, Delta say that "[g]iven the low methane concentrations and ventilation quantities in the underground workings, flaring is not currently a potential way to reduce greenhouse gas emissions from the mine."[6]

[6] Delta Coal - Air Quality and Greenhouse Gas Management Plan, https://www.deltacoal.com.au/environment/chain-valley-colliery/chain-valley-management-plans

Delta should be required to transparently review this position. It is not entirely clear to Lock the Gate what the methane concentration is at this mine that would be relevant to the implementation of a requirement for mandatory flaring, however the GHG Assessment appears to put gas content at 97% CH4, 3% CO2 (Fassifern Seam Gas Content Data).

Key questions:

1. Has Delta considered enrichment of gas to enable flaring?
2. Has Delta considered nitrogen injection for enhanced recovery?
3. For Narrabri Underground Stage 3, Whitehaven Coal's consultant's stated that "it is highly likely a solution for low methane gas flaring could be identified for further consideration." That was more than a year ago. What is NSW DPE and Delta Coal's view on this matter regarding emissions at Chain Valley?

Whitehaven Coal's 14 Oct 2021 review of abatement options at Narrabri Underground found:

- that the "flaring of methane gas … is applied at many NSW and QLD underground mines", but that it is "uncommon", but not impossible to flare at methane concentrations <30%

- There is an approved mine expansion "exploring alternatives that will enable flaring concentrations of 15 – 20% methane by investigating enrichment technologies to increase the gas concentrations at the flare."

- "With greater time available for gas pre-drainage, it is more likely that the reservoir pressure will approach atmospheric pressure, resulting in maximum gas recovery."

- Nitrogen injection is a strategy for enhanced recovery where nitrogen (or other gases) is injected into the coal seam and acts to stimulate diffusion of the methane component of the gas through partial pressure differences (Puri and Yee, 1990). The method was trialled in Queensland, between 2009 – 2010, at a site with methane as the predominant seam gas. The injection trial indicated that accelerated drainage rates were achieved through the injection of nitrogen.

- A survey of the Australian coal industry identified no specific examples of flaring low methane concentration goaf gas (defined as less than 20% methane) independently. As previously stated, examples of goaf gas being blended with higher methane concentrations of pre-drainage gas existed at several mines.

- "An accepted practice for significantly reducing risks associated with flaring of low concentration methane gas is known as "Gas Enrichment", this process involves the separation of the methane gas component from the total gas composition and then flaring predominately the portion of available methane gas … Although gas enrichment technology would be deemed new technology for the Australian coal industry, the process has been proven in other industrial applications, including oil & gas, which has a similar risk profile to the coal industry."

- For Narrabri Underground Stage 3, WHC's consultant's say "it is highly likely a solution for low methane gas flaring could be identified for further consideration."

Legacy emissions (fugitive methane) look to be very problematic

At Appendix 14, GHG Assessment (pg 9), Delta states that "legacy emissions from past mining" is on average 515,348 t CO2-e/ year.[7] This is a significant emissions problem for which no abatement action appears to be proposed.

The proponent says that ongoing fugitive emissions associated with legacy mining operations would be expected until all relevant shafts have been backfilled and closed. Prior to determination, a clear timeline for this work, together with emissions estimates post-mining should be provided.

What is the plan to abate these emissions? This Project should not even be considered without immediate action on this issue. NSW DPE / NSW IPC should require a detailed abatement plan for legacy emissions.

