

Fuel Security and the Diesel Fuel Tax Rebate: Assessing Reform Options

Master deck
September 2026

Executive Summary



Executive Summary

Context and purpose

- **The diesel fuel tax credit is under pressure for 3 key reasons and the evidence base for reform is not well documented:**
 - The FTC entrenches reliance on imported diesel, at a time of energy insecurity for Australia. If current diesel prices persist (~\$1.90/L, Sep 2026¹), BEV haul trucks will already be net economic over their lifetime.
 - It is the 16th largest budget expense, with ~47% going to the resources industry, and is growing faster than the overall budget.
 - Pulls in the opposite direction to decarbonisation policies like the Safeguard Mechanism by lowering the effective cost of diesel.
- The purpose of this work is to provide a robust evidence base of the consequences of proposed policy options (rebate removal, strengthened Safeguard Mechanism and Transition Tax Incentive (TTI)) and propose new options as needed

Assessment of current reform options

- Our work takes into account four factors: international competitiveness (costs to miners), fuel security (reduced used of diesel), decarbonisation and government budget (ability for Commonwealth to recover funds)
- **Overall we find that none of the existing option delivers on all key considerations although TTI is probably the best:**
 - Rebate removal is the fiscal winner at \$38B, but all-in costs rise 3.5% for iron ore and 5.6% for met coal which may be costly to absorb.
 - A strengthened Safeguard barely touches costs, but 83% of its abatement is bought ACCUs, it displaces only 421ML of diesel, and the budget goes backwards by \$2.9B.
 - The TTI abates the most at 22.4Mt and displaces 3,817ML, but returns only \$5.3B. It is currently the best reform option

The Fuel Security Reinvestment Mechanism

- We have developed a new reform option, the **Fuel Security Reinvestment Mechanism (FSRM)**, to better balance different metrics and plug the gaps in other reform options. **The FSRM balances the four metrics and improves fuel security:**
 - Large miners keep 65% of fuel tax credits above \$50M, contingent on reinvestment in energy security. 10% funds a guaranteed package for juniors and mid-tiers (\$1.9B), 25% goes to the budget (\$10B)² which can support and ag / trucking fuel security measures .
 - It abates 18.6Mt against the TTI's 22.4Mt, and returns roughly twice the budget benefit.
 - A four-year phase-in with rollover of capex obligations, and exclusions for farming, fishing, trucking and mines with under ten years of life.
 - Importantly it would have much greater flexibility for fuel security measures compared against the current options which would provide short term and long-term relief for these sectors



Note: 1. After subtracting GST and FTC; 2. The \$10B return to budget includes both first- and second-order modelled effects. First-order effects are modelled at ~\$4.75B.

Overall finding: No current option delivers for all stakeholders

Reform Option ¹	Range of competitiveness impacts for different archetypal producers				Key issues with archetypal reform options	
	Competitiveness Average percentage increase in all-in costs to 2035	Fuel Security Contribution Cumulative ML of diesel displaced to 2035	Decarbonisation Cumulative tCO ₂ e abated to 2035	Cumulative Budgetary impact to 2035 Est. Contribution to government fiscal position in A\$B	Commentary	
	Iron Ore Metallurgical coal					
Rebate removal ²	3.45%	5.61%	3,353ML	9.09Mt	+\$38B	• Delivers best outcomes for budget, with strong fuel security and decarbonisation outcomes. • However, large negative competitiveness impacts are seen.
Strengthened Safeguard	0.08%	0.49%	421	9.09 ACCU Component 83.2%	-3	• Competitiveness impacts are small, with good decarbonisation outcomes driven by ACCU purchases. However, there is a negative budget impact, economy-wide costs, and fuel security impacts are low.
TTI ³	0.51%	0.67%	3,817	22.38	5	• TTI sees declining all-in costs over the horizon. • Delivers highest decarbonisation and fuel security with small competitiveness impacts. Budget upside limited.



Note: 1. All impacts (competitiveness, fuel security, decarbonisation, budget) are additional to what would occur under business-as-usual (e.g., technology uptake) to avoid double-counting. 2. We model the impacts of rebate removal for the resources industry ONLY. Our modelling for rebate removal does not include a \$50M cap. However, we expect that the introduction of such a cap would not lead to substantial changes from the results discussed in this report. 3. The modelled TTI scenario includes a \$50M cap. FTC claims above the \$50M cap are subject to the TTI, below-cap amounts are untouched.

We propose a Fuel Security Reinvestment Mechanism as an option which better balances the needs of all stakeholders and improves fuel security

WHAT THE FUEL SECURITY REINVESTMENT MECHANISM IS

Rather than removing the diesel rebate, the FSRM reallocates FTCs above \$50M. **65% of these FTCs for large miners are converted into an energy-security investment stream.**

The remainder goes to **junior & mid-tier miner support (10%)** and **budgetary needs (25%)**.

- Large miners **retain 65% of fuel tax credits >\$50M** only if reinvested in **technology-agnostic** energy-security spend.
- Junior & mid-tier miners receive a **guaranteed Special Assistance Package** (~\$1.9B) to become energy secure, as they face greater hurdles.
- **Budget savings** can fund the Fuel Security Package and **support for trucking and farming**, or budget repair.
- A deliberately **slow, 4-year phase-in** gives miners time to scope projects and reach FID. Funds can be deployed across a wide range of energy security technology – more flexible than other options.
- **Exclusions:** Farming, fishing and trucking industries. Mines with <10 years of asset life remaining, with no further extensions or expansions claimed.



HOW IT COMPARES ON THE 4 CRITERIA

Reform Options	Competitiveness ≤ 1.5% impact to 2035	Fuel Security ≥ 300ML diesel displaced to 2035	Decarbonisation ≥ 15Mt CO2e abated to 2035	Budget ≥ \$10B saved to 2035
1 Rebate removal	✗	✓	✗	✓
2 Strengthened Safeguard	✓	✗	✗	✗
3 TTI	✓	✓	✓	✗
4 Fuel Security Reinvestment Mechanism	✓	✓	✓	✓

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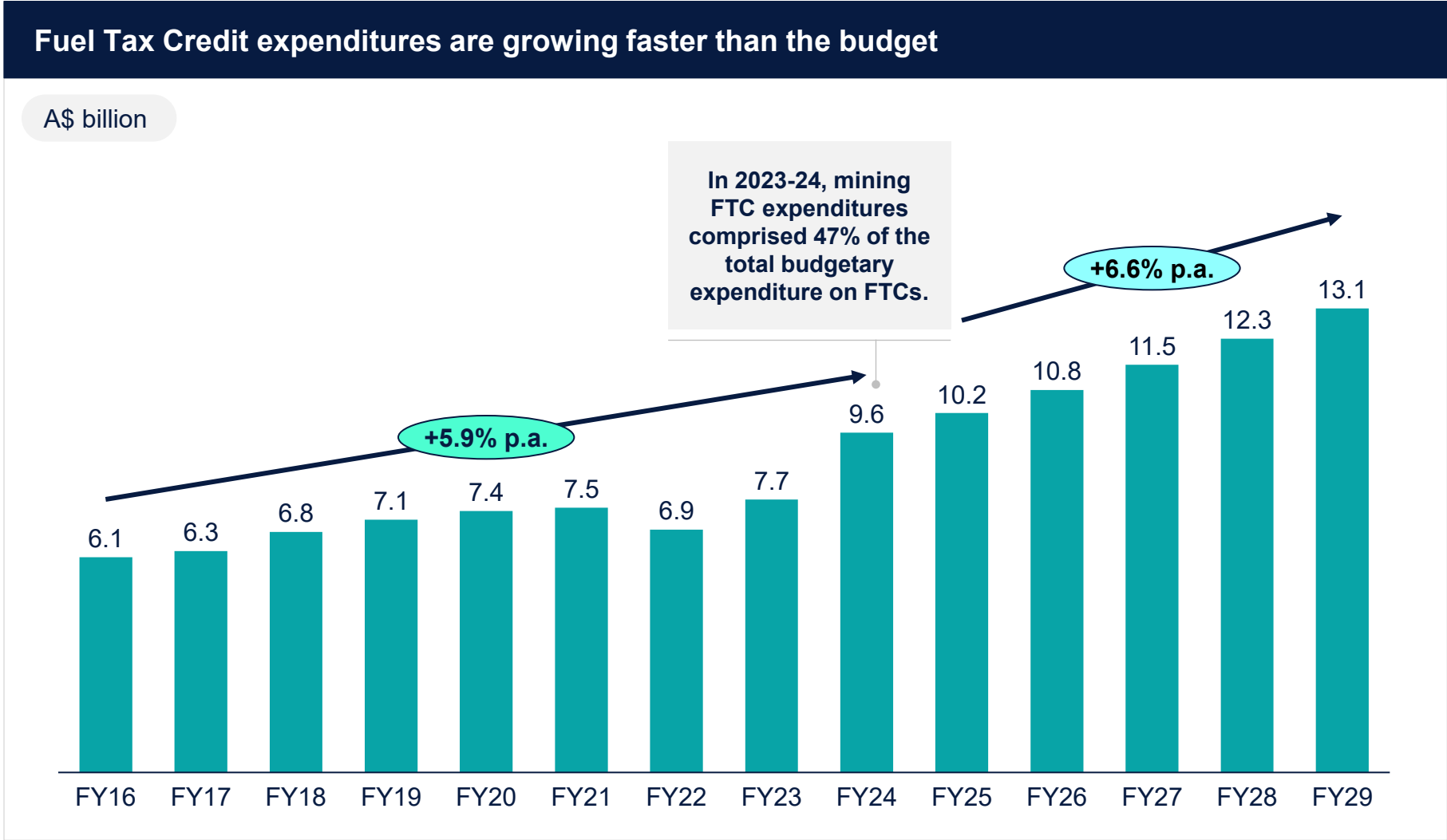
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1. Context, Purpose, and Method



Fuel Tax Credit (FTC) Expenditures are projected to grow ~1.7x as fast as the overall budget



Key Takeaways

1

FTCs are the 16th largest budget programme by expense – and growing: In FY25, FTC expenditure was \$10,151M, up 67% from FY16.

2

FTC expenditure growth is expected to accelerate: FTC expenditure growth is forecasted to be 6.6% p.a. to FY29, significantly higher than overall budget expenditure growth at 3.91%.¹ This is a jump from 5.9% p.a. from FY16-FY24.

3

Mining is growing at roughly the same rate as overall FTCs: Mining comprises a stable 45-47% of the FTC expenditure over time.

But the status quo is coming under significant pressure from three areas

1 Energy Security Pressures

- Iran-driven oil price shock has **increased diesel prices 111%** from \$1.14/L (Sep 2025) to \$2.41/L (end-April 2026).¹ Australia's >85% diesel import dependence leaves miners uniquely exposed.²
- **Repeated diesel price and supply shocks** (post-COVID, Russia-Ukraine, Iran) have made **diesel dependence** a structural risk – creating major operational challenges and disrupting capital allocation plans.
- **Smaller miners risk entering care and maintenance, if this crisis continues. Energy security is key to protecting the jobs and economic impacts of the highly productive Australian mining sector.**

2 Climate Commitments & Pressure

- IMF, World Bank and IEA classification of DFTR as a fossil fuel subsidy creates **international pressure**,³ amplified locally by LEAN and Greens. Labor Party platform commits to “removing disincentives to orderly decarbonisation.”⁴
- There are **public expectations to meet NDC targets** – and diesel equipment is one of the few areas where some feasible substitutes are emerging.

3 Fiscal Pressure

- **Both Coalition and Labor governments have considered DFTR reforms** because its growth is ~70% higher than overall budget growth.⁵
- **Structural deficits over the next decade will drive Treasury to pursue tough cuts** – previously sacrosanct policies (NDIS, CGT) are now in scope. This may spur a relook of the DFTR.



This has led to a variety of reform scenarios being proposed

1 Rebate Removal

The rebate is fully removed.¹

The value flows to government as fiscal saving with no requirement to spend on decarbonisation.

Key Assumptions

- **Boosts BEV uptake:** Shifts breakeven point from 2035 to 2026. BEV adoption from 2029.
- **Adoption of Decarb:** Post-breakeven, adoption phased over asset life.

2 Strengthened Safeguard

Miners receive full rebate but Safeguard baselines are tightened to match decarbonisation under rebate removal.

Key Assumptions

- **CO₂** - Baseline decline rate stepped up (add'l 2.73% decline p.a. from 2031-35)² to match abatement from rebate removal.
- **ACCU Price Escalation:** Prices will escalate in line with demand growth.
- **Adoption of Decarb:** Rising ACCU prices bring renewables and BEV breakevens forward to 2033-34.

3 Transition Tax Incentive

Rebate is untouched, contingent on deployment of equivalent CAPEX into decarbonisation (required for claimed amounts above \$50M).

Key Assumptions

- **CAPEX-only application:** TTI funds only defray CAPEX costs for decarb technologies, OPEX borne by company.
- **Adoption of Decarb:** Switching is based on mandatory CAPEX spends, rather than annualised switching rates
- **Renewable adoption makes BEV cheaper:** ~25% of renewable generation capacity created will power BEVs. Breakeven shifted to 2026. BEV adoption from 2029.

Degree to which rebate is kept



Note: 1. We model the impacts of rebate removal for the resources industry ONLY. Our modelling for rebate removal does not include a \$50M cap. However, we expect that the introduction of such a cap would not lead to substantial changes from the results discussed in this report. 2. On the tentative -3.285% decline rate set from 2031-35, the Strengthened Safeguard option would raise this to a -6.01% decline rate.

We analyse reform scenarios and consider their impacts on 4 metrics

01



Competitiveness

Net change in the ability of Australian mines to compete on costs against global peers and continue to meet revenue expectations. This is done by assessing key cost metrics and total impacts, where relevant.

02



Fuel Security

Net change in diesel usage¹ by Australia's mining industry, given Australia is extremely import-dependent on diesel.

03



Emissions

Net change in greenhouse gas (tCO₂-equivalent) emissions emitted by Australia's mining industry.

04



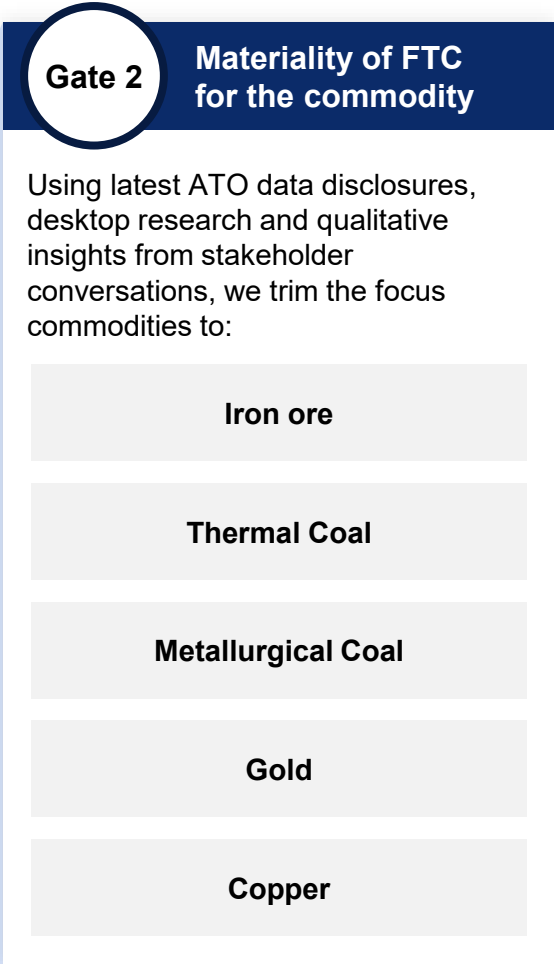
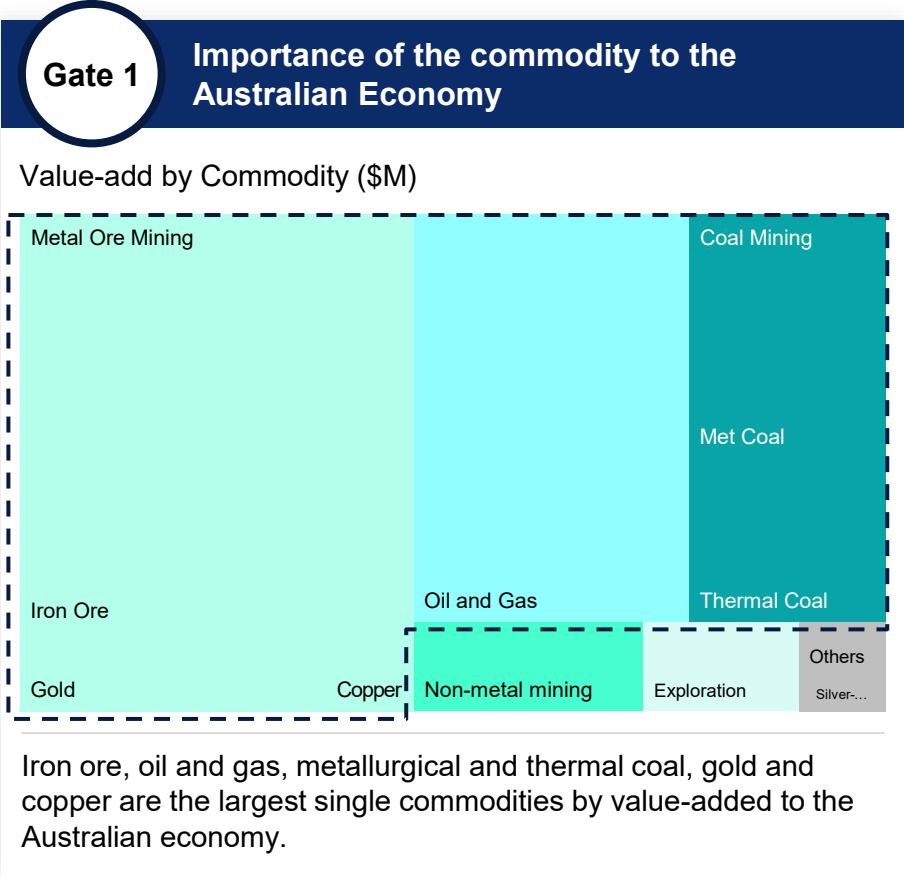
Budgetary impacts

Net changes to Australia's Federal budget, considering both outflows from government payments such as rebates and inflows from government revenue such as tax.



Note: 1. Changes in gas usage are not considered due to Australia's significant domestic gas industry, and further considering the impact of the forthcoming gas reservation policy.

We identify iron ore and metallurgical coal as key commodities for our impact analysis



Gate 3

Additional criteria for prioritisation (Top 3 selected for analysis)¹

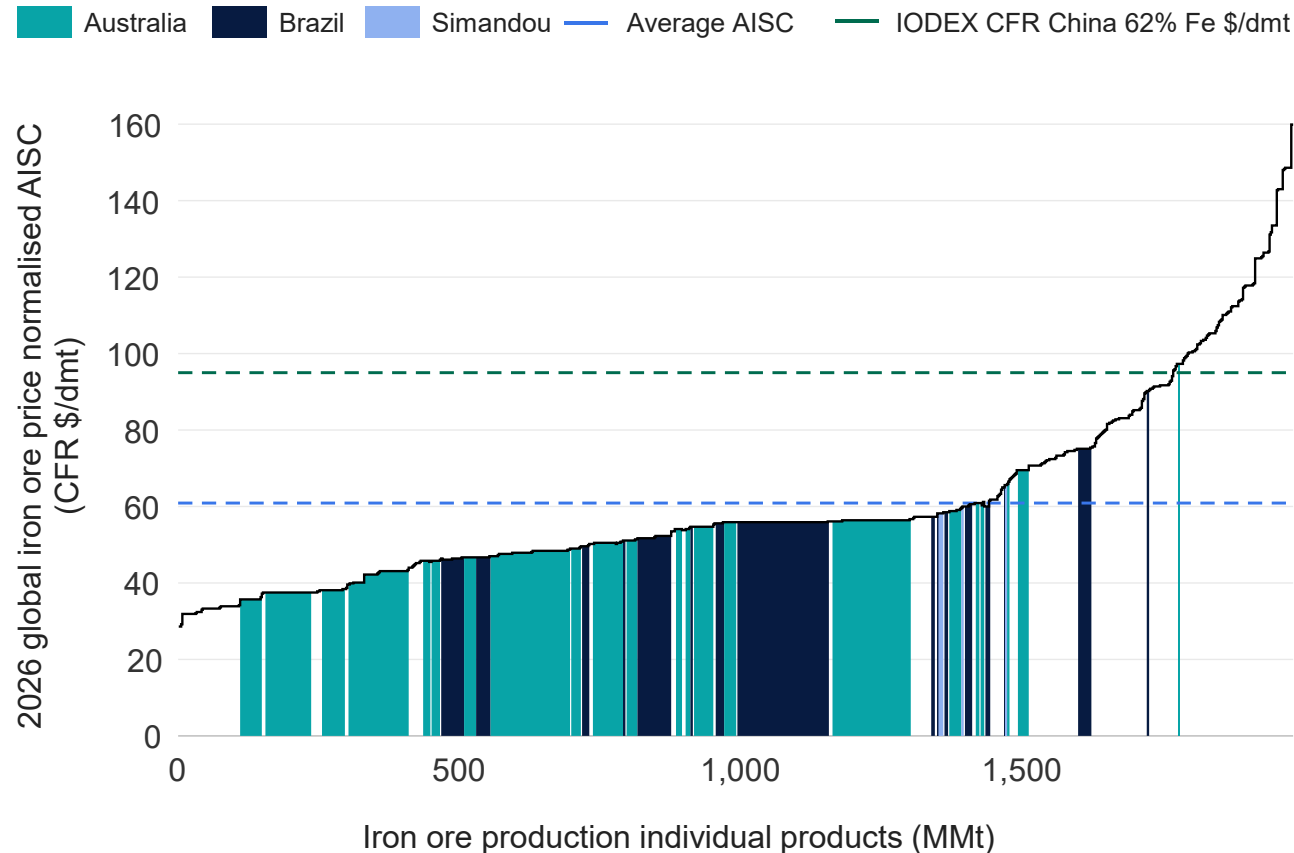
Price, Demand & Margin Vulnerability	Long-Run Economic Importance	Decarbonisation Pathway Availability
Rank	Commodity	Composite Score
1	Iron ore	4.00
2	Metallurgical Coal	4.00
3	Thermal Coal ²	3.67
4	Lithium ³	2.67
5	Gold ⁴	2.33
6	Copper ⁴	2.33

1. Each criterion was given equal weight and involved a qualitative assessment on a scale of 1-5, with 1 being the lowest and 5 being the maximum. All scores are with respect to Australia, not global trends. Score results are as follows: Iron Ore (4|5|3), Met Coal (5|4|3), Thermal Coal (5|3|3), Lithium (3|4|1), Gold (2|3|2), Copper (2|3|2). 2. Analysis on competitiveness impacts on thermal coal can be found in the appendix. 3. We also add in lithium to our prioritisation exercise given its increasing importance as a critical mineral and Australia's significant proportion of global production, but exclude nickel as operations have been decimated due to low-cost Indonesian competition, with little chance of long-term recovery. Any negative impacts from DFTR reform will likely be offset for both lithium and nickel, given their importance as critical minerals, due to government carve-outs and other subsidy schemes. 4. Gold and copper mining, while key industries and sources of revenue, encounter market dynamics of increasing demand (safe haven (Gold), energy transition, artificial intelligence & economic growth in developing countries (Copper)) along with restricted supply. Thus, pressure on margins and sales is less intense, leading to a lower rank.

