2025 consultation

Submission type	Upload
Submitter	Australasian Centre for Corporate Responsibility
Response ID	277498

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11 July 2025

Submission - Net Zero Commission 2025 Consultation

Australasian Centre for Corporate Responsibility

Submitted online to Net Zero Commission, 11 July 2025
On behalf of the Australasian Centre for Corporate Responsibility

research@accr.org.au

To Whom It May Concern,

The Australasian Centre for Corporate Responsibility (ACCR) is pleased to participate in the Net Zero Commission 2025 consultation.

ACCR is a shareholder advocacy and research organisation. We use shareholder strategy to enable investors to escalate engagements with heavy-emitting companies in their portfolios and provide research and analysis for institutional capital seeking long term value in a zero-emissions economy.

Our research is published at: https://www.accr.org.au/research/.

Our submission to this consultation focuses on Question 11, 16, 17 and 18. As part of our response to Question 18, we have appended our recent research into the Hunter Valley Operations (HVO) Continuation Project.

ACCR would be happy to meet with the Net Zero Commission and discuss our response and recommendations, if helpful.

Australasian Centre for Corporate Responsibility
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Response

Question 11: Given the uncertainties in land-sector net emissions, how should NSW incorporate this sector into the state's climate policy and emissions profile?

Recommendation

ACCR recommends that, in developing its emissions profile, NSW separates land-sector emissions from emissions from the other sectors of the economy. NSW should also develop climate policy and climate targets based on emissions figures which exclude LULUCF emissions.

To meet the Paris Agreement goals it is imperative that the energy system, i.e. the part of the economy excluding the land sector (LULUCF), decarbonises. The land sector can play an important role At a global level, the land sector can play a large role in the reduction of global emissions. At a country or state level the focus should be on absolute emission reductions, not on net emission reductions factoring in LULUCF contributions.

Emissions profiles which exclude LULUCF provide a more accurate representation of an economy's progress towards decarbonisation. With LULUCF emissions, the time lag between the emission occurring and being reported on is much greater compared to emissions from other sources. Including LULUCF can therefore obfuscate the degree to which progress has been made. For example, the NSW EPA states that greenhouse gas emissions in 2021-22 were 27% lower than in 2005. When LULUCF emissions are excluded, emissions have only decreased by 18% (based on the latest available data).[1]

Question 16: How could transparency of how coal mines meet their Safeguard Mechanism obligations be improved?

Recommendation

ACCR recommends that Federal and State governments use satellite data that measure greenhouse gas concentrations to validate company greenhouse gas emission reporting.

The current approach for reporting emissions under the Australia's National Greenhouse and Energy Reporting Scheme (NGERS) is flawed. Previous research by ACCR suggests that companies listed in Australia are severely underestimating and underreporting their operational emissions.[2] Satellite data can be used to reliably measure specific emissions footprints from coal mines, as mines have a sufficiently large geographical footprint,[3] and satellite technology is sufficiently advanced.[4]

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[1] The NSW EPA, 2025, Greenhouse gas emissions, https://www.soe.epa.nsw.gov.au/all-themes/air-and-atmosphere/greenhouse-gas-emissions.
[2] ACCR, April 2022, 'Glencore's Methane Problem', https://www.accr.org.au/research/glencore%E2%80%99s-methane-problem/
[3] The Superpower Institute, 2024, Open Methane, https://openmethane.org/analysis/top-methane-emitting-hotspots
[4] Sadavarte, P. et al., 2021, Methane Emissions from Superemitting Coal Mines in Australia Quantified Using TROPOMI Satellite Observations, https://pubs.acs.org/doi/10.1021/acs.est.1c03976?ref=pdf

Question 17: What measures would lead to coal mines prioritising on-site abatement over offsetting?

Recommendation

ACCR recommends that neither nature-based solutions nor avoidance credits are used to offset fossil CO_2 emissions. This would prioritise on-site abatement over offsetting and would limit mitigation deterrence through offsetting.

Crediting methods for biological carbon avoidance or removal activities, such as those involving the plantation or protection of vegetation, are not a permanent form of CO_2 storage. These methods cannot be used to neutralise or offset CO_2 emissions generated through the consumption or production of coal, oil or gas. Due to unresolved integrity issues and the persistent challenge of mitigation deterrence, the use of avoidance credits created through household or industrial crediting methods to offset fossil CO2 emissions is not currently credible in a company transition plan.

Companies should not be incentivised to use credits provided within the Safeguard Mechanism related to nature-based solutions or emissions avoidance projects to offset their fossil CO2 emissions.

ACCR recently published principles, informed by the best available climate science, to be followed to ensure integrity when using offsets in company transition plans.[5]

Question 18: What measures should be considered beyond the Safeguard Mechanism to reduce emissions of the resources sector, particularly methane emissions, to meet NSW's emissions reduction targets?

Recommendation

ACCR recommends that the NSW Net Zero Commission formally request that the Department of Planning, Housing and Infrastructure (DPHI) update its assessment guidelines to require all project proponents, public and private, to apply Treasury Policy and Guidelines Paper TPG23-08 when preparing cost-benefit analyses. This would ensure that emissions are valued consistently across all proposals and that project assessments are aligned with the state's climate commitments.

The NSW Net Zero Commission has identified that emissions from coal mine extensions and expansions present a significant risk to achieving the state's legislated emissions reduction targets.[6] A central component of the project assessment process is the cost-benefit analysis (CBA), which informs the net economic benefit a proposal delivers to NSW. However, CBAs for major coal expansions continue to rely on outdated emissions valuation methods, undermining the integrity of these assessments and misaligning them with the state's climate commitments.

[5] ACCR, 2025, Injecting integrity: aligning the use of offsets in company transition plans with science, https://www.accr.org.au/research/injecting-integrity-aligning-the-use-of-offsets-in-company-transition-plans-with-science/
[6] NSW Net Zero Commission, 2024 Annual Report, https://www.netzerocommission.nsw.gov.au/sites/default/files/2024-12/NZC%202024%20Annual%20Report_V11.pdf, p. 12.

To support consistent and credible project assessments, NSW Treasury has introduced a Marginal Abatement Cost (MAC) approach for valuing greenhouse gas emissions costs,[7] as set out in Treasury Policy and Guidelines Paper TPG23-08 (read in conjunction with TPG24-34).[8,9] This method captures the economic cost of achieving the state's climate targets and is now mandatory for all public sector investment CBAs.

However, this requirement does not currently apply to private project proposals, even when those projects contribute significantly to the state's emissions profile. This results in inconsistent emissions valuation, with CBA requirements differing based on whether a project is publicly or privately owned.

The Department of Planning, Housing and Infrastructure (DPHI) continues to refer proponents to TPP17-03 for the economic assessment of mining proposals,[10] despite this guidance being superseded by TPG23-08 in 2023.[11] Crucially, and unlike the updated Treasury guidance, TPP17-03 does not account for the cost of achieving NSW's legislated climate targets.

Given Climate Minister Penny Sharpe's request that DPHI align its assessment and decision-making processes with NSW's legislated targets,[12] it is important that this inconsistency is resolved and that TPG23-08 is applied to project assessments across the board in NSW.

Continued Use of Outdated Guidance in Major Project Assessments

Recent project approvals demonstrate that TPP17-03 remains in active use, despite being superseded. Mt Arthur Pathway to 2030[13] and the Ulan Coal Mine Modification 6[14] were both approved using TPP17-03 in line with current DPHI instructions. ACCR research shows that ten coal mines currently seeking approval in NSW would generate an estimated 40 $MtCO_2e$ within the state, increasing emissions from existing coal mines by 25%.[15]

The HVO Continuation Project is the largest of these and represents around 40% of the total coal volumes under assessment. ACCR has undertaken a detailed review of the 2024 CBA submitted by the HVO Joint

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[7] NSW Government and Deloitte, 2024, NSW Carbon Values Final report, https://www.nsw.gov.au/sites/default/files/noindex/2025-03/nsw-carbon-values-report.pdf.
[8] NSW Treasury, 2023, TPG23-08 NSW Government Guide to Cost-Benefit Analysis, https://www.nsw.gov.au/sites/default/files/noindex/2025-03/tpg23-08-nsw-government-guide-to-cost-benefit-analysis.pdf.
[9] NSW Treasury, 2024, TPG24-34 Carbon emissions in the Investment Framework, https://www.nsw.gov.au/sites/default/files/noindex/2025-03/tpg24-34-carbon-emissions-in-the-investment-framework.pdf, pp. 4, 8-10. TPG24-34 introduced a target-consistent MAC approach, which applies to all CBAs submitted from January 2025. MAC values are now applicable as they replaced the interim market-based carbon values originally presented in TPG23-08. These interim values were used in the absence of a NSW-specific MAC model.
[10] NSW Department of Planning and Environment, 2018, Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals, https://shared-drupal-s3fs.s3.ap-southeast-2.amazonaws.com/master-test/fapub_pdf/NSW+Planning+Portal+Exhibitions/technical-notes-supporting-guidelines-economic-assessment-mining-coal-seam-gas-proposals.pdf, pp. 48-49.
[11] NSW Treasury, TPP17-03 NSW Government Guide to Cost-Benefit Analysis, https://arp.nsw.gov.au/assets/ars/attachments/TPP17-03_NSW_Government_Guide_to_Cost-Benefit_Analysis_archived.pdf. Archived and replaced by TPG23-08.
[12] The Hon Penny Sharpe MLC, 2024, NSW Net Zero - Letter from Penny Sharpe MLC, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=RFI-75053457%2120240822T212408.030%20GMT
[13] AnalytEcon (for Hunter Valley Energy Coal Pty Ltd), 2023, Mt Arthur Coal Mine Modification 2 – Economic Assessment, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=MP09_0062-MOD-2%2120230927T065317.018%20GMT, pp. 1, 30-34.
[14] Ernst and Young (for Ulan Coal Mines Pty Ltd), 2024, Economic Impact Assessment – Ulan Coal Mine Modification 6, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=MP08_0184-MOD-6%2120240515T232146.547%20GMT, pp. 2, 25-26.
[15] ACCR, 2025, More cost, less benefit for NSW: the flawed rationale for the Hunter Valley coal mine expansion, appended below, pp. 23-27.

Venture (Appended to this submission). When applying current NSW Treasury guidance and accounting for the full scope of relevant emissions in NSW, as also required by TPG23-08, the estimated net benefit to the state fell by 88% - from $7.84 billion to $0.94 billion.[16]

The Maules Creek Continuation Project appears to rely on outdated emissions guidance in its recently submitted CBA. The Maules Creek cost–benefit analysis estimates emissions costs between $0.04 million and $151 million.[17] In contrast, ACCR's application of TPG23-08 to the full scope of relevant NSW emissions from the Maules Creek Continuation Project produces a central estimate of $1,230 million in emissions costs. When emissions are appropriately valued, the project becomes a net cost to the NSW community.[18]

These are not marginal adjustments. The method used to value emissions can materially affect the outcome of a project's economic assessment. The continued use of outdated valuation approaches risks undermining the integrity of the DPHI's project assessment framework. The NSW EPA has noted that increased emissions in one sector increase the abatement task for others.[19] If not accurately costed, this shifts the decarbonisation burden and creates fiscal risk for the state in meeting its legislated targets.

Together, the HVO Continuation Project and Maules Creek Continuation Project account for nearly 60% of the coal volumes currently under assessment in NSW.[20] With the Maules Creek CBA submitted and a revised HVO CBA expected in mid-2025,[21] this is a timely opportunity for DPHI to adopt the updated Treasury guidance and ensure these assessment processes are aligned with the state's emissions targets.

Comparing emissions valuation approaches in TPP17-03 and TPG23-08

Under TPP17-03, which is currently applied in CBAs for the HVO Continuation Project and other coal mine expansions, proponents may use a range of carbon prices, including market-based instruments (e.g. European Union Allowances, Australian Carbon Credit Units) or damage-based estimates (e.g. the US EPA's Social Cost of Carbon). These values differ substantially in methodology and magnitude and are not directly aligned with the cost of achieving NSW's emissions reduction targets.

[16] ACCR, 2025, More cost, less benefit for NSW: the flawed rationale for the Hunter Valley coal mine expansion, appended below, pp. 3-4.
[17] AnalytEcon (for Whitehaven Coal), Maules Creek Continuation Project Environmental Impact Statement, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63428218%2120250529T010018.333%20GMT, pp. 30-31.
[18] AnalytEcon (for Whitehaven Coal), Maules Creek Continuation Project Environmental Impact Statement, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63428218%2120250529T010018.333%20GMT, pp. 31. The proponent's CBA reports a net benefit of $1,079 million, based on estimated emissions costs of $0.04 million. Applying a central emissions cost estimate of $1,230 million, consistent with TPG23-08, results in a net cost of approximately $150 million to the NSW community.
[19] NSW EPA, 2024, EPA Comments to Response to Submissions, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-11826681%2120240523T223654.578%20GMT, p. 5.
[20] ACCR, 2025, More cost, less benefit for NSW: the flawed rationale for the Hunter Valley coal mine expansion, appended below, pp. 23-27.
[21] Hunter Valley Operations, 2025, Response to RFI and Proposed Project Amendments, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=RFI-75053457%2120250326T060538.621%20GMT, p. 8.

Emissions costs are then typically apportioned to NSW using population or GDP-based weightings.[22] Given NSW accounts for approximately 0.1% of the global population and 0.3% of global GDP,[23] this approach significantly reduces the cost attributed to the state, often rendering it negligible. This combination of unspecified pricing and apportionment allows for a high degree of discretion in how emissions are valued, resulting in outcomes that may not be aligned with broader state policy.

Applying the MAC approach under TPG23-08 results in higher emissions costs than those produced under TPP17-03. By requiring full attribution of NSW-based emissions and removing the option to apportion costs, it provides a clearer, state-specific estimate aligned with NSW's legislated targets. While it does not incorporate broader global damages, it offers a consistent basis for valuation that reflects the actual cost to the state.

See appended report for detailed analysis of the HVO Continuation Project CBA, including assessment of TPG23-08 provisions and other identified limitations.

[22] AnalytEcon (for Whitehaven Coal), Maules Creek Continuation Project Environmental Impact Statement, https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-63428218%2120250529T010018.333%20GMT, pp. 73-77.

[23] TPG23-08 states that "each tonne of carbon that occurs in New South Wales should be counted as a whole and not pro-rated by population or any other factor." Accordingly, apportioning emissions based on population or GDP is inconsistent with this guidance. NSW Treasury, TPG23-08 NSW Government Guide to Cost-Benefit Analysis, https://www.treasury.nsw.gov.au/sites/default/files/2023-04/tpg23-08_nsw-government-guide-to-cost-benefit-analysis_202304.pdf, p. 68.