Proposed 'Consolidation Project

The Planned Scenario is forecast to generate emissions between 2023 and 2029 of an additional approximately:

Scope 1 4,938,154 t CO2-e (1,971,372 t CO2-e additional to Approved)
Scope 2 316,000 t CO2-e (221,637 t CO2-e additional to Approved)
Scope 3 33,335,340 t CO2-e (23,486,480 t CO2-e additional to Approved)

Potential Greenhouse Gas Emissions associated with the Project – Export Scenario 2023-2029			
	GHG Emissions (t CO_2-e)		% of emissions
	Total	Additional	(Additional)
Scope 1	4,938,154	1,971,372	7.7
Scope 2	313,536	221,637	0.9
Scope 3	33,335,340	23,486,480	91.5
TOTAL	**38,587,031**	**25,350,157**	**100**

Source: APPENDIX 14, Greenhouse Gas and Energy Assessment, Chain Valley Colliery Consolidation Project, DRAFT, July 2022, accessed 16 December 2022, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-17017460%2120220928T105740.505%20GMT

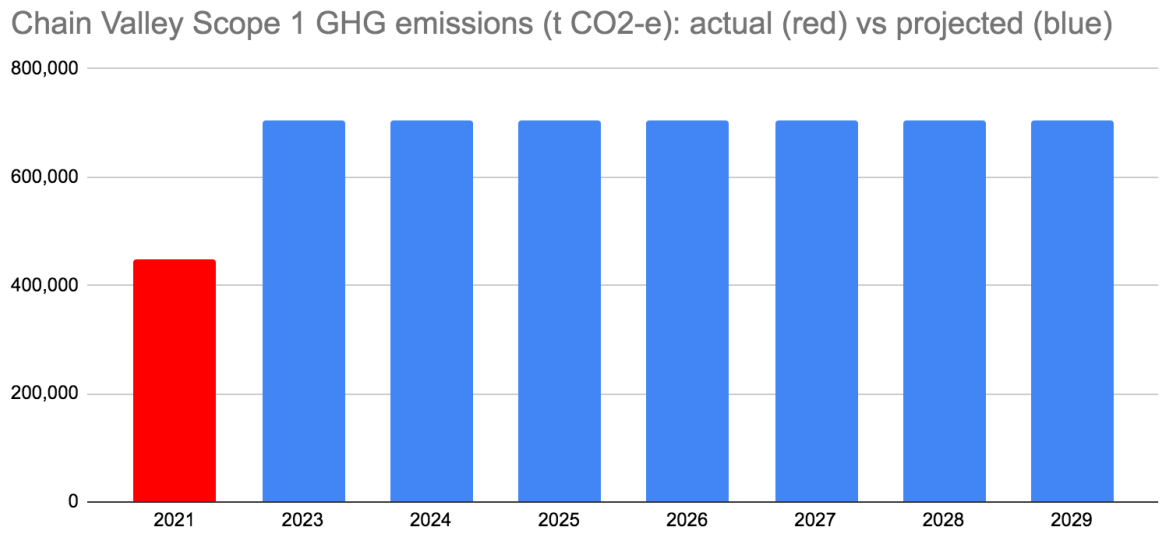
[7] APPENDIX 14, Greenhouse Gas and Energy Assessment, pg 9

Scope 1 GHG emissions

"The Project has the potential to produce approximately 4,938,154 t CO2-e Scope 1 emissions over 7 years, and generate up to approximately 792,000 t CO2-e Scope 1 emissions per annum at maximum production."[8]

1,971,372 t CO2-e Scope 1 emissions over the life of the Project relative to existing approved operations with the primary contributions coming from fugitive emissions associated with emissions in extracted ROM coal (1,030,697 t CO2-e) and legacy emissions from historical mining which are unrelated to the ROM production rate (929,413 t CO2-e).[9]

Dividing 4,938,154 t CO2-e Scope 1 emissions over 7 years of mine operations yields an annual average Scope 1 GHG estimate of about 705,450 t CO2-e. Lock the Gate notes that this represents **a substantial 58% increase in Scope 1 emissions** over the 447,364 to CO2-e reported in 2020-21.



Source: Lock the Gate chart based on 2021 Annual Review data and forward projections for Scope 1 emissions

Ventilation Air Methane abatement must be required at this mine

This Project would generate approximately 4,938,154 t CO2-e Scope 1 emissions over 7 years t CO2-e, with the majority of these being generated by the ventilation system. If this Project is approved, the proponent must be required to install and operate a VAM abatement system to abate these emissions.