On iron ore, Australia starts from a position of relative strength, with ~75% of production in the global Q2

~75% of Australian production is in the global Q2¹

Normalised All-in Sustaining Cost (AISC) Curve (CFR \$/dmt), 2026



Key Takeaways

- **Context & Demand:** Iron ore demand forecast +15% to 1095 Mt by 2035.² Supply to match demand growth; emergence of high-grade iron ore from Guinea (Simandou) is a landmark development.¹
- Australian miners aim to defend cashflows from existing Pilbara assets to fund domestic/overseas expansions as ore grades decline.
- **Australia's current positioning:** WA ranks top-tier on Mineral Potential – this factor comprises ~60% of investment decisions, policy accounts for the rest. WA ranks 6th (Investment Attractiveness) and 13th (Policy Perception) versus Brazil at 19th and 29th.³
- Australian majors are among China's lowest-cost suppliers (C1, CFR).
- Mid/high-cost producers (e.g. Mineral Resources) are structurally disadvantaged to Brazilian competition, despite DFTR, but retain advantages over competitors from China, India, Canada, South Africa.¹
- **Future Australia positioning:** China's procurement consolidation (CMRG) may compress margins via stronger buyer leverage.⁴
- Planning/permitting timelines in WA are lengthening and exceeding government guidelines – eroding the investment climate.³

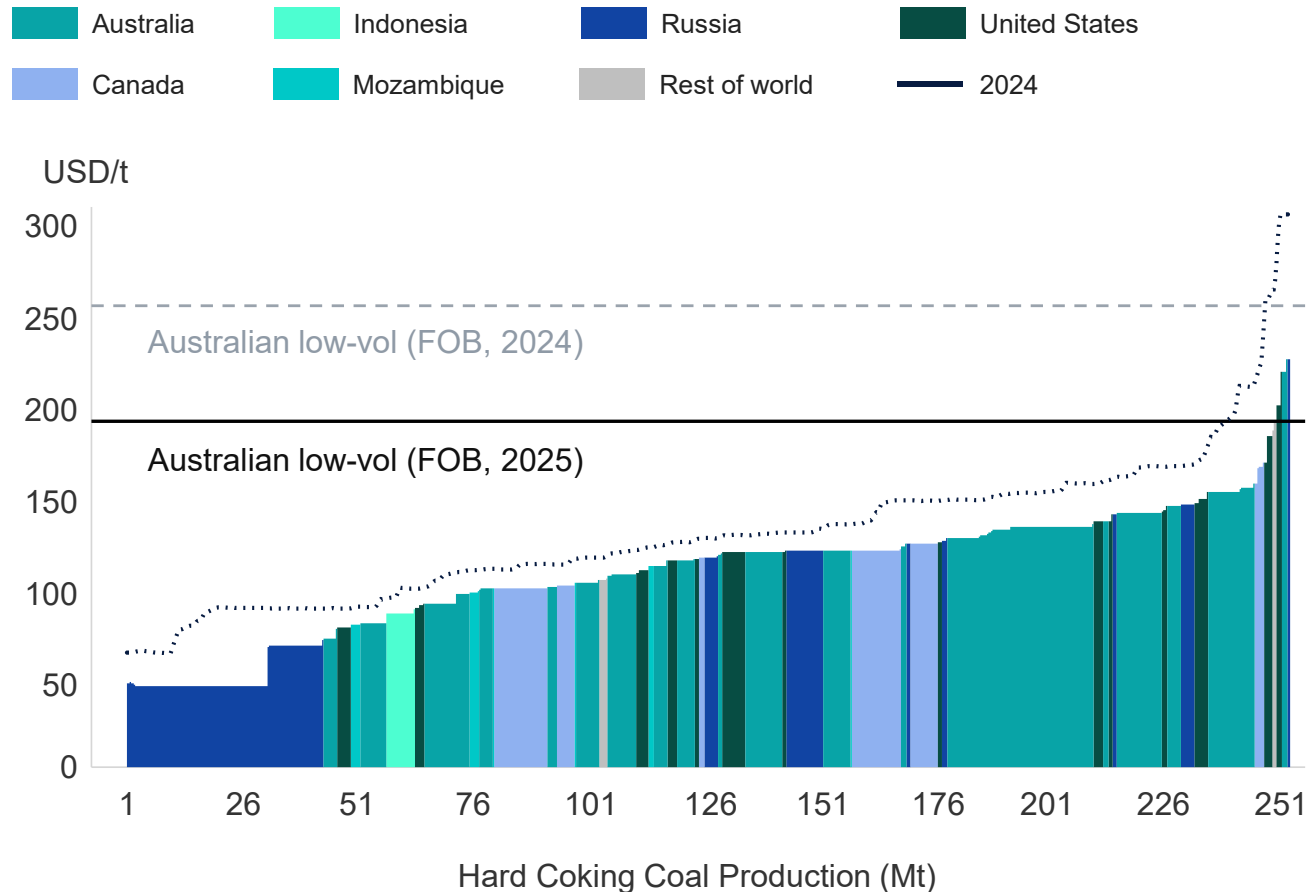


1. Adapted from S&P Global (2026). 2. GlobalData (2026). 3. Fraser Institute, Annual Survey of Mining Companies 2025. 4. AFR (2026a), AFR (2026b), The Australian (2026), ASPI (2026).

For metallurgical coal, the competitiveness picture is mixed with only ~35% of production in the bottom half of producers

Australian Hard Coking Coal mines are in the global Q3/Q4¹

Free-on-Board Cost Curve for Hard Coking Coal (\$/t), 2025



Key Takeaways

- **Demand & Context:** IEA forecasts ~5% global met coal demand decline to 2030 – China, EU, Japan contraction outweighs India, Indonesia growth.¹
- India is now Australia's largest met coal buyer.²
- **Australia's current positioning:** Production is predominantly hard coking coal (HCC), sitting in Q3/Q4 of cost curve but earning a quality premium (low impurities).¹
- Rising costs means key miners are evaluating financials and exposure e.g. BMA undergoing programme of divestment, care & maintenance, and financial health analysis.³
- QLD (90% of Australian met coal) ranks 13th on Investment attractiveness - ahead of USA, Canada, Mozambique, Indonesia - though progressive royalties remains a concern.⁴
- **Future Australia positioning:** Australian met coal production forecast to rise modestly to 2030, driven by Indian and ASEAN demand.¹
- Longer-term, shifts to Electric Arc Furnaces (EAFs) and Direct Reduction of Iron (DRI), may trim demand to 2035.



2. Assessment of Reform Scenarios



Methodology: we model scenario-induced electrification and diesel displacement, then measure impacts vs BAU over 2026-2035

Modelling electrification & diesel displacement

1. Assess the current state of diesel dependence

- Size FTC claims across mining from ATO, CER and company data, incl. the distribution of claims up to a \$20M cap.
- Estimate diesel, gas and fleet intensities of production by commodity (L/Mt, GJ/Mt, trucks/Mt) using company, research and government disclosures.
- Position Australian miners on global cost curves (quartile) as the baseline.



2. Model switching economics under each scenario

- Model TCO for key diesel displacing and electrifying technologies: BEV vs diesel haulage and of renewables + storage vs gas / diesel generation, for low-, mid- and high-cost archetypes. Regional variations are accounted for.
- Model ACCU price paths and Safeguard baseline decline rates (incl. CCM cap); apply each scenario's levers (rebate %, baselines, TTI co-funding).



3. Identify breakeven points and adoption pathways

- Model breakeven years by technology under Business-As-Usual.
- Model breakeven years by scenario; phase adoption over fleet-replacement cycles with an industry-average adoption lag¹; size renewables and storage alongside BEV deployment.



4. Develop uptake rates for diesel displacing technologies

- Understand asset lifespans and replacement decision cycles for resources industry
- Model trends in equipment growth and generation capacity growth
- Model annualised uptake rates for key technologies

Measuring scenario impacts vs BAU (2026-2035)

5. Quantify competitiveness impacts (metric 01)

- Impacts are assessed on the percentage change in all-in costs with respect to Business As Usual², as these include measures of CAPEX that more fully account for the changes miners experience through adopting different technologies.



6. Quantify fuel security, emissions and budgetary impacts (metrics 02-04)

- Estimate diesel litres avoided (02) and tCO₂e abated (03) by the induced battery electric and renewables cohort, net of BAU; size the net budget impact: FTC outflows avoided, company tax offsets. (04).
- 1st- and 2nd-order effects are counted; 3rd-order effects (e.g. budget impacts from broader GDP and wage changes) are out of scope.

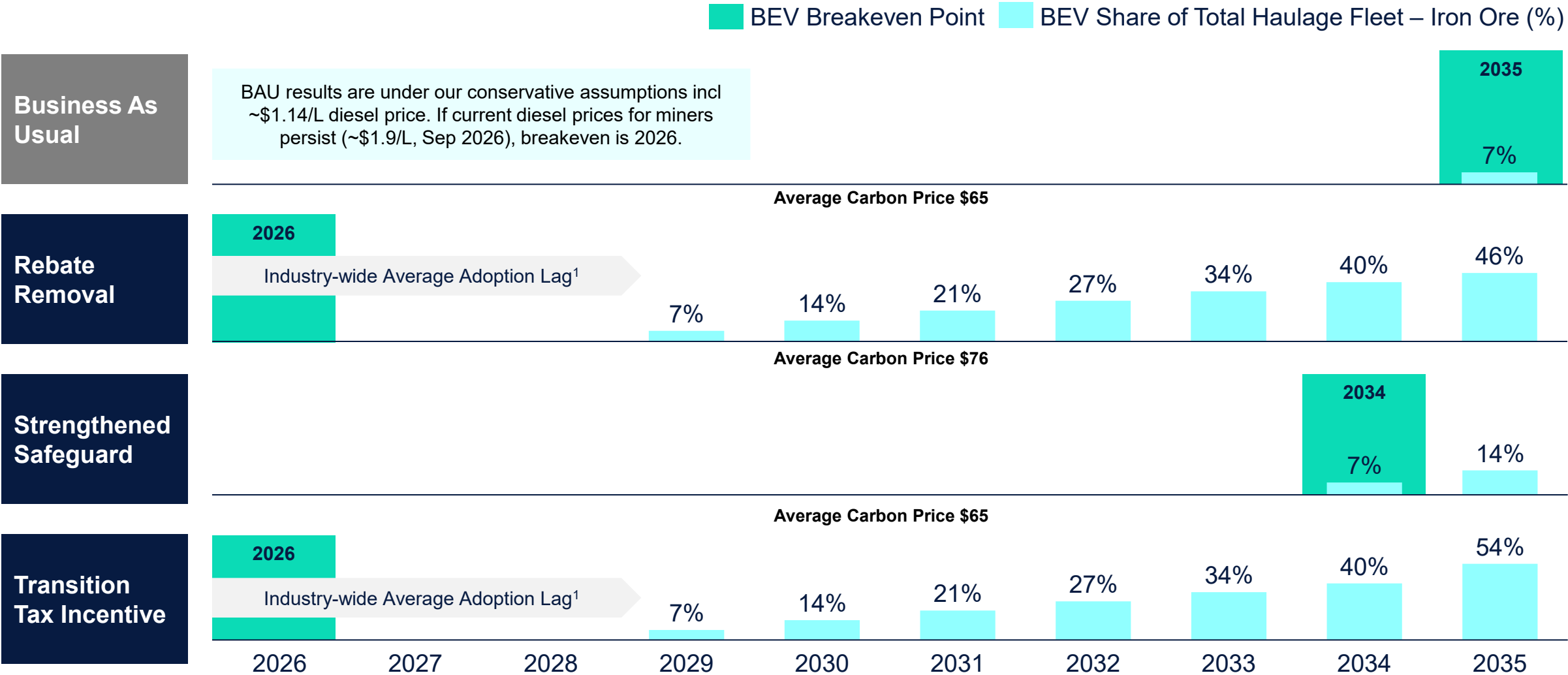
Sensitivities tested

- **Diesel prices:** Medium (A\$1.43/L) / High (A\$2.28/L)
- **Renewables LCOE:** ±20%
- **Carbon prices:** ±20%
- **BEV CAPEX:** Declines with battery learning rates (BNEF forecasts)

Overarching assumptions: all impacts are measured vs Business-As-Usual (BAU) over 2026-2035 for iron ore and metallurgical coal; committed decarb proceeds considered to be BAU, adoption reflects industry-average fleet replacement.



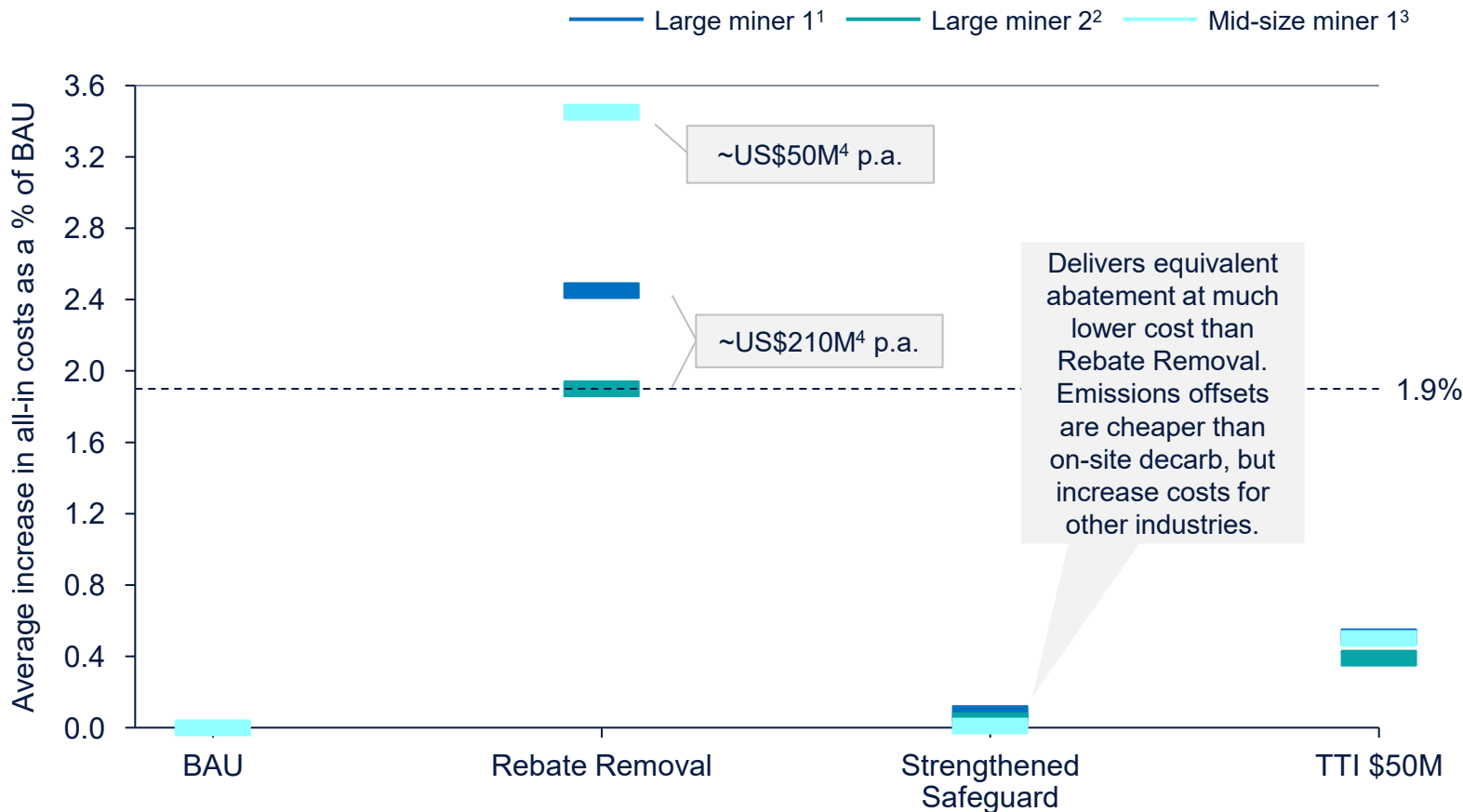
Scenario outcomes are influenced by their different BEV breakeven points



Note: 1. Note that this is an industry-wide average; while each mine site will have different fleet replacement cycles and different miners will have different capacities to retrofit or go for early replacement, this analysis looks at industry-wide average adoption. Stakeholder consultations and desktop research indicate 2-4 years are needed for procurement and initial deliveries, given trials have already been initiated in the Pilbara. We model a 3 year adoption lag for 2026 breakevens for realism. See Appendix for further detail. Fortescue is excluded as active deployment is scheduled to begin in late-2026 with operational changes, OEM negotiations, financing, and renewables deployment having already progressed substantially regardless of whether reform scenarios materialise.

For iron ore, rebate removal leads to ~2%+ cost increases, while other scenarios have less than half that impact

Average increase in All-in costs to 2035 as a percentage of BAU costs (%)



Key Takeaways

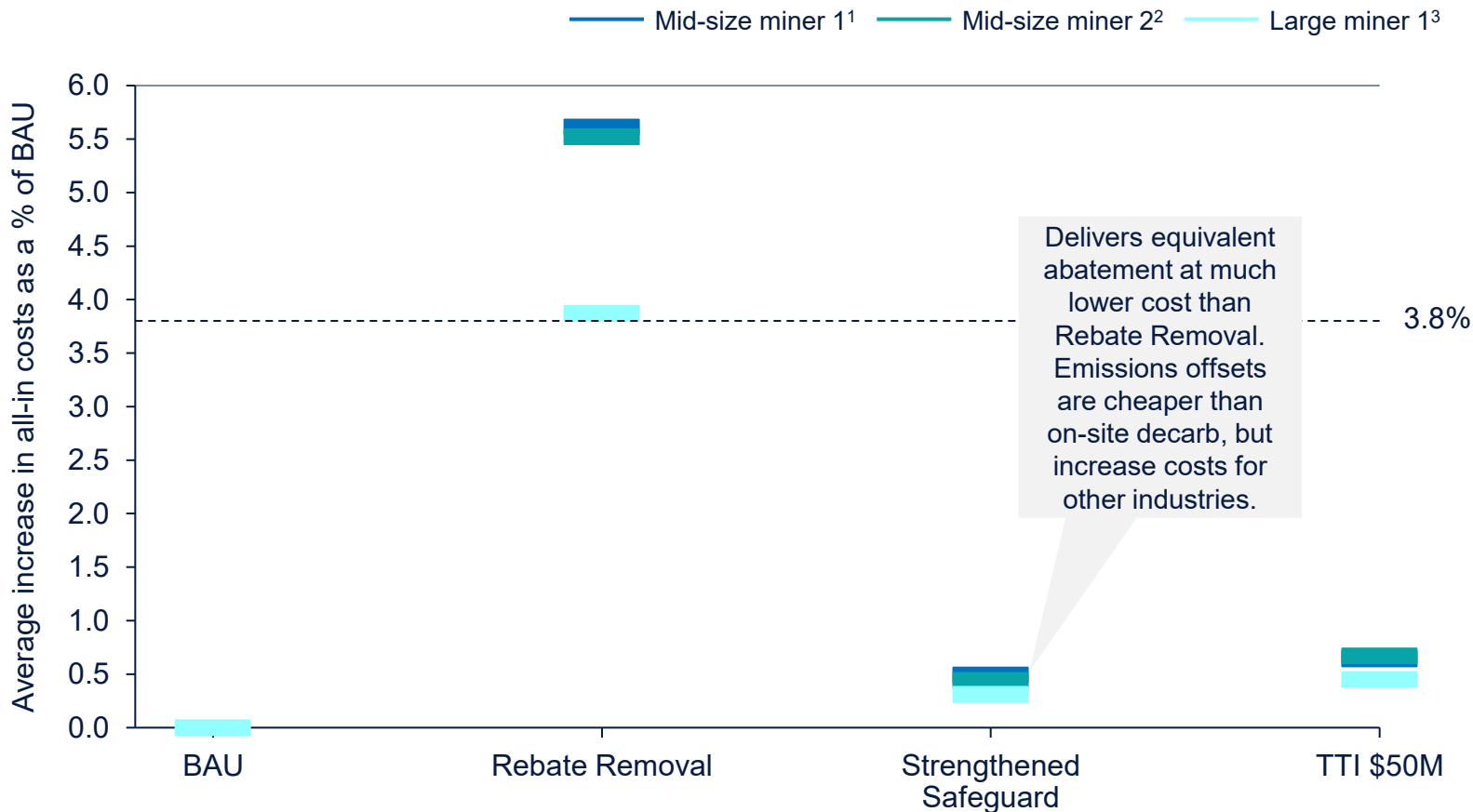
- **Rebate Removal materially impacts costs:** Full rebate removal increases costs by 1.9-3.5%, with early decarbonisers like Large Miner 2 gaining competitive advantages.
- **TTI and Strengthened Safeguard offer similar outcomes:** Competitiveness impacts are marginal with both scenarios, approximately 10x smaller than full rebate removal.
- **TTI could offer benefits for highly diesel dependent producers:** If high-cost producers, such as Mid-size Iron Ore Miners, are able to fully reinvest TTI funds, they can potentially improve competitiveness through material reductions in structurally high diesel OPEX costs. However, if firms cannot fully deploy capital, as implied through stakeholder consultation, cost increases up to 0.5% are seen across archetypes.



1. Archetypal large iron ore miner with conservative transition strategy and access to integrated rail and economies of scale. 2. Archetypal large iron ore miner with aggressive transition strategy and access to integrated rail and economies of scale. 3. Archetypal mid-size iron ore miner with conservative transition strategy (constrained by technology access, capital demands of transition, financing access and high-cost business structure), no access to integrated rail and limited/smaller economies of scale. 4. Indicative revenue impact estimates based on delivered unit margin impacts, on 2025 production levels and cost structures. 5. Diesel OPEX costs are high for mid-size producers due to absence of integrated rail, increased transport distances, and other factors.