ACCR

June 2025

More cost, less benefit: the flawed rationale for the Hunter Valley coal mine expansion

A review of the 2024 cost-benefit analysis submitted as part of the Hunter Valley Operations Continuation Project Economic Impact Assessment

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More cost, less benefit for NSW: the flawed rationale for the Hunter Valley coal mine expansion

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About ACCR

The Australasian Centre for Corporate Responsibility (ACCR) is a not-for-profit, philanthropically-funded shareholder advocacy and research organisation that engages with listed companies and investors globally, enabling and facilitating active stewardship. Our research team undertakes company-focused research into the climate transition plans of listed companies, offering analysis, research and insights to assist global institutional capital understand investment risks and opportunities during the energy transition. For more information, follow ACCR on LinkedIn.

1. Executive Summary

1.1 Introduction

The proposed Hunter Valley Operations (HVO) Continuation Project is the largest coal expansion project under NSW Government assessment. The HVO Joint Venture (51% Yancoal, 49% Glencore) is seeking to expand existing mine operations to 2045 and extract an additional hundreds of millions of tonnes of run-of-mine coal (ROM) over the coming decades.

HVO Joint Venture's original proposal sought to extract an additional 684 million tonnes (Mt) of ROM coal, which would have resulted in an estimated 32 Mt of CO_2-equivalent ($MtCO_2e$) direct emissions within NSW, and nearly 1 gigatonne of CO_2-equivalent ($GtCO_2e$) from end-use combustion of coal in export markets. Following concerns raised by the NSW Government about the project's significant fugitive methane emissions and impact on the State's legislated emissions reduction targets,[1] the joint venture is revising the application – reducing the mine size by 35%,[2] resulting in 40% less scope 1 emissions[3] relative to the original proposal. The revised proposal is expected in mid-2025.

Even with a reduced size, the HVO Continuation Project represents almost 40% of emissions in the NSW Government's coal project approval pipeline. With existing coal mining projects already straining the ability of NSW to meet its legislated emissions reduction targets, if HVO is approved it will further strain the state's ability to meet its targets and shift the burden onto other sectors to make deeper emissions reductions.

[1] NSW DPHI, Consideration of Climate Change (Net Zero Future) Act 2023, Scope 3 Emissions and Mining Panel Advice, letter to HVO Pty Ltd, July 2024.
[2] ACCR estimate based on a reduction of ~220 Mt ROM coal relative to the original proposal. HVO Pty Ltd, Response to RFI and Proposed Project Amendments, letter submitted to the NSW DPHI, March 2025, p. 4.
[3] HVO Pty Ltd, Response to RFI and Proposed Project Amendments, letter submitted to the NSW DPHI, March 2025, p. 5.

A critical component of the assessment process will be consideration of the economic costs and benefits to NSW. ACCR has undertaken a detailed review of the cost-benefit analysis (CBA) [4] the HVO Joint Venture provided in 2024 as part of its original proposal. We found this 2024 CBA significantly understates the cost of emissions from the project, meaning it overstates its net economic benefits to the state.

When we applied the latest NSW Treasury guidance to the 2024 CBA, and considered the full scope of relevant emissions in NSW, the estimated net benefits to the NSW community reduced by 88% – from $7.84 billion to $0.94 billion.[5] Further, when we used a coal price forecast more aligned with federal and state commitments to the Paris Agreement, the project's net benefits to the NSW community dropped below zero.

The insights gleaned from this analysis aim to inform a more robust and credible CBA for the upcoming revised application. A CBA which uses the most up-to-date guidance, includes all relevant emissions, and considers coal price assumptions consistent with government commitments to the Paris Agreement will provide the NSW Government a more credible basis for decision-making.

1.2 Key Findings

1. **The 2024 cost-benefit analysis (CBA) undertaken for the proposed HVO Continuation Project significantly understates the cost of emissions to NSW, due to its reliance on an outdated framework. When the current Treasury framework is applied the cost of emissions is 1700 times higher, rising from $3.7 million to $6.34 billion. This sees the project's net benefits to NSW reduce by 81%, from $7.84 billion to $1.50 billion. See Chart 1.1 – (1).**

The 2024 CBA uses NSW Treasury Guidance TPP17-03 as a framework to quantify the cost of carbon emissions of the project. This is in line with 2018 guidance from the Department of Planning, Housing and Infrastructure (DPHI). However, TPP17-03 has since been superseded by TPG23-08, which uses a NSW-specific Marginal Abatement Cost (MAC) and aligns emissions valuation with the state's legislated emissions targets.

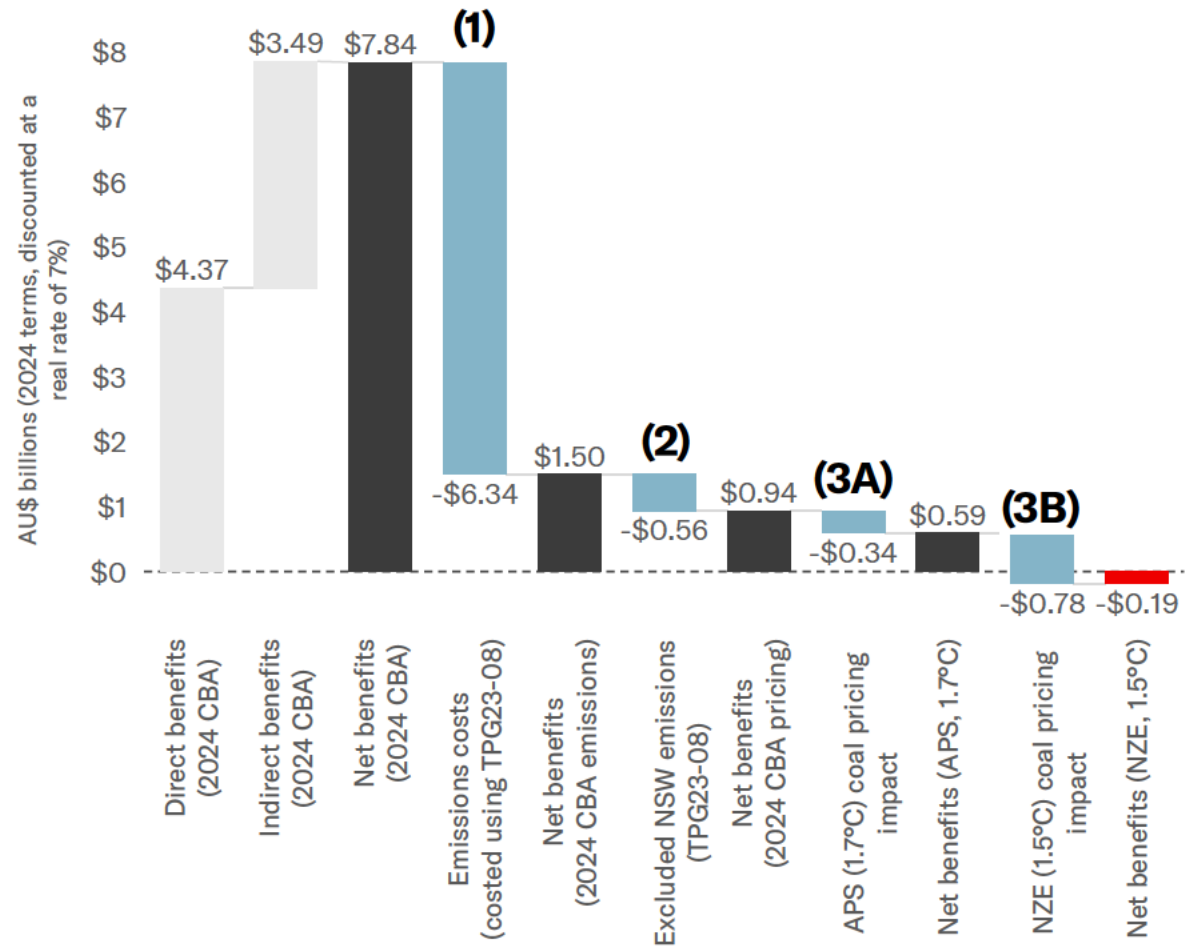
2. **The emissions estimate in the 2024 CBA excludes emissions from intrastate rail transport.[6] When these are included total emissions are 9% higher, resulting in an additional $0.56 billion in costs. When the current Treasury framework is applied to the full scope of emissions, the project's net benefits to NSW are reduced by 88% compared to the 2024 CBA, falling from $7.84 billion to $0.94 billion. See Chart 1.1 – (2).**

[4] Ernst and Young (EY) published a revised Economic Impact Assessment in May 2024 which included the cost-benefit analysis of the project to the NSW community.
[5] Unless otherwise stated, all monetary values in this report are expressed in Australian dollars (AUD).
[6] Under current NSW Treasury guidance all emissions that occur within NSW should be included in a cost-benefit analysis.

3. **The 2024 CBA relies on a coal price forecast that is considerably higher than the International Energy Agency's (IEA) Announced Pledges Scenario (APS) and Net Zero Emissions (NZE) scenario. When the project's benefits are modelled in line with the APS and NZE its direct benefits decline by 8% and 26% respectively. When the current Treasury framework is applied, and the full scope of NSW emissions is included, a Paris-aligned coal pricing forecast results in the project's net benefit to NSW falling below zero, which means it becomes a social cost to the state. See Chart 1.1 – (3A) and (3B).**

The APS reflects the global policy direction based on announced government commitments, while the NZE scenario aligns with NSW and Federal commitments to the Paris Agreement.

Chart 1.1: Analysis of the 2024 CBA using the current Treasury Framework, the full scope of NSW emissions, and APS and NZE pricing shows a significant reduction in the project's net benefits to NSW[7]



Source: 2024 CBA, TPG23-08, NSW Treasury Carbon values report, IEA WEO 2024 extended dataset, ACCR modelling

[7] Numbered labels in the chart correspond to the key findings and recommendations.

4. **If HVO is approved, it would materially affect the state's ability to meet its legislated emissions reduction targets - including imposing a burden on other sectors to compensate with deeper cuts - yet the 2024 CBA does not account for this. Coal mining accounts for around 15% of total NSW emissions, which would increase to over 20% by 2035 if all proposed coal mining expansions are approved. The HVO Continuation Project accounts for almost 40% of coal expansion emissions in NSW under consideration.**

1.3 Recommendations

ACCR recommends that any future application for the HVO Continuation Project must include a cost-benefit analysis that incorporates:

1. **The latest NSW Treasury guidance, TPG23-08, to ensure emissions are costed appropriately and the State's emissions targets are reflected in the assessment.**

The NSW Government should assess all projects – public and private – using consistent methodologies. TPG23-08 is mandatory for assessing public investments and should be applied to private investments to ensure the consistency and integrity of planning processes. Project assessments should be based on sound economic analysis and not subject to differential treatment based on ownership.

2. **The full scope of emissions occurring within NSW, including intrastate rail emissions.**
3. **The project's direct benefits under future energy scenarios, consistent with federal and state commitments to the Paris Agreement and aligned with the expected policy direction.**

The impact of each recommendation on project value to NSW has been modelled by ACCR and is labelled accordingly in Chart 1.1.

2. Understating costs, overstating benefits – flaws in the 2024 cost-benefit analysis

Our review of the 2024 cost-benefit analysis (CBA) submitted for the HVO Continuation Project finds it significantly understates the project's emissions costs,[8] meaning the project's net benefits to the state are overstated.

2.1 Understating the cost of emissions

The 2024 CBA estimate of emissions costs to NSW of $3.7 million is significantly understated, due to its reliance on an outdated methodology. ACCR's analysis, using current NSW Treasury guidance Marginal Abatement Cost (MAC) framework estimates the emissions cost to NSW is $6.34 billion – 1,700 times higher than the 2024 CBA estimate. This reduces the project's net benefit to NSW from $7.84 billion to $1.50 billion.

The 2024 CBA estimates the net benefits of the project to the NSW community at $7.84 billion, which includes $3.7 million for emissions costs. The framework it uses to quantify the cost of carbon emissions is NSW Treasury Guidance TPP17-03.[9] While the use of TPP17-03 is suggested by the Department of Planning, Housing and Infrastructure (DPHI) for mining and coal seam gas proposals,[10] this framework is outdated, having been superseded in 2023 by new Treasury guidance, TPG23-08.[11]

TPG23-08 improves upon previous guidance by using a NSW-specific Marginal Abatement Cost (MAC) to value the cost of greenhouse gas emissions (Refer to Appendix 5.2 for further detail). This approach more accurately evaluates the costs of meeting NSW emissions targets, including considering the abatement opportunities available to NSW.[12]

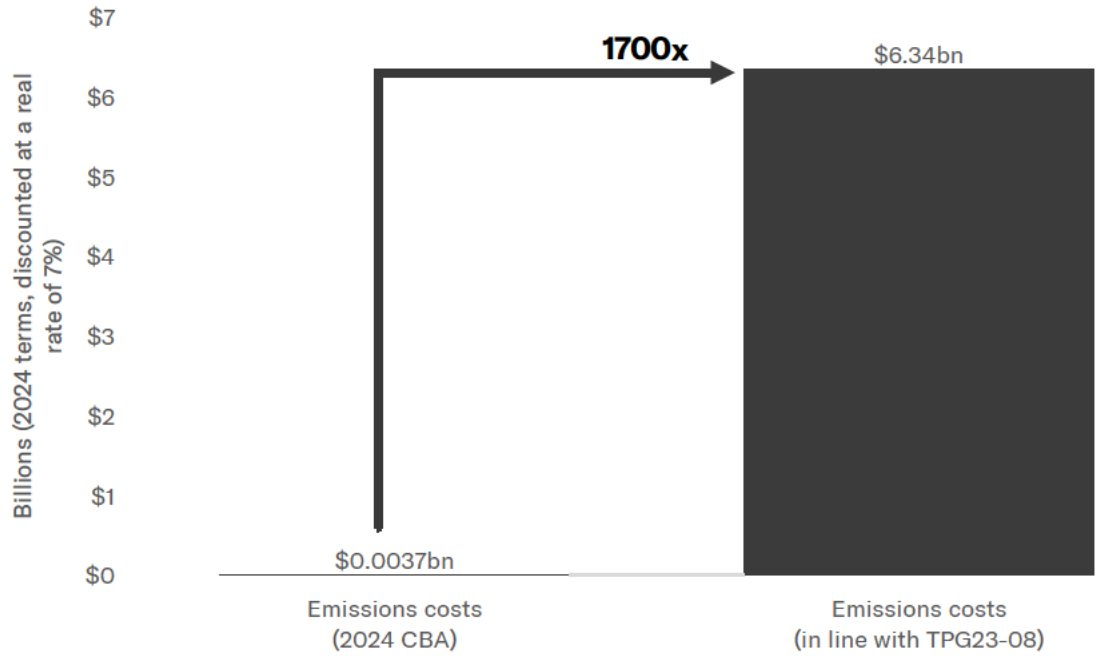
TPG23-08 has been mandatory for public sector investment decisions since 2023. It offers a consistent framework for assessing emissions impacts across both public and private projects and applying it across both would ensure comparability and policy alignment. Using an outdated method

[8] These are classified as indirect costs in the 2024 CBA.
[9] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPP17-03. Archived and replaced by TPG23-08.
[10] DPHI, Technical Notes supporting the Guidelines for the Economic Assessment of Mining and Coal Seam Gas Proposals, pp. 48-49.
[11] NSW Treasury, TPG23-08 NSW Government Guide to Cost-Benefit Analysis. Current as of 2nd March 2023.
[12] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPG23-08. p. 67. States that shadow carbon prices should be applied "in the absence of a comprehensive Australian emissions market or modelled target-consistent marginal abatement cost." This gap is now addressed by Carbon emissions in the Investment Framework TPG24-34, which introduces carbon values based on a NSW-specific marginal abatement cost approach aligned with the state's legislated climate targets. These values replace the interim prices previously set out in the TPG23-08.

in the CBA for the upcoming revised HVO application would risk undermining the integrity of the planning process and enabling differential treatment based on ownership.

