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Safeguard Mechanism Review

Submission in response to August Consultation Paper

September 2026

About The Superpower Institute

The Superpower Institute's (TSI's) mission is to help Australia seize the extraordinary economic opportunities of the post-carbon world.

A net zero Australian economy will reduce global emissions by just over 1 per cent. But if Australia successfully seizes the economic advantage in exporting zero emissions goods, this can create an opportunity for full employment with rising incomes for a growing population sustained over more than a generation, and reduce global emissions by up to 10 per cent.

Renowned economist Ross Garnaut and economic public policy expert Rod Sims have joined forces through The Superpower Institute, to focus on practical research and policy to unlock this opportunity. The Institute specialises in the policy settings and market incentives needed to make Australia an economic superpower and provides practical knowledge to governments and industry to realise this opportunity.

TSI works across the building blocks of the superpower economy including: renewable energy, green hydrogen, land carbon and minerals processing; the potential zero carbon export products including green iron and green aluminium; and the enablers of this economy including economic and fiscal policy, trade policy and regional development.

https://www.superpowerinstitute.com.au/.

About this submission

Please contact TSI with any queries info@superpowerinstitute.com.au.

Executive Summary

TSI welcomes the opportunity to contribute to the consultation process for the 2026-27 Review of the Safeguard Mechanism ('the Review').

The Safeguard Mechanism is not delivering adequate levels of abatement

The Safeguard Mechanism is Australia's cornerstone policy for reducing industrial emissions. An important test is whether it provides adequate incentives for industrial abatement: first, evaluated against its own baselines; and second, with performance assessed against Australia's 2035 commitment to reduce emissions 62-70 per cent below 2005 levels.

The Safeguard Mechanism is failing both tests.

The Safeguard Mechanism does not provide strong enough incentives for facilities to invest in abatement. Since 2020-21, net emissions have fallen about 12 per cent, but gross emissions have barely declined. The lack of abatement incentive reflects the low cost of complying with baselines.

Under the Safeguard Mechanism, the cost of compliance is determined by the price of Australian Carbon Credit Units (ACCUs). In 2024-25, two thirds of facilities surrendered ACCUs for compliance, totalling 10.7 million ACCUs. In comparison, facilities surrendered only 2.6 million Safeguard Mechanism Credits (SMCs), which represent abatement below baselines. ACCU prices are below the trajectory required for efficient onsite abatement, and not sufficiently stable or certain to provide a strong signal for investments in abatement technology.

The Safeguard Mechanism is also failing to deliver abatement consistent with Australia's 2035 target range. Emissions from Safeguard facilities will need to fall 5-7 per cent each year between 2031 and 2035 to meet Australia's commitments,[1] requiring a dramatic increase in abatement investments compared to recent performance.

The Safeguard Mechanism is not the right tool for the job

TSI's position is that the Safeguard Mechanism is not the right instrument for delivering the broad, deep emissions reductions Australia needs to achieve. It covers only 30 per cent of national emissions, leaving about 70 per cent uncapped. It is extremely complex, with baselines administratively determined and applied at the product and facility level. Cost and price effects are opaque, and it does not raise revenue.

[1] See Pitt, "Safeguard Mechanism Reforms"; and McLeod et al., *Free Ride: How Our Biggest Polluters Are Dodging Their Fair Share*.

An economy-wide carbon price, such as TSI's Polluter Pays Levy (PPL), would reduce emissions more efficiently and provide a clear signal for investments in abatement. It would also raise substantial revenue - around $22 billion each year, on average - which could be used to support the transition to net zero.

Reforms to the Safeguard Mechanism need to prioritise stronger abatement incentives

In the absence of a PPL, and in the context of this review, TSI proposes a range of reforms that would materially improve the Safeguard Mechanism. These reforms strengthen incentives for emissions abatement, give Australia a better chance of meeting the emissions-reduction targets aligned with our Paris commitments, and do so at the lowest possible cost within the constraints imposed by the Safeguard Mechanism framework.

There are three priorities for strengthening industrial abatement incentives.

The first priority is to strengthen incentives for abatement in the context of low ACCU prices. The government will need to lift the price of compliance above present ACCU market prices, in a way that preserves a middle road between least-cost mitigation supported by ACCUs, and progressively stronger incentives for industrial mitigation as reliance on ACCUs rises. TSI recommends a **progressive ACCU surrender surcharge.** A progressive surcharge keeps the cost of using ACCUs equal to or slightly above the market price at low levels of use, but progressively increases the cost of using ACCUs for compliance as dependence increases. This progressively raises the *marginal* incentive for onsite abatement, while keeping the *average* cost of compliance well below the marginal incentive.

The second priority is to make the compliance price more predictable, so that facilities can invest in abatement with greater certainty about compliance costs into the future. TSI recommends a **predictable minimum Safeguard compliance price**, with a published forward pathway. SMCs need a guaranteed minimum sale value, while ACCUs need a minimum effective compliance cost.

The third priority is to **tighten baselines** to reflect Australia's 2035 commitment to reduce emissions 62-70 per cent below 2005 levels, by 2035. TSI recommends decline rates of 7 per cent between 2031 and 2035.

These reforms are urgently required. Abatement investments require many years to plan and implement. Postponing these reforms will undermine incentives for industrial abatement well into the late 2030s, making Australia's task of meeting its targets even harder.

Principles for reforming the Safeguard Mechanism

Our recommendations are guided by five principles:

1. **Effective mitigation:** Ensure the Safeguard Mechanism delivers mitigation commensurate with Australia's climate ambition, accounting for the risks inherent to offsets and securing high-integrity credited abatement.
2. **Economic efficiency:** Preserve incentives to identify and undertake least-cost credible mitigation.
3. **Predictable price formation:** Provide sufficiently stable and predictable incentives for long-term investment while limiting harmful volatility.
4. **Simplicity and robustness:** Minimise complexity that supports gaming, discretion-related uncertainty, administrative burden, and fiscal liabilities.
5. **Reform compatibility:** Preserve pathways to future improvements in effective mitigation, ambition, and integrity.

Recommendations

General

Australia should introduce a Polluter Pays Levy, as described in TSI's report *The Case for Pricing Pollution* (January 2026). The recommendations below apply in its absence.

Strengthening mitigation incentives under the Safeguard Mechanism

Recommendation 1: Introduce a progressive ACCU surrender surcharge as a facility's reliance on ACCUs increases. Recycle revenue to support industrial decarbonisation.

Recommendation 2: Introduce vintage restrictions for ACCUs.

Recommendation 3: Introduce coordinated ACCU and SMC price floors to provide a predictable minimum incentive for industrial decarbonisation. The ACCU price floor should be implemented with a levy worth a fixed percentage of the gap between ACCU prices and the ACCU price floor. The SMC price floor should be set with guaranteed purchases at an agreed rate, and raised at an indexed, published rate.

Recommendation 4: If the cost containment mechanism regularly binds ACCU and SMC prices, it should be reviewed to reflect the revealed price of abatement.

Coverage

Recommendation 5: Lower the Safeguard threshold to 25,000 tonnes CO_2-e to align coverage with NGERs reporting.

Recommendation 6: In the absence of an economy-wide Polluter Pays Levy, the government should consider adapting and expanding the Safeguard Mechanism to create efficient incentives to abate emissions in the electricity sector. The Grattan Institute has provided a model which could serve as a starting point for consultation.

Recommendation 7: Broaden the Safeguard Mechanism to capture all fossil mining activity, with facility baselines designed to achieve reductions consistent with Australia's 2035 target.

Coal, methane and measurement under the Safeguard Mechanism

Recommendation 8: Align coal baselines with other sectors: industry-average emissions intensity to apply as soon as possible after 2031, with baselines reflecting the likelihood that mine methane emissions are systematically underestimated.

Recommendation 9: Introduce industry-financed, independently audited methane monitoring.

Recommendation 10: Government should examine whether reliance on GWP100 alone adequately reflects the near- and long-term warming effects of short-lived greenhouse gases, particularly methane.

Recommendation 11: The CER should publish supplementary GWP20 estimates alongside existing GWP100 Safeguard emissions data.

Decline rates under the Safeguard Mechanism

Recommendation 12: Facility baselines should be designed to achieve reductions consistent with Australia's 2035 target, and to manage measurement and scientific risk around emissions and offsets. Baselines should decline by 7 per cent per year between 2031 and 2035. Newly-covered facilities should enter the scheme with 'initial' emissions reduction contributions, but converge with current participants over a five-year period.

Carbon leakage

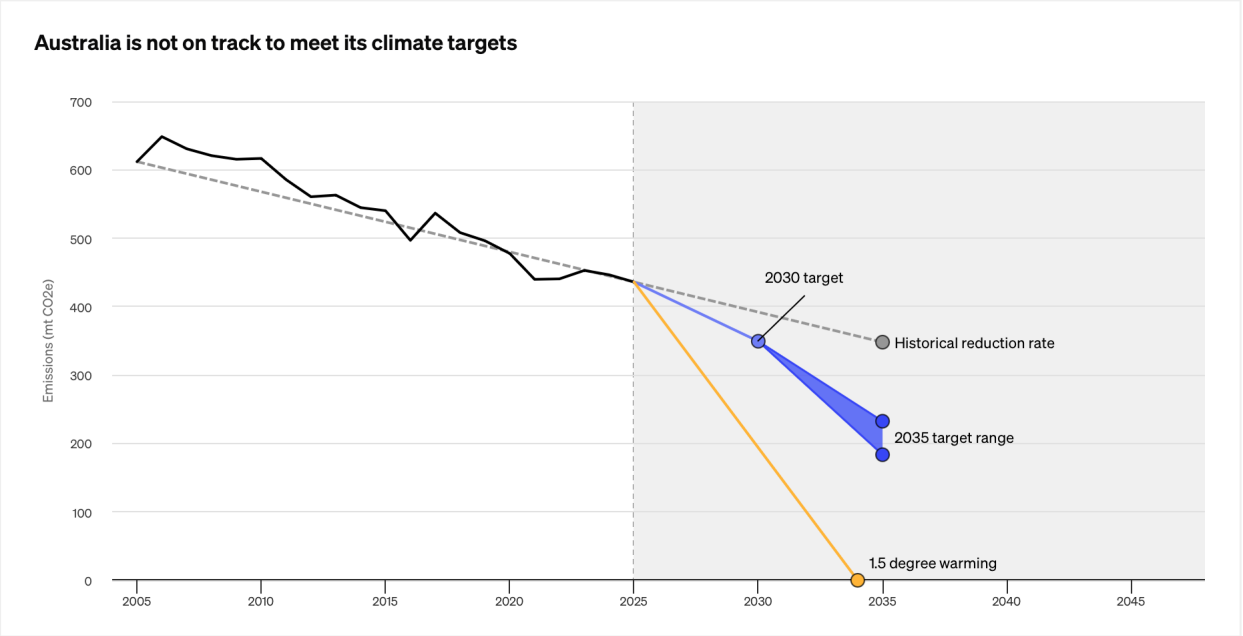
Recommendation 13: Replace trade-exposed baseline adjustments with a border carbon adjustment.