Prior to determination, NSW DPE and/or NSW IPC should require Delta to explain - in detail - their considerations regarding whether VAM abatement would be viable at Chain Valley. They must also be required to explain - in detail - the mitigation benefits, cost of mitigation

[8] GHG Assessment, pg 16
[9] Pg 130, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-17017460%2120220928T105733.800%20GMT

versus benefits provided, community views and the nature and extent of potential improvements that the installation and operation of VAM abatement would deliver at this mine. Where claims are made by Delta about the viability and cost of VAM abatement, evidence should be provided to substantiate these claims.

NSW DPE should also clarify its own position on the viability and cost of VAM abatement in NSW.

In April 2021, during their assessment of the Tahmoor South Project, the NSW Department of Planning, found that "Commercial systems to treat VAM are available but are currently high cost ..." This assertion was undermined this year by the NSW Minister for Planning. In July 2022, Justin Field MLC asked the Minister for Planning if any systems to abate ventilation air methane (VAM) from underground coal mines are commercially available? In August 2022, the Minister replied: "No, these systems are not yet commercially available."

Scope 2 GHG emissions

"The Project is forecast to consume approximately 1,400,000 GJ of electricity over the period 2023-2029 (an additional approximately 990,000 GJ relative to Approved), which will generate approximately 316,000 t CO2-e (221,637 t CO2-e relative to Approved) of Scope 2 emissions. **Delta Coal can influence reductions in Scope 2 emissions by driving electricity reduction and efficiency initiatives."**[10]

[10] Exec Summary, Appendix 14, Greenhouse Gas and Energy Assessment, Chain Valley Colliery Consolidation Project, DRAFT, July 2022, accessed 16 December 2022, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-17017460%2120220928T105740.505%20GMT

“Since 2020, Delta Coal has increased its underground ventilation capacity by approximately 10%. The increase in ventilation load has increased electricity use intensity across Delta Coal’s operations.” (GHG Assessment, App 14, pg 15)

Delta Coal should be required to purchase 100% renewable energy

In July 2022, the NSW Minister for Planning was asked:

> *Does the Government consider the purchase of 100 per cent renewable energy to be a ‘reasonable and feasible’ abatement measure for electricity that coal mine operators' source through the electricity grid?*

In August 2022, this reply was provided:

> *In general, yes, however the reliance on renewable energy needs to be considered on a case-by-case basis. This may not be considered reasonable and feasible for all operations and needs to be determined based on the outcomes of a cost-benefit analysis.*[11]

The Minister for Planning was also asked “[u]nder what circumstances would it not be reasonable and feasible for a coal mine in New South Wales to purchase renewable energy?” Here is the answer provided in August 2022:

> *Whether use of renewable energy is considered to be reasonable and feasible would need to be determined on a case-by-case basis but, for example, if the cost or availability of purchasing renewable energy inhibited production at a mine site, it would not be considered reasonable and/or feasible.*[12]

The questions that obviously arise from this statement are:

1. Is renewable electricity available for Delta Coal to purchase? If not, why not?
2. Has Delta Coal costed the purchase of renewable energy?
3. What is the difference between the cost to Delta of renewable energy and the cost of regular grid energy?
4. If the cost of renewable energy is cheaper, then why shouldn’t Delta Coal be required to implement this abatement measure?
5. If the cost of renewable energy is more expensive, then why shouldn’t Delta Coal be required to implement this measure? Coal exporters from Australia reaped as much as $45bn in windfall gain in the 2021-22 year, with a similar bonanza likely this year.[13] If abatement of Chain Valley’s substantial methane emissions is challenging, then

[11] QON 9318 - Planning - REASONABLE AND FEASIBLE ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS, https://www.parliament.nsw.gov.au/lc/papers/pages/qanda-tracking-details.aspx?pk=92748
[12] Answer received on 19 August 2022 and published in Questions & Answers Paper No. 809, https://www.parliament.nsw.gov.au/hp/housepaper/28717/QuestionsAndAnswers-LC-809-20220819-Revised.pdf
[13] Peter Hannam, 15 December 2022, Australia’s coal exporters made windfall gain of $45bn last year, report estimates, https://www.theguardian.com/environment/2022/dec/15/australias-coal-exporters-made-windfall-profit-of-45bn-last-year-report-estimates

doesn't that make easy abatement from the purchase of renewable energy a high-priority abatement measure?