For met coal, rebate removal leads to 3.8%+ cost increases, while other scenarios have less than one-third that impact

Average increase in All-in costs to 2035 as a percentage of BAU costs (%)



Key Takeaways

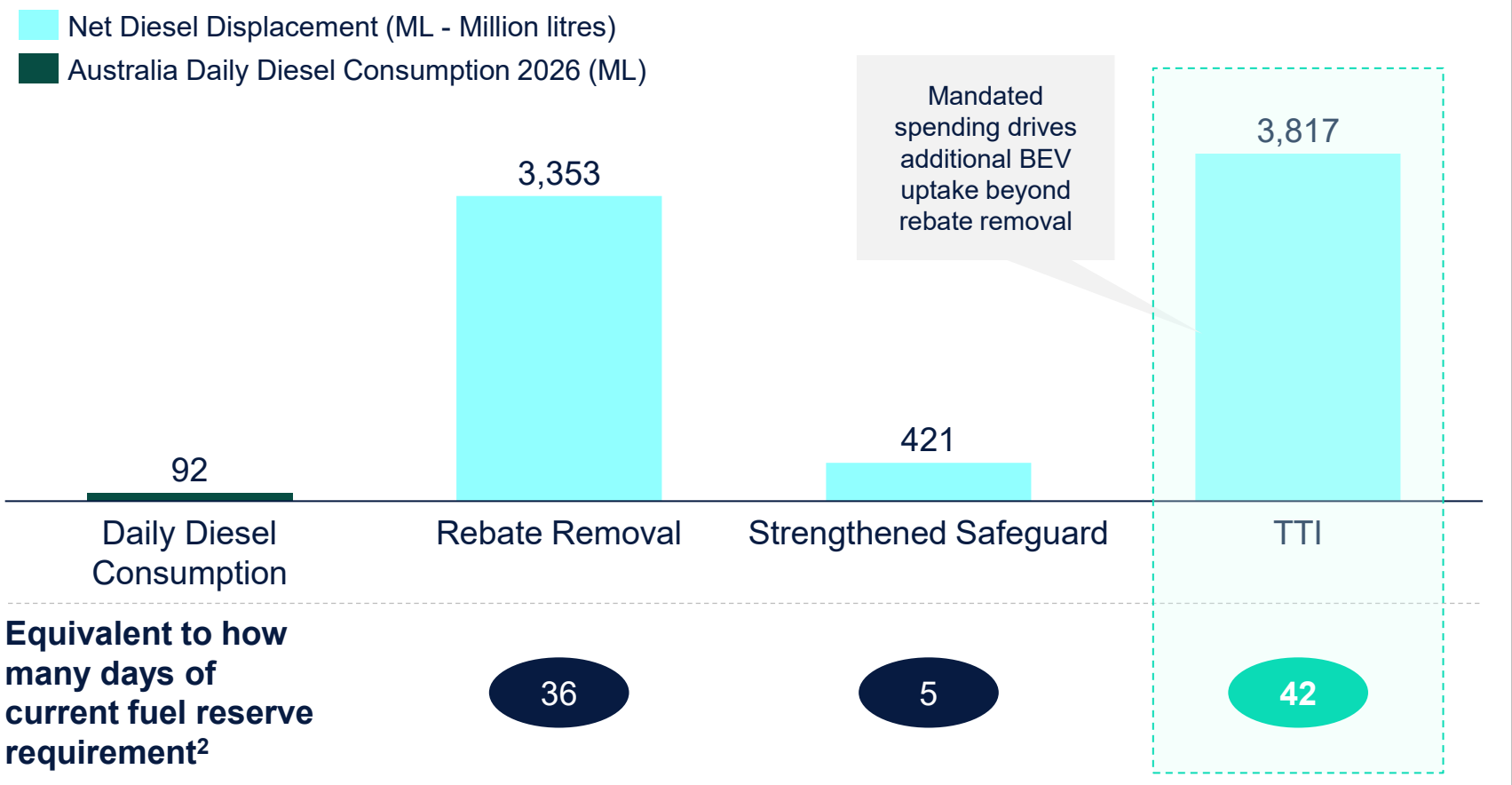
- **Metallurgical coal mirrors iron ore's scenario ranking, but has greater cost impacts due to higher diesel intensities:** Cost impacts are ~2x of iron ore, because diesel intensities of production are ~3.5x higher.⁴ This is structural – driven by smaller operations, worsening strip ratios, shifts to open-cut mines, and longer distances travelled. This also forces miners to move away from electric draglines towards diesel haulage during excavation.⁵
- **TTI offers a tradeoff between short- and long-term outcomes:** Coal miners face higher costs when decarbonising (vs iron ore) in the short-run but high diesel dependency, and corresponding OPEX savings, means long-run average costs are similar to Safeguard. However, rising costs mean short-run decarb expenditure may be challenging for miners to cover.



1. Archetypal Mid-size miner with met coal operations in Queensland. 2. Archetypal mid-size miner with met coal operations in Queensland. 3. Archetypal large size miner with diversified operations across thermal coal and met coal, with Queensland production primarily focussed on met coal. 4. Cyan Ventures internal assessment based on IEEFA (2026), Australian Energy Statistics (2025), DISR (2025), and ARENA (2017). 5. IEEFA (2026)

Diesel savings vary, with strongest reforms delivering up to 42 days of national consumption by 2035

 Policy reform could displace diesel equivalent to 5 to 42 days (cumulative) of the fuel reserve requirement by 2035



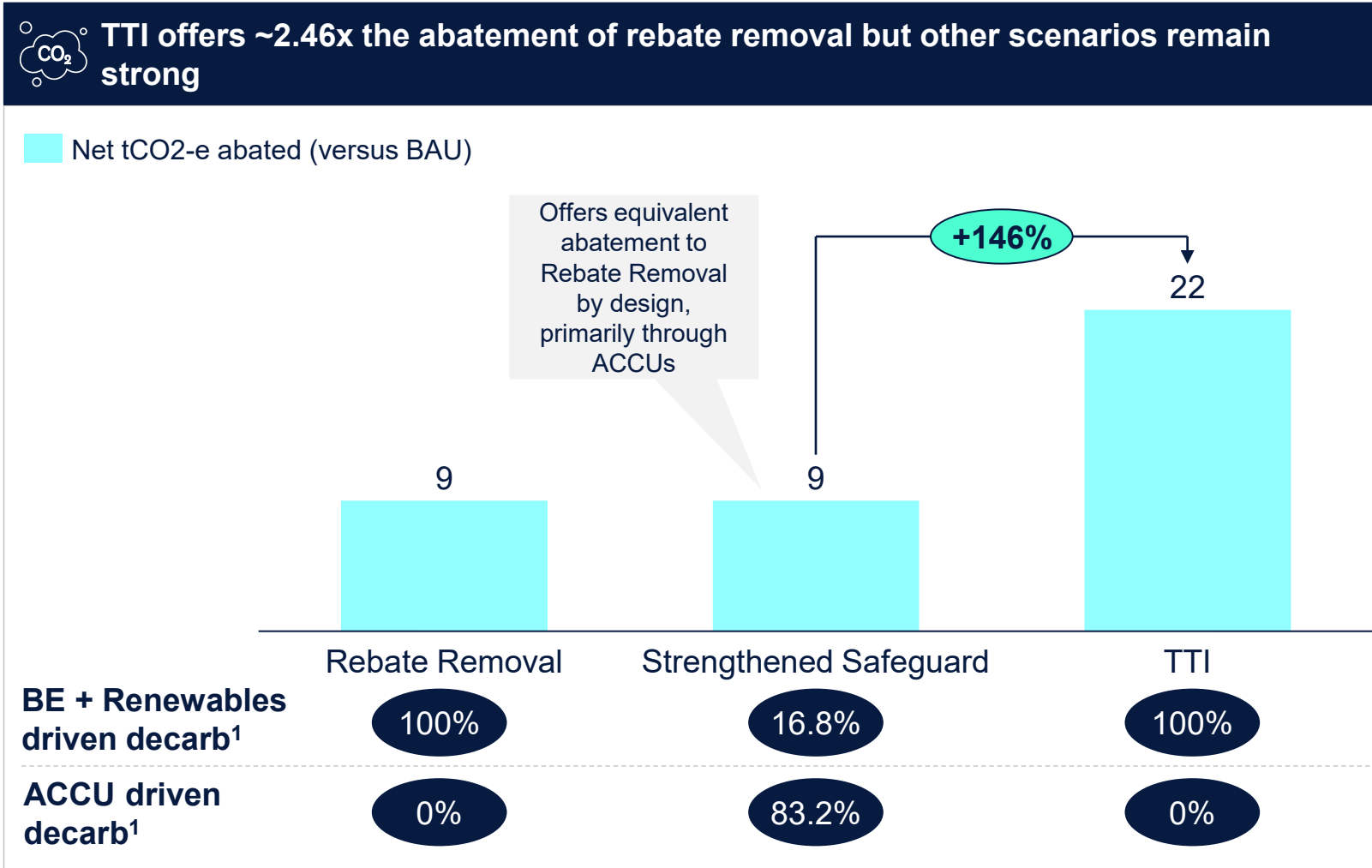
 Key Takeaways

- Diesel displacement is driven by Battery Electric tech uptake:** Rebate removal and TTI push forward BEV adoption by 6 years driving significant diesel displacement. Strengthened Safeguard only pushes BEV adoption forward by 1 year, leading to limited impacts.
- Policy reform can significantly improve Australia’s fuel security:** Barring the Strengthened Safeguard scenario, diesel displacement is equivalent to 36-42 days of the fuel reserve requirement. This is similar to – or larger than – the existing stockholding of 32 days.¹



Note: 1. SBS (2026). 2. Estimates are based on 2026 diesel fuel requirements, assuming all else remains equal and mining diesel demand declines, the overall impact will be larger.

All scenarios offer significant decarbonisation, but the TTI offers 146% more abatement



 Key Takeaways

- Renewables uptake is scenario-dependent:** Safeguard and TTI accelerate adoption via carbon costs and mandated spending, respectively. Diesel rebate changes have no bearing on gas vs renewables economics.
- Battery electric tech is the key lever activated:** BE drives a large proportion of net decarb in all scenarios, as renewables uptake has a lower MACC and proceeds substantially under BAU.
- TTI outperforms rebate removal on BE uptake:** Mandatory spending channels capital into BEV adoption faster, delivering additional decarb.
- Safeguard decarbonisation driven by ACCUs:** ACCUs allocate decarb costs to the lowest cost instruments in the economy. However, Safeguard remains a blunt instrument, raising costs for all industries, including those with fewer pathways to decarbonise.

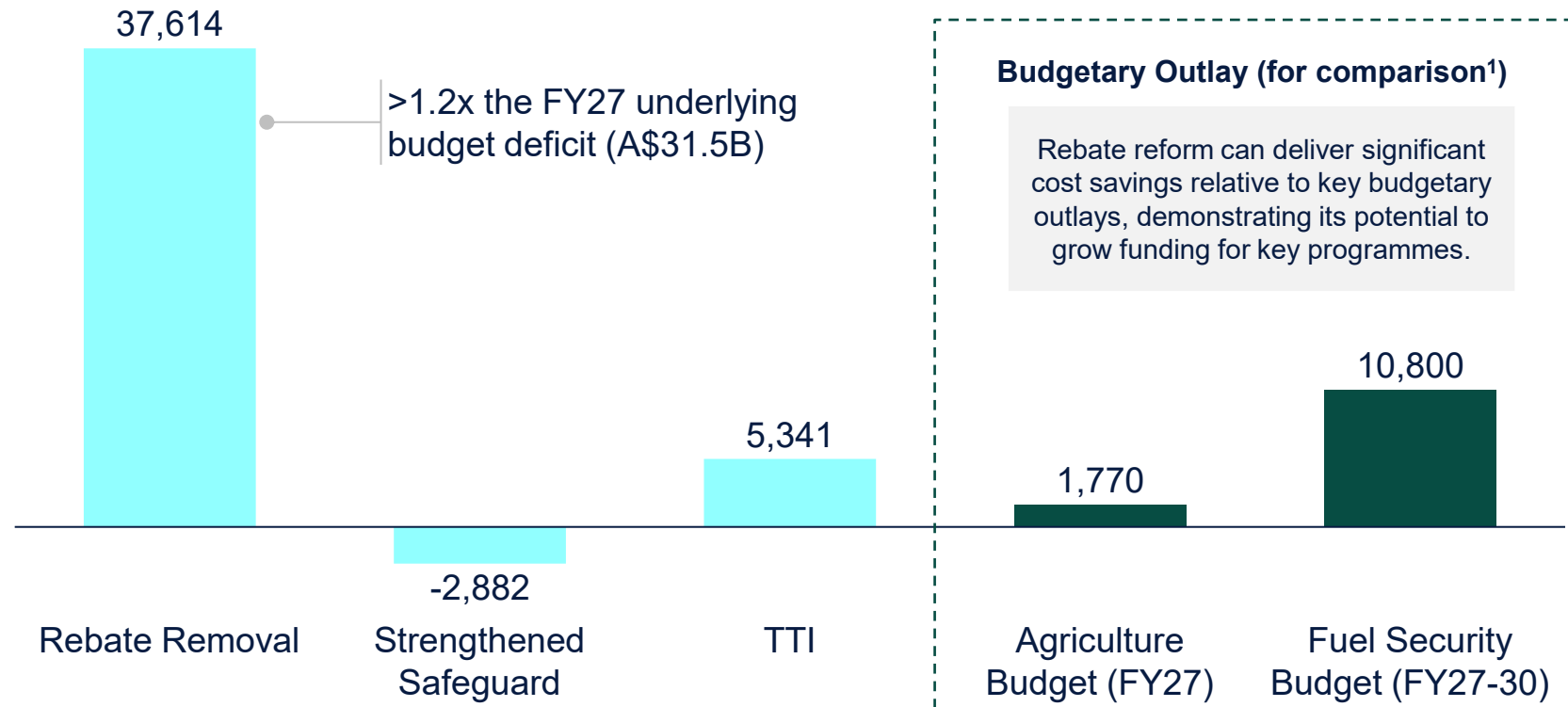


Note: 1. We show NET impacts i.e. decarbonisation that is additional to BAU, not the GROSS impact. Therefore, decarbonisation that would likely proceed under BAU (e.g., technologies that become cost-effective before 2035 and are adopted by industry) are not allocated to reform outcomes to avoid double counting. Consequently, under rebate removal and TTI, results should not be read as companies ceasing purchases of ACCUs altogether – instead, it reflects that none of the additional decarbonisation induced through rebate removal or the TTI policy would arise from ACCU purchases (due to the nature of the reform policies).

The rebate lever meaningfully contributes to budget repair (+A\$38B)

 Budget impacts are +A\$38B for complete rebate removal, while Strengthened Safeguard loses ~A\$3B

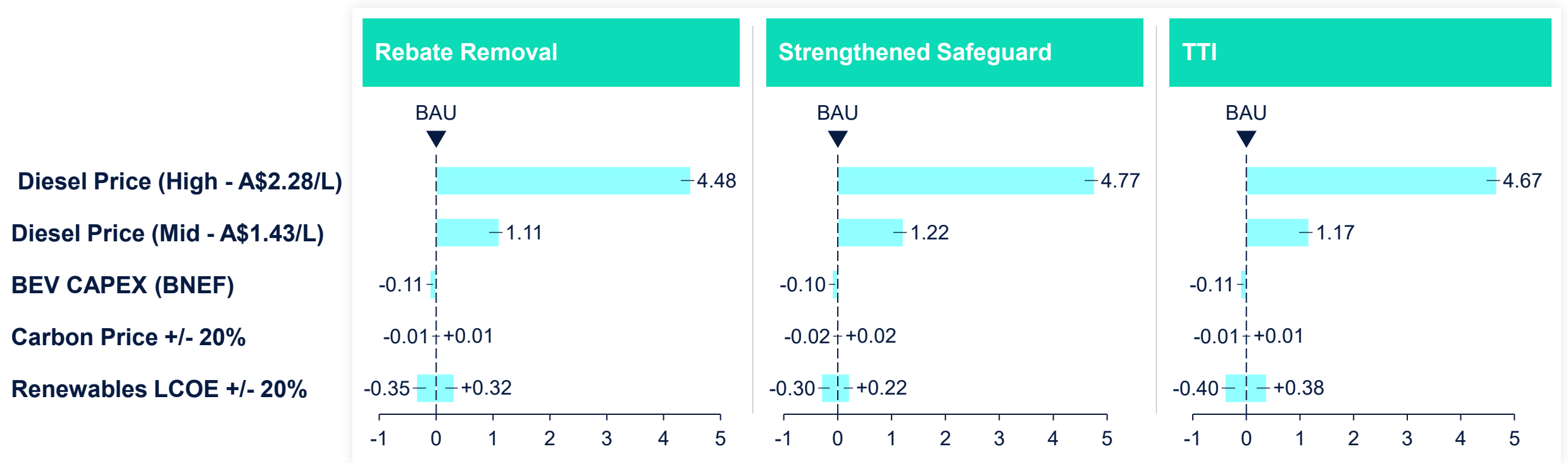
 Net Budget Impact to 2035 (versus BAU)  Australian budget spend



Key Takeaways

- **Rebate removal levers deliver material fiscal impact:** Even a 35% removal can cover the full programme costs of the Fuel Security package running from FY27-30.¹
- **TTI fiscal upside is structurally capped:** Coverage limited to 18 firms, rebates returned rather than retained, capital flows first to renewables (lower MACC, prerequisite for BEV deployment), delaying diesel demand reduction and FTC savings.
- **Safeguard delivers losses for Treasury:** No direct revenue to Commonwealth (revenue-neutral scheme); competitiveness impacts erode broader tax take through 2nd-order effects.

Diesel prices are the single biggest sensitivity across scenarios – Iron Ore



- **Diesel prices are the single biggest lever:** Doubling the price adds ~4.5-4.8% to all-in costs under every scenario because it is a significant input cost (of increasing importance, given growing diesel intensities of production) and switching takes time.
- **Renewables LCOE is the biggest lever after diesel:** Electrification has a lower MAC than most other key technologies and industry feedback states that renewable buildouts are a necessary precursor to deployment of electrified tech (BEV, BE Rail, trolley assist etc). Effects are amplified by the 'remoteness premium' attached to Pilbara renewable deployments.
- **BEV CAPEX learning rates are a structurally weaker lever:** Truck acquisition costs are relatively smaller proportion of all-in costs, and lower CAPEX costs only reach the small add'l fleet electrification pulled forward, which is thin in the early years.



Note: See Appendix Slides 60-64 for the full list of sensitivities analysed. All sensitivities are measured against our Business as Usual base case, for comparability.

In summary, no current scenario delivers for all stakeholders

Reform Option ¹	Range of competitiveness impacts for different archetypal producers				Key issues with archetypal reform options
	Indicative		Low	Medium	
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Strengthened Safeguard	0.08% 0.49%	421	9.09 ACCU Component 83.2%	-3	Competitiveness impacts are small, with good decarbonisation outcomes driven by ACCU purchases. However, there is a negative budget impact, economy-wide costs, and fuel security impacts are low.
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Moreover, 4 additional challenges need to be considered

Asset Life & Duration Issues¹

Mines with <10 years remaining may find it uneconomical to invest in long-life electrification.

40.6% of coal mines and 15.6% of gold mines are scheduled for closure by 2035. Without end-of-life asset offloading or reform exclusion, business viability may be affected.

Limited Decarbonisation Options¹

Decarbonisation technologies may not be commercially ready or may have ecosystem risks.

BE Haulage and Rail are still under trial; deployment requires operational changes. Without a sufficient phase-in period, miners may not be able to respond appropriately to reform.

Shift in Cost Structure¹

Diesel displacement and decarbonisation technologies are CAPEX intensive but provide operating savings relative to existing technologies.

By 2035, diesel haulage CAPEX will be 34% lower than BEV haulage but OPEX will be +51-82%. Assistance needed to shift to a CAPEX-heavy model, unless diesel prices remain elevated at 2026 levels.

Unequal Playing Field for Junior & Mid-tier miners¹

Junior and mid-tier miners are disproportionately diesel dependent, but capital-intensive decarbonisation is challenging to invest in.

Reform without special support for junior/mid-tier miners would worsen competitive landscape and concentrate market power.



Note: 1. See Appendix Slides 41-44 for further details, data and analysis on each reform concern.

3. The Fuel Security Reinvestment Mechanism: a more balanced, fuel security focussed option



We have consulted with 30+ stakeholders, across 4 categories

Corporates & Industry Groups

- Several large-cap Australian miners
- Junior & Mid-tier Australian miners
- Mining industry bodies
- Investor Group on Climate Change (IGCC)
- Range of Super Funds & Financial Institutions

Public Sector

- Commonwealth Treasury
- DCCEEW
- DISR
- WA Government
- LEAN

Think Tanks / Research Organisations

- Institute for Energy Economics and Financial Analysis (IEEFA)
- Climate Energy Finance (CEF)
- Australasian Centre for Corporate Responsibility (ACCR)
- Climate Council
- Naru Research (Tim Baxter)

Independent Experts

- Ex-Industry Advisors and Experts
- Environmental Advisors and Experts
- Other Expert Advisors



There are 5 main points of feedback garnered from these consultations (1/2)

1 The window of opportunity is now

- **The fleet replacement cycle is in a critical phase.** Key replacement decisions will be made in the next 2-4 years. Without reform, Treasury and miners will be **locked-in to diesel for the next 14-17 years (early 2040s)**.
- **Energy security is front-of-mind for mining staff and junior miners** facing diesel cost pressures and care & maintenance risks. BlueCap stood down FIFO; many miners are on 2-in-1 worker rosters, some considering 3-in-1.¹
- Policy certainty is key. The sooner industry has certainty around policy contours, the better their ability to adapt. Locking-in diesel use long-term, and subsequently being forced to reform the rebate, is the **worst-case scenario**.

2 Fair Balance between Treasury & Miners

- **Any reasonable reform must give miners time to adapt** and cushion the impact to their bottom line by ensuring they have access to a fair proportion of DFTR funds.
- Materially improve the budget, for Treasury to direct it towards rising spending demands or budget repair. **Without adequate 'return' for budget, ambitious reform is not worth it.**

3 Political Feasibility

- Reform must explicitly **link between rebate removal and capex subsidies** for adopting energy security technologies. This will facilitate public understanding.
- **Shield junior & mid-tier miners from cost escalation.** They need additional support to become energy secure – given higher diesel dependency,² market pressures, smaller margins – or market power of Tier 1s will be entrenched further.
- **Reform must be focussed on the big players**, as they have the capacity to adapt. It should not cover all resources industry players.



There are 5 main points of feedback garnered from these consultations (2/2)

4 Be technology-agnostic and flexible

- Being prescriptive about capital allocation is impractical, given diversity of mine sites and commodities. Focus on renewables, BEV Haulage is too narrow. **The full range of energy security technologies should be considered.**
- **Reform should not be administratively complex.** As far as possible, it should fold into existing Treasury and government policy mechanisms to avoid raising administrative costs and introducing arbitrage opportunities.
- Rapid technology evolution (and cost reductions) in many energy security technologies shorten the economic life of new investments. **Assistance needed to account for faster asset depreciation.**

5 Have sensible exclusions

- **Must not affect farming, fishing, or the trucking industry.** To help these groups become more energy secure, different policy frameworks and tools are needed.
- **Exclude mines with <10 years of operations remaining.**



We have used feedback to design a new reform scenario: the Fuel Security Reinvestment Mechanism (FSRM)



THE FSRM, IN ONE LINE

Rather than removing the diesel rebate, the FSRM converts the majority of Fuel Tax Credits for large miners into an energy-security investment stream — redirecting the remainder to junior & mid-tier miner support and budgetary needs.