Introduction

The Review comes at a critical time in Australia's emissions reduction efforts.

Australia has committed to reducing emissions 43 per cent below 2005 levels by 2030, and between 62 and 70 per cent by 2035. Australia is currently not on track to meet these targets (see Figure 1).

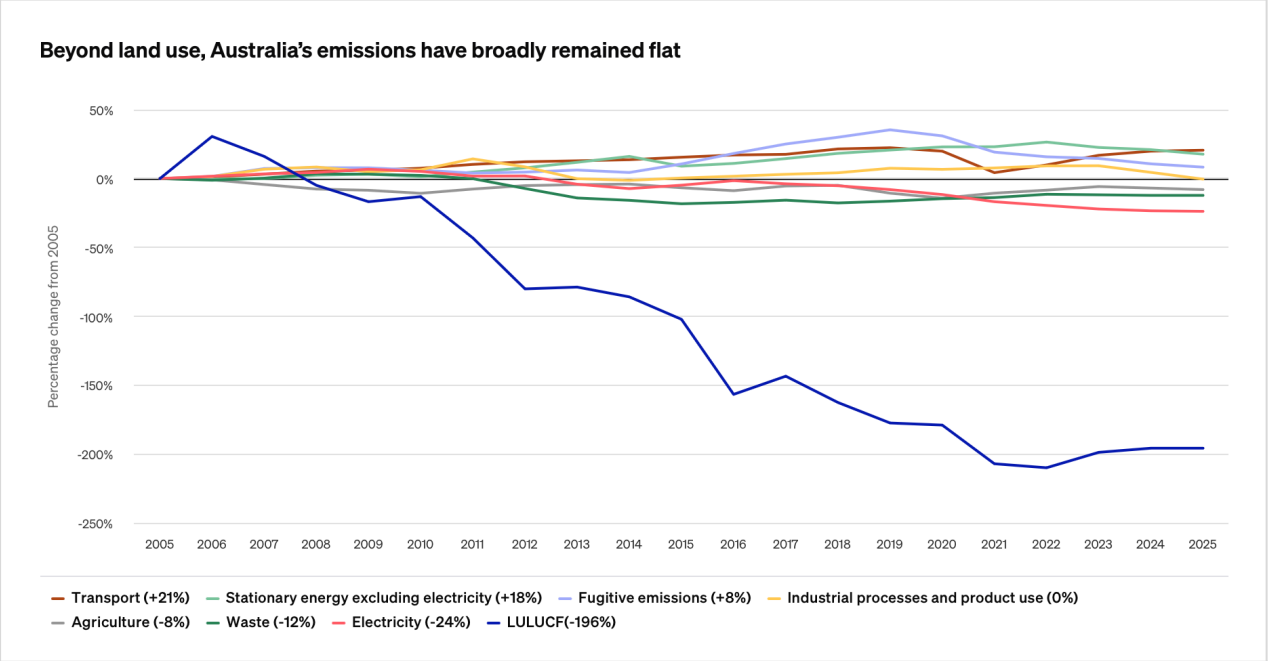
Figure 1



Source: The Superpower Institute, 'The Case for Pricing Pollution', January 2026

Since 2005 emissions have barely decreased outside the land-use sector, and in some sectors they have increased (see Figure 2).

Figure 2



Source: The Superpower Institute, 'The Case for Pricing Pollution', January 2026

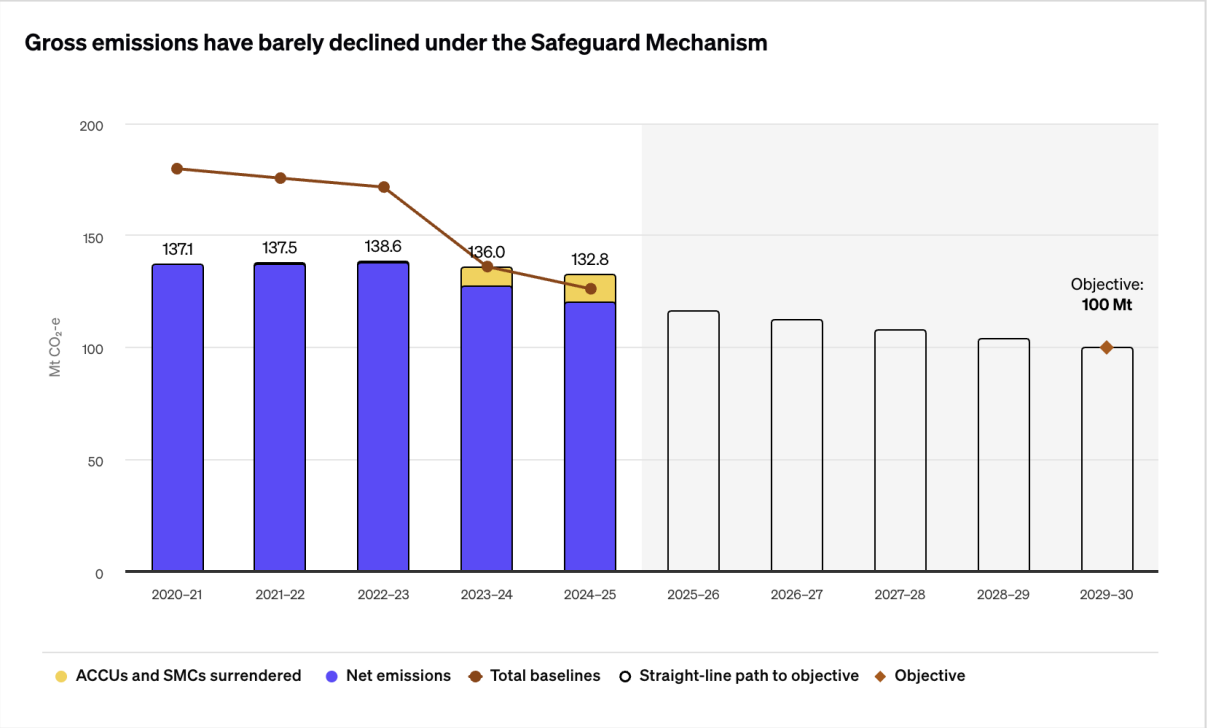
To meet the targets, the annual rate of emission reductions needs to more than double from its historical average of 9 Mt each year, and negligible rates since 2022, to between 19 and 24 Mt each year from now through to 2035.

This significant gap between Australia's international commitments and the current pace of reduction requires materially strengthened policy settings.

The Safeguard Mechanism is currently the primary policy instrument focused on emissions reduction in the industrial sector. Large industrial emitters represent around 30 per cent of total national emissions.

The performance of the Safeguard Mechanism in constraining industrial emissions to date is well documented. Gross emissions to 2024-25 are generally flat, while net emissions have fallen by about 12.1 per cent (see Figure 3).

Figure 3



Notes: Gross emissions are greenhouse gas emissions into the atmosphere; net emissions are gross emissions minus ACCU and SMC surrenders. Facilities' net emissions must not exceed their baselines, with ACCU and SMC surrenders (in yellow) increasingly used for compliance.
Source: TSI analysis of 2024-25 Safeguard Mechanism Data, Clean Energy Regulator[2]

Reports by a range of organisations including the Investor Group on Climate Change and The Climate Council has called for significant reforms to the Safeguard Mechanism.[3] Others, such as the Grattan Institute, have recommended expanding the scope of the policy to include the electricity sector.[4]

TSI's position is that the Safeguard Mechanism is not the right tool for the job of reducing emissions in Australia because it is:

- too narrowly focused, covering only 30% of Australia's emissions;
- highly complex, with baselines set at the facility level which create distortions;
- opaque in terms of the costs it imposes on industry and the flow-on costs to consumers.

The Safeguard Mechanism also does not generate any revenue that can be used to smooth the transition to net zero.

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[2] Clean Energy Regulator, *2024–25 Safeguard Mechanism Data Insights*.
[3] See Pitt, "Safeguard Mechanism Reforms"; and McLeod et al., *Free Ride: How Our Biggest Polluters Are Dodging Their Fair Share*.
[4] Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*.

In January 2026 TSI released a report, *The Case for Pricing Pollution*, in which it made the case for an economy-wide upstream price on carbon (a 'Polluter Pays Levy') that could replace the Safeguard Mechanism along with a patchwork of other climate policies such as the Capacity Investment Scheme and the New Vehicle Efficiency Standard.

An economy-wide carbon price such as a Polluter Pays Levy would reduce emissions more efficiently, providing a clear signal for investment that would encourage emissions reduction across the economy. Critically, it would also raise substantial revenue—around $22b per annum on average—that could be used to support households and small businesses through the transition to net zero.

TSI advocated for the Review to consider a broad suite of policy options, including more direct forms of economy-wide carbon pricing, rather than a narrow focus on how the Safeguard Mechanism could be reformed. The terms of reference for the Review have not provided such an opportunity.