6. How would the cost of renewable energy "inhibit" production at the mine site? This does not appear to be a remotely credible excuse / justification for failing to implement what most people in the community would regard as a 'reasonable and feasible' measure.
7. If Whitehaven Coal can do it, why can't Delta Coal? In FY22, Whitehaven Coal claim they "contracted with AGL to provide 100% carbon neutral electricity across the business."[14]

The Clean Energy Council advised in their 'Clean Energy Australia Report 2022' that since "2017, there have been at least 110 corporate power purchase agreements (PPAs) negotiated, contracting over 4 GW of renewable energy generation." This is clearly an option for coal miners in NSW.

Scope 3 GHG emissions

Delta make the following statement about Scope 3 emissions in Appendix 14, GHG Assessment:

"Approximately 33,335,340 t CO2-e (23,486,480 t CO2-e additional relative to Approved) of Scope 3 emissions are estimated to be associated with the Project. As product coal is proposed to be consumed by the adjacent VPPS, the entirety of Scope 3 emissions under this domestic supply scenario will be subject to domestic controls regarding emissions. It is noted that the scope 3 emissions would occur irrespective of whether the Project proceeds based on the planned operating life of the VPPS to the end of 2029."

It is not accurate to say that *"scope 3 emissions would occur irrespective of whether the Project proceeds based on the planned operating life of the VPPS to the end of 2029" as* there is a real possibility that: a) this power station may close earlier than 2029, or b) that coal consumption may diminish as renewable energy generation ramps up and the need for power from Vales Point trends downward.

Methane emissions

Methane emissions globally are rising

Just last month, The BOM and CSIRO released State of the Climate 2022. The report found that in 2020 and 2021, atmospheric methane concentration increased by 13 and 20 ppb, respectively. "Increases of these sizes are unparalleled in three decades of direct atmospheric measurements."

[14] WHC Sustainability Report 2022, https://whitehavencoal.com.au/wp-content/uploads/2022/09/Whitehaven-Coal-Sustainability-Report-2022.pdf

Australia has joined the pledge to cut methane emissions by 30% by 2030

In October 2022, Australia joined the Global Methane Pledge: a voluntary commitment (122 signatories so far) working to reduce global methane emissions across all sectors by at least 30% below 2020 levels by 2030.

NSW is NOT on track to cut coal mine methane emissions by 30%

In NSW, current efforts to reduce methane emissions from coal mining are not aligned with the 30% reduction goal of the methane pledge. Under the 'current policy scenario' in the 'NSW Greenhouse Gas Emission Projections, 2021−2050', fugitive emissions from coal mines (open cut and underground) are projected to reduce by 13% from 11.63 Mt CO2-e in 2020 to 10.1 Mt CO2-e by 2030.

A 30% cut in methane emissions should be considered a minimum goal for methane abatement at Ulan. We note the IEA - in their Net Zero by 2050 report - called for the "elimination of all technically avoidable methane emissions by 2030". The IEA modelled a 75% fall in methane emissions from fossil fuels between 2020 and 2030 as result of "a concerted global effort to deploy all available reduction measures and technologies".

Does it matter if NSW's coal mine emissions abate either: a) slowly, at a pace driven by coal-industry self interest; or b) not at all?