What it does



Large miners **retain 65% of fuel tax credits above \$50M** — only if reinvested in **technology-agnostic** energy-security spend.



Junior & mid-tier miners receive **guaranteed Special Assistance Package** (~\$1.9B) to become energy secure, as they face greater hurdles.



Returns ~\$10B to the budget;¹ can be invested in Fuel Security package, farming/trucking support or budget repair



A deliberately **slow, 4-year phase-in**² gives miners time to scope projects and reach FID. There is no cliff edge.

HOW THE ~\$19B FTC POOL IS SPLIT



Who it applies to

IN SCOPE

- 01 Large miners** (FTC claims >\$50M p.a.): credits become **contingent on reinvestment into bolstering energy security**.
- 02 Junior & mid-tier miners** (below the \$50M cap): **no cost impact**, plus funded support to become energy-secure.

EXCLUDED

- 01 Farming, fishing and the trucking industry.**
- 02 Mines with <10 years of operating life remaining.**



Over what period

Now: government signals reform is coming, giving industry early policy certainty.

From 2027: FSRM implemented, opening a **4-year phase-in**. CAPEX requirements can **roll over** so companies have time to scope projects, win board approval and reach FID.

2031: FSRM phase-in period ends. Steady state implementation.



Timed to shape the **current fleet-replacement cycle** (decisions in the next 2–4 years) and avoid locking in diesel to the early 2040s.



BEYOND THE FSRM

Government can further back industry through **stronger diesel-use disclosures, coordinated engagement with trading partners and OEMs** on pricing and finance, and **cooperative procurement and retrofit pathways** for smaller miners.



Note: 1. The \$10B return to budget includes both first- and second-order modelled effects. First-order effects are modelled at ~\$4.75B. 2. Stakeholder consultations indicate that the next 2-4 years will see key equipment replacement decisions being made. However, 2-3 years of phase-in may prove challenging for many in industry in being able to scope projects and bring them to FID. Hence, we have taken the outer envelope of 4 years for the phase-in.

The FSRM delivers a better balance across all metrics, particularly fuel security

Range of competitiveness impacts for different archetypal producers Indicative Low Medium High Key issues with archetypal reform options Challenge

Reform Option ¹	Competitiveness Average percentage increase in all-in costs to 2035		Fuel Security Contribution Cumulative ML of diesel displaced to 2035	Decarbonisation Cumulative tCO2e abated to 2035	Cumulative Budgetary impact to 2035 Est. Contribution to government fiscal position in A\$B	Commentary
	Iron Ore	Metallurgical coal				
Rebate removal ²	 3.45%	 5.61%	3,353ML	9.09Mt	+\$38B	• Delivers best outcomes for budget, with strong fuel security and decarbonisation outcomes. • However, large negative competitiveness impacts are seen.
Strengthened Safeguard	0.08%	0.49%	421	9.09 ACCU Component 83.2%	-3	• Competitiveness impacts are small, with good decarb driven by ACCU purchases. However, there is a negative budget impact, economy-wide costs, & fuel security impacts are low.
TTI ³	0.51%	0.67%	3,817	22.38	5	• TTI sees declining all-in costs over the horizon. • Delivers highest decarbonisation and fuel security contribution with small competitiveness impacts. Budget upside limited.
Fuel Security Reinvestment Mechanism	1.23%	1.57%	1,173 ⁴ 3,492 4,665	18.60	10	• Balance between different initiatives ○ Relatively small cost impact ○ Large fuel security benefits and decarb ○ Budget uplift is significant



Note: 1. All impacts (competitiveness, fuel security, decarbonisation, budget) are additional to what would occur under business-as-usual (e.g., cost-effective technology uptake) to avoid double-counting. 2. We model the impacts of rebate removal for the resources industry ONLY. Our modelling for rebate removal does not include a \$50M cap. However, we expect that the introduction of such a cap would not lead to substantial changes from the results discussed in this report. 3. The modelled TTI scenario includes a \$50M cap. FTC claims above the \$50M cap are subject to the TTI, below-cap amounts are untouched. 4. The FSRM can deliver at least 3,492ML of diesel displacement to 2035, on conservative assumptions, including fund utilisation rates matched to the TTI (see Appendix for further details on assumptions). However, the FSRM offers extra flexibility in fund utilisation (longer phase-in, wider technology list) and also, redirects support to smaller players and government. Thus, accounting for the extra flexibility, and the funding FSRM can deliver to the Fuel Security package to 2030 and equivalent whole-of-economy Fuel Security support post-2030, we estimate savings of 1,173ML of diesel can be realised growing from ~36ML in 2029 to ~282ML by 2035.

Each key segment gains a unique benefit under the FSRM

Large miners

Greater technology flexibility and transition time

- Approved technologies under the FSRM are wider than what has been publicly proposed for other scenarios, giving businesses the flexibility to account for a range of mine types and sites.
- 4 year phase in to allow for more projects to reach FID and deliver on-site abatement, with shorter phase-in periods proving challenging for industry.

Juniors & mid-tier miners

Dedicated support

- The FSRM is the only reform option that provides dedicated and guaranteed support to smaller players to help them adopt the technologies needed for energy security.
- This segment faces unique challenges in adopting such technology (financing, technology adoption, investment readiness). Without dedicated support, the competitive landscape may deteriorate.

Whole-of-economy

Budget return which can be directed to targeted, meaningful support for industries

- Offers a substantial budget return (~\$10B) that can be directed to special support for the trucking and farming industries, to assist with the switch to fuel secure technology.
- Funds can also support the announced Fuel Security Package, or budget repair, for the entire economy.



Our proposed solution would deal with the 5 issues received in feedback

Categories	How the Fuel Security Reinvestment Mechanism (FSRM) deals with these issues
Need for action now	• Policy certainty: Government signals reform will be implemented from 2027 or is inevitable, with a 4 year phase-in period where CAPEX investment requirements can be rolled over to allow companies to scope projects, get board approvals and reach FID. Reform will influence this fleet replacement cycle.
Fiscal balance	• Rebate for larger miners contingent on investments in energy security: Applies only to those with FTC claims >\$50M. Large miners will receive 65% of FTCs above \$50M. • Remainder will fund Special Assistance Package for junior miners (10%, \$1.9B) & budget repair (25%, \$4.75B), along with any unspent funds by large miners. Direct linking of reform to societal benefits will ease public communication.
Focus on large companies	• Junior miners will be excluded by the \$50M cap, guaranteeing no cost impact. • Special Assistance Package will be guaranteed: 10% of large miner FTCs (~\$1.9B) will be guaranteed towards helping juniors & mid-tiers adopt energy security technologies, and protect competitive landscape.
Tech agnostic	• Accelerated depreciation (CAPEX write offs): To more fairly tax companies, an accelerated depreciation regime will avoid penalising adoption for emerging energy secure technologies. Temporary Full Expensing style write-offs can be considered for newly-commercial technologies. • Technology-agnostic: Investments do not have to be solely directed into renewables or BEV Haulage. Investments in catenary rail, trolley-assist & non-fleet alternatives (e.g. conveyor technology), retrofits to trolley-assist/BEV, electric excavators and dozers, electric dewatering pumps will all be eligible.
Exclusions	• Farming, fishing, trucking industry, and mines with <10 years left, are excluded.

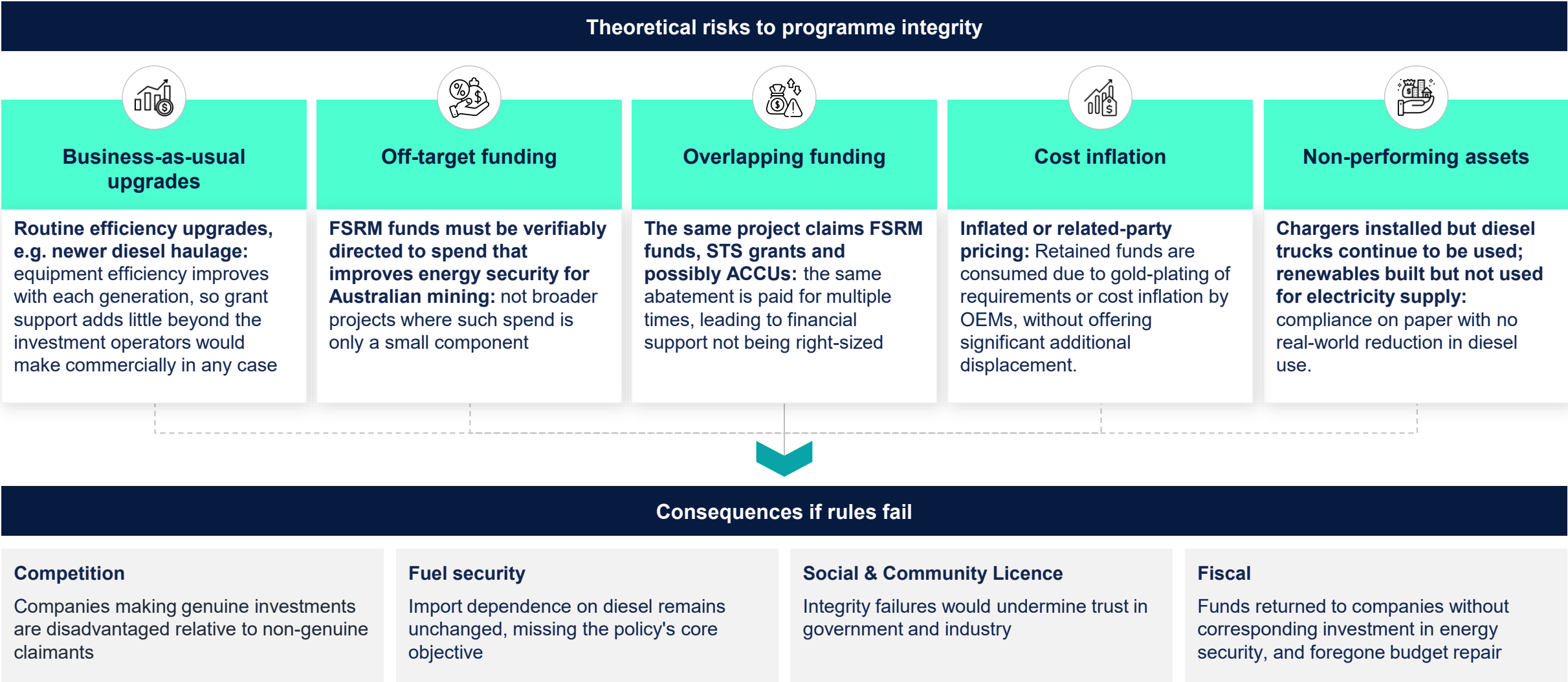


There are a variety of other actions the government can take to assist industry

Further Steps	Description & Benefits
Encourage a Coordinated Government-Industry Approach	• Whole-of-Government cooperation to lead engagement with key trading partners and OEMs, particularly in China, to deliver preferential pricing and financing terms for Australian miners. This can include lower-cost financing in RMB. • Building a stronger relationship with key trading partners will insulate against competitive pressures. • Support demand pooling: Encourage cooperative procurement where junior & mid-tier miners can add-on a limited order for energy security tech at the standard terms agreed by a major. The additional costs will be borne by them but will bring some economies of scale cost reductions. Alternatively, support a formal demand pooling mechanism for smaller firms to aggregate and standardise fleets, which may bring operational savings. • Encourage retrofits through local suppliers for junior miners, who often purchase 2nd hand equipment. • Encourage OEM maintenance, warranty and retrofit support for 2nd-hand equipment.
Strengthened Disclosures	• Require disclosures to Federal and State governments on domestic diesel use by all miners with operations in Australia. Consider requiring public disclosures on domestic diesel use, particularly for East Coast states and territories. • This will improve transparency, and spur shareholder interest in optimising diesel use at miners that are less efficient.



However, assurance rules will be needed to maintain programme integrity



These rules should have the following 4 design principles (see Appendix for further details)

UNDERLYING DESIGN PRINCIPLES

Targeted Technology-Agnostic Spend

Any technology that displaces diesel or assists it can qualify, but not other spends

- Any investment which verifiably displaces diesel or assists with long-term diesel displacement qualifies. Largely CAPEX, although specified OPEX e.g. long-term renewable PPAs qualify.
- Government does not pick winners: the accepted technology list is open and reviewed regularly.
- Independent Technical Eligibility Committee maintains the technology list and rules on novel proposals - modelled on the ACCU scheme's integrity committee.

Additionality

No funding for spend that was already planned

- Not committed (FID) before reform announcement; not a like-for-like replacement at end of asset life
- Not required by law; not funded by another government programme for the same costs
- Mirrors the ACCU scheme's newness, regulatory additionality and government programme tests

Fair Compliance

De minimis regulations to prevent bottlenecks

- Pre-approved technology list is a safe harbour: listed investments skip case-by-case assessment
- 4 mechanisms will be used to deter and detect non-genuine claims:
 1. Company investment plans and tallying with other reported data
 2. Independent engineer panel on US DOE model
 3. AI-assisted claim screening
 4. Regional cost benchmarking
- Private-ruling pathway gives upfront certainty for novel technologies

Verification & Clawback

Built on NGER, ATO and Safeguard data

- Verification built on NGER reporting, registered greenhouse and energy auditors and litre-level FTC data. No parallel reporting system for compliant miners.
- Unspent funds are recovered pro-rata through the tax system, with penalties for false claims under existing tax law.



Appendix

September 2026

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5	Additional Details on Fuel Security Reinvestment Mechanism	p. 66-69



Reform proposals may gain traction as they marshal counter-principles to industry's economic arguments



Economic Principles against Reform



Taxing Inputs is Distortionary

- **Diesel is a core input for the resources industry** and the rebate is an administrative mechanism to prevent input taxation.¹
- **Taxing production inputs like diesel has cascading effects, creating distortions and horizontal and vertical inequities in tax treatment.** This is generally disfavoured by Treasury.
- MCA maintains that **FTC reform is the wrong instrument for decarbonisation** – the Safeguard Mechanism already targets emissions (Tinbergen rule).¹



User Pays Principle

- **Fuel excise was designed to fund public roads**, while miners largely operate on private transport networks they built and maintained.
- Although full hypothecation has been removed, partial hypothecation of fuel excise indexation to road funding continues.²
- Industry feels it would be **inappropriate to levy road user charges on operations with minimal public road reliance.**



Economic Principles favouring Reform



Social Equity & Externalities

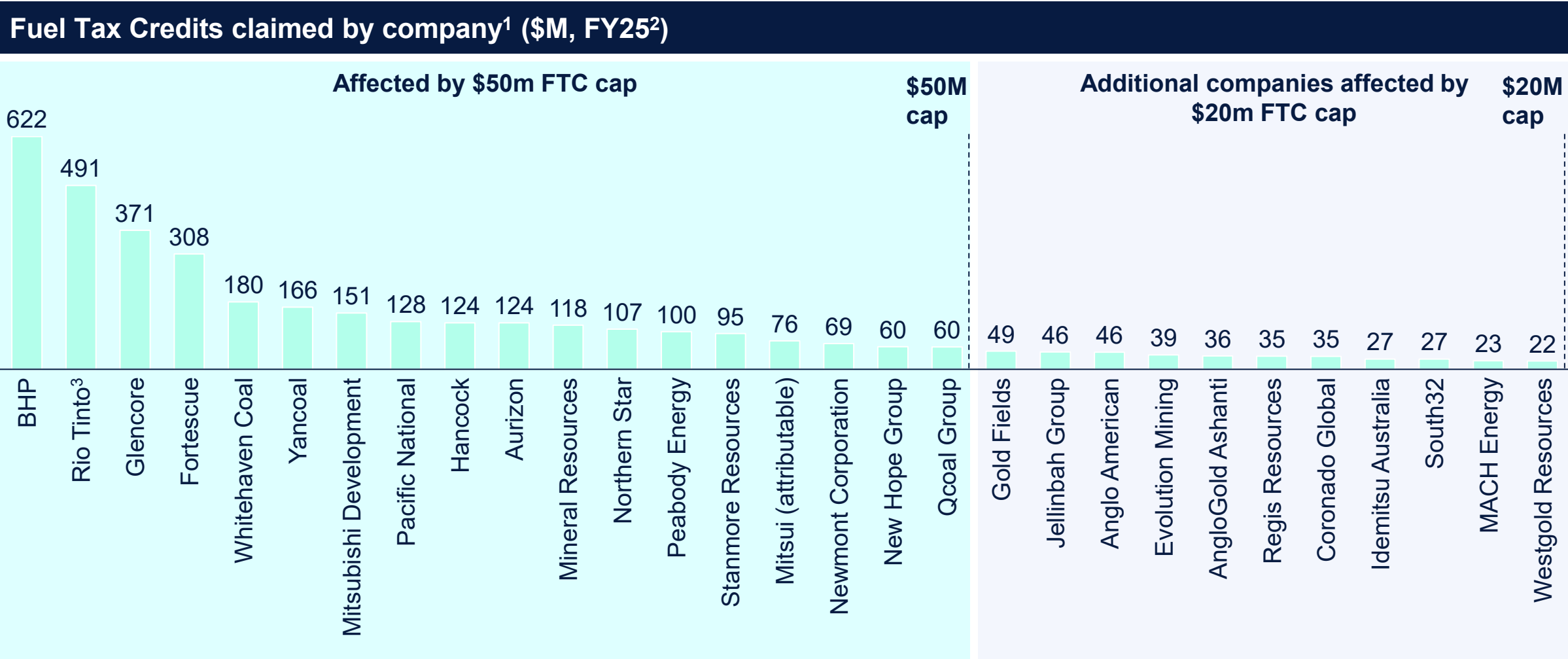
- Light vehicle users incl. small businesses receive only partial FTCs (still charged a Road User Charge) while miners receive full FTCs. **Thus, inputs are (partially) taxed for small businesses but not large mining companies.**²
- This creates vertical inequities, acknowledged by Treasury, and social equity concerns. A two-tier treatment is politically vulnerable, particularly during challenging economic conditions.
- Treasury has acknowledged arguments that **diesel usage creates health externalities and that heavy vehicles damage roads more than light ones**, offering some justification for recouping extra costs.²



Theory of Second Best

- Where multiple market distortions exist, economic theory suggests removing just one can further reduce societal welfare. Indeed, adding additional distortions (including input taxes) may move closer to socially ideal outcomes.
- Thus, **reform proponents believe that vertical inequities and externalities from mining diesel use can justify FTC reform, by reducing overall distortions and improving societal welfare.**

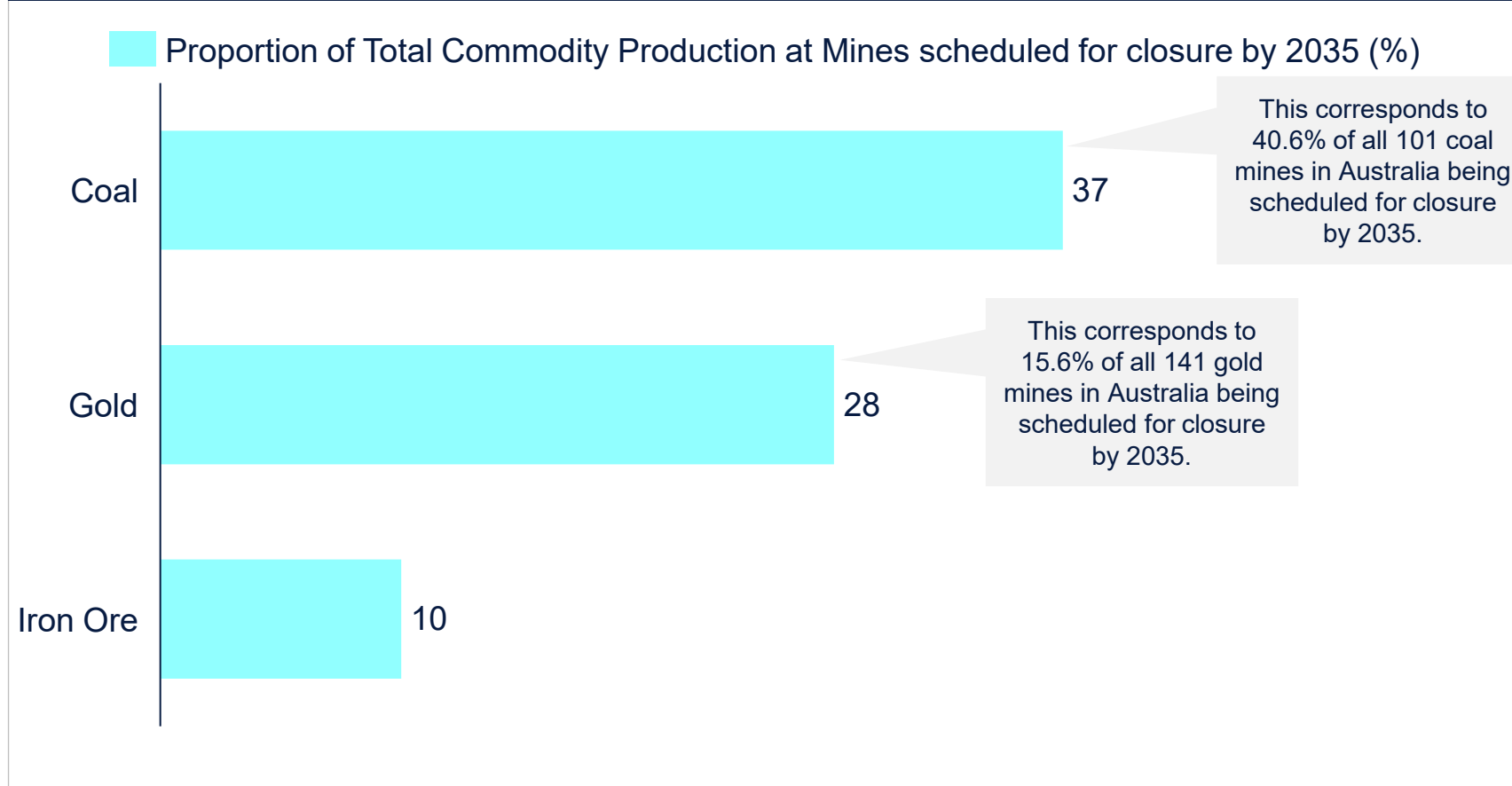
Fuel Tax Credit Claims Assessment – Resources Industry only



1. Based on Cyan internal assessment, using company ASX disclosures, company sustainability and annual reports, NGER emissions factors, AES disclosures and OCE commodity production volumes. 2. With the exception of Rio Tinto which reports on a Calendar Year basis. 3. Data based on CY25 disclosures

Asset life mismatches pose a major risk to coal and gold miners

 37.1% of Coal Production, and 27.7% of Gold Production, is scheduled to go offline by 2035¹



Key Takeaways

- **Mine electrification has a duration challenge:** Renewable generation (25 year life) and BEV equipment (15-20 year lives) outlast mines with <10 years remaining, making the investment case uneconomical.
- **Coal is hardest hit by the duration challenge, iron ore the least:** Iron ore, coal and gold are among Australia's biggest resource exports. Roughly 3.7x more coal and 2.8x more gold production is scheduled to close by 2035 versus iron ore.
- **Reform risks asset stranding:** Without mechanisms to offload BEV/renewables investment at end-of-life, miners face uneconomical investments or early closures.