It is in this context that TSI makes this submission. TSI has not altered its view that Australia would be better served by replacing the Safeguard Mechanism with an economy-wide carbon price like the Polluter Pays Levy. But in the context of a more narrowly focused review, TSI is putting forward a range of reforms that would materially improve the Safeguard Mechanism.

These reforms would raise the incentive for abatement at covered facilities, make the compliance price more predictable, and give Australia a better chance of achieving its emission reduction targets. Although our proposed reforms will make an already complex scheme even more complex, this is unavoidable given the limitations and existing features of the Safeguard Mechanism.

In making any reforms to the Safeguard Mechanism the objective should nonetheless be to transition to an economy-wide carbon price as soon as possible.

The remainder of TSI's submission is structured as follows:

- **Section 1** describes the current shortcomings of the Safeguard Mechanism and describes a set of principles that guide TSI's recommended approach to reform
- **Section 2** focuses on recommendations to strengthen industrial mitigation incentives under the Safeguard Mechanism by reforming the arrangements for surrender of ACCUs
- **Section 3** addresses coverage of the Safeguard Mechanism, including the threshold, the electricity sector, and the coal and gas sectors.
- **Section 4** covers decline rates
- **Section 5** covers carbon leakage and border carbon adjustment

1. The Safeguard Mechanism is not delivering efficient emissions abatement

For Australia to meet its emissions-reduction commitments at the lowest possible cost, efficient investments in abatement are essential – investments at the right scale, at the right time. An important test of the Safeguard Mechanism is whether it provides incentives for these investments.

The Safeguard Mechanism fails this test. The main reason is that incentives to abate are strongly determined by ACCU prices, which are below the price trajectory required for efficient onsite abatement, and not sufficiently stable or certain to provide a strong signal for abatement investments.

1.1 Low ACCU prices undermine efficient investments in abatement

ACCU prices are low because there is abundant supply relative to current levels of demand. This reflects policy settings under the Safeguard Mechanism.

The Safeguard Mechanism treats ACCUs as equivalent to abatement from an accounting perspective. Facilities can make unlimited ACCU purchases to discharge their obligations.[5]

This is problematic for three reasons:

1. Policy settings limit demand: The level of demand for ACCUs reflects administratively-determined baselines and scheme coverage. Generous baselines and narrow coverage reduce demand and therefore prices.
2. Non-equivalence creates abundant supply: Some ACCU-generating activities are not environmentally equivalent to abatement, leading to excessive supply.
3. ACCU compliance costs do not provide sufficient industrial abatement incentives: because ACCUs are abundant and relatively cheap, their market price sets a low marginal cost of Safeguard compliance.:

These features of the Safeguard Mechanism keep ACCU prices low and undermine incentives for efficient industrial abatement.

Policy settings limit demand

Demand for ACCUs is largely determined by Safeguard Mechanism settings, particularly facility baselines and scheme coverage. The Climate Change Authority's (CCA) review of the ACCU Scheme observed that Safeguard facilities are the principal

[5] Facilities that surrender ACCUs equivalent to 30 per cent or more of their baseline must explain why the responsible emitter has not undertaken more onsite abatement. In 2024–25, 23 facilities triggered this requirement: Clean Energy Regulator, *2024–25 Safeguard Mechanism Data Insights*.

buyers of ACCUs, using them to help manage emissions above their baselines.[6] In 2024-25, Safeguard compliance accounted for around 80 per cent of all ACCUs surrendered or cancelled.[7]

Baselines are set administratively to deliver an emissions trajectory. They are calibrated against the scheme's contribution to national targets, the circumstances of trade-exposed facilities, and what is considered to be administratively workable. For each facility, emissions above its baseline create a compliance liability, while emissions below it can generate SMCs. Across the scheme, the relatively small gap between emissions and baselines therefore determines the demand for compliance units.

All else being equal, lower baselines increase this gap and increase demand for ACCUs; higher baselines do the opposite. The size of this residual compliance task therefore largely determines the ACCU price, and the share of ACCU-based compliance versus industrial mitigation.

Yet baselines, and so the size of this residual, have not been set with any regard to the resulting ACCU price, or to whether that price will be strong enough to justify investment in industrial abatement. The strength of the incentive facing an industrial facility is consequently an incidental by-product of decisions about baselines, based on entirely separate considerations.

Today this residual compliance task is small. In 2024-25 the Safeguard Mechanism covered 208 facilities responsible for 132 Mt CO2-e, but the compliance liability was around 12 Mt CO2-e.[8] This is much smaller than annual ACCU issuance—around 21.6 million units in 2025—allowing nearly all the compliance task to be met without generating material scarcity in the ACCU market. The resulting low ACCU price then becomes the marginal price against which industrial abatement must compete.

The Safeguard Mechanism's limited coverage compounds this effect. Safeguard Mechanism facilities comprise only around 30 per cent of national emissions, yet have access to 100 per cent of the national supply of ACCU-generating land-sector projects. Moreover, it is only a sliver of that 30 per cent—only the residual between emissions and baselines— that generates demand for ACCUs. The CCA concludes that Safeguard-driven demand will fall well short of the land sector's abatement potential.[9]

The large stock of banked ACCUs further raises their availability relative to demand. At 30 June 2026 Safeguard entities held nearly 40 million ACCUs and 10 million SMCs, or

[6] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 20.
[7] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 47.
[8] Clean Energy Regulator, *2024–25 Safeguard Mechanism Data Insights* (covered emissions 132.8 Mt CO_2-e less net emissions 120.3 Mt CO_2-e).
[9] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 26.

equivalent to around four years of compliance at current rates.[10] If settings remain unchanged, this stock will allow liabilities to be met with limited upward pressure on prices for some years.

Non-equivalence creates abundant supply

It is extremely likely that more comprehensive scientific and economic accounting would reduce ACCU issuance and lift ACCU prices. Higher ACCU prices would strengthen incentives for industrial abatement.

Environmental risks are inherent to offsets. Fossil fuels have been taken from the earth's crust in large volumes, releasing greenhouse gases into the atmosphere. While industrial abatement prevents the release of greenhouse gases, most offsets sequester them temporarily. These sequestered greenhouse gases will be released into the atmosphere at some point in the future.

Rules for ACCU issuance reflect judgements about the longevity or 'permanence' of sequestration projects; the risk of sequestration being 'reversed' by events beyond the project proponent's control; and the effectiveness, or 'additionality' of sequestration actions. See Appendix A for a full description of these risks.

The ACCU scheme, however, does not adequately reflect recent science, sequestration measurement, or updated estimates on the cost of addressing impermanence from 25-year ACCUs. Addressing ACCU-level risk is fundamental to the integrity of the Safeguard Mechanism and for meeting Australia's emission reduction targets. TSI therefore emphasises the importance of addressing these issues, even if they are out of scope for this Review.

To the extent that permanence, reversal, and additionality risks are not reflected in ACCU issuance rules, this lifts the supply of ACCUs and lowers the price at a given level of demand—so undermining the Government's objective of a material incentive for industrial abatement.

ACCU compliance costs do not provide a sufficient industrial abatement incentive

Current settings allow a tonne of excess Safeguard emissions to be offset through the surrender of one ACCU. Where ACCUs are abundant and relatively cheap, their market price sets a low marginal cost of Safeguard compliance and undermines the incentive to invest in industrial abatement.

This matters because the Safeguard Mechanism is intended to provide covered facilities with a material incentive to invest in reducing their own emissions. The Review

[10] Clean Energy Regulator, *2024–25 Safeguard Mechanism Data Insights*, fig. 1.4 and 1.5.

consultation paper asks whether existing treatment of ACCUs is driving sufficient onsite abatement.

ACCUs provide valuable compliance flexibility and support least-cost mitigation, and should remain available to Safeguard facilities. The problem arises where the ACCU price is low enough for them to account for the large majority of compliance, crowding out industrial abatement.

The task is therefore to raise the price of ACCU-based compliance, particularly as the share of ACCUs in compliance becomes excessive. A broader Safeguard Mechanism, covering more facilities, would itself tend to increase the ACCU price—but even that may not reliably achieve the policy objective of a material incentive for industrial decarbonisation. Policy should therefore respond progressively to the revealed extent of ACCU reliance, strengthening the signal for industrial abatement where ACCU reliance undermines investment. As the Review consultation paper notes:

> *"...the unrestricted use of offsets lowers the cost of meeting climate targets in the short term, but could create risks to the achievement of national emissions goals over time."*[11]

Residual uncertainty around ACCU mitigation provides a second reason for caution about excessive reliance on offsets. Even with strong issuance rules, the science remains incomplete: uncertainty remains around additionality, measurement, permanence, and reversal, and some of these risks may be correlated across projects and methods. The Chubb Review identified the scheme-level aspect of this problem, observing that:

> *"In any offsets scheme... there remains the real risk of leakage and the possibility that the scheme may allow over-crediting of abatement... a scheme-level buffer – the mandatory cancellation of a percentage of ACCUs generated under the scheme – would ensure that abatement credited was appropriately conservative across the scheme portfolio."* [12]

These risks should be addressed as precisely as possible through ACCU issuance methodologies. But residual scheme-level uncertainty—which becomes more consequential as ACCU dependence grows—provides an additional reason to avoid excessive reliance on offsets, and reinforces the case for strengthening industrial mitigation incentives.

[11] DCCEEW, *Safeguard Mechanism Review Consultation Paper*, 14.
[12] Chubb et al., *Independent Review of Australian Carbon Credit Units*, 19.

1.2 The uncertain ACCU price path further weakens investment signals

The Safeguard compliance market not only produces a relatively low current compliance price; the future price path is also uncertain. The Cost Containment Mechanism (CCM) sets an upper bound on compliance costs, but below that ceiling future prices depend on interactions between ACCU and SMC supply, banking, baseline liabilities, and demand for credits.