Former Chief Scientist of Australia, Professor Penny Sackett recently provided expert evidence to the NSW IPC as a submission on the recently approved Mt Pleasant Optimisation Project:

> "the effects of climate change – which are caused by anthropogenic GHG emissions – are already serious; more than that, they are in fact dangerous. Furthermore, some of these effects are already irreversible and more will become so with even relatively small amounts of additional warming beyond that of 1.5°C, which is already locked in.
>
> Every tonne of GHG emission leads to (more) dangerous warming. It is not possible to know which amount, from which source, will precipitate environmental subsystems, including those in NSW, to tip irreversibly. In this context, the Precautionary Principle certainly applies."[15]

Every viable tonne of GHG abatement of Scope 1 and 2 emissions from coal mining in NSW counts.

[15] Dr Penny Sackett, Distinguished Honorary Professor, ANU Institute for Climate, Energy and Disaster Solutions, 14 July 2022, 'Expert Report Regarding the Greenhouse Gas and Climate Implications of the proposed Mt Pleasant Optimisation Project (SSD - 10418)', pg 115

Other comments

Could coal be supplied to Vales Point PS from other coal mines? If yes, would this result in substantially lower Scope1 emissions?

Pg 18 of the GHG assessment says:

> *emissions associated with the Project are associated with generation from the VPPS which has a planned operating life to 2029. Emissions associated with the supply of coal to the VPPS and its operation will occur irrespective of whether the Project proceeds. The close proximity of the Project to the VPPS and existing coal transport infrastructure means the emissions associated with supply coal to the VPPS from CVC and MC are likely to be lower than supply from other domestic sources which would have increased transport related emissions.*

Appendix 1: A note on Scope 1 and 2 GHGs in NSW from coal mining

SUMMARY

The process of *mining* coal in NSW releases large amounts of fugitive methane emissions, diesel emissions and emissions from the generation of the electricity used to power coal mines.

According to the NSW Treasurer and Minister for Energy, Scope 1 and 2 GHGs from coal mining in NSW in 2019-20 were **18.6 Mt CO2-e**[16] or ~14% of all of NSW's GHG inventory.

The current regulatory system that purports to minimise Scope 1 and 2 GHGs from coal mines in NSW is not fit for purpose. It features a hands-off, light-touch approach, with patchy reporting of Scope 1 and 2 coal mine emissions to the NSW Government (at least 15 coal mines don't report their GHGs at all to the NSW Government). There is an absence of guidelines and standards for mitigation measures and offsets for coal mines. Conditions of consent are usually vague and legally unenforceable. Over the last five years in NSW, no coal mine in NSW has been prosecuted for breaching GHG conditions of consent.

The Mining SEPP requires that GHG emissions from coal mining in NSW "*are minimised to the greatest extent practicable".* A major problem arises however, when consent authorities translate this into specific language in coal-mine Development Consents. When this occurs,

[16] NSW Legislative Council, QUESTIONS AND ANSWERS No. 809 FRIDAY 19 AUGUST 2022, pg 16, 9330 ENERGY—GREENHOUSE GAS EMISSIONS FROM COAL MINES—Mr Justin Field to the Minister for Finance, and Minister for Employee Relations representing the Treasurer, and Minister for Energy—, https://www.parliament.nsw.gov.au/hp/housepaper/28717/QuestionsAndAnswers-LC-809-20220819-Revised.pdf

we typically end up with a cookie-cutter condition that reads: *"The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Planning Secretary" (Appin / Bulli Seams Development Consent).*

Generic requirements that coal mines implement 'reasonable and feasible' measures to reduce or minimise GHG emissions are failing to produce meaningful emissions reductions. Reasonable and feasible measures such as the use of renewable energy to avoid Scope 2 electricity emissions are routinely dismissed or deferred. Coal mines routinely pass 'Independent Environment Audits' based not on whether they are *reducing* emissions, but instead on whether vaguely defined and ineffective measures are being implemented.