When using adjusted MAC emissions costs[13] - in line with TPG23-08 - we estimate that the emissions cost of the original HVO proposal is $6.34 billion, which is 1,700 times greater than the $3.7 million costs in the 2024 CBA (see Chart 2.1). This reduces net project benefits to NSW from $7.84 billion to $1.50 billion (see Chart 2.2).

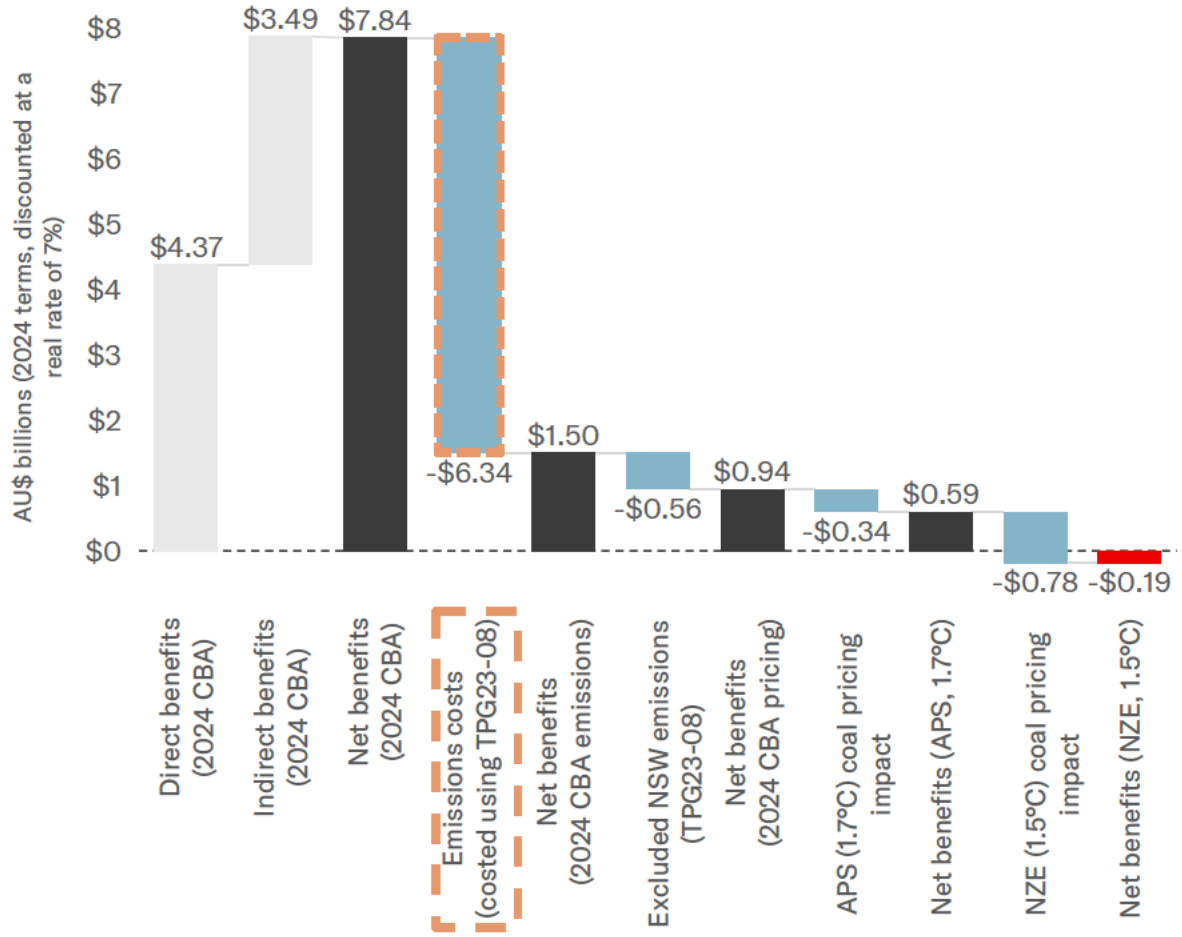
Chart 2.1: The current NSW Treasury guidance (TPG23-08) puts the emissions cost at $6.34 billion – 1,700 times the 2024 CBA's $3.7 million figure



Source: 2024 CBA, ACCR modelling

[13] The NSW Treasury calculates carbon values using a 5% discount rate, consistent with the updated social discount rate (NSW Carbon Values Report, p. 9). However, since the CBA was conducted at a 7% discount rate, we have adjusted the carbon values accordingly to ensure a like-for-like comparison.

Chart 2.2: ACCR modelling of the 2024 CBA, in line with current Treasury guidance (TPG23-08), reduces project net benefits to NSW to $1.50 billion



Source: 2024 CBA, TPG23-08, NSW Treasury Carbon values report, IEA WEO 2024 extended dataset, ACCR modelling

2.2 Incomplete emissions figures

The 2024 CBA relies on an emissions estimate of 29.59 MtCO2e. However, this estimate excludes intrastate rail emissions. When included:

- **Total emissions rise by at least 9% to 32.2 $MtCO_2e$, resulting in an additional $0.56 billion in emissions costs.**
- This adjustment, along with application of TPG23-08 (see section 2.1), **results in the project's net benefits to the state reducing by 88% – from $7.84 billion to $0.94 billion.**

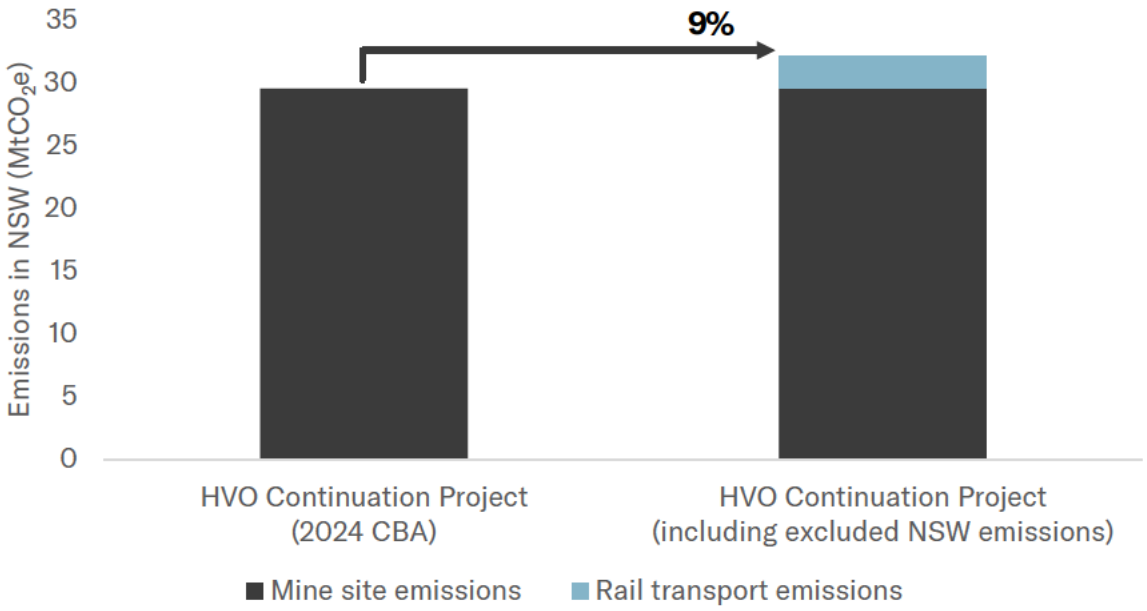
Under current NSW Treasury guidance, all emissions that occur within NSW should be included in a CBA.[14] However, the 2024 CBA excludes intrastate rail emissions, incorrectly classifying them as scope 3 emissions for the state.

By limiting its calculations to Scope 1 and 2 emissions at the mine site only, the 2024 CBA does not capture the project's full emissions costs within NSW. The CBA should include all emissions within NSW that result from the project, regardless of where they occur in the supply chain.

When intrastate rail emissions are included, the total NSW emissions of the HVO Continuation Project rise by 9% (see Chart 2.3), adding $0.56 billion in emissions costs. The cumulative impact, including cost identified in Section 2.1, is that the project's net benefits to NSW reduce by 88% compared to the 2024 CBA, falling from $7.84 billion to $0.94 billion (see Chart 2.4).

Other NSW-based emissions are also likely understated in the 2024 CBA, such as upstream emissions from suppliers – 84% of whom are NSW-based.[15] This is not included in the scope of our analysis but should be factored in for emissions estimates for the revised HVO Continuation Project.

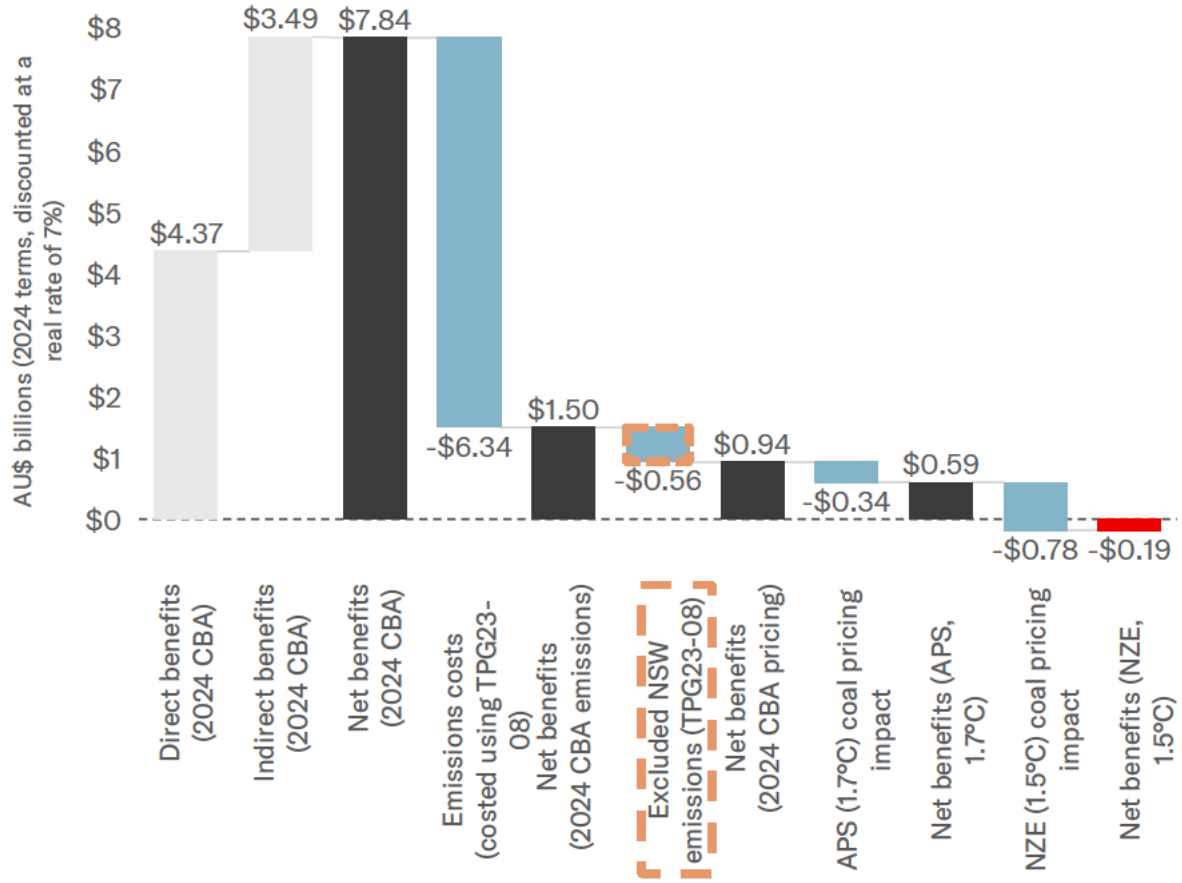
Chart 2.3: Including intrastate rail emissions in NSW from the HVO Continuation Project means emissions are 9% higher than the emissions input in the 2024 CBA



Source: 2024 CBA, HVO Continuation Project emissions modelling

[14] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPG23-08, p. 68. "The emissions impacts given standing in a CBA should include the emissions that occur within New South Wales. Each tonne of carbon that occurs in New South Wales should be counted as a whole and not pro-rated by population or any other factor."
[15] EY, Economic Impact Assessment of the Hunter Valley Operations continuation project (revised 2024), p. 32.