Policy settings are one source of uncertainty: future baselines, scheme coverage, and rules governing ACCU use can all materially affect future demand and price pathways. However, even if future Safeguard policy settings were known with certainty, firms would still need to anticipate future compliance prices in a complex market. Forecasting requires accurate expectations about baseline liabilities, production, onsite abatement and SMC generation by other facilities, ACCU issuance, and compliance demand over many years. Market analysis has found that Safeguard prices are highly sensitive to the behaviour of facilities and other market participants over time.

Uncertainty weakens incentives for industrial investment, especially long-lived abatement projects that depend on future avoided compliance costs and SMC revenues. The CCM protects against unexpectedly high prices, but there is no corresponding protection against unexpectedly low prices that weaken the return to industrial abatement.

Clear and durable guidance on future policy settings is therefore important, but may not be sufficient. Where the Government seeks a material incentive for industrial decarbonisation, it should also strongly consider policy interventions that stabilise the forward price signal faced by Safeguard facilities.

1.3 Principles for reform

TSI proposes a range of reforms that would give the Safeguard Mechanism a better chance of achieving Australia's objectives to reduce emissions at the lowest possible cost.

1. **Effective mitigation**
2. **Economic efficiency**
3. **Predictable price formation**
4. **Simplicity and robustness**
5. **Reform compatibility**

Effective mitigation

The purpose of the Safeguard Mechanism is not only to constrain net emissions, but also to drive gross emissions reductions at covered industrial facilities. The legislated Safeguard outcomes require that responsible parties for each facility have a *material incentive* to invest in reducing that facility's emissions. The 2026-27 Review is explicitly concerned with whether this objective is being met, or whether additional incentives for onsite abatement are required.

Efficient incentives for abatement would ideally be driven by broader scheme coverage, tighter issuance rules for ACCUs, and ACCU prices and surrender rules that properly account for the crowding-out of industrial abatement and offset risk. The design of the Safeguard Mechanism precludes substantially broader coverage, and the Review does not examine ACCU issuance rules.

The Safeguard Mechanism will therefore need to rely wholly on demand-side measures to provide incentives for efficient onsite abatement.

These reforms are urgently required. Abatement investments require many years to plan and implement, and the next Safeguard Review is not until 2031; postponing these reforms will undermine incentives for industrial abatement well into the late 2030s.

Economic efficiency, predictable price formation, simplicity, and scope for further reform

Reforms for effective abatement should be as economically efficient as possible, preserving incentives to pursue low-cost mitigation. Reforms should also deliver price stability and predictable investment incentives.

Ideally reforms should be simple, but the constraints of the Safeguard Mechanism, and the narrow terms of the Review, make it hard to meet other policy goals without introducing new complexity. This is the cost of working with a second-best policy. Simplicity is one reason we favour the PPL as the best instrument for reducing emissions.

Reforms made now should not preclude stronger abatement incentives or ambition in the future, nor improvements to ACCU integrity.

2. Strengthening industrial mitigation incentives

For the reasons outlined in Section 1, the Safeguard Mechanism is failing to deliver strong enough incentives for industrial abatement. The principles outlined above should guide reforms.

2.1 The effective cost of ACCU-based compliance should rise with ACCU use

The discussion in Section 1.1 showed that the market price of ACCUs cannot be relied upon, by itself, to provide the material industrial mitigation incentive sought through the Safeguard Mechanism. The appropriate response is to progressively raise the effective price of ACCU-based compliance as dependence on ACCUs becomes more extensive.

Residual uncertainty around ACCU mitigation provides a second reason for this approach, because credible abatement is fundamental to Australia's emission reduction efforts. Safeguard Mechanism Credits (SMCs) and onsite abatement are comparatively reliable forms of climate mitigation. They reflect reductions in emissions at Safeguard facilities—tonnes of emissions that will not enter the climate system—for which measurement and permanence are significantly more reliable.

The necessary policy challenge is therefore to preserve access to credible ACCUs while strengthening the incentive for industrial mitigation as reliance on offsets rises. A hard cap on ACCU use above a defined threshold is unsuited to this challenge; caps are unresponsive to abatement costs, which constrains compliance flexibility. TSI prefers policies that progressively raise the cost of compliance as ACCU use increases, progressively strengthening incentives for abatement.

2.2 A progressive ACCU surrender surcharge

A progressive ACCU surcharge will strengthen industrial mitigation incentives

Under a progressive surcharge, ACCUs surrendered at modest levels will incur compliance costs equal or similar to the ACCU market price. As dependence on ACCUs grows, the marginal cost of ACCU-based compliance also rises, supporting progressively more onsite abatement and a stronger market for SMCs. The progressive design therefore preserves access to credible offsets while ensuring that reliance does not crowd out industrial mitigation. Unlike an ACCU cap, it preserves compliance flexibility: when SMCs are relatively expensive or temporarily scarce, facilities can continue to use ACCUs albeit at a higher price.

A progressive surcharge has two advantages over a flat surcharge. First, it applies the strongest incentive where ACCU reliance is highest, rather than applying the same cost to every ACCU irrespective of the level of ACCU dependence. Second, it raises the marginal incentive to abate much more strongly than the average cost of abatement. It therefore delivers greater support for industrial abatement at a lower cost to industry.

The advantages of the progressive design do not depend on the Government correctly estimating Marginal Abatement Curves (MACs) in advance. The MACs for ACCUs and industrial abatement, today and in the future, are highly uncertain, and policies designed today should adapt well to a range of possible price conditions. The progressive design adapts automatically to different MACs: if industrial mitigation turns out to be relatively inexpensive, ACCU reliance will remain low, and so will the surcharge. If it is relatively costly, the opposite pattern will hold.

Compared to a flat surcharge, the progressive structure will better preserve a base level of demand in the ACCU market, where modest ACCU use is not treated as inherently undesirable.

The surcharge should be applied at the facility level (Box 1), based on the share of each facility's annual Safeguard liability discharged through ACCUs.

Surcharge revenue can be recycled back to industry, to lower the costs of compliance for Safeguard facilities through investments in industrial decarbonisation. Together, the progressive ACCU surcharge and revenue recycling will support the Review's explicit focus on enhancing onsite abatement.

Box 1. Why apply a progressive ACCU surcharge at facility-level?

It may appear that a system-wide approach would better track aggregate ACCU reliance than a facility-level schedule. Yet facility-level schemes will create similar incentives and are much easier to administer.

The facility-level model supports ACCU use until the marginal cost of ACCU compliance meets the marginal SMC price. Facilities will converge around a common ACCU share, and around the same share that would be optimal in a system-wide scheme.

System-wide schedules are complex to administer, because ACCUs with lower surcharges need to be allocated across facilities.

A first-come-first-serve approach would be arbitrary. Retrospectively determining surcharge rates, once total liabilities and ACCU use was known, would interfere with planning, distort price signals, and be complex to administer (see Appendix B1).

Facility-level administration lifts the incentive for abatement across the system, without requiring a separate allocation mechanism for lower-surcharge ACCUs.

Design of a progressive ACCU surrender surcharge

The surcharge rises smoothly with a facility's share of Safeguard liability met through ACCUs. Importantly, use of higher-surcharge ACCUs should not retrospectively affect the surcharge paid on earlier ACCUs. The marginal incentive for industrial mitigation thereby rises substantially faster than the average cost of ACCUs.

A progressive schedule can be calibrated against a flat ACCU discount or surcharge, so it imposes a similar average burden at a chosen level of ACCU reliance. For example, take a flat 30 per cent ACCU issuance discount, equivalent to a flat ACCU surrender surcharge of about 43 per cent. An illustrative progressive schedule, with a slightly lower average surcharge when ACCUs meet half the Safeguard liability, would produce approximately:

Share of liability met with ACCUs	Marginal surcharge	Average surcharge across all ACCUs used
10%	15%	8%
20%	30%	16%
30%	45%	23%
40%	60%	31%
50%	75%	38%

This illustrative schedule shows the divergence between the average surcharge and the marginal incentive for industrial mitigation. At around 50 per cent ACCU reliance, the marginal incentive for finding another tonne of industrial mitigation can be around double the average cost.

The actual schedule adopted should be calibrated through further analysis and ongoing market observation, and phased in on a published timetable that permits facilities and ACCU producers to adjust contracts and investment plans. Once established the schedule should be modified only where necessary, to preserve predictable incentives for investment.

An alternative design, a progressive ACCU surrender ratio, is described in Appendix B2. This approach differs by requiring facilities to surrender an increasing number of ACCUs per unit of Safeguard compliance as the ACCU share in compliance increases.

It raises the industrial mitigation incentive without raising revenue, but raises industry costs and demand for ACCUs more than onsite abatement.

2.3 Treatment of banked ACCUs

A facility's cost of compliance is determined by ACCU prices in the compliance period, and the cost of ACCUs purchased in previous periods and 'banked'. The treatment of banked ACCUs therefore has implications for the cost of compliance, and incentives for abatement. Applying a surcharge at the point of ACCU surrender, rather than issuance, allows consistent treatment of new and banked ACCUs.

ACCU banking is efficient to the extent that today's ACCUs have the same characteristics as future ACCUs. Today's low ACCU prices, however, reflect current policy settings and issuance rules.

TSI advocates for reforms that improve the integrity and value of future ACCUs. To prevent the strategic purchase and banking of lower-value, lower-credibility ACCUs, TSI supports vintage restrictions. TSI also notes that ACCU banking creates early demand that supports the ACCU market, so restrictions should not be overly aggressive. Further work is required; TSI recommends the government evaluate the effects of rules requiring ACCUs to be surrendered within 3 or 5 years of issuance.

Recommendation 1: Introduce a progressive ACCU surrender surcharge as a facility's reliance on ACCUs increases. Recycle revenue to support industrial decarbonisation.

Recommendation 2: Introduce vintage restrictions for ACCUs.

2.4 A price floor will stabilise the industrial abatement signal

A predictable minimum Safeguard compliance price, with a published forward pathway, will create a more efficient incentive to invest in abatement. Because SMCs and ACCUs enter the scheme differently, implementation necessarily differs: SMCs need a guaranteed minimum sale value, while ACCUs need a corresponding minimum effective compliance cost.