Source: Cyan Ventures internal analysis based on company documents, published reports, and other announcements. Coal data also used Global Energy Monitor's Global Coal Mine Tracker data.

Diesel displacement options are still limited, or face other adoption barriers

Rating: ● High ● Medium ● Low

Criteria	Technology Availability	Uptake Feasibility	Commentary
Electric drills, excavators & loaders, draglines, rope shovels	Available	●	- BHP has noted that electric options for such equipment are already available for commercial use.¹ - Established OEMs for the Australian market have deployed this equipment across companies: Fortescue has a fleet of 15 electric excavators, each saving 1 million litres of diesel annually;² BHP has deployed the R9400E electric excavator in the Pilbara;³ Underground coal mines have deployed electric drills, pumps and loaders.⁴
BEV Haulage	Under trial, nearing large-scale deployment at Fortescue	● Iron Ore	- BHP and Rio Tinto have begun trials with the Caterpillar 793 XE Early Learner BE Haul truck in the Pilbara.⁵ - Fortescue has placed orders for the Liebherr T264 BEV and the XCMG XDE240 BEV, aiming to complete deployment for its 2030 Real Zero target.⁶
		● Coal	Chinese OEMs have extensively deployed BEV haulage at coal mine sites in China,⁷ however, incumbent OEMs for the Australian market (Liebherr and Komatsu) do not have BEV haulage of the appropriate class. Switching incurs ecosystem risks.
BE Rail	Initial trials	●	BHP, Hancock, Fortescue have already begun trialling BE Rail in their Pilbara operations.⁸ Aurizon is also progressing on a BE Rail trial in WA.⁹ Unions, which are mandatorily part of technology accreditation processes, may block adoption of BE Rail in the Pilbara.¹⁰
Shipping	Not Available	●	Although some electric tugboats have reached the market, no currently available options will meaningfully displace diesel from shipping.



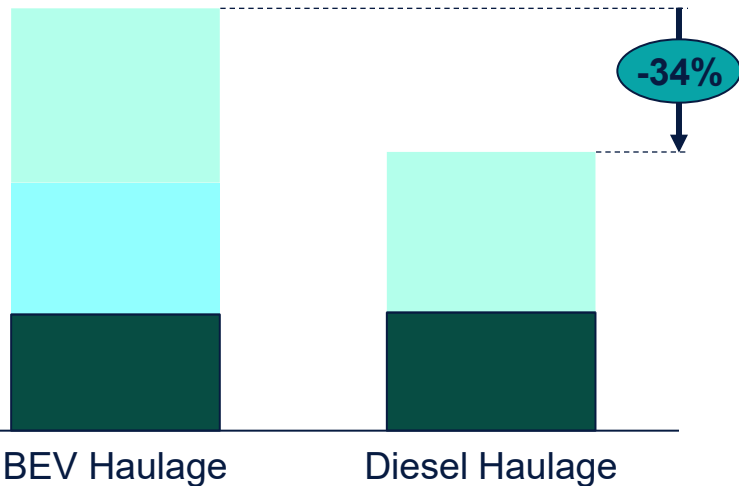
1. BHP (2023). 2. Renew Economy (2026) 3. BHP (2024). 4. AusIMM (2025), Australian Mining (2025). 5. BHP (2026). 6. Fortescue (2024), Fortescue (2025). 7. See full detail on Slide 52. 8. BHP (2025), Fortescue (2026), Renew Economy (2023). 9. Alcoa (2025). 10. The Australian (2026).

Diesel displacement shifts operating models towards capex intensification



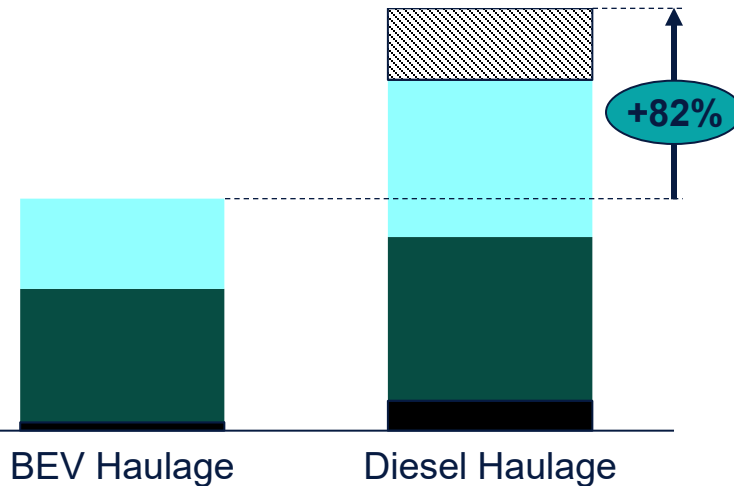
In 2035, Diesel Haulage CAPEX is 34% lower than BEV Haulage

Vehicle CAPEX
Renewables CAPEX
Sustaining CAPEX



However, operating costs will be 51-82% higher

Add'l Fuel Costs (without DFTR)
Fuel / Electricity
O&M
Carbon Costs



Operating savings on BEV will be substantially larger at current diesel prices



Key Takeaways

- **Higher upfront capital, lower lifetime operating costs:** Firms will have to restructure operating models to account for the adoption of assets that require higher upfront capital investments, but provide significant operational savings over the asset life.
- **Asymmetric Impacts:** Capex intensification may pose additional challenges for smaller and mid-tier miners
- **Rapid technology evolution introduces depreciation uncertainty:** CAPEX costs for BEV Haulage are expected to decline 16+% from 2026-2035; miners will also be concerned about asset depreciation as technology rapidly evolves.

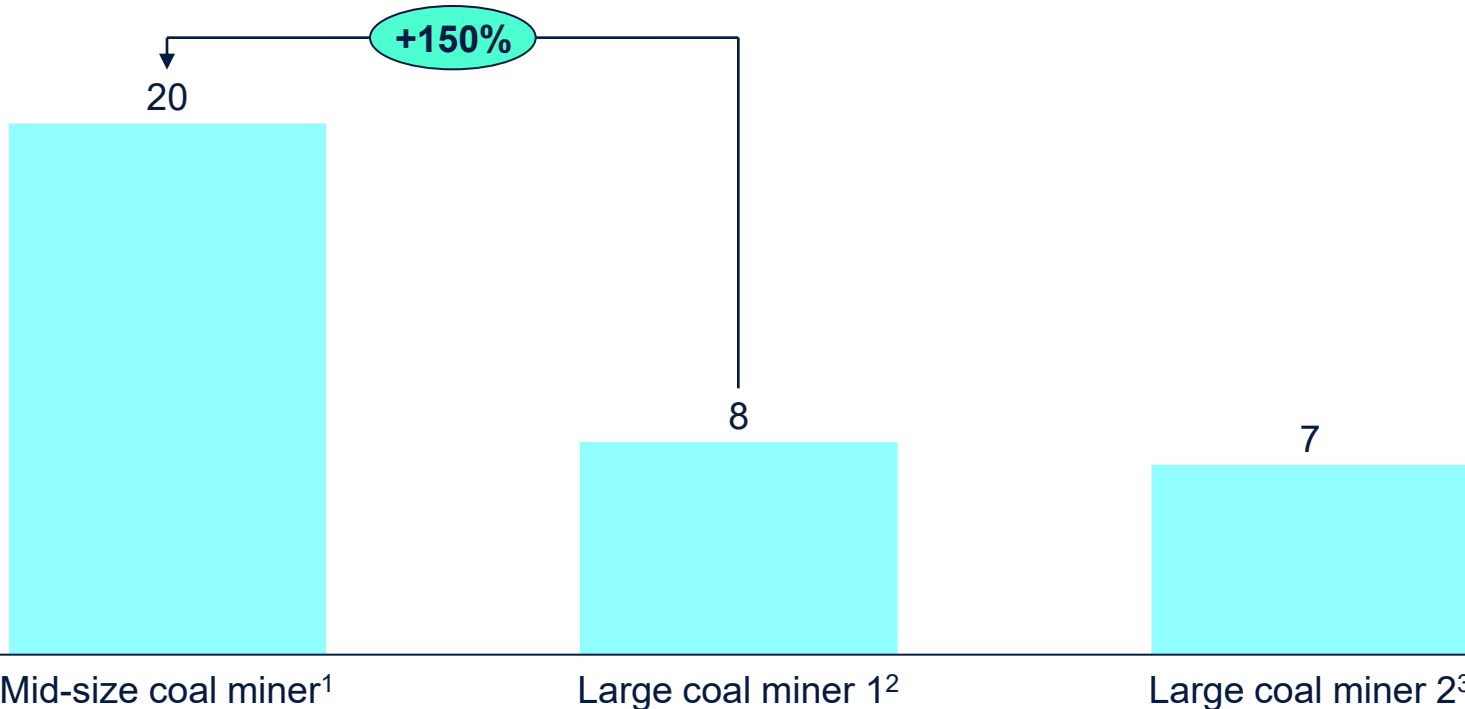


Smaller miners face disproportionate diesel exposure and harder choices



Diesel comprises a much smaller proportion of total costs at high volume coal producers

Diesel as a % of Costs



Key Takeaways

- **Scale drives structural cost advantages:** High-volume producers can justify integrated rail corridors, dedicated transport corridors, and capture infrastructure proximity benefits.
- **Smaller producers often pay a diesel penalty:** Lower throughput and less optimised logistics translate to disproportionately higher unit fuel costs.
- **Diesel displacement is harder – making reform challenging:** Weaker access to financing, less bargaining power with OEMs, and weaker margins (sometimes), constrain capex-heavy decarbonisation. Smaller fleet sizes mean OEMs will not develop bespoke or first-in-class products for them, often forcing them to be second-movers.



Note: 1. Archetypal Mid-size miner with predominantly thermal coal operations across Queensland and NSW. 2. Archetypal large size miner with diversified operations across thermal coal and met coal, with Queensland production primarily focussed on met coal. 3. Archetypal large miner with diversified thermal and met coal operations across NSW and Queensland. Data developed using Cyan Ventures Analysis using company data (for e.g., see ASX [release](#) and annual [report](#)), public reports (for e.g., see IEEFA [report](#)), stakeholder consultations and internal expertise.

Detailed modelling assumptions – Global Assumptions

Item	Assumption Units	Notes
Exchange Rate AUD:USD	0.65 A\$/US\$	2025 exchange rate, used as standard in resources industry for financials in 2025. Aligned for consistency.
FTC Rebate	0.519 (FY26) A\$/L	Weighted average of FY26 FTC rate from ATO data, without accounting for short-term cut to excise rate. This was done to ensure modelling consistency, given the Federal Treasurer has indicated the excise halving will be short-term. ¹
FTC Growth Rate	2.5 % p.a.	Midpoint of RBA Inflation Target band (2-3%). Conservative assumption, near-term growth rate is higher due to higher inflation.
Diesel Price (with rebate)	1.14 A\$/L	ACCC September Quarter 2025 – Average retail price minus excise & GST. Conservative assumption, lower than current levels.
Diesel Price (without rebate)	1.659 (FY26) A\$/L	ACCC September Quarter 2025 – Average retail price minus GST. Equivalent to Diesel price with rebate + FTC rate. Price shown only for FY 2026, future prices will grow due to inflation-linked growth in FTC Rebate.
Gas Price	7.54 (2025) \$/GJ	ACIL Allen forecast projections, with pricing rising to ~\$10 by 2035. Conservative assumption, in line with the WA Government reporting \$7.4/GJ for 2025.
Pilbara Premium for Renewables	~2 times	Pilbara premium derived from Rio’s \$600M investment in 200MW solar + 200MWh BESS in Pilbara, implies double the cost of GenCost levels.



Note: 1. Sydney Morning Herald ([2026](#)), ABC ([2026](#)).

Detailed modelling assumptions – Commodity & Fleet Assumptions

Item	Assumption Units	Notes
Iron Ore Production	953 Mt (2025) → 1094.6 Mt (2035) Mt	Current production from DISR data, initial year forecasts from DISR/OCE till their forecast horizon, GlobalData forecast beyond that to 2035.
Coal production (black, saleable)	420.7 Mt (2025) → 256 Mt (2035) Mt	Current production from DISR data, initial year forecasts from DISR/OCE till their forecast horizon, Cyan Ventures internal estimates beyond that to 2035. Our internal estimates project higher coal production than Treasury 's low decline case (42% decline to 244 Mt by 2035).
Iron Ore – Diesel Intensity of Production	~2.7 ML/Mt	Cyan Ventures internal estimate. IEEFA (2023) implied estimate of ~2.61 ML/Mt, ARENA (2017) implied estimate of ~3.61 ML/Mt. Based on internal assessments, we believe the true industry-average diesel intensity of production is closer to the IEEFA estimate.
Coal – Diesel Intensity of Production	~9.3 ML/Mt	Coal Mining Diesel Use calculated from Australian Energy Statistics and DCCEEW NGER 2025 and applied to production volumes.
Iron Ore – Fleet Size	See notes Trucks/Mt	For Iron Ore (ex-Fortescue): ~0.89 trucks/Mt from BHP WAIO disclosures . For Fortescue , announced fleet size of 360 BEV Haul trucks for 100% fleet replacement used.
Coal – Fleet Size	8.56 Trucks/Mt	From Hunter Valley Operations disclosures. ¹
Fleet Switching Behaviour	- -	For all scenarios, we assume miners will only switch from Diesel Haulage to BEV Haulage when cost-effective. After breakeven, the annualized switching rate per annum is: 1/Asset Life (Existing Fleet) + All Incremental Fleet Growth. In the TTI Scenario, extra funds may be deployed into BEV Haulage, if feasible capital allocations for lower-cost alternatives have been exhausted.



Note: 1. Using IEEFA (2026) and HVO (2024) data

Detailed modelling assumptions – Haulage Assumptions (1/2)

Item	Assumption Units	Notes
Lifespan	100,000-150,000 hours	Cyan Internal Assumption, based on discussions with various stakeholders
Annual Operating Hours	5000-7500 hours	Cyan Internal Assumption, based on discussions with various stakeholders
Fleet Fuel Burn	120-200 L/hr	Cyan Internal Assumption, based on discussions with various stakeholders
Engine/Battery Replacement Cycle	25,000-30,000 hours	Discussions with stakeholders, data from SunHunk
Diesel Haulage Upfront Cost	5-8 US\$M	OEM list prices, IEEFA , SunHunk Heavy Industries
Diesel Engine Rebuild Cost	1-3 US\$M	SunHunk Heavy Industries
OPEX (ex fuel)	0.13 Fraction of CAPEX	Cummins



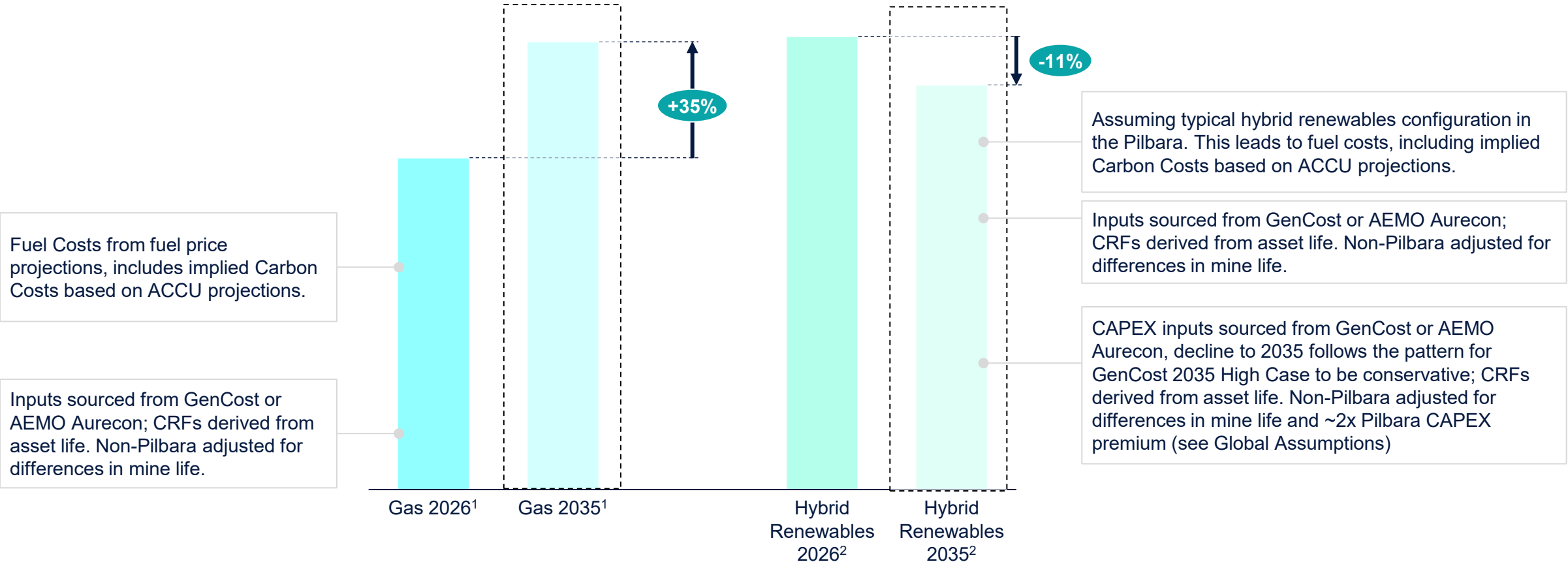
Detailed modelling assumptions – Haulage Assumptions (2/2)

Item	Assumption Units	Notes
BEVs powered by Renewables	- -	From Stakeholder discussions, we assume industry will power BEV Haulage and other BEV equipment with Renewable Energy. The cost comparison for BEV vs Diesel Haulage will include an amortised share of the required renewable build-out.
Efficiency of Diesel Engine	0.4 fraction	International Council on Clean Transport (2014), DPIRD NSW (2021)
Efficiency of Electric Engine	0.9 fraction	Range of estimates used e.g. DPIRD NSW (2021) uses 90%, Journal of Cleaner Production (2025) estimates 95+%.
Hourly Energy per truck	0.57-0.95 MWh/hr	Calculation from NGER Diesel Fuel:Energy ratios, and relevant engine efficiencies.
Implied RE Build-out nameplate capacity	2.0-3.5 MW	Implied nameplate capacity needed to support average power demand of one truck. Using ITK/David Leitch , we assume ~68% is solar with the remaining Wind and an appropriately sized BESS.
Coal Industry: Deployment and Technological Risk Premium	15 %	Given lack of trials in Australian conditions for BEV Haulage and the lack of available BEV models from existing OEM suppliers, any switching to Chinese suppliers e.g. XCMG with established BEV Haulage for coal operations will have risk premia. We assume risk premia range between 10-20% based on desktop research, with the midpoint taken. Risk premia decline to 7% by 2035.



Detailed modelling assumptions – Stationary Energy Generation

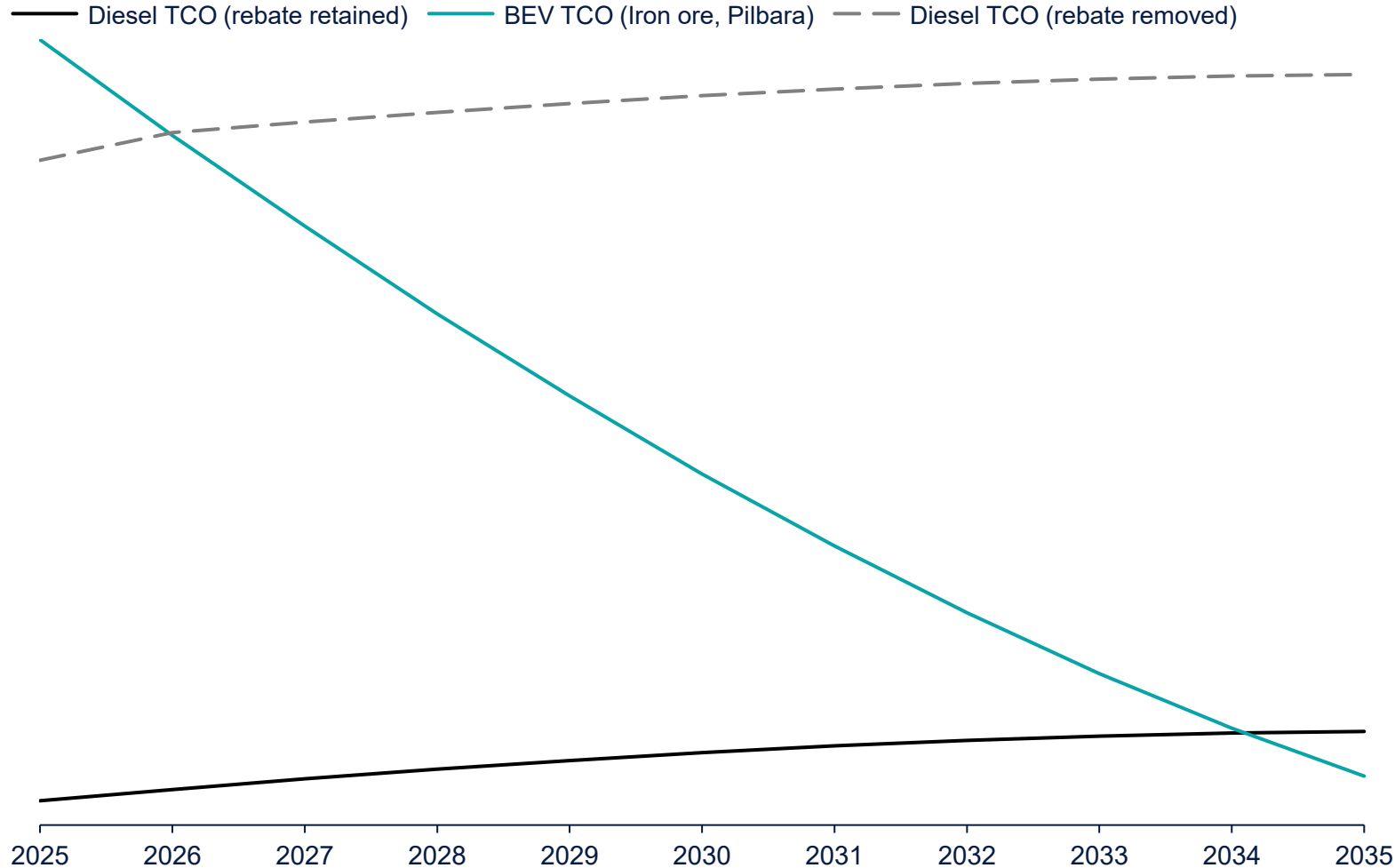
Levelised Cost of Electricity for Pilbara Stationary Energy Generation
(A\$/MWh)



Breakeven Point 2033 (Pilbara). 2029 (East Coast).