Chart 2.4: Including intrastate rail emissions increases emissions costs by $0.56 billion



Source: 2024 CBA, TPG23-08, NSW Treasury Carbon values report, IEA WEO 2024 extended dataset, ACCR modelling

2.3 Net economic benefits to NSW turn negative under IEA NZE coal pricing

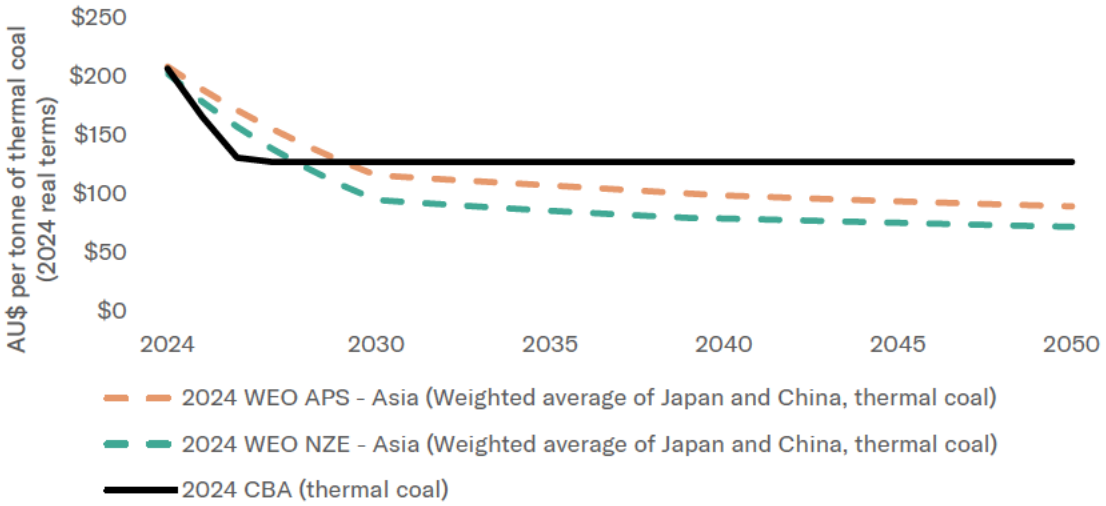
The 2024 CBA assumes flat real coal prices from 2028 onward. However, when coal price trajectories consistent with state and federal commitments to the Paris Agreement are applied, along with the latest NSW Treasury Guidelines (see sections 2.1 and 2.2), **the modelled net benefits to NSW falls from $7.84 billion to below-zero – representing a net social cost to the NSW community**.

The primary source (95%) of the proposed HVO Continuation Project's direct economic benefits to NSW are company taxes and royalties, which are both highly sensitive to assumed coal price forecasts.

The 2024 CBA assumes a flat real coal price from 2028 onwards, which is a considerably higher projection than prices in the International Energy Agency's (IEA) Announced Pledges Scenario (APS)

and Net Zero Emissions (NZE) scenario[16] (see Chart 2.5). When comparing average thermal coal prices from 2024 to 2050, the 2024 CBA price was 14% higher than the APS and 36% higher than the NZE scenario (see Chart 2.6).

Chart 2.5: The long-term flat real thermal coal price assumed in the 2024 CBA is more optimistic than the projections outlined in the IEA's APS and NZE scenarios[17,18]



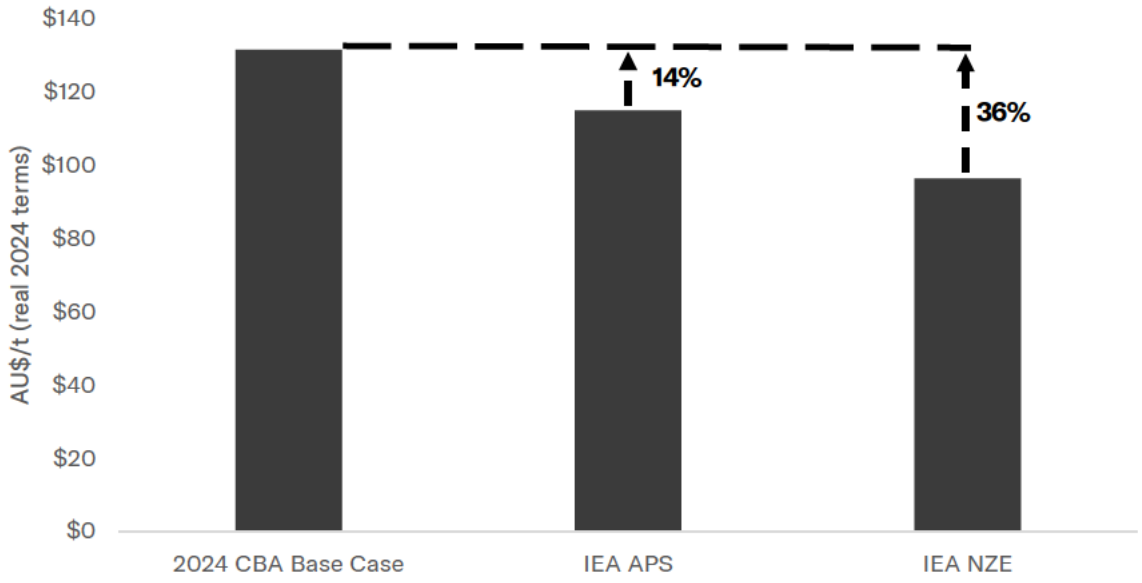
Source: 2024 CBA, IEA WEO 2024 extended dataset

[16] The IEA's NZE scenario is a normative scenario showing the IEA's view of the most cost effective, equitable and technically feasible path to reach net zero CO_2 by 2050, aligned with a global average temperature 1.5°C above pre-industrial levels in 2100. The APS is a formative scenario that assumes announced pledges by nations are met on time and in full, but that there is no further increase in ambition. The APS leads to a global average temperature around 1.7–1.8°C above pre-industrial levels by 2100.

[17] 2024 CBA and IEA WEO 2024 extended datasets. 2024 thermal coal imported volumes for China and Japan are used to calculate the weighted averages of coal prices; IEA, Coal 2024, pp. 114-115.

[18] In the absence of publicly available data on HVO's export volumes by country, we apply a weighted average of import prices from China and Japan – its primary export markets – as a proxy for Newcastle coal prices.

Chart 2.6: The 2024 CBA's assumed average thermal coal price from 2024-2050 is 14% and 36% higher than IEA APS and NZE prices respectively



Source: 2024 CBA, IEA WEO 2024 extended dataset

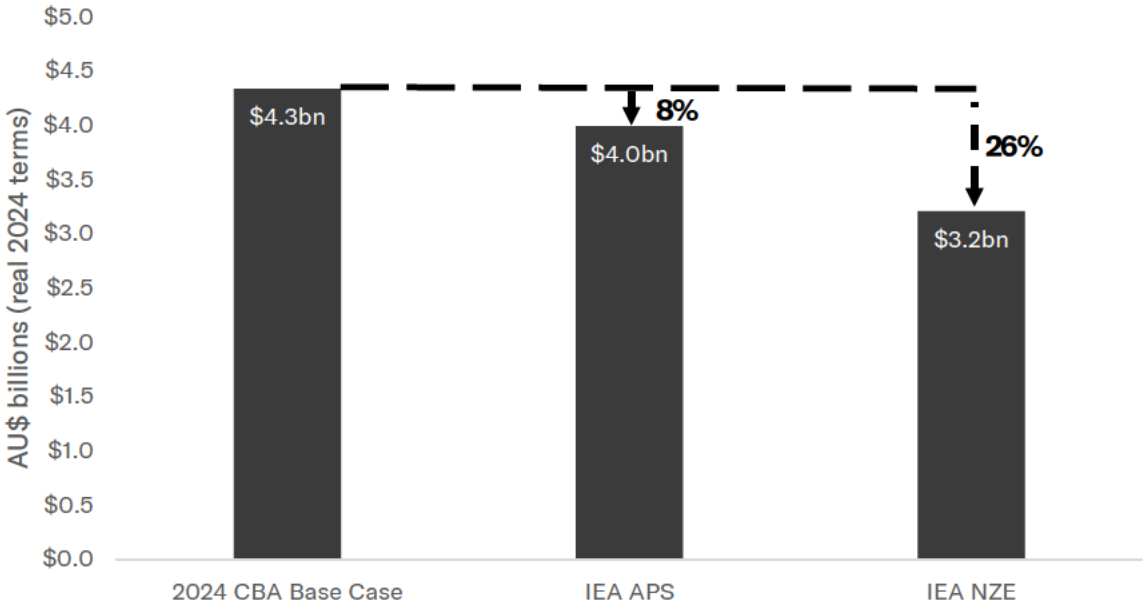
Using the APS would help the government understand how already announced global ambitions and targets towards emissions reductions may affect long-term coal prices - and thus the project's benefits to NSW. The NZE scenario aligns with NSW state[19] and federal[20] commitments to the Paris Agreement and net zero by 2050.

Our modelling highlights the impact of coal price assumptions on the HVO project's economic benefits - demonstrating the high sensitivity of royalties and tax revenues to lower coal price forecasts.[21] While the 2024 CBA estimates $4.3 billion of direct benefits to NSW, we found when coal price inputs are modelled in line with the APS and NZE, the project's direct benefits decline by:

- 8% under the APS
- 26% under the NZE. When applied with current NSW Treasury guidance (see sections 2.1 and 2.2), this Paris-aligned coal pricing forecast results in the HVO project's net benefit to NSW falling below zero, becoming a social cost to the state (see Chart 2.8).

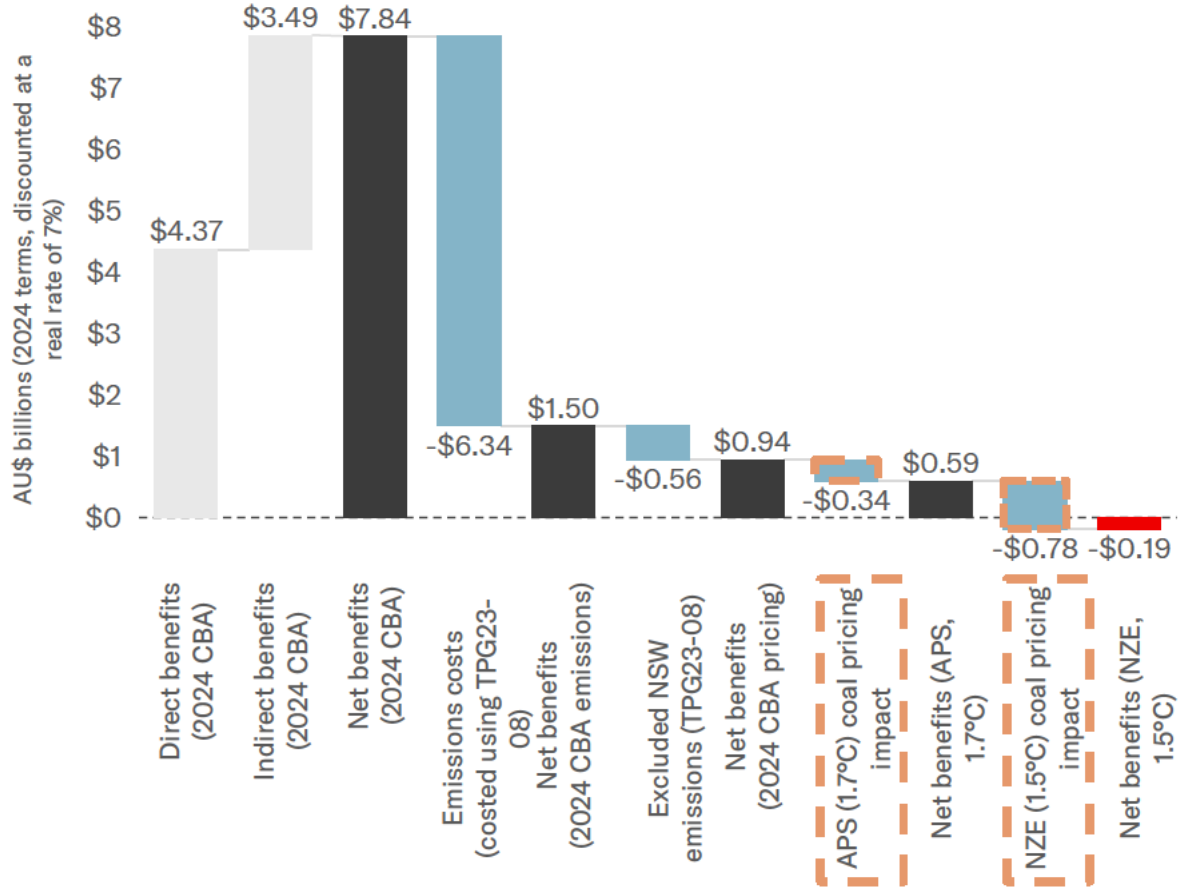
[19] NSW legislation, Climate Change (Net Zero Future) Act 2023 No 48. "The purpose of this Act is to give effect to the international commitment established through the 2015 Paris Agreement to (a) hold the increase in the global average temperature to well below 2°C above pre-industrial levels, and (b) pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.
[20] Australian Department of Climate Change, Energy, the Environment and Water, International climate action.
[21] See Appendix 5.3 for detailed breakdown.

Chart 2.7: Direct benefits to NSW from the HVO Continuation Project are 8% less under the APS and 26% lower under the NZE scenario



Source: 2024 CBA, IEA WEO 2024 extended dataset, ACCR modelling

Chart 2.8: Project net benefits to NSW are reduced by 92% (IEA APS pricing) and 102% (IEA NZE pricing)



Source: 2024 CBA, TPG23-08, NSW Treasury Carbon values report, IEA WEO 2024 extended dataset, ACCR modelling

3. Further room for improvement on the 2024 CBA

ACCR recommends that decision-makers also consider three other issues in the 2024 CBA.

3.1 Employment benefits may be overstated

The 2024 CBA assumes a constant "net economic benefit to local workers" of $1.3 billion across all price sensitivities. However, historical data between 1990 and 2020 shows a positive correlation between coal prices and coal mining employment in Australia. While future price impacts are uncertain, assuming there is no employment change under lower prices risks overstating indirect benefits.