Context and rationale for a price floor

Long-term industrial decarbonisation investments depend on expected carbon prices. A volatile market, or one in which prices can remain unexpectedly low for extended periods, can weaken investments even where investors expect future Safeguard obligations to tighten.

The current Cost Containment Mechanism (CCM) protects facilities from high ACCU and SMC prices, but provides no protection from inefficiently low prices. Inefficiently

low prices undermine the investment signal and penalise firms that invested in decarbonisation. Historically, ACCUs have traded between $29 and $43 and have never approached the cost containment ceiling.

A price floor is therefore the natural counterpart to the existing ceiling. Together, the ceiling and floor establish a price corridor, limiting both upside compliance risk and downside investment risk. This helps firms make long-term investments under a more predictable price pathway.

The price floor should be set at a level to maintain adequate long-run mitigation incentives, with increases indexed and published to provide forward certainty; the floor should also be subject to regular review. Price formation within the corridor can continue, providing information about marginal abatement costs with a reduced risk of temporary market imbalances affecting investment decisions and returns.

There are alternative mechanisms for improving price predictability, including contracts for difference (CfDs), but price floors and CfDs are not perfect substitutes and are better understood as complements (Box 2).

Box 2: Price floors and CfDs as predictability measures

CfDs can reveal market expectations and allow participants to hedge future carbon-price risk, but they cannot manufacture useful information where the underlying market is genuinely uncertain. In a complex, policy-dependent market, CfD prices may reflect risk appetite, balance sheet constraints, and views about government decisions more than a well-informed estimate of future compliance prices. Even where there is information to reveal, their effectiveness depends on sufficiently deep, long-dated markets.

A clearly specified price corridor, and future pathway for that corridor, therefore logically precedes private hedging: it establishes a common minimum incentive for investment for all Safeguard parties, removes tail risks, and narrows the range of uncertainty that counterparties must insure.

This should make long-dated CfDs easier and cheaper to write. CfDs can then perform their comparative advantage within the corridor, allowing individual firms to hedge more tightly against the remaining market uncertainty.

Applying price floors to two compliance instruments—ACCUs and SCMs—that are substitutes creates additional design complexity. While proper functioning of the floor

depends on the introduction of a progressive ACCU surrender surcharge, a progressive surrender surcharge can be implemented without the price floor.

Design of price floors

The principal purpose of the price floor is to provide a more predictable incentive for industrial decarbonisation. ACCU and SMC floors are intentionally designed differently, reflecting differences in their roles, incentives, and constraints.

The SMC floor should be set by guaranteed purchase of SMCs that are not otherwise purchased by facilities. This purchase should be at a floor price. This would establish a lower bound on the return from additional emissions reductions at Safeguard facilities. Government purchases would be required only when private demand is insufficient to absorb SMC supply at the floor.

The cost of maintaining the floor—and so Safeguard price predictability—should be collectively funded by Safeguard facilities, rather than the budget. For example, if:

- aggregate baselines were 130 Mt;
- aggregate emissions were 128 Mt; and
- the floor was $50/t;

then a net 2 Mt surplus would imply purchases of $100 million. Spread proportionally across 130 Mt of baseline allocation, this would be approximately $0.77 per tonne. The design avoids net budgetary cost and internalises the cost of maintaining Safeguard price predictability within covered facilities. Conversely, if the floor rarely binds, market price formation continues essentially unaffected but with greater forward clarity.

The ACCU floor should be implemented by a levy paid whenever market ACCU prices fall below the floor. However, unlike SMCs, ACCUs priced below the floor should not receive a fixed price: if all ACCUs priced below the floor are lifted to the floor price, this would remove the incentive for firms to seek lower-cost ACCUs. This would weaken price discovery and least-cost procurement, sacrificing the goal of economic efficiency. The levy should therefore allow facilities to retain some of the gap between the raw ACCU price and ACCU floor. For example, if

- Government captures 80 per cent of the gap, so that facilities retain 20 per cent exposure to the underlying ACCU price; and
- raw ACCU prices are $40 per tonne and the floor is $60 per tonne, producing a $20 per tonne gap;

then the levy is $16 and the effective price floor is $56 per tonne. Revenue from the levy could be used to support industrial decarbonisation or finance other Safeguard Mechanism-related costs.

See Appendix B3 for more detail on the reason price floors are proposed to be implemented differently for ACCUs and SMCs.

ACCU and SMC floors must be designed alongside a progressive ACCU surrender surcharge

Because facilities retain some benefit when buying cheap ACCUs, low ACCU prices can keep the compliance cost of ACCUs below the SMC floor. And because ACCUs are currently one-for-one substitutes for SMCs, facilities' demand for SMCs may be strongly suppressed. SMCs will nonetheless continue to be generated up to the floor price, and any excess supply must be purchased at the floor—placing greater pressure on that mechanism than intended.

A progressive ACCU surrender surcharge limits this crowding-out effect. As a facility relies more heavily on ACCUs, and as progressively higher surcharges are applied, the effective marginal cost of ACCU compliance automatically rises above the SMC floor. For example, under a surrender surcharge with a $60 ACCU floor, a $40 raw ACCU price, and an 80 per cent levy on the $20 gap:

- the effective cost of one raw ACCU is $56;
- the first ACCUs attract a near-zero surcharge and ACCUs remain cheaper than a $60 SMC;
- at a 10 per cent ACCU share, the surcharge reaches 15 per cent so that ACCU compliance now costs 1.15 x 56 = $64.40, so an SMC at the $60 floor becomes competitive; and
- as the marginal cost of ACCUs continues to grow with use, so more SMCs become viable further up the supply curve.

The two instruments therefore perform distinct but complementary functions: the common price floor sets a predictable lower bound for the industrial abatement incentive; and progressive ACCU surrender surcharges make the choice between ACCUs and SMCs depend jointly on the raw ACCU price and the degree of ACCU reliance—so that even if cheap ACCUs are abundant, higher-cost SMCs and onsite abatement are gradually made competitive. The combination preserves market responsiveness to relative mitigation costs, while limiting excessive offset reliance and Government exposure under the SMC purchase floor.

Recommendation 3: Introduce coordinated ACCU and SMC price floors to provide a predictable minimum incentive for industrial decarbonisation. The ACCU price floor should be implemented with a levy worth a fixed percentage of the gap between ACCU prices and the ACCU price floor. The SMC price floor should be set with guaranteed purchases at an agreed rate, and raised at an indexed, published rate.

Monitoring the Cost Containment Mechanism

The CCM has not been utilised to date because ACCUs have held the marginal compliance price well below the ceiling. Proposed reforms that raise marginal ACCU prices and strengthen the industrial abatement incentive are likely to bring the marginal compliance price closer to the CCM.

Under the illustrative progressive ACCU surcharge, for example, maintaining today's roughly 80 per cent ACCU share would imply a marginal surcharge of around 120 per cent. Applied to current ACCU prices of around $39, this would bring the effective marginal cost of ACCU compliance close to the 2026–27 CCM price of around $88. In practice, the progressive surcharge is likely to prevent such extensive dependence on ACCUs: RepuTex modelling commissioned by the Productivity Commission identifies substantial lower-cost industrial abatement, which would tend to reduce ACCU use and therefore the applicable surcharge.[13] The recycling of progressive surcharge revenue into industrial decarbonisation will place further downward pressure on the equilibrium compliance price.

The Government should nonetheless closely monitor the interaction between the market, the progressive surcharge, and the CCM. If the CCM binds regularly, this likely indicates that the ceiling is set too low and is obstructing industrial decarbonisation. If so, the CCM should be raised.

Recommendation 4: If the cost containment mechanism regularly binds ACCU and SMC prices, it should be reviewed to reflect the revealed price of abatement.

2.5 Implementation and transition pathway

Increasing incentives for abatement is a priority, and a progressive surrender surcharge should be introduced as soon as possible. Reforms introduced from 2030 would provide facilities with several years to prepare. A surrender surcharge should be phased in – for example, over a three-year period – providing a balance of the stronger incentives that are needed, and time for facilities to review their abatement and offset plans before the full surcharge schedule is applied.

Price floors strengthen longer-term price signals, and complement the progressive surrender surcharge on ACCUs. If the government prefers to introduce reforms in sequence, rather than as a full suite, price floors can be introduced after a surrender surcharge has been phased in; a surrender surcharge will anyway provide a stronger investment signal for abatement and reduce uncertainty about the ACCU price trajectory.

[13] Reputex Energy, *Summary Results: Scenarios for the Cost of Safeguard Mechanism Abatement.*

3. Improving coverage of the Safeguard Mechanism

The Safeguard Mechanism covers about 30 per cent of Australia's emissions. The Review invites feedback on whether coverage should be expanded across a larger portion of national emissions.

3. 1 The Safeguard Mechanism threshold should be lowered

As Australia's cornerstone emissions-reduction policy, the Safeguard Mechanism provides insufficient coverage of economy-wide emissions. The Government will need to expand the scheme as broadly as possible to promote efficient decarbonisation and meet its climate goals and international obligations.

The National Greenhouse and Energy Reporting Scheme (NGERs) framework covers about two-thirds of emissions in the economy, including emissions from the electricity sector. A substantial share of these industrial emissions could be brought under the Safeguard Mechanism (see Section 3.2 regarding the electricity sector). This would require the Government to increase coverage by dropping the Safeguard Mechanism threshold to 25,000 tonnes of CO_2-e, in line with the NGERs reporting threshold.

The Productivity Commission's Inquiry into the net zero transformation finds:

> *"The Safeguard Mechanism review scheduled for 2026-27 should determine the new threshold but favour broadening the scheme as much as possible... If the review identifies no major concerns, reducing the threshold from 100,000 tonnes to 25,000 tonnes of carbon dioxide equivalent per year would be reasonable."*[14]

It notes that "Lowering the threshold to 25,000 tonnes of CO2-e per year from 2031 could reduce annual average costs of abatement measures by nearly 10% and yield gross benefits of around $900 million from 2031 to 2035."[15]

A threshold of 25,000 tonnes per annum incurs additional administrative costs compared to a 50,000 tonne threshold. The lower threshold is, however, essential for capturing emissions from an additional 20 facilities in the oil and gas extraction sector, and an additional 9 coal mining facilities.[16] Methane from these facilities is extremely likely to be underestimated (Section 3.3.1); there are therefore disproportionate benefits from bringing them under the Safeguard Mechanism and creating incentives for abatement.