Detailed design decisions – Rebate Removal Scenario

NPV-annuitised total cost of ownership
(A\$/hr, full enabling system basis)



Analysis reflects our conservative assumptions on diesel prices (~\$1.14/L). If current diesel prices persist (~\$1.90/L, Sep 2026), BEV TCO is already lower than Diesel TCO.

The BEV stack reflects the full enabling-system cost (vehicles, renewable generation, storage, charging) not vehicle cost alone. The enabling investment and its timing poses a barrier to adoption. Adoption timing additionally reflects procurement, operational-readiness and fleet-replacement lags, modelled separately from the per-hour TCO.

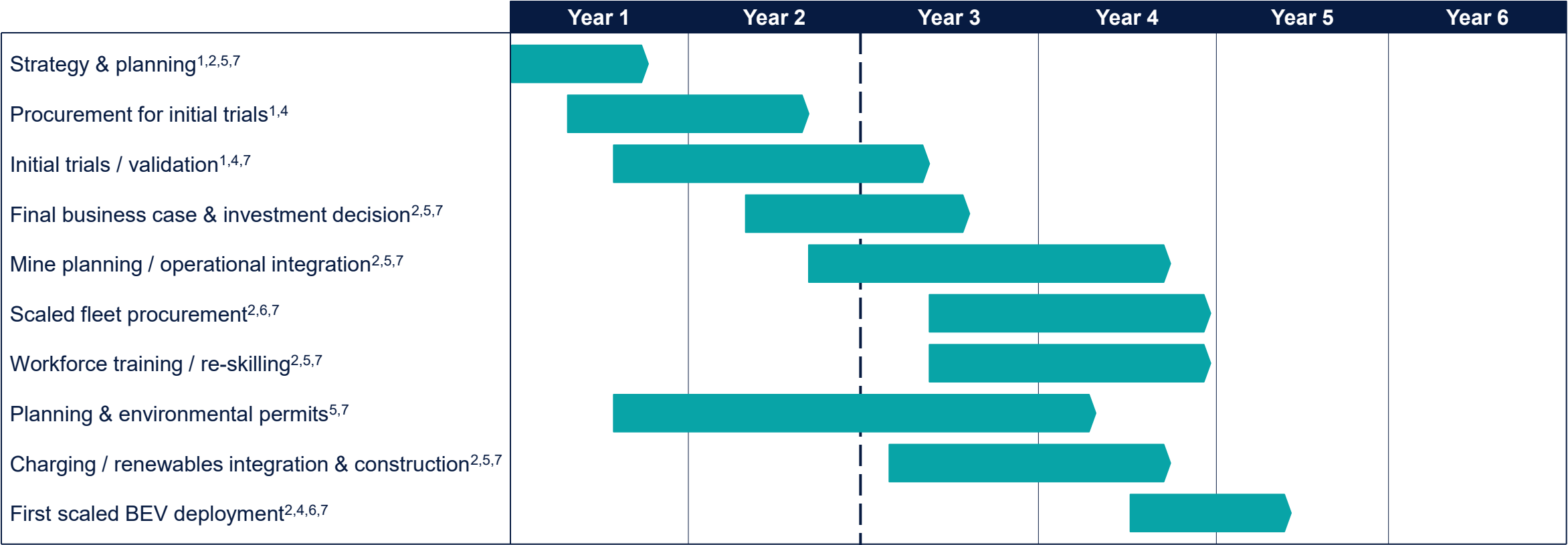
Given a 2026 rollout of BEV Haulage is impractical given OEM lead times, negotiation processes, and others, we assume an industry-wide average 3 year lag in adoption based on industry standard contract negotiations (see subsequent slides). The increase in effective diesel prices till 2029 is absorbed by miners. From 2029 onwards, fleet replacement brings down diesel costs.



Notes: Analysis covers the average industry-wide Pilbara iron ore cohort (BHP, Rio Tinto, Mitsui, Hancock, MinRes and below-cap miners). The BEV TCO reflects the full enabling system: vehicles, renewable generation, storage, charging; the comparison is of complete cost of ownership, not technology readiness. Adoption timing additionally reflects procurement, operational-readiness and fleet-replacement lags, modelled separately.

Indicative industry-wide BEV deployment activities duration – Iron Ore

The below is an indicative timeline for the activities required to plan, procure and deploy BEV haulage. This is an assessment of activity duration only. It is not a deployment forecast.



Industry-wide cohort broadly here today:
BHP / Rio remain in first-stage trials, but BHP's conditional FY2028 fleet-adoption pathway likely supports first scaled industry-wide uptake from 2029, while broader haulage electrification remains post-2030



Sources: 1. BHP / Rio Tinto (2024). 2. BHP (2024). 3. Fortescue (2024). 4. BHP / Rio Tinto (2025). 5. Cyan Ventures analysis. 6. IEEFA (2026). 7. Climate Change Authority Sector Pathways Review: Resources (2024). Notes: Model assumes first average industry-wide scaled BEV uptake from 2029 (Year 4, Year 1 = 2026). With cap breakeven foreseeable, procurement, FID and deployment readiness run in parallel; assume residual readiness lag separates breakeven from first scaled deployment. The deployment-readiness sequence draws on (a) BHP's conditional FY2028 fleet-adoption pathway; (b) BHP / Rio first-stage trial evidence, including Cat trucks originally planned from H2 2024 and Komatsu trucks from 2026; (c) public-policy / statutory advice that broader electric mining haulage adoption remains closer to 2030–2035; and (d) BHP / Rio pre-2030 spend changes.

Indicative industry-wide BEV deployment activities duration – Coal

The below is an indicative timeline for the activities required to plan, procure and deploy BEV haulage. This is an assessment of activity duration only. It is not a deployment forecast.



Coal Miners are broadly here:

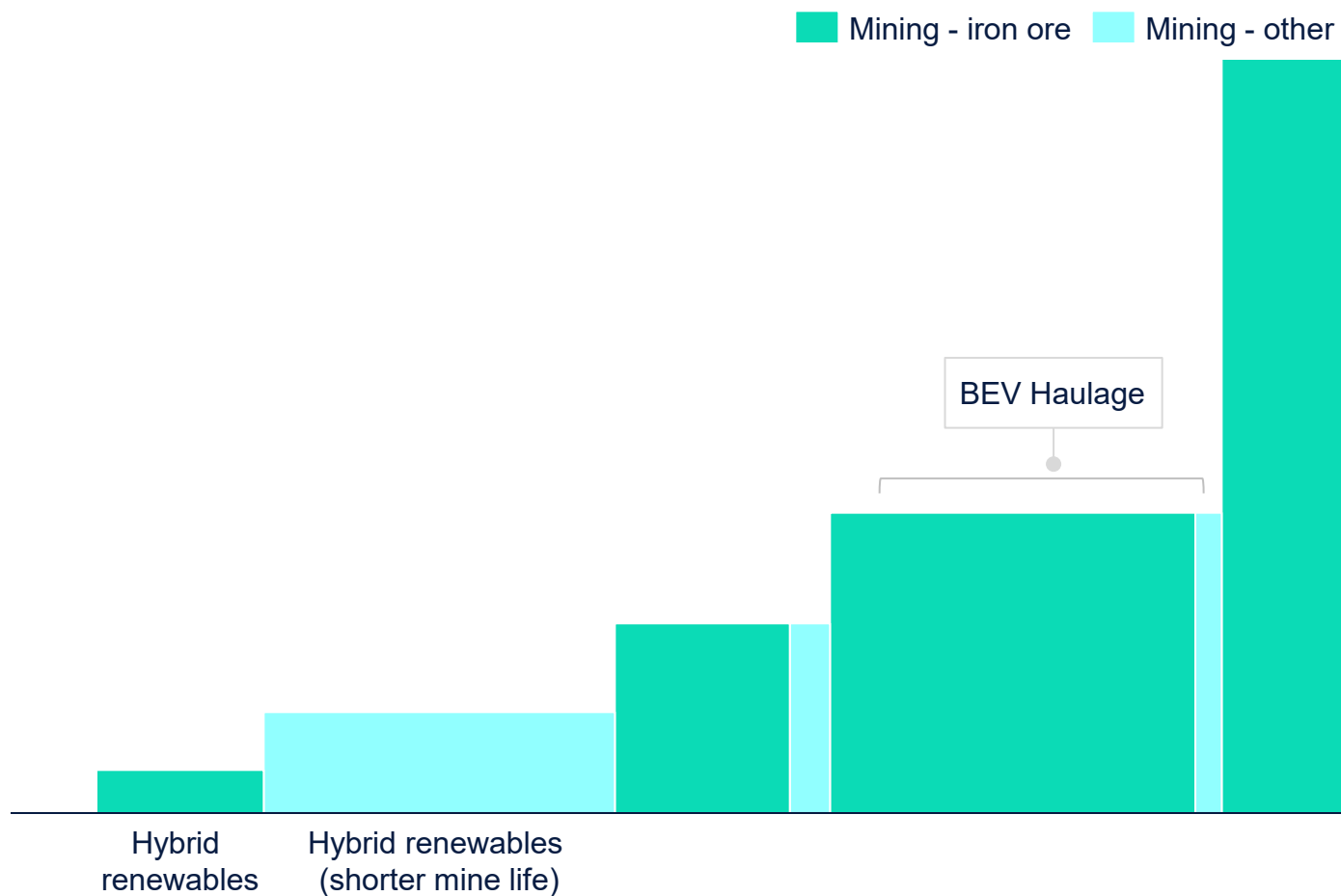
While domestic trials have not been initiated, BEVs have gone into large-scale deployment in Chinese coal mines.¹ Some Australian coal miners have made or are planning renewable energy buildouts or purchases but most efforts are early stage.²

Sources: 1. Zijin Mining has used Breton 105t – 140t BEV Haulage, which are common tonnages used in Australian coal ([2026a](#), [2026b](#)). XCMG has supported a fleet of 100 autonomous 90t BEV Haul trucks at the Yimin Inner Mongolian coal mine ([2026](#)). 120 Tonly autonomous BEV Haul trucks with 90t capacity have been deployed at the Zhundong coal mine ([2026](#)). 2. Anglo American has switched to 100% renewable PPAs ([2022](#)). Anglo-American decarbonisation pathway expects meaningful diesel displacement in the 2030s ([2025](#)), with trials of Hydrogen-powered haulage ongoing in South Africa ([2022](#)). BHP BMA will operate on 100% renewable energy via PPAs from 2027 onwards ([2024](#)). Whitehaven Coal is investing in a 26MW solar plant ([2024](#)), which is undergoing planning approvals in NSW ([2026](#)). Yancoal has proposed the Stratford Renewable Energy Hub with 330 MW solar and 3.6GWh pumped hydro ([2024](#)), undergoing planning approvals process in NSW ([2026](#)). Yancoal has previously signed an MOU with Green Gravity for a GESS system but this did not materialise ([2022](#), [2025](#)). Malabar Resources plans to invest in a 350MW solar farm + BESS in the Hunter Valley ([2024](#)), in a very early stage of planning approvals in NSW ([2026](#)). IEEFA ([2026](#)) finds that major miners including BHP, Glencore and Anglo American have deferred diesel displacement to post-2035.



Detailed design decisions – TTI Scenario

Marginal Abatement Cost Curve



Key Design Decisions & Assumptions

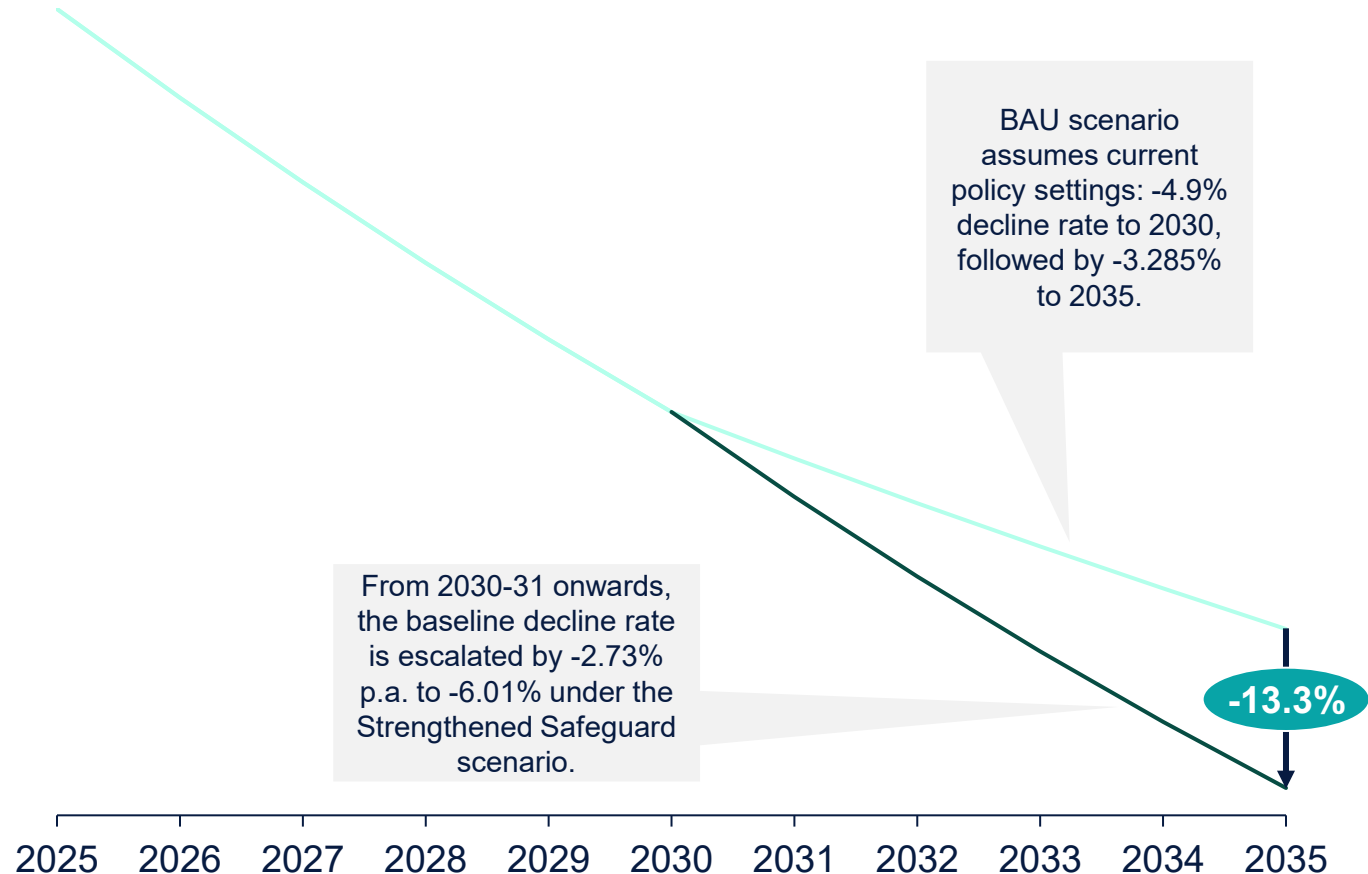
- **Investment Prioritisation:** Hybrid Renewables have a lower MAC than BEV Haulage, on current projections. Miners will prioritise investing in hybrid renewables under TTI.
- **TTI Credit Banking:** Aligning with the [CEF proposal](#), we provide an initial 3-year banking period for TTI Credits. We make a modelling assumption that only a small proportion (20%) of TTI credits will be exercised over this period, while the rest will be rolled over.
- **TTI Fund Utilisation:** Based on discussions with stakeholders, we assume ~25% of disbursed funds (except funds going to early decarbonisers) will return to Treasury.
- **BEV Haulage powered by Renewables:** Based on stakeholder discussions and current market behaviour, miners will build out renewable energy to meet the increased generation capacity needed for BEV Haulage. Under TTI, this allows for incremental BEV adoption as it defrays the amortised RE cost line item for BEVs.



Detailed design decisions – Strengthened Safeguard Scenario

Emissions baseline reduces by an extra 13% under Strengthened Safeguard scenario

— Emissions Baseline (BAU) — Emissions Baseline (Strengthened Safeguard)



Key Design Decisions & Assumptions

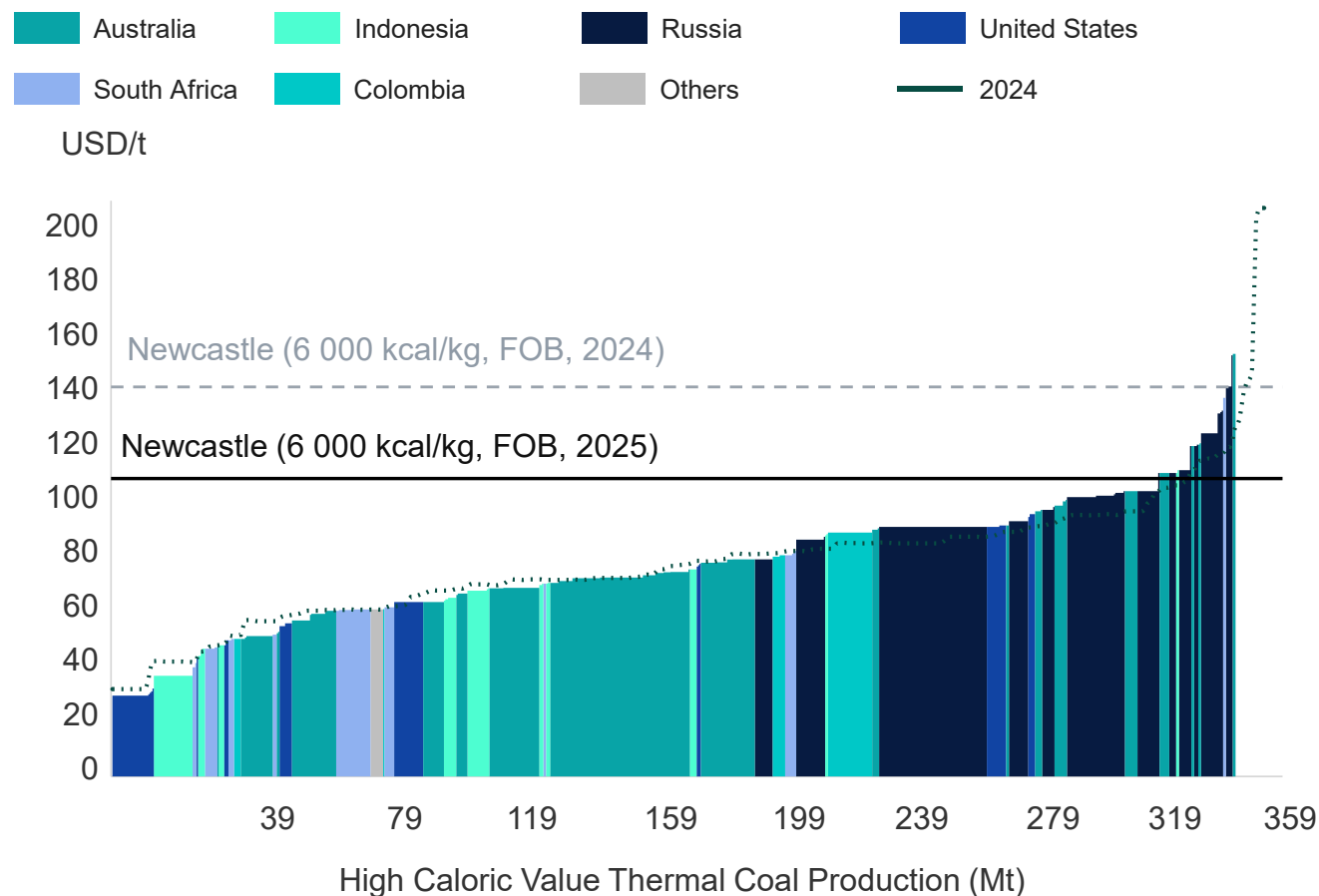
- **Baseline Decline Rate:** The legislated -4.9% decline rate to 2030 assumed unchanged and applicable to all iron ore and coal mining operations, based on recent TEBA data showing no exemptions for these industries. From 2030 onwards, the currently forecast decline rate of -3.285% is used. This is subject to changes from the review.
- **Equivalent Decarb with Rebate Removal Scenario:** To ensure consistent comparison of effects, our strengthened safeguard scenario assumes the baseline decline rate from 2030-35 will be increased to -6.01% to match the cumulative additional abatement under Rebate Removal.
- **ACCU Price Projections (ex-Strengthened Safeguard scenario):** 35 (2025) → 80 (2035) based on EY Net Zero Centre projections that align with Cyan Ventures expectations.
- **ACCU Price Projections (Strengthened Safeguard scenario):** 35 (2025) → 95.8 (2035). ACCU price assumed to grow with elasticity factor (Cyan Ventures internal assumption) to underlying demand growth.