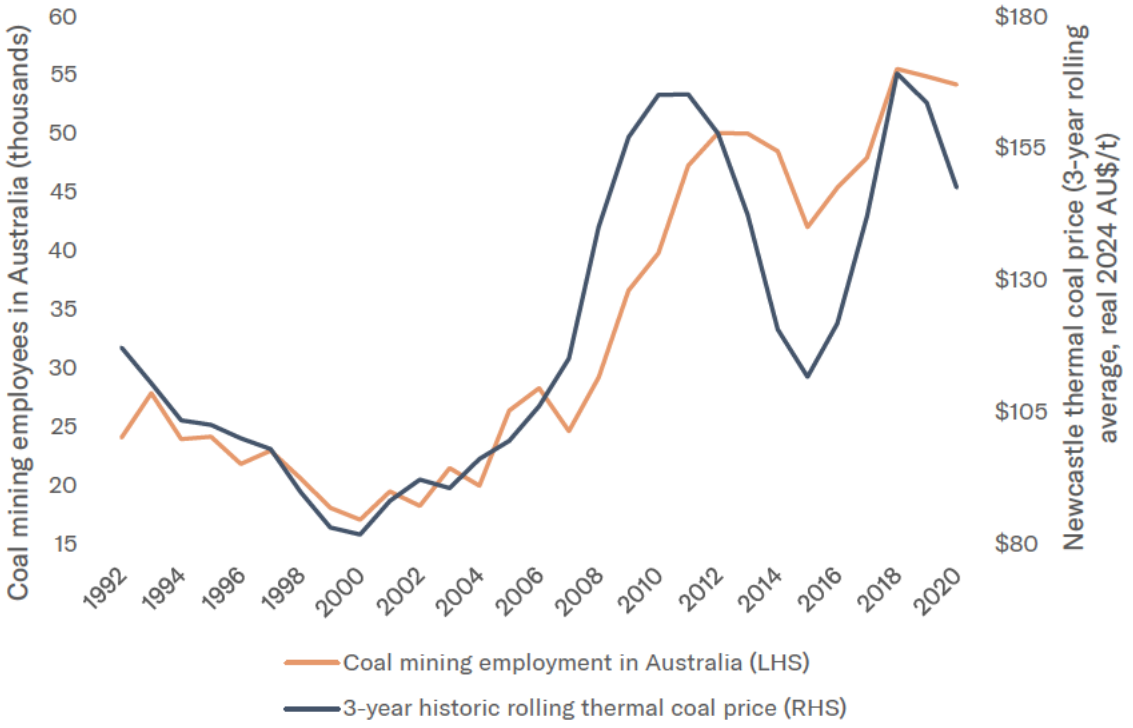
The 2024 CBA does not account for any employment changes that may flow from a material coal price decline. It does conduct coal price sensitivity analyses to evaluate the impact on project net benefits, considering a base case pricing forecast and varied coal prices ±25%. While these changes influenced direct benefits – such as royalties and company taxes – they did not affect indirect benefits, including the "net economic benefit to local workers". [22]

Our analysis shows a strong positive correlation between Newcastle coal prices and employment levels in the Australian coal mining sector, [23] indicating that price trends have historically[24] impacted employment and economic outcomes to local workers (see Chart 3.1). Regression analysis shows that each $1 per tonne decrease in coal price is associated with approximately 400 fewer coal mining jobs in Australia (see Chart 3.2).

Although precise impacts at the individual project level are difficult to estimate, this strong relationship highlights the need to carefully evaluate "indirect benefits to local workers" in low-price scenarios, such as those more consistent with global policy direction (APS) and commitments to the Paris Agreement (NZE) (see Section 2.3), to avoid overstating benefits to decision-makers.

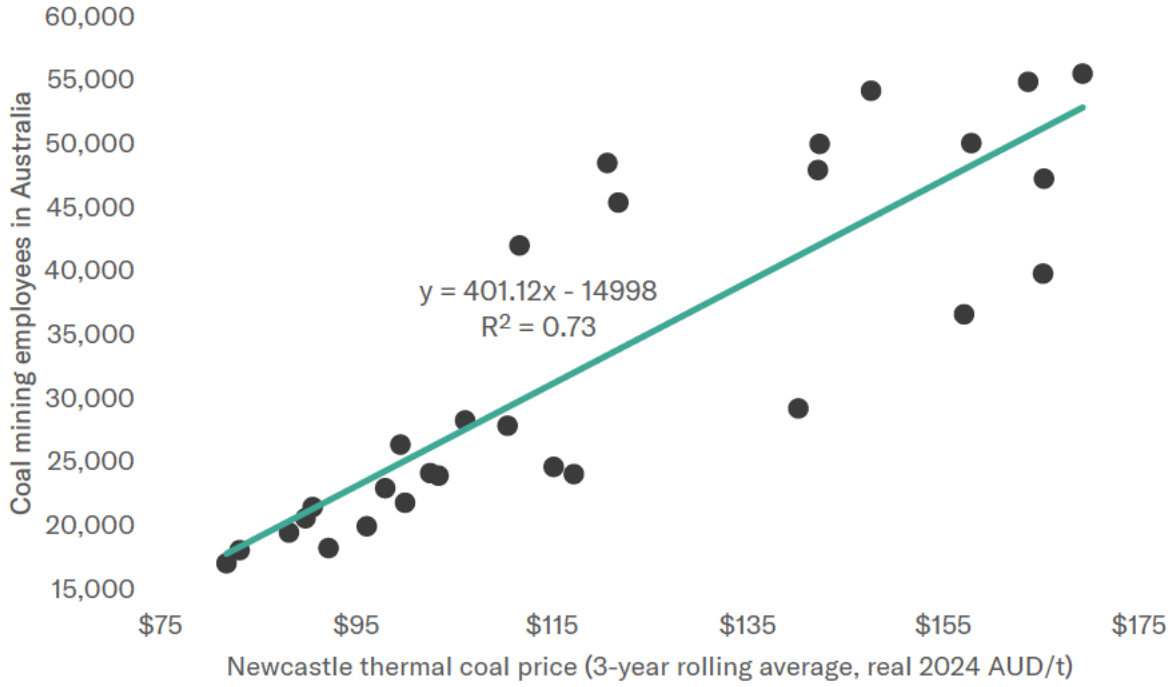
[22] EY, Economic Impact Assessment of the Hunter Valley Operations continuation project (revised 2024), p. 67.
[23] This analysis uses a 3-year trailing rolling average of coal prices to represent the longer-term signals firms respond to, while keeping raw employment data to reflect actual observed employment outcomes. Prices have been converted from nominal to real terms using historical US consumer price index (U.S. Bureau of Labor Statistics, Consumer Price Index) and to AUD using historical annual average exchange rate (Federal Reserve Bank of St. Louis, U.S. Dollars to Australian Dollar Spot Exchange Rate).
[24] The earliest year with available data for both International Monetary Fund coal prices (IMF Primary Commodity Prices) and Australian Bureau of Statistics coal employment (Labour Force, Australia, Detailed) is 1990. As the analysis uses a 3-year trailing rolling average for coal prices, the first modelled year is 1992. Data following the COVID-19 pandemic and the Russian invasion of Ukraine have been excluded due to extreme volatility in coal markets, which introduces significant outliers that could distort the results.

Chart 3.1: Newcastle thermal coal prices trends are closely linked with coal mining employment in Australia



Source: IMF primary commodity prices, ABS coal employment (Labour Force, Australia, Detailed)

Chart 3.2: Regression analysis shows that a $1/t decrease in coal price is historically associated with 400 fewer coal mining employees in Australia



Source: ACCR modelling

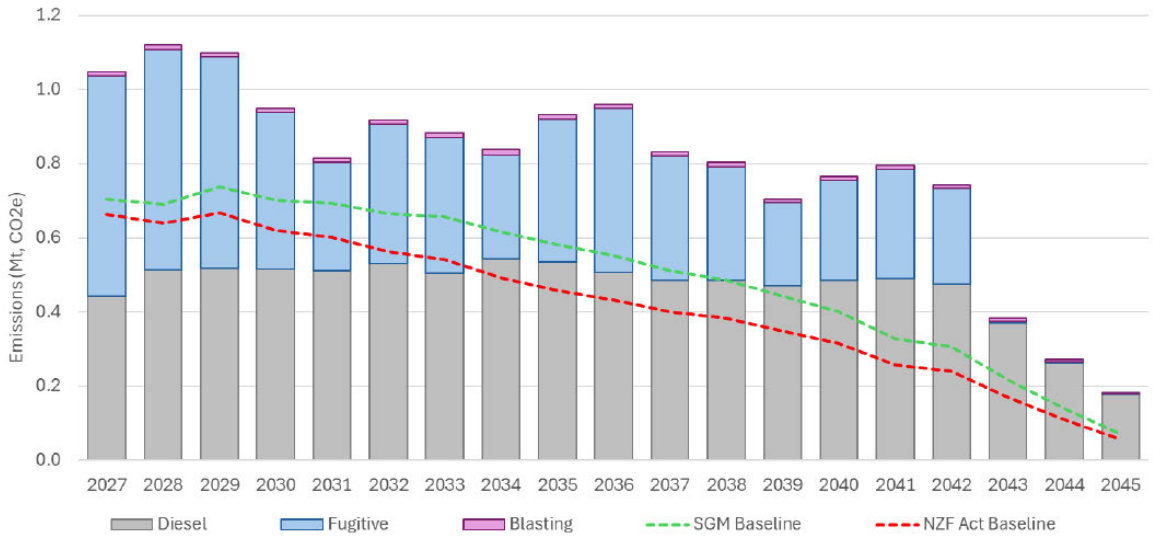
3.2 Heavy reliance on offsets

The revised HVO Continuation Project is expected to exceed its Safeguard Mechanism (SGM) baseline every year, meaning it must offset exceedances using Australian Carbon Credit Units (ACCUs) or Safeguard Mechanism Credits (SMCs). If the project's SGM obligations are met predominantly through ACCUs, this raises concerns about integrity, particularly as over 90% issued since 2019 have been nature-based, despite concerns about their scientific effectiveness. A heavy dependence on offsets introduces potential liabilities for the proposed project and the NSW Government.

The revised HVO Continuation Project is likely to emit around 800,000 tCO_2e per year on average, [25] placing it under the SGM, which requires large industrial facilities to reduce emissions annually or offset exceedances using ACCUs or SMCs to offset the excess.

The HVO Continuation Project's emissions will consistently exceed its SGM baseline (see Chart 3.3), requiring the purchase of 5.5 $MtCO_2e$ in offsets to comply.[26] In the 2024 CBA, SGM obligations are costed using ACCUs.[27]

Chart 3.3: The revised HVO Continuation Project will exceed its SGM baseline every year

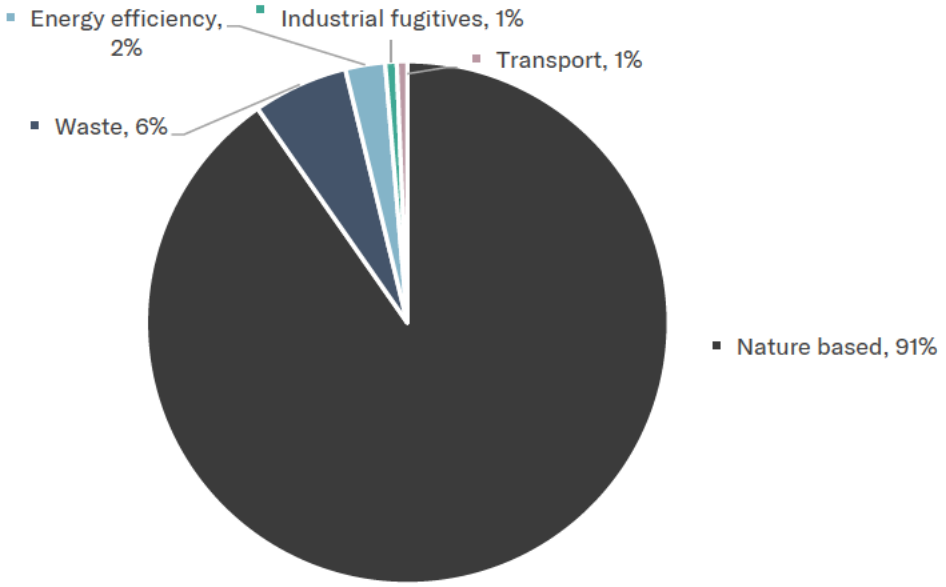


Source: HVO Continuation Project (revised mine plan) – Preliminary Analysis of Greenhouse Gas Impacts

[25] EPBC Portal, HVO Continuation Project – Preliminary Analysis of Greenhouse Gas Impacts, p. 7.
[26] EPBC Portal, HVO Continuation Project – Preliminary Analysis of Greenhouse Gas Impacts, p. 9.
[27] EY, Economic Impact Assessment of the Hunter Valley Operations continuation project (revised 2024), pp. 42-44. Although safeguard exceedances can be covered using a mix of SMCs and ACCUs, the 2024 CBA models exceedances as entirely met by ACCUs based on pricing (footnote 93).

If the project's SGM obligations are met predominantly through ACCUs, this raises concerns about integrity, particularly as over 90% issued since 2019 have been nature-based[28] (see Chart 3.4). While ACCUs offer a market-based emissions reduction tool, the voluntary carbon market has been plagued with unresolved integrity challenges, including a lack of real, additional emissions reductions. Nature-based methods like reforestation and soil carbon are not a permanent form of CO_2 storage, and cannot be used to neutralise or offset CO_2 emissions generated through the consumption or production of coal, oil or gas.

Chart 3.4: ACCUs issued since 2019 by project type



Source: Clean Energy Regulator (Quarterly Carbon Market Report December Quarter 2024)

A heavy dependence on offsets introduces potential liabilities for the proposed project. Key risks include:

- Permanence Risks: CO_2 storage in vegetation, soils and sediments through Nature-Based Solutions can only offset fossil CO_2 emissions if preserved and managed for at least 1,000 years, a timescale broadly understood to be extremely unlikely given a range of factors – including our current warming trajectory.[29]
- Ineffective Emissions Abatement: If offsets do not represent genuine emissions reductions, companies may face reputational, regulatory and financial risks as stakeholders demand higher integrity in climate commitments. Even if the ACCUs or SMCs are of credible

[28] Clean Energy Regulator, Quarterly Carbon Market Report December Quarter 2024.
[29] ACCR, 2025, Injecting integrity: aligning the use of offsets in company transition plans with science.

integrity, if they are sourced from outside New South Wales, they would not contribute to achieving NSW's emissions targets, as noted by the EPA.[30]

- Regulatory Uncertainty: Governments and regulatory bodies are increasingly scrutinising the validity of offsets, which could lead to stricter compliance requirements, re-evaluations of offset methodologies, or even the invalidation of certain projects.

3.3 Incorrect apportionment of the Social Cost of Carbon

The method that the 2024 CBA uses to calculate emissions costs to NSW, based on the Social Cost of Carbon (SCC), is outdated. It would be better to instead reflect total emissions costs using the updated MAC methodology (Section 1.1). However, if a SCC-based approach is used it must not apportion emissions costs to NSW based on its 0.1% share of global population, as the 2024 CBA does. To do so is inconsistent with current NSW Treasury guidance and the OECD Polluter Pays Principle. The CBA should reflect the full cost of emissions – not a population-based share.