Recommendation 5: Lower the threshold for Safeguard Mechanism to 25,000 tonnes of CO_2-e to align coverage with NGERs reporting.

[14] Productivity Commission, *Investing in Cheaper, Cleaner Energy and the Net Zero Transformation*, 2.
[15] Productivity Commission, *Investing in Cheaper, Cleaner Energy and the Net Zero Transformation*, 9.
[16] DCCEEW data, provided

3.2 Coverage of the electricity sector

Electricity generation accounts for around 34 per cent of Australia's emissions, most of it in the National Electricity Market.[17] But the electricity sector also determines how fast the rest of the economy can decarbonise. Clean energy and electrification are two of the five priority actions in the Government's Net Zero Plan.[18] Modelling by Treasury demonstrates that expanding renewable supply remains the most cost-effective abatement available, contributing to both emissions cuts in the electricity sector and enabling reductions elsewhere through electrification.[19]

The treatment of emissions in the electricity sector directly affects incentives for the industrial sector to invest in abatement, and therefore should be considered within the Review.

Current policies are not providing efficient incentives for abatement. The main national-level policy instrument aimed at promoting investment in renewable generation and storage is the Capacity Investment Scheme (CIS). The CIS subsidises selected renewable energy generation and storage projects through government tenders. Only a very small amount of generation capacity has commenced construction under the scheme, it creates significant contingent liabilities for the budget, and it risks chilling investment outside the scheme by distorting competition between participants and non-participants.

The Government is not on track to meet its 82 per cent renewable generation target on current settings, with new generation build remaining too slow. Alongside the CIS, uncertainty of coal plant closures, and in some cases, subsidisation of coal generators to remain in operation, sends a contradictory signal to that needed for Australia to meet its renewable energy targets.

At the core of the problem is that asset owners and investors in the electricity sector have no consistent future price signal for emissions. The existing policy architecture relies on centrally planned and administered discretionary support from government, with complex contract design, uncertain timing of auctions and an unpredictable competitive environment given uncertainty of coal closures and opacity about subsidy arrangements for them.

It is worth noting that under the *National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015*, a sectoral baseline of 198 Mt CO_2-e applies collectively to grid-connected generators; if they exceed it collectively that baseline ceases to apply and individual facility baselines take effect.[20]

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[17] DCCEEW, *Australia's Emissions Projections 2025*, 38.
[18] DCCEEW, *Australia's Net Zero Plan*, 5.
[19] Treasury, *Australia's Net Zero Transformation: Treasury Modelling and Analysis*.
[20] Clean Energy Regulator, "Electricity Sector Emissions and Generation Data 2024–25."

In 2024-25, reported scope 1 emissions from grid-connected generators were 133.7 Mt CO_2-e or roughly two-thirds of the baseline and falling. So the provision for coverage of the electricity sector under the Safeguard Mechanism has never come close to binding and is unlikely under existing settings.

As set out earlier in this submission, the problem of emissions is best addressed through an economy-wide carbon price such as the Polluter Pays Levy (PPL). Under this model, with a levy applied upstream on coal and gas extraction, the electricity sector would face the carbon-emissions costs of fossil fuel use.

Under a PPL, the price signal would also be consistent across the economy, meaning abatement opportunities in the electricity sector which are the lowest cost abatement opportunities available would be pursued ahead of other sectors which face higher costs or technical challenges. This is efficient and desirable in emissions reduction efforts.

A PPL would also be administratively simpler than applying the Safeguard Mechanism to the electricity sector. It would require no setting of baselines and no complex rules. Importantly, a PPL would also raise revenue that could be returned to electricity consumers to smooth the transition to net zero.

An alternative approach would be to adjust the Safeguard Mechanism settings to bring the electricity sector into its purview. While TSI views this as sub-optimal policy compared to a PPL, due to its complexity and failure to raise revenue, it is worth considering for two reasons:

1. Creating a clear, predictable price incentive for emissions reductions in the electricity sector is very important to achieving Australia's emissions reductions targets
2. Under certain design features, the Safeguard Mechanism applying to the electricity sector could provide a stronger abatement signal and, in doing so, deliver some of the benefits of that model

The most developed proposal for inclusion of the electricity sector in the Safeguard Mechanism is contained in a report by the Grattan Institute.[21] The main feature of the proposal is the creation of a single sector-wide baseline for the electricity sector. Generators emitting above the threshold would need to purchase credits while those emitting under the threshold would generate credits they can sell. This would provide both a revenue source for renewable generation and a financial penalty for generating emissions - exactly the signal required if we are to reach our emissions reduction targets.

[21] Reeve et al., *Bills down, Emissions down: A Practical Path to Net-Zero Electricity*.

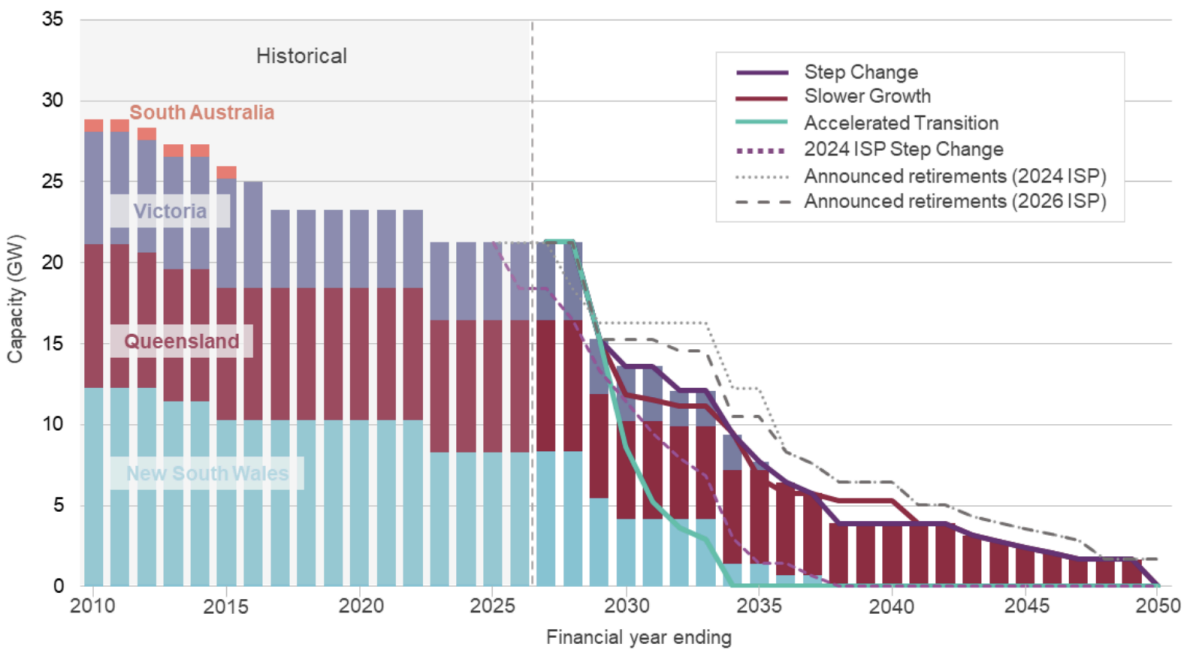
This would be a departure from the Safeguard Mechanism as it operates today. For trading to operate optimally, renewable generators (who would not be regularly included in the Safeguard Mechanism given null emissions), would need to be able to generate SMCs.

Alternatively, If the only objective is to promote certainty around coal closures, then the complexity of the Safeguard Mechanism should be avoided.

The Government could provide additional clarity and certainty to coal closures outside of the Safeguard Mechanism. For example, the Government could enforce the penalty price of emissions on coal plants past their announced closure dates.[22] This would be sufficiently high to provide an incentive for closures. This approach should have no price impacts, if plants close before any cost penalty is activated.

This approach is sub-optimal in a number of ways. Firstly, announced closure dates are not aligned with emission reduction targets (Figure 4). Second, while this approach provides some clarity for renewable investors, unlike the PPL or a more effective trading scheme, it does not provide an additional financial incentive that the Safeguard Mechanism would.

Figure 4



Source: AEMO[23]

[22] "The maximum civil penalty is set at 1 penalty unit per tonne of excess emissions per year and the infringement notice charged at one-third of the maximum civil penalty to a maximum of 150,000 penalty units. As of 7 November 2024, a penalty unit for a breach of Australian Government law is $330." - see DCCEEW, "Safeguard Mechanism Overview."

[23] AEMO, *2026 Integrated System Plan for the National Electricity Market: A Roadmap for the Energy Transition*, 15.

As a priority, the electricity sector needs clear abatement incentives to support a smooth and economically efficient transition. This is best achieved through a PPL which can clearly price emissions, provide a signal for coal plant exits, and promote the renewable investments necessary to replace existing coal capacity. Expanding the way in which the Safeguard Mechanism applies to the electricity sector is likely to be the next best option. It prices emissions and provides incentives for renewables using efficient market allocations.

Without a clear abatement signal in the electricity sector, Australia will struggle to meet its national decarbonisation goals, and the cost of meeting these goals will be much higher.

Recommendation 6: In the absence of an economy-wide Polluter Pays Levy, the government should consider adapting and expanding the Safeguard Mechanism to create efficient incentives to abate emissions in the electricity sector. The Grattan Institute has provided a model which could serve as a starting point for consultation.