For thermal coal, Australian competitiveness looks good with ~70% of production in the global Q2 but broader industry headwinds will bite

Australia dominates the global Q2 for High-CV Thermal Coal¹

Free-on-Board Cost Curve for High Caloric Value Thermal Coal (\$/t), 2025

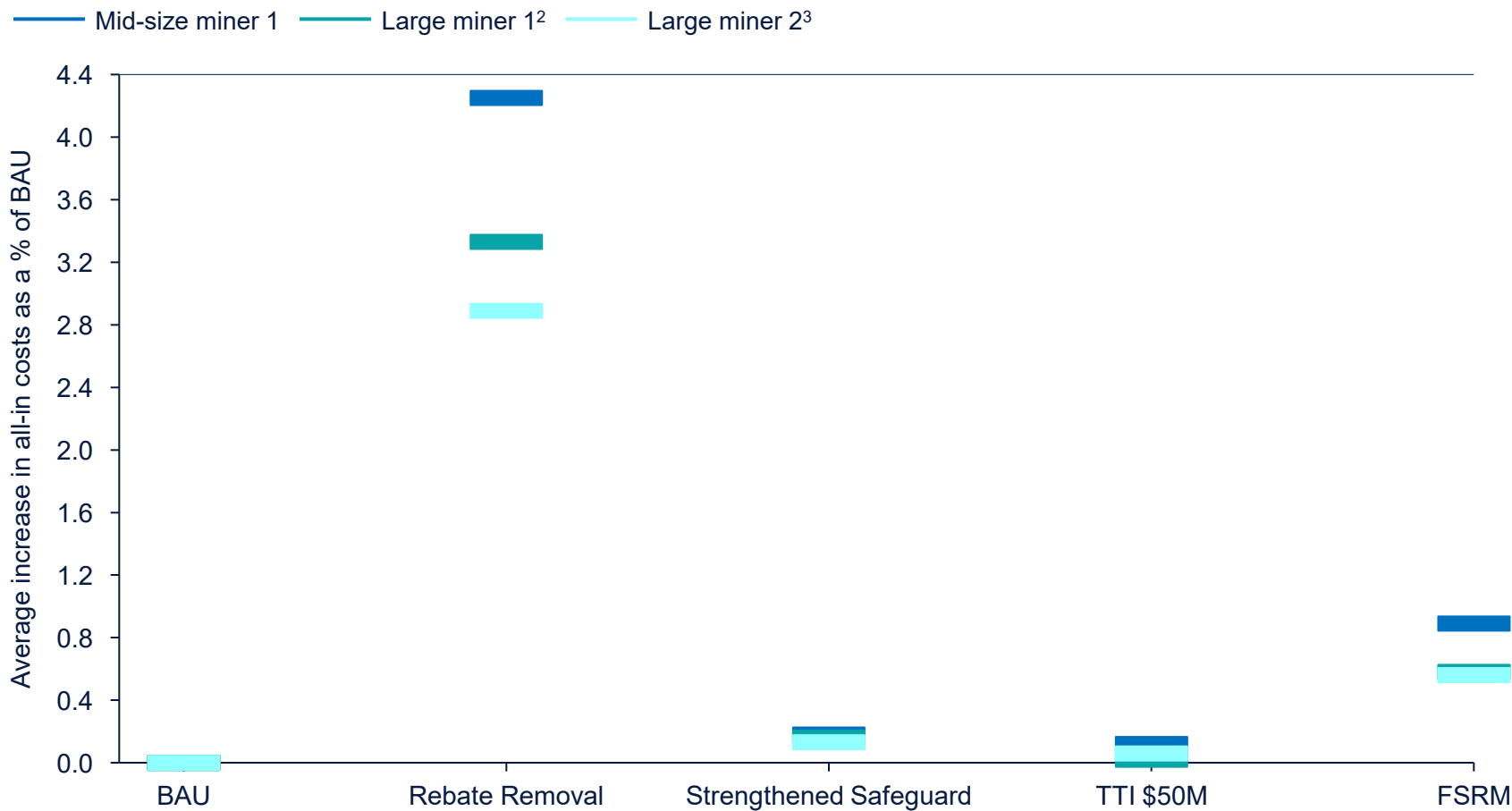


Key Takeaways

- **Demand & Context:** Global thermal coal outlook negative, driven by decarbonisation and environmental regulations.
- Key buyers for Australia retreating – export volumes to South Korea (3rd largest buyer) down ~67% (2021-24);² Japan (largest buyer) diversifying to Indonesian and Colombian coal (50% less ash),³ to ease regulatory compliance.
- **Australia's current positioning:** Domestic production concentrated in High-CV Thermal Coal, where Australia dominates global Q2 and earns a premium.³
- Investment Attractiveness: NSW (28th) and QLD (13th) outrank Indonesia, South Africa and Colombia but trail many US and Canadian states.⁴
- **Future Australia positioning:** High-CV premium markets may shrink as buyers decarbonise or adopt lower as products, eroding Australia's pricing and market power.
- Treasury forecasts 42-51% coal output decline by 2035; thermal coal likely hit harder than metallurgical coal.⁵
- Regulatory risks rising: NSW (68% of exports) has banned new coal exploration and mines.⁶ QLD's progressive coal royalties, NSW planning bottlenecks further undermine investment case.⁴

For thermal coal, rebate removal leads to 2.8%+ cost increases, while other scenarios have less than one-quarter that impact

Average increase in All-in costs to 2035 as a percentage of BAU costs (%)



Key Takeaways

- **Thermal coal lies between iron ore and met coal on rebate exposure:** Rebate removal lifts all-in costs by ~+2.9-4.3%. As with the other two commodities, smaller miners are significantly worse off under rebate removal.
- **Prioritisation between Strengthened Safeguard and TTI shifts towards the former, unlike met coal:** Largest met coal producers sit much above the cap, implying much higher reinvestment obligations while thermal coal production is less exposed.⁴
- **Safeguard costs for thermal coal are lower than met coal:** Met coal mines tend to be deeper, more often underground, and ‘gassier’ (emit more methane).^{5,6} Although abatement costs for underground mines are estimated at ~50% of open cut,^{5,6} this does not close the gap to thermal coal.



1. Archetypal Mid-size miner with predominantly thermal coal operations across Queensland and NSW. 2. Archetypal large miner with diversified thermal and met coal operations across NSW and Queensland. 3. Archetypal large size miner with diversified operations across thermal coal and met coal, with Queensland production primarily focussed on met coal. 4. Cyan Ventures internal assessment (see Appendix for further details on FTC Claims Assessment). 5. IEEFA (2024), IEEFA (2025). 6. Ember (2023).

Breakeven sensitivity to diesel price and battery learning rate assumptions, by FTC scenario

Rebate retained (current policy)

	Low diesel price (A\$1.14/L)	Medium diesel price (A\$1.43/L)	High diesel price (A\$2.28/L)
2.5% learning rate on batteries	2035	2030	2026
4.1% learning rate on batteries	2032	2029	2026
8.0% learning rate on batteries	2030	2028	2026

Strengthened Safeguard scenario

	Low diesel price (A\$1.14/L)	Medium diesel price (A\$1.43/L)	High diesel price (A\$2.28/L)
2.5% learning rate on batteries	2034	2029	2026
4.1% learning rate on batteries	2032	2028	2026
8.0% learning rate on batteries	2030	2027	2026

\$50m FTC cap scenario

	Low diesel price (A\$1.14/L)	Medium diesel price (A\$1.43/L)	High diesel price (A\$2.28/L)
2.5% learning rate on batteries	2028	2026	2026
4.1% learning rate on batteries	2027	2026	2026
8.0% learning rate on batteries	2027	2026	2026

Full rebate removal / Transition Tax Incentive scenarios

	Low diesel price (A\$1.14/L)	Medium diesel price (A\$1.43/L)	High diesel price (A\$2.28/L)
2.5% learning rate on batteries	2026	2026	2026
4.1% learning rate on batteries	2026	2026	2026
8.0% learning rate on batteries	2026	2026	2026

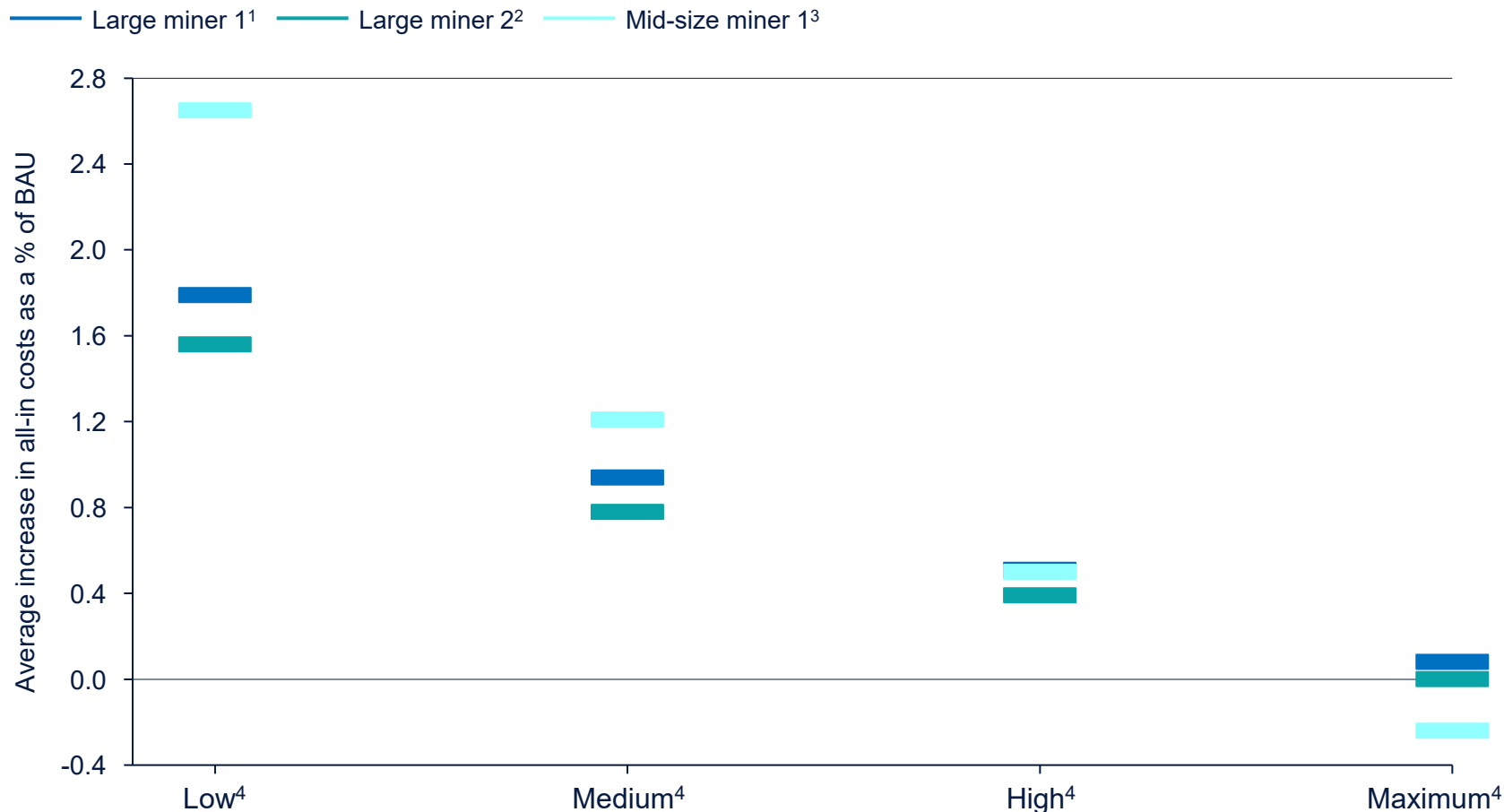
Breakeven varies depending on key assumptions. High diesel price driven by geopolitical tensions could bring breakeven forward to 2026 under every policy scenario; aggressive reform (e.g., \$50m FTC cap or full removal) does the same across most price and learning rate assumptions. Under current policy settings with slow learning, breakeven slips to the mid-2030s.

Notes: Each table holds the FTC scenario fixed; cells show the first year BEV haulage TCO falls below diesel, varying by diesel price (columns) and battery learning rate (rows). Battery learning rates assumed linear. Greener = earlier breakeven. Diesel price cases (all net of FTC and GST): low A\$1.14/L (ACCC average retail diesel, Sep Q 2025); medium A\$1.43/L (~25% above low); high A\$2.28/L (recorded 30 Mar 2026). Battery learning rate: ~4.1% p.a. is the implied rate from BNEF (2025 actual US\$99/kWh → forecast US\$65/kWh by 2035, linearly interpolated 2026-2035); 2.5% and 8% p.a. are assumed low/high sensitivities. FTC scenarios: rebate retained = status quo; \$50m cap = FTC capped at A\$50m per consolidated group (sub-cap diesel use remains rebated); full removal = no rebate. Strengthened Safeguard: A\$80/t carbon price by 2035 baseline, with a Cyan Ventures internal elasticity factor applied to demand-driven scenarios. Source: ACCC Australian Petroleum Market Report, September Quarter (2025); AIP terminal gate prices (accessed 30 Mar 2026); BNEF clean-transport battery outlook (2025); David Leitch / ITK Research (2026).



TTI impacts are highly sensitive to fund utilisation – Iron Ore

All-in cost impacts and order differ widely based on TTI fund utilisation rates



Key Takeaways

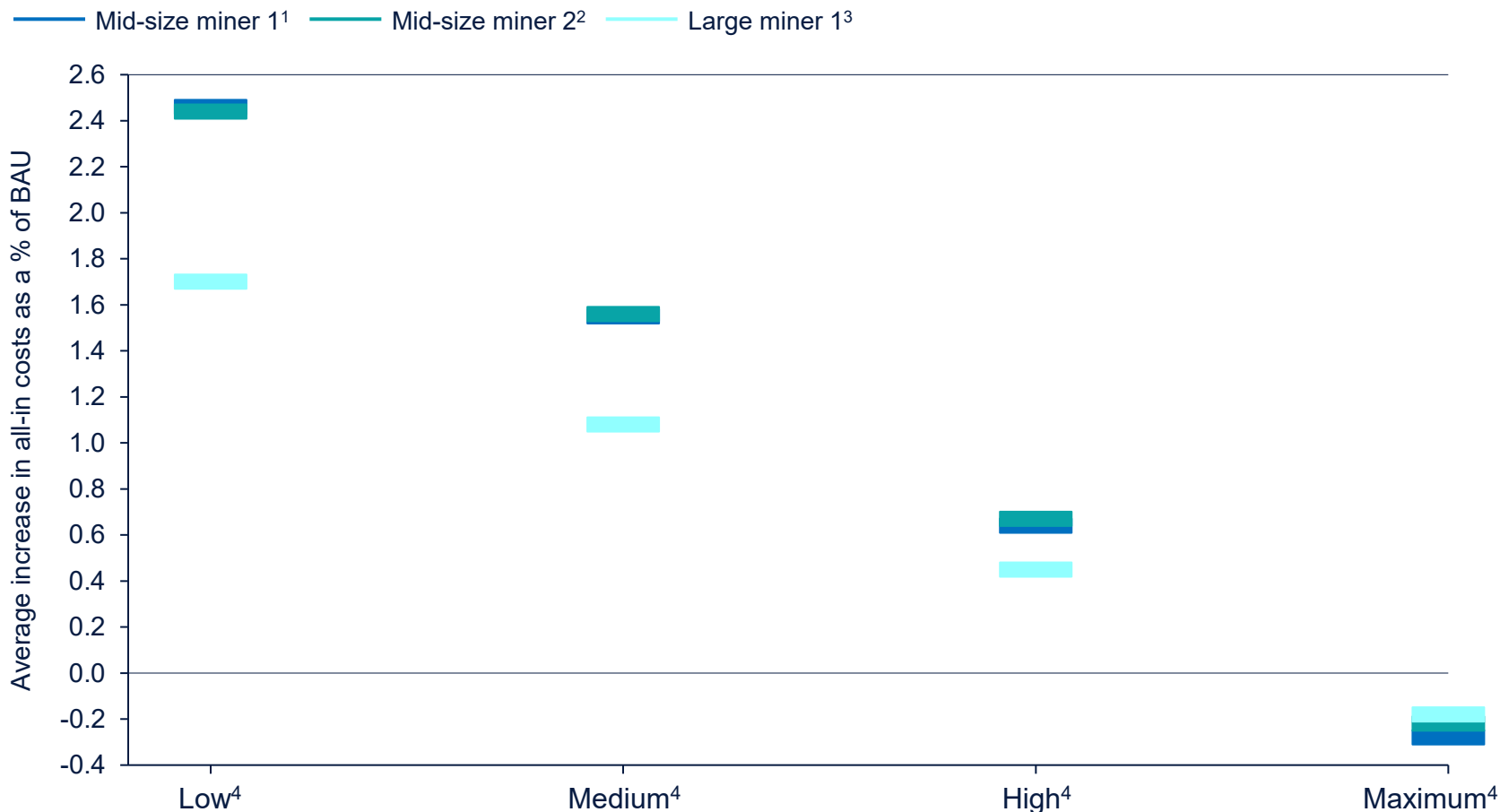
- **Fund utilisation is a critical swing factor:** As utilisation rises from low to maximum, average all-in cost impact falls from 2+% to near-zero or negative.
- **At low utilisation, TTI impacts approach rebate removal:** Average costs to 2035 rise to ~+2.7% for an archetypal mid-size miner. Although the 3-year TTI banking period helps, a cost-shock hits from 2029 onwards.
- **Higher utilisation brings significant benefits for mid-size miners:** The structurally high diesel costs experienced by smaller miners lead to high cost impacts at low utilisation. However, at high or maximum utilisation, operating savings to 2035 begin to accumulate. This can even bring overall *reductions in costs* and invert competitiveness impact orders.



1. Archetypal large iron ore miner with conservative transition strategy and access to integrated rail and economies of scale. 2. Archetypal large iron ore miner with aggressive transition strategy and access to integrated rail and economies of scale. 3. Archetypal mid-size iron ore miner with conservative transition strategy (constrained by technology access, capital demands of transition, financing access and high-cost business structure), no access to integrated rail and limited/smaller economies of scale. 4. Fund utilisation excludes early decarbonisers, who have in-train investments and planned decarbonisation spends that can soak up TTI spending requirements. All percentages exclude this group. Low = ~25%, Medium = ~50%, High = ~75%, Maximum = ~100%.

TTI impacts are highly sensitive to fund utilisation – Met Coal

All-in cost impacts and order differ widely based on TTI fund utilisation rates



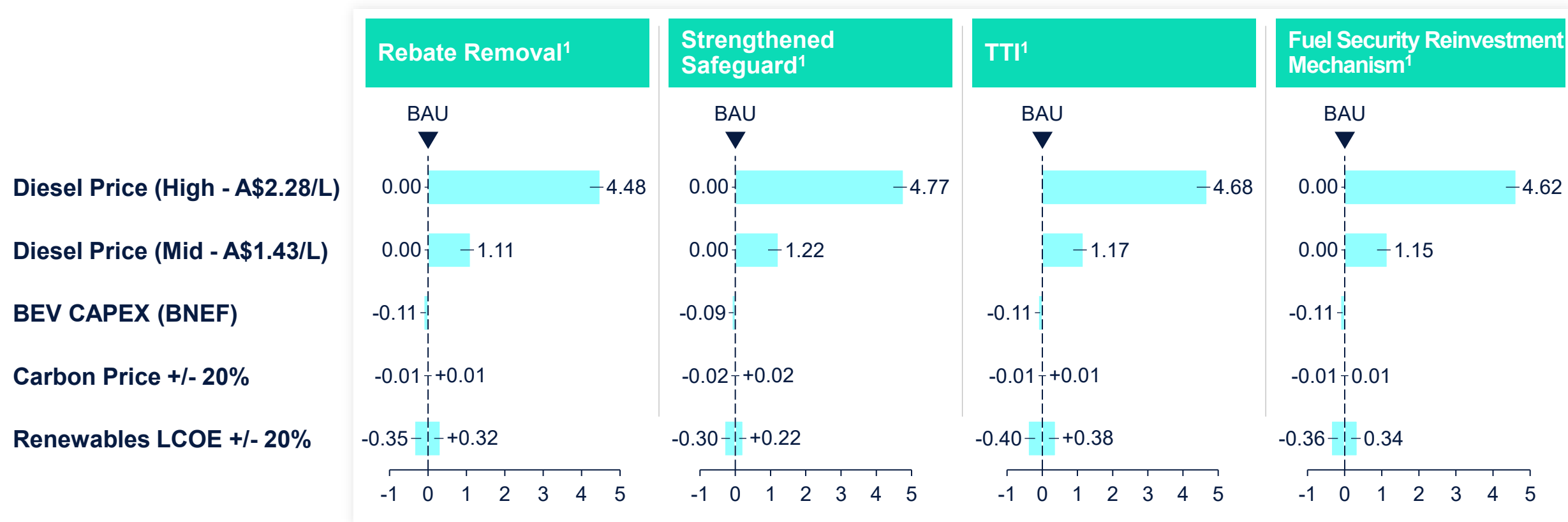
Key Takeaways

- **Met coal is more exposed than iron ore:** Met coal is more diesel-intensive to produce, producers are generally smaller scale than for iron ore. Consequently, scale and diversification offsets are harder to achieve.
- **Maximum utilisation is unlikely to be realised for met coal:** Shorter mine lives, uncertain demand & policy outlook, sometimes compressed margins will constrain investments under the TTI. Moreover, operational readiness for adopting energy security technologies is lower than iron ore producers, meaning transitioning will take more time. This makes the maximum case of cost reductions structurally implausible.



1. Archetypal Mid-size miner with met coal operations in Queensland. 2. Archetypal mid-size miner with met coal operations in Queensland. 3. Archetypal large size miner with diversified operations across thermal coal and met coal, with Queensland production primarily focussed on met coal. 4. Fund utilisation excludes early decarbonisers, who have in-train investments and planned decarbonisation spends that can soak up TTI spending requirements. All percentages exclude this group. Low = ~25%, Medium = ~50%, High = ~75%, Maximum = ~100%.

Cost Competitiveness Sensitivities – Iron Ore

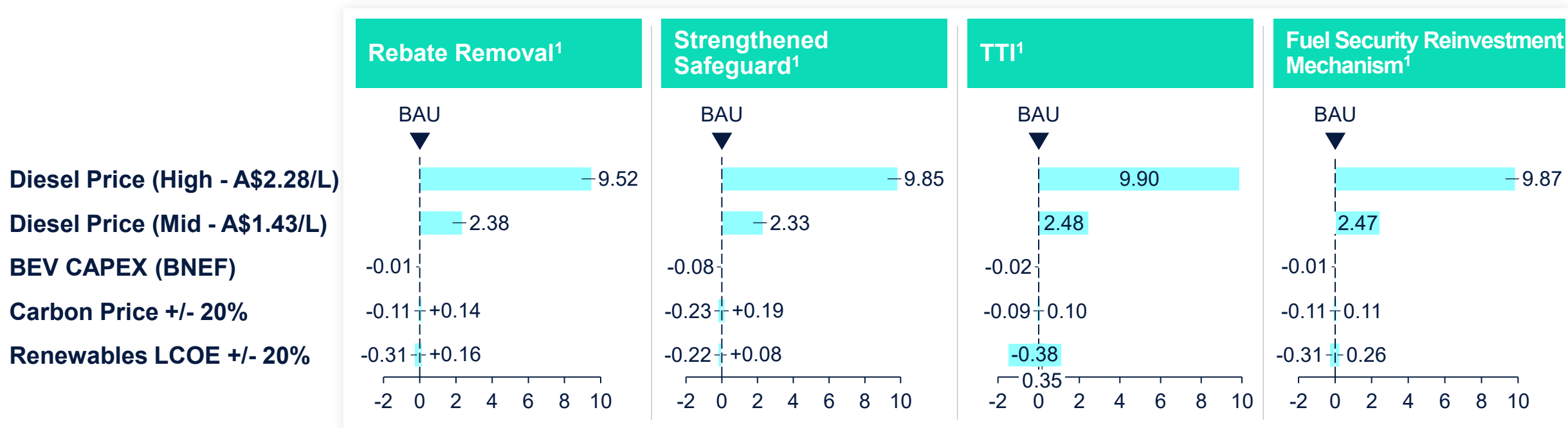


- **Cheaper renewables help most where policy supports the shift:** Under TTI, firms build renewables-backed generation (for charging, power supply, etc) at scale this decade, so a 20% cost reduction reduces average all-in costs to 2035 by ~0.4% (the largest non-diesel effect). SGM reform is less sensitive as on-site decarb is much more expensive than ACCUs, so adoption remains slower. Extra flexibility in the FSRM scheme design vs TTI, reduces sensitivity to renewables costs to levels similar to rebate removal.
- **All 4 scenarios carry near-identical diesel risk:** Choice between them rests on energy security, abatement and budget outcomes, not competitiveness sensitivity.