The 2024 CBA assessment calculates emissions costs using the US Environmental Protection Agency's Social Cost of Carbon, but attributes only $3.7 million to NSW by distributing total costs across the global population, in line with NSW's 0.1% share. This approach contradicts NSW Treasury guidance, which states that:

> "…each tonne of carbon that occurs in New South Wales should be counted as a whole and not pro-rated by population or any other factor…"[31]

In addition, the OECD Polluter Pays Principle requires polluters to bear the full cost of their emissions.[32]

While the NSW Treasury's current MAC-based approach is superior (Section 2.1 and Appendix 5.2), if an SCC-based method is applied, the full cost of emissions should still be assigned to NSW. Population-based apportionment significantly understates NSW's financial responsibility and weakens the integrity of the project's economic assessment.

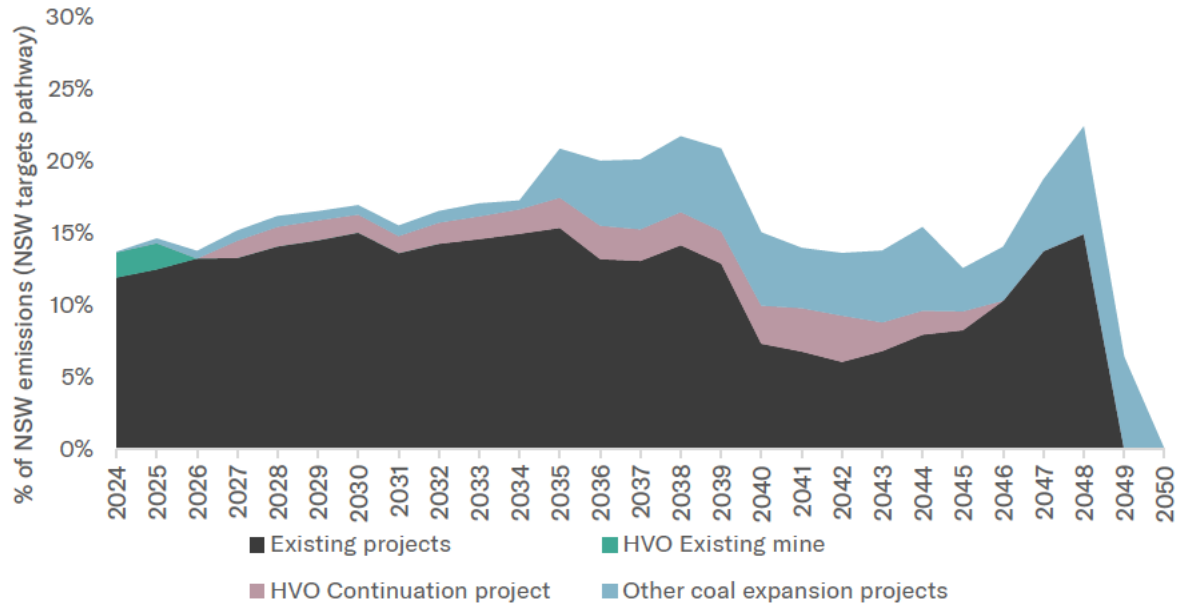
[30] NSW EPA, Second Submission - HVO North and South Open Cut Coal Continuation Projects (SSD-11826681 and SSD-11826621) - EPA Comments to Response to Submissions, p. 2.
[31] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPG23-08, p. 68.
[32] OECD Legal Instruments, Recommendation of the Council on the Implementation of the Polluter-Pays Principle. "The Polluter-Pays Principle constitutes for Member countries a fundamental principle for allocating costs of pollution prevention and control measures introduced by public authorities." (Section I, Paragraph 1). "The polluter should bear the expenses of carrying out the measures […] to ensure that the environment is in an acceptable state. In other words, the cost of these measures should be reflected in the cost of goods and services which cause pollution in production and/or consumption." (Section I, Paragraph 2).

4. Straining NSW emissions targets

The 2024 CBA does not account for the impact of the project on NSW's ability to meet its legislated emissions reductions targets. Coal mining accounts for around 15% of total NSW emissions, which would increase to over 20% by 2035 if all proposed coal mining expansions are approved (see Chart 4.1).

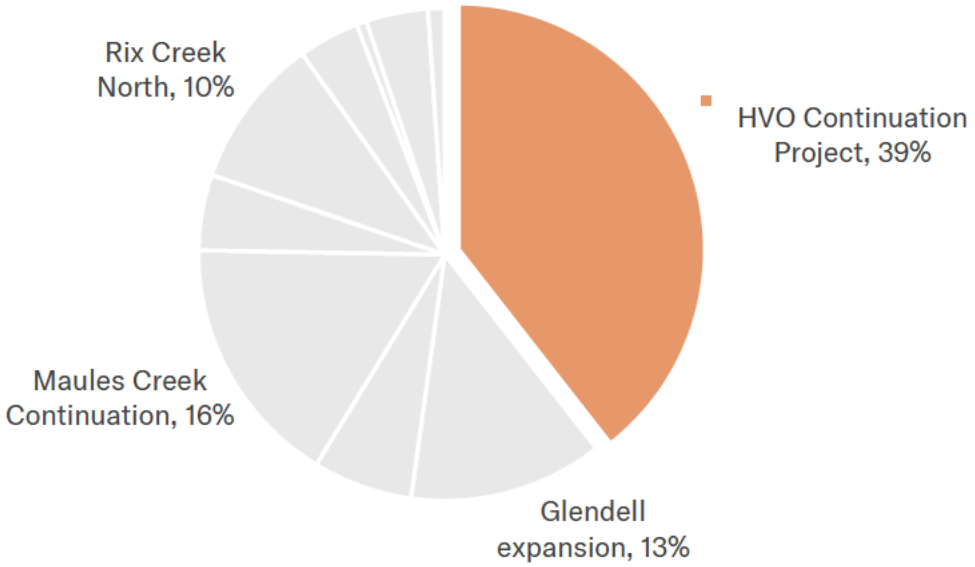
Under the revised scope, our analysis shows that the HVO Continuation Project accounts for almost 40% of these coal expansion emissions in NSW under consideration (see Chart 4.2). This would materially affect the state's ability to meet its emissions reduction targets, and among other concerns, impose a burden on other sectors to compensate with deeper cuts. Hence, it is crucially important to embed legislated targets in the CBA and assessment of this project.

Chart 4.1: Coal mining accounts for a material share of total NSW emissions, which is projected to increase if proposed expansion projects proceed



Source: ACCR modelling

Chart 4.2: Even under revised scope, the HVO Continuation Project makes up nearly 40% of emissions in the NSW coal expansion pipeline



Source: ACCR modelling

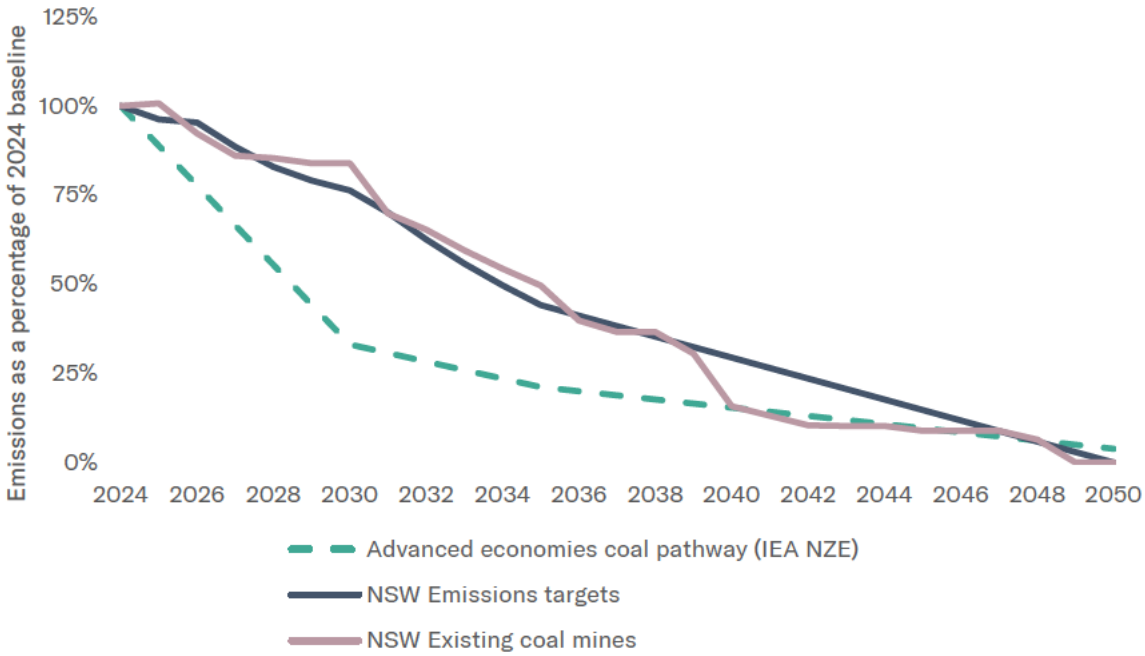
NSW has set emissions reduction targets of 50% by 2030, 70% by 2035 and net zero by 2050, relative to a 2005 base year. NSW is already struggling to meet its 2030 emissions target,[33] with many sectors behind the required decline rate.

Sectors such as transport, land use, housing and infrastructure will face additional challenges to reduce emissions as they expand to meet demand from population growth – estimated at over 20% by 2050.[34] If a single sector reduces emissions more slowly than required under NSW's emissions pathway, other sectors must compensate by cutting emissions more rapidly.

The IEA NZE coal pathway for advanced economies implies there is a strong case for the coal mining sector to reduce emissions more rapidly than the NSW emissions pathway to meet NSW's targets (see Chart 4.3). Emissions from existing coal operations in NSW are projected to decline broadly in line with the state's overall emissions pathway, but the decline rate is already slower than the IEA's NZE advanced economies pathway.

[33] NSW Net Zero Commission, 2024 Annual Report. "Unless action is accelerated, NSW may not reach net zero by 2050 and we will fail to meet our nearer term targets" (p. 9). "There are pressures for increased emissions associated with new coal mining projects (extensions and expansions of existing mines) … Any emissions increases associated with extended or expanded projects would require all other sectors to make greater emissions reductions if the state is to meet its emissions reduction targets" (p. 12).
[34] NSW Treasury, NSW Common Planning Assumptions (population and housing).

Chart 4.3: Scope 1 and 2 emissions from coal in advanced economies need to decline faster than the NSW emissions pathway for net zero by 2050



Source: IEA WEO 2024 extended dataset, NSW emissions targets, ACCR modelling

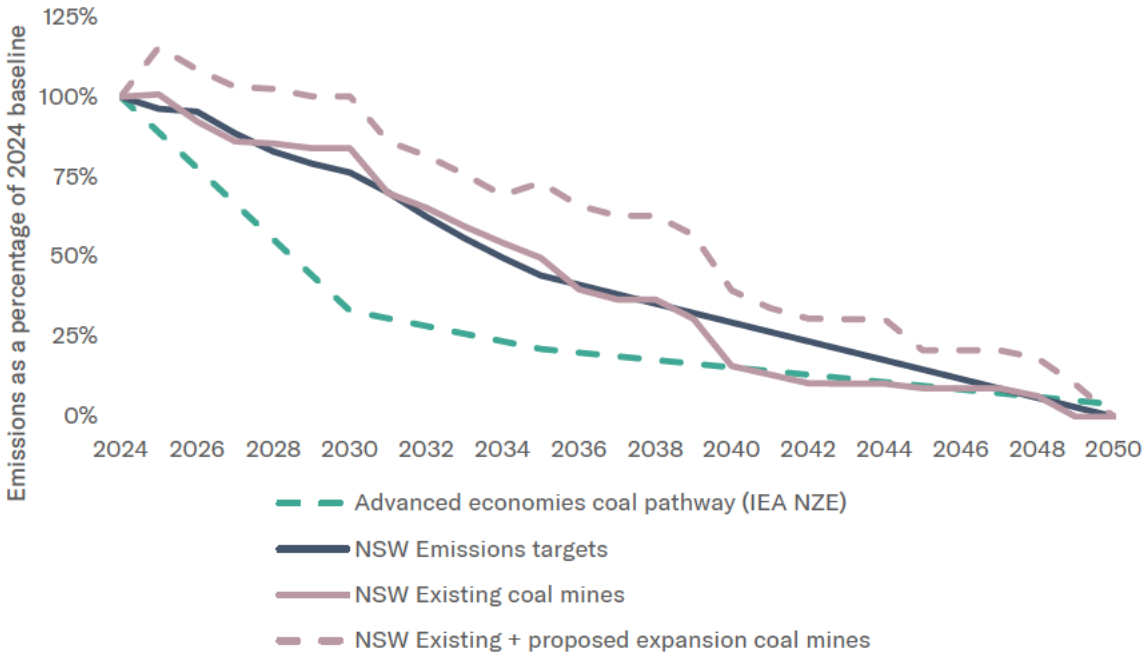
However, at a time when the coordinated and gradual closure of existing coal mines in NSW should be occurring in line with the IEA's NZE advanced economy coal pathway, the NSW Government continues to approve new mine expansions:

- The Mount Pleasant Optimisation Project, approved by the state in 2022[35] and federally in 2024,[36] extended operations by 22 years and is expected to generate 16.3 $MtCO_2e$.[37]
- The Narrabri Underground Extension Project, approved by the state in 2022[38] and federally in 2024,[39] also extended operations by 22 years, with projected emissions of 18.4 $MtCO_2e$.[40]
- The Ashton-Ravensworth extension, approved by the state in 2022[41] and federally in 2024,[42] added 8 years of operation and is expected to generate 6 $MtCO_2e$.[43]

There are currently 10 proposed coal expansion projects under assessment in NSW. If approved, this would contribute to a slower rate of emissions decline in the state's coal sector (see Chart 4.4).

[35] NSW Government Planning Portal, Mount Pleasant Optimisation Project.
[36] ABC News, Government green-lights three NSW coal mine extensions, angering environmental groups.
[37] AnalytEcon, Mount Pleasant Optimisation Project Economic Assessment, p. 3.
[38] NSW Government Planning Portal, Narrabri Underground Mine Stage 3 Extension Project.
[39] Whitehaven Coal, Federal Government approves Narrabri Stage 3 Extension Project.
[40] Whitehaven Coal, Narrabri Underground Mine Stage 3 Extension Project Amendment Report, p. 23.
[41] NSW Government Planning Portal, Ravensworth UG (Mod 10) - Ashton Integration.
[42] ABC News, Government green-lights three NSW coal mine extensions, angering environmental groups.
[43] Ashton Coal Operations Pty Limited, Ashton-Ravensworth Underground Mine Integration Modification, p. 30.