3.3 Coverage and treatment of the coal and gas sectors

The Safeguard Mechanism covers coal mines with more than 100,000 tonnes of CO2-equivalent greenhouse emissions each year. About 88 per cent of National Greenhouse Gas Inventory (NGGI) emissions from coal are covered,[24] with methane emissions representing about 70 per cent of coal mining emissions, predominately from fugitive emissions.[25] TSI analysis estimates that 15 per cent of coal mine methane emissions are not covered.

Gas sector coverage is below 40%, largely because many gas facilities fall below the reporting threshold, including smaller gas plants and transmission pipelines.

Methane emissions have a stronger but shorter-lived global warming potential than carbon dioxide emissions. Coal mines that are not covered by the Safeguard Mechanism do not have an incentive to invest in emission abatement, neglecting the scale and urgency of the methane-emission reduction challenge.

Lowering the coverage threshold for the Safeguard Mechanism would expand the share of emissions covered from coal mines, but depending on the threshold, potentially leave some mines uncovered.

Recommendation 7: Broaden the Safeguard Mechanism to capture all fossil mining activity. Facility baselines should be designed to achieve reductions consistent with Australia's 2035 target.

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[24] Gorringe, "The Coal-Fired Carbon Credit Market."

[25] Climate Change Authority, *2024 Sector Pathways Review: Resources*, 3.

Baseline arrangements for coal mines are too generous

The Government has sought views on baseline arrangements for coal mines. Current settings include preferential 'hybrid' baselines, with a slower transition to an industry average than other sectors. Hybrid baselines will persist beyond 2030 because they are built into the production variable. When the coal mining sector faces weaker decline rates compared to others, it benefits from a larger stock of valuable emissions allowances – essentially a wealth transfer – and the generous baselines distort production decisions. The Safeguard Mechanism should not treat sectors preferentially except to create a level playing field with emissions-intensive imports.

This problem is aggravated by the likely underestimation of fugitive emissions from coal mines. (See TSI's submission on the Fossil Methane Consultation Paper for a summary of evidence.) This is likely to be reflected in Australia's future inventory, and in the meantime creates the risk of accumulating but unrecognised emissions. Underestimation of methane emissions also reduces the marginal incentive to invest in projects that cut those emissions.

Better measurement of methane emissions would reduce this risk, raise the incentive to invest in projects that cut methane, and underpin facility baselines that more accurately reflect actual methane emissions from coal mines, rather than estimated emissions.

Recommendation 8: Align coal baselines with other sectors: industry-average emissions intensity to apply as soon as possible after 2031, with baselines reflecting the likelihood that mine methane emissions are systematically underestimated.

Recommendation 9: Introduce industry-financed, independently audited methane monitoring.

Treatment of methane offsets from coal mines

The Safeguard Mechanism allows ACCUs to offset methane emissions. This is despite methane's short-term warming effects exceeding the delayed offset provided by ACCUs. ACCUs do not provide true offsets for methane emissions, from a short and medium-term warming perspective.

Under current policy settings, many fossil mines rely on ACCUs to stay within their emissions thresholds. Coal facilities used approximately 6.3 million tonnes of carbon dioxide equivalent (MtCO2e) offsets to meet their baseline in FY2025, a 40 per cent increase in offsets from the previous fiscal year.[26] In this time, the coal mining sector

[26] Setiawan and Aghdasi, *Declining Emissions in Australia's Coal Sector Mask Growing Offset Use*.

increased total emissions more than production, reflecting an increase in emissions intensity.[27]

This submission summarises well-documented concerns about the robustness of ACCUs,[28] but acknowledges that ACCU reforms are out of scope for this Review.

However, the risk of inadequate offsetting is particularly acute when ACCUs are used to offset methane emissions. In the short term, offsets are expected to target carbon dioxide emissions, and are calculated using an emission's global warming potential over a 100-year time scale (GWP-100).[29] Offsets are not designed to be equivalent to the much stronger but shorter-lived warming effect of methane.

Within the limits of the Safeguard Mechanism Review, reforms should recognise tradeoffs between short and long-term warming effects from abatement of different greenhouse gases; for example, the government should consider requirements to prioritise methane-emission offsetting with SMCs generated through methane abatement, to the extent that these are available.

Recommendation 10: Government should examine whether reliance on GWP100 alone adequately reflects the near- and long-term warming effects of short-lived greenhouse gases, particularly methane.

Recommendation 11: The CER should publish supplementary GWP20 estimates alongside existing GWP100 Safeguard emissions data.

4. Baselines need to be tightened to meet 2035 decarbonisation commitments

4.1 Scheme-wide baselines

The government has set a 2035 Nationally Determined Contribution to reduce emissions between 62 and 70 per cent below 2005 levels. The indicative annual decline rate for Safeguard Mechanism baselines is 3.285 per cent from 2030. This will not drive onsite abatement consistent with Australia's decarbonisation commitments.

Research by the IGCC finds that:

> *"A 5 to 7% decline rate from 2031 to 2035 is consistent with the 2035 target range. Implementing a 7% decline rate would drive around 15 Mt increased average annual abatement, with around 61% of abatement delivered onsite."*[30]

[27] Clean Energy Regulator, *2024–25 Safeguard Mechanism Data Insights*.
[28] Macintosh et al., *Tortured Recommendations, Incomplete and Unsubstantiated Findings: An Analysis of the Report of the Independent Review of Australian Carbon Credit Units*.
[29] Setiawan and Aghdasi, *Declining Emissions in Australia's Coal Sector Mask Growing Offset Use*.
[30] Pitt, "Safeguard Mechanism Reforms."

Because there is therefore considerable uncertainty about emissions and effective abatement both outside and within the Safeguard Mechanism, TSI recommends that the Review adopt the more stringent 7 per cent decline rate. About one third of Australia's emissions are not reported under the NGERs, so these responsible emitters cannot be brought under the Safeguard Mechanism. TSI's view is that abatement incentives under the Safeguard Mechanism are undermined by overly generous ACCU issuance and low compliance costs. The prudent response is to implement the more ambitious 7 per cent decline rate within the Safeguard mechanism.

4.2 Baselines for newly-covered facilities

Facilities that enter the Safeguard Mechanism need baselines. The consultation paper invites feedback on options for setting newly-covered facilities' Economic Reduction Contribution (ERC). ERCs are the multiplier used to progressively tighten the baseline emissions-intensity of products.

Option 1 would use the same ERC multiplier as facilities already covered by the scheme, reflecting several years of tightening. It would prevent competitive distortions between newly-covered facilities and current participants, but require newly-covered facilities to meet more stringent baselines immediately. Option 2 would 'reset' the ERC multiplier for newly-covered facilities, creating competitive distortions but easing their compliance tasks.

The Government should instead consider a separate ERC schedule for newly-covered facilities, implemented with the more generous 'reset' ERC in the first year of compliance, but tightening the ERC rapidly to converge with the ERC faced by current participants. We propose a five-year convergence period.

Recommendation 12: Facility baselines should be designed to achieve reductions consistent with Australia's 2035 target, and to manage measurement and scientific risk around emissions and offsets. Baselines should decline by 7 per cent per year between 2031 and 2035. Newly-covered facilities should enter the scheme with 'initial' emissions reduction contributions, but converge with current participants over a five-year period.

5. Carbon leakage: trade-exposed industries and border carbon adjustment

The Review seeks feedback on the current Trade Exposed Baseline Adjustments (TEBA) arrangements and whether a 'border carbon adjustment' (BoCA) could be suitable for Australia.

TSI's position is that domestic carbon pricing arrangements should be accompanied by a carbon levy applied at the border (such as a BoCA) to energy-intensive imports, so domestic producers of energy-intensive goods are not disadvantaged. In The Case for Pricing Pollution, in the context of TSI's recommended Polluter Pays Levy, we recommended:

> *This border levy should be based on the European Union's Carbon Border Adjustment Mechanism (CBAM), in both design and price. The CBAM is being phased in from 2026 to 2034, when importers will incur the full price of the EU carbon price on energy-intensive products.*

The Carbon Leakage Review (CLR) has made similar conclusions and recommendations. In particular the CLR found:

> *A border carbon adjustment applied to imports could be an appropriate policy measure for selected Safeguard-covered commodities with high carbon leakage risk from imports. It could provide a robust underpinning of the Safeguard Mechanism for commodities where carbon leakage risk is material, and efficiently support industrial decarbonisation and the emergence of low emissions industries.*

5.1 TEBA arrangements under the Safeguard Mechanism

Current arrangements for trade exposed facilities create equity concerns and weaken the incentive for on-site abatement.

Eligibility for TEBA is triggered by the size of the scheme's cost impact on a facility. The more emissions-intensive a facility is, the larger that impact, and the more relief it receives. Relief therefore rises with emissions intensity. The scheme is flawed. Two facilities producing the same product can face materially different decline rates if one receives TEBA and the other doesn't. A facility that has already invested in abatement and is therefore ineligible for TEBA will be disadvantaged against a facility that has made no investment but which receives a concessional decline rate.

Further, a facility that reduces its emissions intensity also reduces the cost impact of the Safeguard Mechanism which can reduce or remove its eligibility for TEBA. Perversely, relief is therefore contingent on a facility remaining carbon-intensive and can act as a disincentive for investment.

The consultation paper seeks feedback on whether a move to a 'sectoral approach' to TEBA would be preferred. A sectoral approach would remove some of the perverse incentives for facilities producing the same commodity and would be administratively simpler.

The consultation paper also seeks feedback on a possible 'catch-up arrangement' whereby other facilities would make up the shortfall. This would shift who bears costs, possibly unfairly by increasing the burden on facilities that have no leakage exposure.

Ultimately, the questions around changes to TEBA are appropriately resolved by addressing carbon leakage questions directly through consideration and design of a BoCA.

5.2 Border Carbon Adjustment (BoCA)

The CLR found that for products with a high carbon cost relative to product price, imports can readily substitute for domestic production.

The CLR has recommended a BoCA, introduced progressively, starting with cement and lime with the potential for it to be extended to other sectors.

Recommendation 13: Replace trade-exposed baseline adjustments with a border carbon adjustment.