Notes: 1. All results are with respect to the BAU in our base case, to allow for comparability.

Cost Competitiveness Sensitivities – Metallurgical Coal

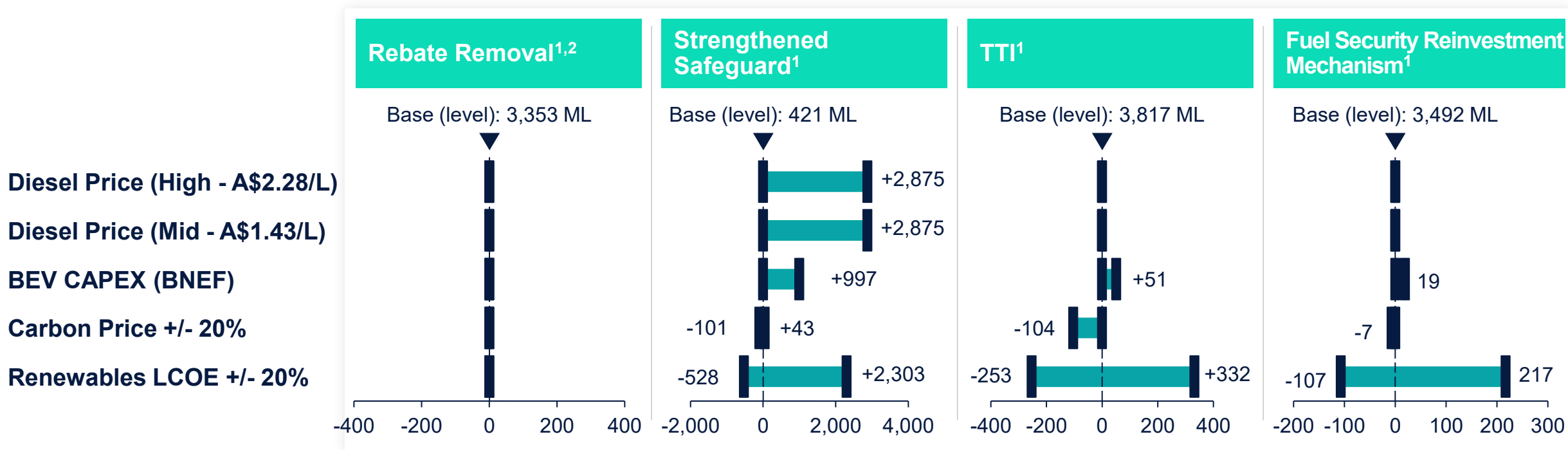


- **Met coal's diesel sensitivity is ~2 × iron ore's (+9.9% vs +4.7% for TTI):** diesel is roughly twice the share of its cost stack, and inadequate operational preparedness and trials in East Coast coal mines leaves more of the fuel bill exposed to diesel shocks.
- **Carbon is visible for met coal (±0.2%) but not iron ore, reflecting higher safeguard exposure per tonne from gassy (methane) mines**
- **Renewables matter less than for iron ore:** East Coast generation builds (or dedicated grid electricity) costs lower than in the Pilbara as there is no remoteness premium, so less of it lands within the 2026-35 window. A +/- 20% swing has a smaller impact, and those costs sit on an all-in cost base 2-3X larger, shrinking the percentage impact.
- **A faster BEV capex learning rate has marginal impact:** met coal uptake is predominantly fund-constrained (challenging fundamentals, declining margins) and risk-constrained (mine life, poor operational readiness, OEM switching costs), not truck price-constrained. Faster learning only pulls breakevens by 1-2 yrs, with thin early uptake restricting all-in cost impacts.



Notes: 1. All results are with respect to the BAU in our base case, to allow for comparability.

Energy Security (ML displaced)

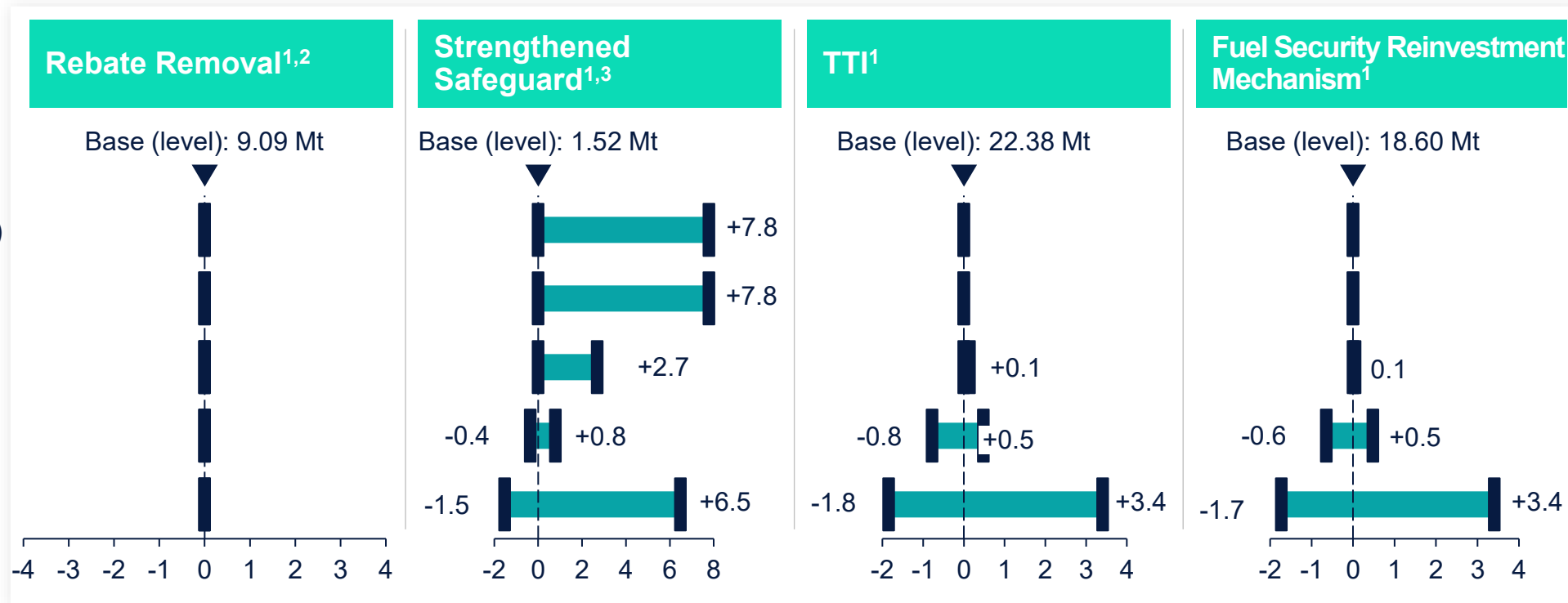


- **Rebate removal is delivery-constrained, not economics-constrained:** Deployment assumed to proceed at max pace operational & supply chain realities allow (truck availability, site works, fleet replacement cycles) under our base case, so higher diesel prices cannot accelerate it. This lever also outweighs any impacts from changes to carbon prices. Renewables vs gas economics are unchanged.
- **Under Safeguard, either diesel shock brings deployment forward to 2029:** Both shocks unlock same adoption path and 2,875ML of diesel displaced, as adoption pre-2029 is not practicable.
- **TTI/FRSM displacement is set by mandatory investments into decarb, not by operational prices:** Diesel prices do not change truck capital costs; Faster decline rates and carbon prices have small effects; renewables the biggest lever as generation buildout precedes large-scale BEV deployment and alters capital costs.



Notes: 1. All results are with respect to the BAU in our base case, to allow for comparability. 2. Rebate Removal scenario: Under BAU, a higher diesel price would spur more diesel displacement as the adoption of diesel displacing tech would be relatively more cost-effective. This would change the balance between decarb under BAU and under the rebate removal scenario, leading to decreasing decarb under rebate removal under high diesel prices as a modelling artefact. To avoid confusion, as the total BAU + scenario decarb is expected to be unchanged, we have shown no change under the higher diesel price scenarios. The same logic applies to the other sensitivities, due to the delivery constraints.

Decarbonisation (MtCO₂e abated)

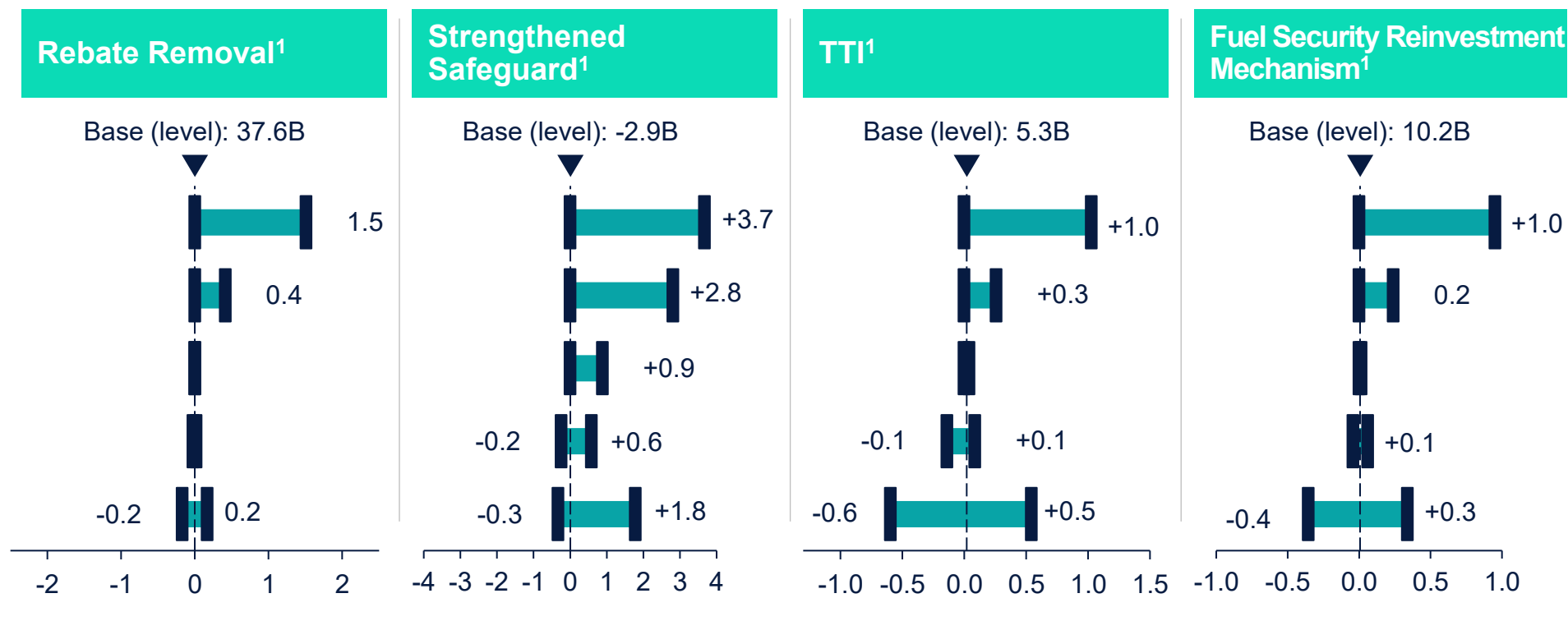


- **As for energy security, rebate removal sensitivities for decarb are adoption-constrained not economics-constrained. Similarly, TTI and FSRM decarb is driven by mandatory investments, meaning diesel operational costs and truck prices have limited impacts, while renewable prices are the biggest lever.**
- **SGM abatement hinges on when switching starts:** In our base case, BEVs only become economic in 2033-34, so only 1-2 yrs of adoption fall inside the model window; shocks to diesel prices or cheaper renewables are the most significant and widen that window to ~7 years, compounding abatement to ~8-9 Mt. Note that this sensitivity reflects on-site decarbonisation as this is the key model output, with the balance (if any) to match rebate removal being ACCUs.
- **Cheaper batteries work slowly:** A faster learning rate advances SGM breakeven by 2 years but cannot reach 2029 floor because the compounding cost wedge is only ~8% deep by 2030, unlike a diesel shock which impacts costs much more materially.



Notes: 1. All results are with respect to the BAU in our base case, to allow for comparability. 2. Rebate Removal scenario: Under BAU, a higher diesel price would spur more diesel displacement as the adoption of diesel displacing tech would be relatively more cost-effective. This would change the balance between decarb under BAU and under the rebate removal scenario, leading to decreasing decarb under rebate removal under high diesel prices as a modelling artefact. To avoid confusion, as the total BAU + scenario decarb is expected to be unchanged, we have shown no change under the higher diesel price scenarios. The same logic applies to the other sensitivities, due to the delivery constraints. 3. The Strengthened Safeguard sensitivity on this slide represents the change in *on-site decarbonisation*. This is because this scenario is designed to match the total abatement under Rebate Removal. As a result, it is not meaningful to assess sensitivities to overall decarbonisation (including offsets like ACCUs).

Budget impact (\$B)



- **Higher diesel prices drive budget benefits:** faster BEV switching drives operational cost savings and reduces 2nd order budget impacts (reduced corporate tax take from competitiveness impacts to firms) relative to BAU.
- **Strengthened Safeguard is the only scenario where higher carbon prices hurt the budget:** -A\$0.2bn at +20%; the same emissions reductions impact bottom line more, without driving much add'l switching behaviour because the implied carbon price to offset the DFTR is ~\$194, far above the CCM cap.
- **Sensitivities never reorder the scenarios:** Although budget sensitivities can be substantial (up to +1.5-2.4B), they are dwarfed by the budget differences between each scenario.



Notes: 1. All results are with respect to the BAU in our base case, to allow for comparability.

The real economic cost of abatement for the market economy and government varies widely

Reform Option	Cost to market economy to 2035 in \$/tCO ₂ e ¹	Transfer-adjusted cost to market economy to 2035 in \$/tCO ₂ e ²	Government benefit to 2035 in \$/tCO ₂ e ³	Commentary
Rebate removal	Rebate removal is largely a transfer ⁴	Rebate removal is largely a transfer	Rebate removal is largely a transfer	Driven by higher effective diesel price from removal of diesel input credits. This may be viewed as a transfer cost, as government receives these funds instead.⁴
Strengthened Safeguard⁵	255  1,156	581	-347	- ACCUs included as abatement, bringing down costs for industry but raising them across the economy - Limited adoption of diesel displacement tech puts a floor under abatement costs
TTI	171	68	237	- Cost of abatement much lower once transfer-adjusted, and similar to current ACCU prices. None of these costs are transfer costs. - Non-cost barriers may exist to achieving these outcomes⁶
Fuel Security Reinvestment Mechanism	226	96	404	- Cost of abatement much lower once transfer-adjusted, and within range for forecast ACCU prices to 2035. ~25% driven by FTCs reallocated to budget repair; which can be considered a transfer cost. - Non-cost barriers may exist, albeit less than for the TTI as the scheme is more flexible.



Notes: 1. The market economy here refers to the resources industry (private sector). Note that 3rd order impacts to GDP, wages and regional economies are out of scope for this analysis. Inclusion of these factors could shift results in either direction. The cost to the market economy is an estimate of the cost borne by the resources industry per tCO₂e abated to 2035. This is not a forecast. 2. The transfer-adjusted cost estimates the net impact to the resources industry, after stripping out the impacts of funds that are merely transferred from industry to government (e.g. under rebate removal the government receives the full value of the rebate that industry would otherwise have received). This is not a forecast. 3. The government benefit to 2035 estimates the benefit/cost to government for each tCO₂e abated under the reform option. This is not a forecast. 4. Rebate removal is largely a transfer from industry to government, disentangling the 'non-transfer' effects is challenging. Total costs to the market economy are estimated as \$5233/tCO₂e. 5. Strengthening Safeguard baselines increases costs for the entire economy to achieve decarbonisation outcomes in the resources industry. \$1156/tCO₂e is the cost of abatement for on-site decarbonisation for mining only, \$255/tCO₂e is the cost for on-site decarbonisation and ACCU purchases across the resources industry (not just iron ore and coal industries). 6. Cost estimates do not include the impact of non-cost barriers including the ability for firms to reach FID under TTI scheme design, balance sheet challenges, workforce and supply chain impacts. These may materially alter the likelihood of real-world outcomes being similar to estimates.

An open technology list defines eligible and excluded spend



Eligible (open list, reviewed every yearly)

- BEV haulage and charging
- Trolley assist and catenary
- Regenerative downhill haulage
- IPCC (in-pit crushing and conveying) and conveyors
- Electric excavators, dozers, graders, water carts, wheel loaders, drills and pumps
- Underground BEV fleets
- On-site renewables, storage and microgrids
- Electrified process heat
- Retrofits of existing diesel assets
- Emerging technologies (e.g. hydrogen haulage) via case-by-case ruling
- Renewable diesel projects

Pre-approval eligible technologies

Certain technologies with high-quality cost data and high commercial readiness e.g. solar farms can be designated for pre-approval: If companies' project costs are within reasonable bounds, no further verification is needed.



Excluded

- Like-for-like diesel replacement (e.g., buying new diesel fleet that is more fuel-efficient due to natural fleet improvements)
- Purchase of offsets or ACCUs
- Expansion capex beyond the cost of energy security investments
- Costs funded by another government programme
- Mines with <10 years remaining life
- Assets not dedicated to the covered operation

Assurance runs through 5 stages from investment plan to clawback

 01 Register & plan • Company lodges a Fuel Security Investment Plan for an approved investment • Plan assessed within a time-bound period, with auto-approvals after a given delay • Conditional approval gives certainty for board approvals and FID • <i>Guards against BAU upgrades, off-target & overlapping funding</i> <i>Lead: Regulator (CER)</i>	 02 Independent review • Projects >\$100M reviewed by a regulator-appointed independent engineer, in a time-bound period, funded by the proponent, unless on pre-approval • Smaller projects self-declare against published criteria, subject to spot audit • <i>Guards against off-target & overlapping funding, and cost inflation</i> <i>Lead: Independent engineer</i>	 03 Deploy or return • Companies update progress on investments • Unspent or unacquitted funds returned to government per FSRM design <i>Lead: CER / ATO</i>	 04 Measure & verify • Annual verification of litres displaced using NGER energy data and FTC claims + operationalisation checks for investments • Registered greenhouse and energy auditors; reasonable assurance for the largest claims • <i>Guards against non-performing assets</i> <i>Lead: Registered auditors</i>	 05 True-up & clawback for rare cases • Pro-rata recovery where investments do not contribute towards verified diesel displacement or electrification • False claims penalised under existing tax law • <i>Guards against non-performing assets</i> <i>Lead: ATO</i>
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Assurance effort is proportionate to claim size and technology novelty: pre-approved technologies face lighter checks, other projects >\$100M face full review

4 mechanisms detect and deter non-genuine claims



1. Company investment plans & tally checks

Investment Plans: Companies submit investment plans for approval. These are assessed by auto-approval or proper checks, depending on the situation.

Production changes (non-exhaustive, example): Diesel use is compared to baseline intensities and mine site production, to understand production-adjusted diesel intensities, diesel displacement trends and check for scheme misuse. Appropriate justifications (e.g., new mines) are accounted for. Similar checks for other forms of electrification.

Formula: displacement (L) = baseline intensity (L per unit, 3-yr pre-plan average) x actual production, less actual diesel use

Baseline built from the 3-year average of FTC claims, adjusted for production volume.

Precedent: same production-adjusted architecture as Safeguard baselines; all inputs already reported under NGER, Safeguard and FTC.¹



2. Independent engineer panel

Selection: regulator-run panel of chartered engineering firms, open tender every 3 years; the regulator selects and engages the engineer for each review, with the proponent reimbursing (US DOE LPO model)²

Independence: maximum 2 consecutive engagements per company; conflict declarations against auditing standard independence threats; no concurrent consulting for the reviewed company



3. AI-assisted claim screening

Screening: a risk engine scores every claim across variety of data sources (e.g. FTC litres, NGER data, telematics). Anomalies are referred to human auditors

Controls: a random-sample audit stream operates alongside the model; the system does not approve or deny claims. This is similar to ATO, CER principles for AI-assisted tools.³



4. Regional cost benchmarks

Database: rolling 3-year record of unit costs by technology and region, built from acquitted claims, GenCost, CSIRO and public tenders (where appropriate).

Triggers: claims above the 75th percentile of comparable projects face cost review; above the 90th percentile, acquittal is capped at benchmark unless justified

Coverage: each acquittal adds a data point, improving benchmark accuracy as the scheme matures

Each element of the framework is drawn from an existing programme

Programme	Established feature	Use in FSRM rules
ACCU Scheme (AUS) ¹	Newness, regulatory additionality and government programme tests; independent integrity committee (CAIC replacing ERAC)	Gateway additionality tests; Technical Eligibility Committee model
NGER / Safeguard (AUS) ²	Registered auditors with independence and conflict rules; production-adjusted intensity baselines	Verification rails, auditor pool and displacement measurement method
PRF Safeguard Transformation Stream (AUS) ³	Eligible-expense definitions; excludes new or expanded coal and gas facilities	Eligible spend rules and programme exclusions
EU Innovation Fund ⁴	Grant reduction on GHG underdelivery	Performance-based clawback (if assets built but not used)
Clean Economy ITCs (Canada) ⁵	Statutory eligible-equipment lists; recapture on disposal or change of use	Technology list drafting; recovery through the tax system
DOE Loan Programs Office (US) ⁶	Independent engineer engaged by the agency at applicant cost; conditions precedent to disbursement	Independent engineer panel for projects >\$100M

Governance:

- CER assesses plans and verification using existing NGER and Safeguard infrastructure
- ATO administers the FTC interface, fund retention and recovery
- An independent Technical Eligibility Committee maintains the technology list (yearly review) and rules on novel proposals
- Public register of plans, acquittals and verified displacement



1. Clean Energy Regulator ([2025a](#)). 2. DCCEEW ([2023](#)), Clean Energy Regulator ([2025b](#)), Clean Energy Regulator ([2025c](#)), Clean Energy Regulator ([2025d](#)), Clean Energy Regulator ([2026](#)). 3. Australian Government ([2025](#)), ARENA ([2025](#)). 4. European Commission ([2026](#), [2019](#)). 5. Canada Revenue Agency ([2025](#)). 6. US DOE ([2025](#)).