Chart 4.4: Scope 1 & 2 emissions if existing and proposed mines are approved by the NSW Government



Source: IEA WEO 2024 extended dataset, NSW emissions targets, ACCR modelling

5. Appendices

5.1 Coal mining sector in NSW

ACCR modelling of coal mining in NSW

To support analysis of the coal sector in NSW, ACCR has compiled data from multiple documents available through the NSW Planning Portal. The total approved maximum ROM coal production capacity in NSW is approximately 380 Mt/year.[44] In practice, actual production is considerably lower, with 2023 output recorded at 221 Mt[45] – equivalent to around 60% of approved capacity. While this represents average utilisation across all mines, individual mine performance varies – many operate below this average.

For modelling purposes, a linear production forecast was applied based on each mine's remaining marketable reserves, wash yields and approved mine life. Where this forecast materially exceeded either the approved maximum capacity or a reasonable utilisation benchmark, mine-level capacity was capped at 70% of the approved limit. This adjustment, applied to 23 mines, ensures that aggregated mine outputs reconcile with total observed ROM production, while allowing for variation in utilisation rates across the sector. Following these adjustments, the weighted average modelled production across all NSW mines was estimated at 58% of approved ROM capacity. The same methodology was applied to the pipeline of expansion coal projects currently seeking approval.

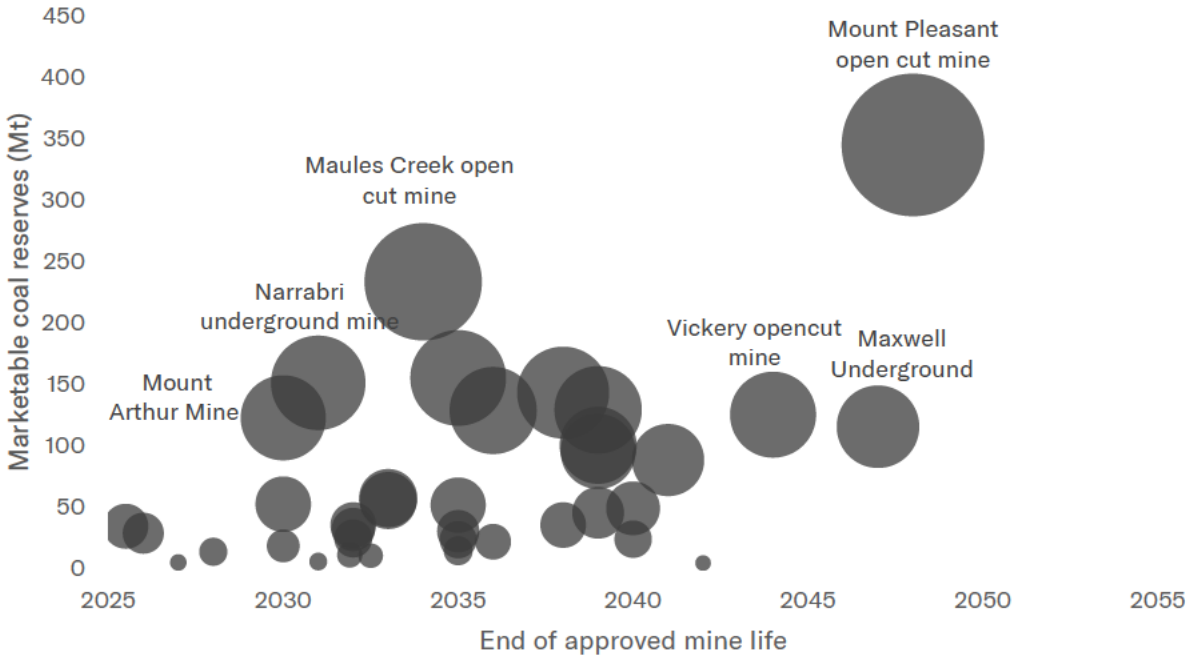
Emissions are forecast based on the production volumes of these projects. Direct emissions are calculated by applying the default safeguard emissions intensity of 0.065 tCO_2e per tonne of ROM.[46] Scope 3 emissions are forecast using the National Greenhouse and Energy Reporting (NGER) emissions factors, corresponding to the specific coal types produced.

Coal mining sector in NSW

There are currently 36 operating coal mines in NSW, with an average approved mine life of 13 years (see Chart 5.1). These mines will produce approximately 1800 Mt of product coal (90% thermal coal and 10% metallurgical coal). This will result nearly 4.5 $GtCO_2e$ of emissions, of which 160 $MtCO_2e$ will be direct emissions in NSW from mining (see Chart 5.2).

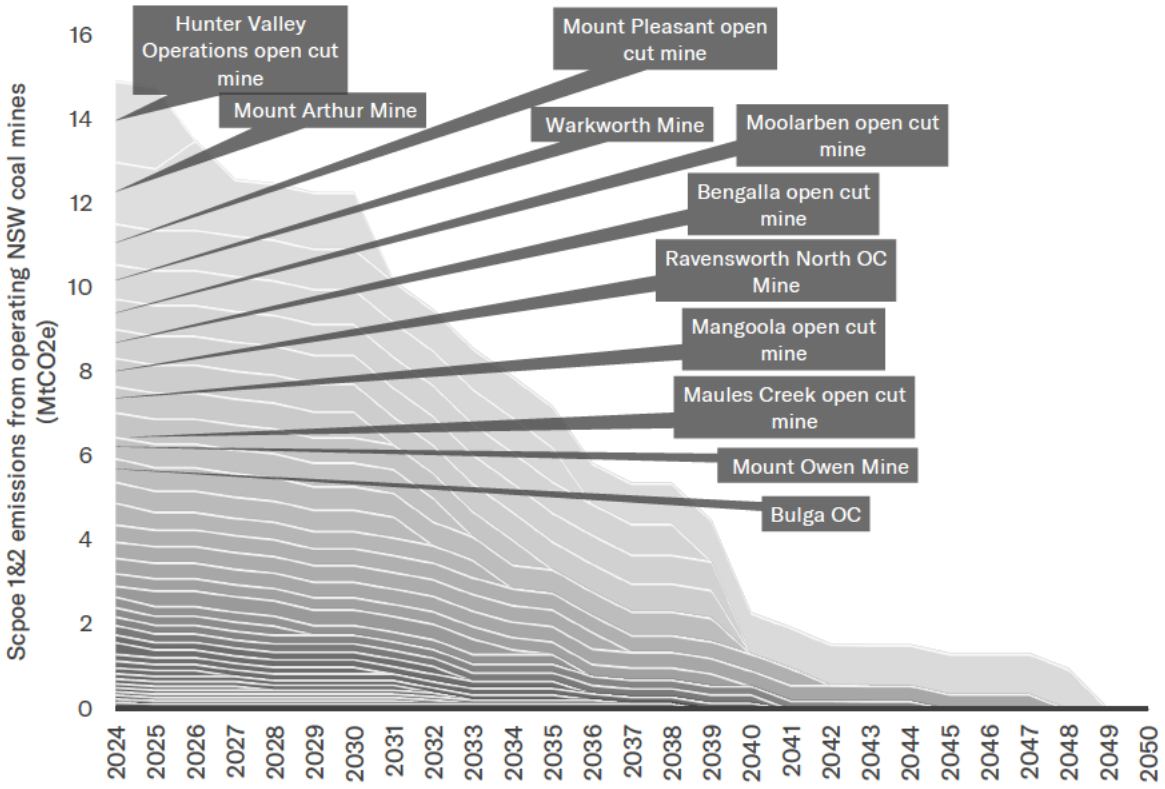
[44] ACCR analysis based on project-level data sourced from the NSW Planning Portal.
[45] NSW Coal Services, 2023 Annual Report, p. 34.
[46] Department of Climate Change, Energy, the Environment and Water, Safeguard Mechanism: Prescribed production variables and default emissions intensities, p. 8.

Chart 5.1: Operating mines in NSW by end of approved mine life and marketable reserves



Source: ACCR modelling

Chart 5.2: Scope 1 & 2 emissions from operating NSW coal mines



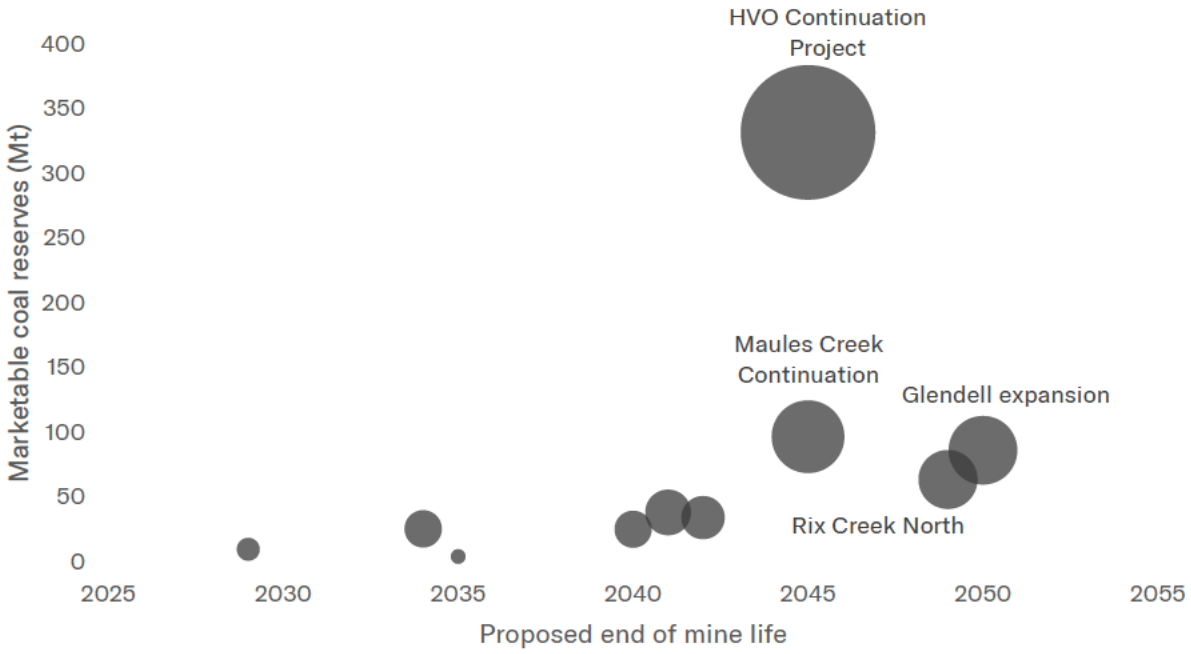
Source: ACCR modelling

The NSW Department of Planning, Housing and Infrastructure is currently assessing 10 projects for an expansion of operations beyond their currently approved end of life (see Chart 5.3). If approved, these projects will generate around 1.5 $GtCO_2e$, of which 40 $MtCO_2e$ will be direct emissions in NSW

(Chart 5.4). Projects seeking approval vary considerably in size (see Chart 5.3) and timelines (see Chart 5.5).

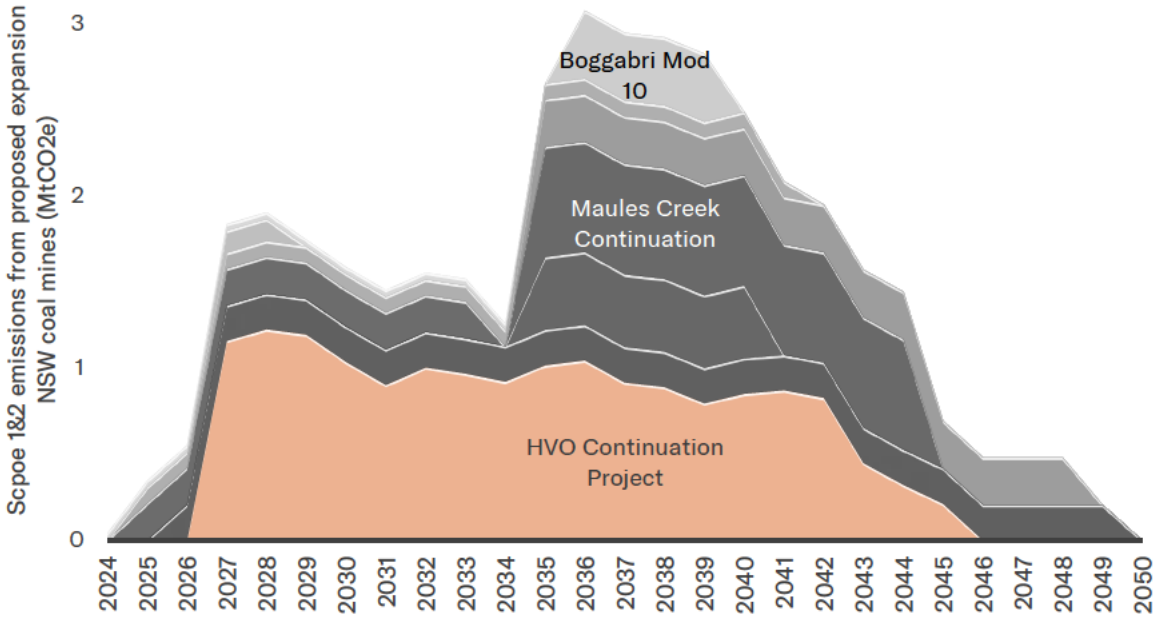
Five large mines account for 85% of the proposed expansions under assessment. The largest by far is the HVO Continuation Project, which accounts for almost 40% of the 10 coal mines seeking approval in NSW (see Chart 4.1).