A regulatory mess

In January 2022 - in their whole-of-government assessment of the Narrabri Underground coal mine Stage 3 proposal - NSW DPE assessed the NSW system for regulating direct GHG emissions from coal mining in NSW and found that *"there are still a range of uncertainties about the specific application of the various policies to individual SSD applications under the EP&A Act, including:*

- *Impacts: there is no clear methodology to assess the relative scale (or associated consequences) of emissions in a consistent manner, nor are there any definitions of different levels of emissions (e.g. low, moderate or high);*
- *Standards: there are no performance criteria or limits provided (e.g. maximum annual or total emissions) for any development types (e.g. coal mines, power stations, or industrial facilities), nor is there any clear timeline to measure any ratcheting down (e.g. a plan for staged reductions in fugitive emissions);*
- *Mitigation measures: there is no clear guidance on how to assess potential mitigation or abatement measures (e.g. what measures are considered 'reasonable and feasible' or 'best practice'), both for current and future activities; and*
- *Offsets: there is no guidance on whether offsets should be required for a particular development (e.g. trigger levels based on predicted unabated emissions), nor any methodology to calculate the quantum or type of offsets that may be warranted.*[17]

When Professor Ian Lowe examined conditions of consent for coal and gas projects approved by the NSW IPC, he found it unlikely that they would produce "any significant measurable mitigation" of their Scope 1 and 2 emissions.[18]

70% of facilities in NSW emitting 100,000 t CO2-e or more are coal mines

In 2020-21, 33 facilities in NSW reported emitting more than 100,000 t CO2-e of GHG emissions to the Clean Energy Regulator.[19] These are the largest emitting facilities in NSW

[17] NSW DPE, January 2022, Narrabri Underground Mine Stage 3 Extension Project (SSD 10269) | Assessment Report , pg 55

[18] Emissions from recently approved fossil fuel projects in New South Wales, Emeritus Professor Ian Lowe AO FTSE, July 2021, https://www.lockthegate.org.au/expert_analysis_mining_greenhouse_emissions

[19] The largest Scope 1 GHG emitting facilities in Australia (excluding the electricity sector) are covered by the Australian Government's Safeguard Mechanism. Facilities that emit more than 100,000 t CO2-e per annum are required to report to the Clean Energy Regulator.

(excluding electricity generation). Of these 33 facilities, **24 (~70%) were coal mines,** with remainder being facilities incl. Port Kembla Steelworks, the Tomago Aluminium smelter and Boral's cement works.

Emissions intensity rising at many coal mines despite claims that all 'reasonable and feasible' measures are being implemented

As at October 2022, the GHG emissions intensity per tonne of run-of-mine (ROM) coal mined was rising at at least 14 coal mines in NSW that publicly report their data. This is occurring despite those mines claiming to be implementing all 'reasonable and feasible' measures to reduce or minimise emissions.

26 new or expanded fossil fuel projects approved in NSW since Paris Agreement

New coal and gas approvals in NSW are making the problem worse. **Since the Paris Agreement entered into force in November 2016, the NSW Government has approved 26 new or expanded fossil fuel projects**.[20]

- The single largest new coal development since the Paris Agreement – the massive Mt Pleasant Optimisation Project in the Hunter Valley - was approved in September 2022. This Project will add ~16Mt CO2-e in Scope 1 and 2 emissions to the NSW inventory over its lifetime.

- The Narrabri Underground Stage 3 mine won approval in April 2022 with an abatement plan that promises <1% mitigation of predicted Scope 1 emissions. These emissions - after proposed abatement - are predicted to be huge: Narrabri mine expansion would make it dirtiest thermal coalmine in Australia, environmentalists say.

The total Scope 1, Scope 2 and Scope 3 emissions of the 26 approved projects - if all projects are built and operate until the dates allowed by their development consents - would be approximately **4.5 billion tonnes of CO2-e**.[21]

[20] Calculated by adding Narrabri Underground Stage 3, Mount Pleasant Optimisation and Wongawilli MOD 2 to ACF's analysis: ACF, December 2021, The NSW Independent Planning Commission's contribution to global greenhouse gas emissions, https://d3n8a8pro7vhmx.cloudfront.net/auscon/pages/19889/attachments/original/1643946316/ACF_IPC_research.pdf?1643946316

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