Chart 5.3: Proposed approved coal mine life expansions and marketable reserves



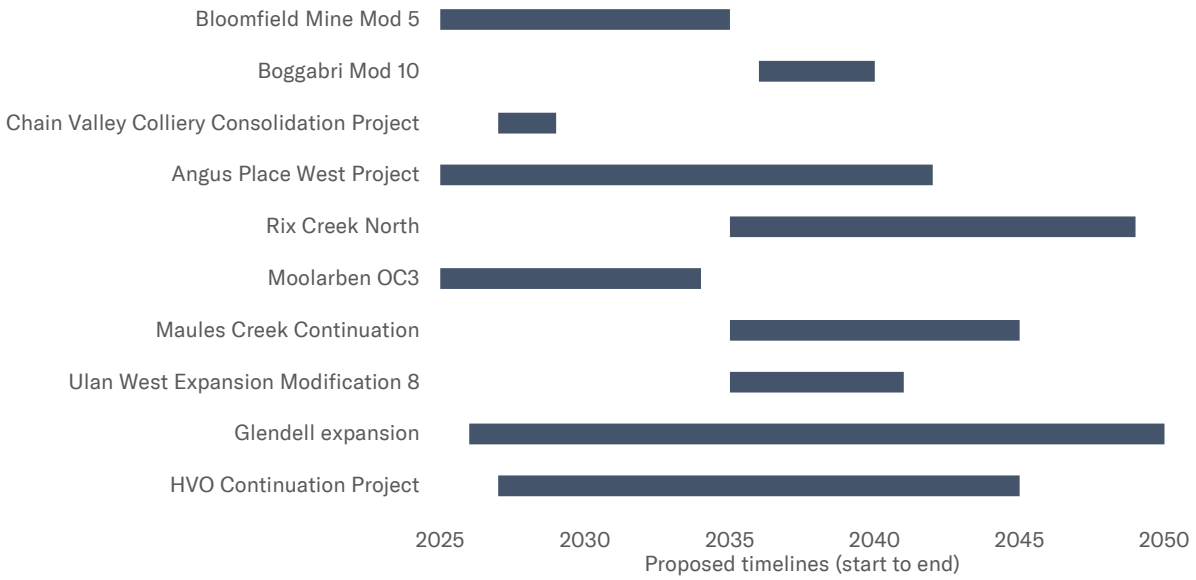
Source: ACCR modelling

Chart 5.4: Scope 1 & 2 emissions from proposed expansion coal mines in NSW



Source: ACCR modelling

Chart 5.5: Proposed timelines for expansionary coal projects currently seeking approval

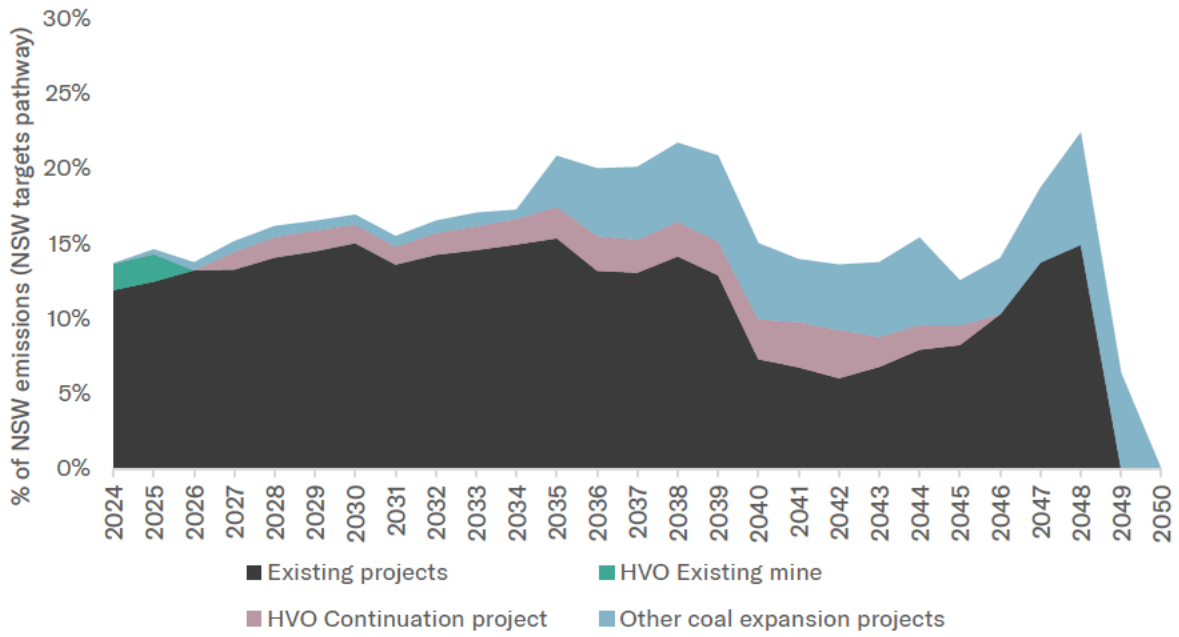


Source: ACCR modelling

Coal mining accounts for around 15 percent of total NSW emissions (see Chart 5.6). While emissions from existing mines are projected to decline, primarily due to closures, the share of coal mining in total state emissions is expected to remain steady as overall NSW emissions fall in line with state targets. However, with several coal expansion projects currently under assessment, coal mining's share of NSW's emissions could increase and exceed 20 percent by 2035 if these projects proceed.

This presents a structural challenge for managing the state's emissions budget. As coal mining holds a stubborn and potentially increasing share of total emissions, other sectors – many of which are essential, hard-to-abate and expected to grow, such as agriculture, infrastructure, housing and technology (including data centres) – will face greater pressure to reduce emissions.

Chart 5.6: Coal mining accounts for a material share of total NSW emissions, which is projected to increase if proposed expansion projects proceed



Source: ACCR modelling

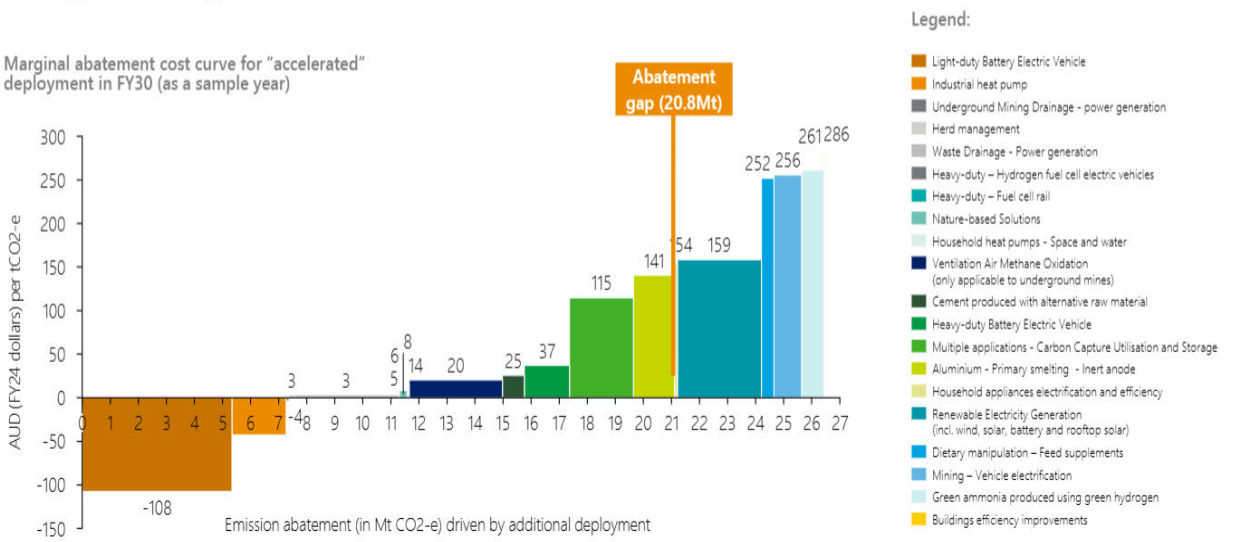
5.2 NSW Treasury directive to use MAC for emissions costs

The 2024 CBA is based on *TPP17-03: NSW Government Guide to Cost-Benefit Analysis*,[47] which has since been replaced by *TPG23-08*.[48] Under *TPG23-08*,[49] greenhouse gas emissions must be costed using NSW-specific cost of emissions.[50] This requirement is reinforced by *TPG24-34: Carbon Emissions in the Investment Framework*,[51] which presents the updated emissions costs – based on a NSW-specific Marginal Abatement Cost (MAC) approach – that must be used in CBAs prepared under *TPG23-08*, in line with the state's legislated climate targets.

[47] EY, Economic Impact Assessment of the Hunter Valley Operations continuation project, May 2024, p. 39.
[48] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPP17-03. The status of this guide is listed as "archived" and it has been replaced by TPG23-08, indicating that it is outdated and no longer applicable for use in current assessments.
[49] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPG23-08.
[50] NSW Treasury, NSW Government Guide to Cost-Benefit Analysis TPG23-08. p. 67. States that shadow carbon prices should be applied "in the absence of a comprehensive Australian emissions market or modelled target-consistent marginal abatement cost." This gap is now addressed by TPG24-34, which introduces carbon values based on a NSW-specific marginal abatement cost approach aligned with the state's legislated climate targets. These values replace the interim prices previously set out in the TPG23-08 Technical Note.
[51] NSW Treasury, Carbon emissions in the Investment Framework TPG24-34. "The carbon value estimates in the technical note [Technical note to NSW Government Guide to Cost-Benefit Analysis TPG23-08]... was [sic] an interim measure applied in the absence of a marginal abatement cost model specific to New South Wales and does not reflect the state's emissions reduction targets." (p. 10).

Chart 5.7 presents a simplified MAC curve, showing how the required abatement volume determines the MAC. The MAC is calculated annually by assessing the least-cost deployment of decarbonisation solutions needed to meet NSW targets.

Chart 5.7: Marginal abatement cost curve for FY30 ("accelerated deployment")[52]



Source: NSW Carbon Values Final report

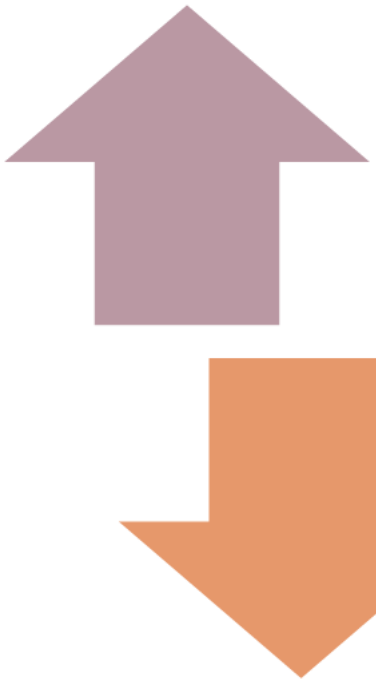
The current MAC uses the latest publicly available scientific research and market data as of September 2023. Cost curves are to be updated every two years.

Several factors could influence the MAC in future years (see Chart 5.8). NSW's slow emissions reduction progress, the approval of emissions-intensive projects in 2024, limited decarbonisation solutions and additional high-emissions projects in the pipeline are likely to widen the gap between the state's emissions and its targets, increasing the need for abatement.

As lower-cost abatement options are depleted, costs are expected to rise along the MAC curve, driving up carbon values. While advancements in decarbonisation technologies could improve efficiency and reduce costs over time, current constraints suggest that abatement costs are more likely to increase in the near future.

[52] NSW Treasury and Deloitte, NSW Carbon Values Final report, p. 19.

Chart 5.8: Factors that can change MAC



Increase in MAC

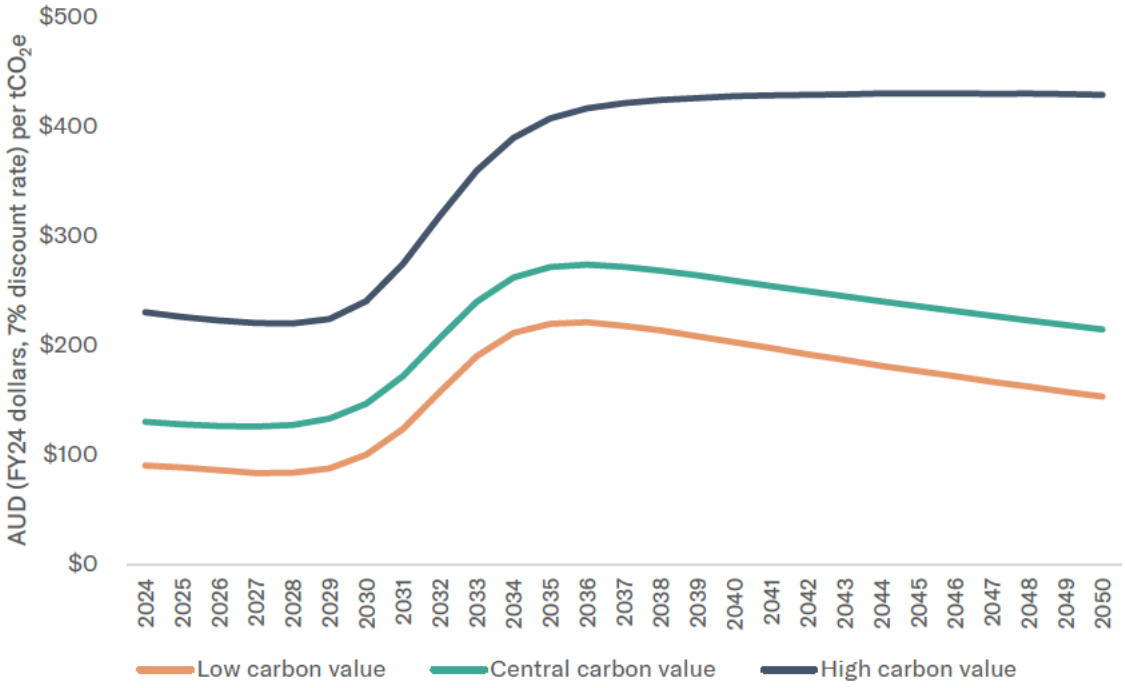
- Slower-than-required emissions reduction
- Approval of emissions-intensive projects, increasing total abatement required
- Limited advancements or investment in decarbonisation technologies
- More ambitous targets

Decrease in MAC

- Faster-than-required emissions reduction
- Rapid advancements in or deployment of decarbonisation technologies
- Economic slowdown or structural shift away from emissions-intensive industries

The emissions costs presented by the NSW Treasury are based on the updated Social Discount Rate (SDR) of 5%. However, the 2024 CBA was conducted using a 7% discount rate. As a result, we have adjusted the carbon values accordingly to ensure a like-for-like comparison (see Chart 5.9).

Chart 5.9: Adjusted carbon values (7% discount rate) in alignment with the NSW Government's guide to cost-benefit analysis



Source: NSW Carbon Values Final report, ACCR modelling

5.3 Breakdown of coal price forecast assumptions on the project's benefits to NSW

Table 5.1: Impact of coal price forecast assumptions on project economic benefits[53]

Scenario	Avg. Thermal Coal Price ($/t)	Revenue ($m)	Royalties ($m)	Corporate Tax ($m)	Direct Benefits to NSW ($m)	Project NPV ($m)	Profit After Tax ($m)
2024 CBA base case	$132	$30,800	$3,240	$898	$4,340	$5,500	$6,370
IEA APS 2024	$115	$29,000	$3,050	$744	$3,920	$4,360	$5,280
IEA NZE 2024	$96	$25,000	$2,620	$394	$3,210	$1,880	$2,800

Source: ACCR modelling

[53] Minor differences between the 2024 CBA base case and this table are due to variations in modelling configuration or input data. These differences are not material and do not affect the overall conclusions. All figures in the table are in AUD 2024 real terms.

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