Appendix A: ACCU issuance and risk

Permanence and reversal risks are not adequately reflected in ACCU prices

Because sequestration offsets may be temporary, a 'permanence' discount reflects limited sequestration and storage periods. These discounts are based on the anticipated life of an ACCU project. Sequestration offsets are also at risk of unexpected reversal events such as bushfires, which are reflected in a 'reversal' discount.

ACCU prices do not adequately reflect the scale of permanence or reversal risks.

Permanence obligations require ACCU projects to maintain the carbon stored or sequestered for either 25 or 100 years. It is not clear whether, or to what extent, carbon stored under 25-year projects will be retained beyond that point.[31] 25-year projects are discounted 20 per cent to address this 'permanence risk,' reflecting their short lifespan and the potential cost to the government of replacing carbon stores if 25-year projects are discontinued.[32]

A 5 per cent 'reversal risk' discount is applied to sequestration-based offsets.[33] A 25-year plantation project is therefore discounted 25 per cent, so 75 ACCUs are issued for 100 tonnes of 'stored' carbon dioxide. Only 75 per cent of projects have started earning ACCUs, and already more than half are 25-year projects.[34] The share of ACCUs from 25-year projects is expected to increase as more projects enter their permanence period.[35]

The 20 per cent discount was set in 2014, before Australia signed the Paris Agreement and committed to reach net zero in 2050. There is little information on how the 20 per cent discount was set or its appropriateness in the context of new scientific research, Australia's decarbonisation commitments, and updated cost estimates for addressing permanence risk.[36]

Permanence and reversal risk adjustment are outdated and, for example, do not reflect scientific uncertainty and up-to-date research on the risk that climate change increases losses from impermanence, and the risk of reversal events such as bushfires.

The CCA has repeatedly expressed concern about ACCU permanence and reversal discounts. While CSIRO notes some offset methodologies and locations are riskier than others, the CCA observes "there is little recognition of these differences in the scheme wide mechanisms that are designed to mitigate this risk." In 2020 the CCA called for

[31] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*.
[32] Climate Change Authority, *Review of the Emissions Reduction Fund*, 94.
[33] Clean Energy Regulator, "Permanence Obligations."
[34] Clean Energy Regulator, "ACCU Scheme Crediting Period and Permanence Period Dates."
[35] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 11.
[36] Climate Change Authority, *Review of the Emissions Reduction Fund*, 97.

the government to revisit the assumption 25-year carbon stores would usually be retained.[37]

In 2023 the CCA suggested one approach to permanence risk might require four credits from projects with 25-year permanence periods to equate one credit from projects with 100-year permanence periods,[38] equivalent to a 75% discount rate. The CCA reiterated this suggestion and their concern in 2026:

> *"Safeguard compliance is now the main source of ACCU demand, and ACCUs are increasingly used to offset industrial emissions... the Authority believes the growing role of ACCUs from projects with 25-year permanence periods in safeguard compliance raises questions about durability that warrant further assessment. The Authority reiterates its 2023 recommendation that the Government assess the risk of reversal buffer and permanence period discount..."*[39]

ACCU prices are unlikely to adequately reflect permanence and reversal risk, increasing supply and decreasing demand for offsets, and – depending on market interactions – likely reducing the price of ACCUs.

Additionality risk is not adequately reflected in ACCU prices

ACCUs should result in 'additional' carbon abatement that is unlikely to occur in the ordinary course of events. 'Additionality risk' describes the possibility that ACCU projects are over- or under-credited with carbon abatement. Different ACCU methodologies have different levels of additionality risk, which is reduced when additional abatement can be accurately estimated, measured, and verified.

ACCUs from land-based sequestration ('sequestration ACCUs') are particularly vulnerable to additionality risk, including ACCUs generated with vegetation, agriculture and forestry management. There is inherent uncertainty estimating carbon sequestration and storage in managed land-based systems, versus a counterfactual 'baseline' scenario.[40]

Recent analysis raises concerns about sequestration additionality estimates, reflecting uncertainty about both baseline estimates of sequestration, and the sequestration

[37] Climate Change Authority, *Review of the Emissions Reduction Fund*, 92.
[38] Climate Change Authority, *2023 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 37.
[39] Climate Change Authority, *2026 Review of the Carbon Credits (Carbon Farming Initiative) Act 2011*, 11.
[40] Nolan et al., "Additionality, Baselines, and the Proper Accounting for Land-Based Climate Change Mitigation Efforts."

gains from management.[41] Emerging science also highlights new sources of uncertainty – for example, warmer temperatures increase vegetation respiration rates and decrease sequestration, while higher carbon concentrations in the atmosphere increase vegetation growth rates through the fertilisation effect, increasing sequestration. These effects have implications for both baseline and managed landscapes, and uncertainty about how these effects compound. This uncertainty should be reflected in additionality estimates.

Additionality of sequestration ACCUs is estimated with the Full Carbon Accounting Model (FullCAM). FullCAM models the relationship between different landscapes, management practices, and actions to generate above-base line sequestration. But the FullCAM model does not account for the effect of climate change on respiration or for fertilisation effects, increasing the risk of additionality estimate error.[42]

Measured and verifiable data from sequestration ACCUs would help reduce system-wide risk. Australia is not using data to improve sequestration measurement or to improve FullCAM, increasing the risk of additionality estimate errors and additionality measurement errors.[43]

[41] Macintosh et al., *The ERF's Human-Induced Regeneration (HIR): What the Beare and Chambers Report Really Found and a Critique of Its Method*; Macintosh et al., "Australian Human-Induced Native Forest Regeneration Carbon Offset Projects Have Limited Impact on Changes in Woody Vegetation Cover and Carbon Removals."
[42] Roxburgh, "A Look at LOOC-C, Carbon Abatement Calculator."
[43] DCCEEW, "Improved Native Forest Management (INFM) Method"; DCCEEW, "Reforestation by Environmental or Mallee Plantings - FullCAM 2024 Method"; DCCEEW, "Plantation Forestry Method."

Appendix B: Compliance costs and ACCUs

Appendix B1: The challenge of allocating ACCUs across facilities

Box 1 advocates a facility-level surrender surcharge, noting the alternative is to allocate the final distribution of ACCUs – some with lower costs of compliance, some with higher – across facilities.

Auctions for 'tranches' of ACCUs with different surrender surcharges may be the best way to solve the allocation problem. But it would create an additional market in rights to particular surrender surcharges, with associated administrative complexity and price volatility. Further, auctions would bid up the value of lower-cost tranches towards the marginal compliance cost, so that lower-surcharge tranches would not be materially lower-cost than higher-surcharge tranches. This would raise costs and undermine an intended feature of the facility-level design: with genuinely cheap early tranches, the average costs of ACCU use increase much more slowly than the marginal costs of ACCU use.

Appendix B2: Progressive ACCU surrender ratios as an alternative to the progressive surrender surcharge

An alternative method of increasing the industrial abatement incentive is a progressive ACCU surrender ratio. ACCU use at modest levels can remain one-for-one. As dependence on ACCUs grows, progressively more ACCUs should be required to discharge each tonne of Safeguard liability.

The increased use of ACCUs for each tonne of Safeguard liability has two favourable consequences.

- The primary benefit is that the marginal cost of compliance through ACCUs rises, making SMCs and onsite abatement progressively more attractive. If ACCUs cost $60/t, then at a ratio of 1.25 per compliance tonne, SMCs up to a value of $75/t will be competitive.
- A secondary benefit is that it acts as tangible insurance against systemic risks associated with extensive reliance on offsets. If, for example, an average of 1.25 ACCUs is surrendered per compliance tonne, the ACCUs used could on average deliver only 80 percent of their credited mitigation yet still provide one tonne of mitigation per tonne of liability. This is akin to increasing bank capitalisation requirements as systemic risk and uncertainty grows.

B2.1 Design of a progressive surrender-ratio scheme

ACCU surrender ratios would be applied within a 'tranche' – for example, a tranche representing the first 10 per cent of ACCUs surrendered. In higher tranches, the higher surrender ratio is applicable to ACCUs from that tranche, not across all ACCUs purchased.

The initial tranche would remain one-for-one, rising slowly, preserving relatively low-cost ACCUs where their use—and associated risks—remain modest. Subsequent tranches would rise progressively. An illustrative schedule may be:

- First 10% of liability: 1.0 ACCU per tonne.
- 10-20%: 1.1
- 20-30%: 1.2
- 30-40%: 1.35
- 40-50%: 1.5
- 50-60%: 1.75
- 60-70%: 2.0
- 70-80%: 2.5
- 80-90%: 3.0

The progressive design leads to divergence between the average cost of compliance and the marginal incentive for industrial abatement. At today's ACCU share in compliance—around 80 per cent—based on the schedule above, the highest tranche reached would require around 2.5 ACCUs to be used per compliance unit. Across all facilities, the marginal incentive for onsite abatement or SMC generation would therefore be around 2.5 times the market price of ACCUs—or around 2.5 times the incentive today.

But because most ACCUs were surrendered in lower tranches—first the 1.1 tranche, then the 1.2 tranche, and so on—the average use of ACCUs per tonne of Safeguard liability would be much lower at 1.5. Thus, the scheme would achieve a marginal incentive for onsite abatement significantly higher than its average cost to facilities. This is the same beneficial pattern described for the ACCU surcharge.

Progressive surrender ratios support the market for ACCUs. As facilities undertake more onsite abatement, progressive surrender ratios support greater levels of ACCU demand than policies that preserve one ACCU per tonne of compliance for all ACCUs. For example, if ACCUs were surrendered to meet 50 per cent of facilities' collective liability, the average use of ACCUs per tonne under the progressive schedule above would be 1.23. This would generate ACCU demand equivalent to around 62 per cent of liability under current one-for-one arrangements.

The surrender-ratio schedule would need to be calibrated through further analysis and ongoing market observation, and phased in on a clear timetable that permits facilities and ACCU producers to adjust contracts and investment plans. Once established the schedule should be modified only where necessary, to preserve predictable incentives for investment.

Under a progressive surrender ratio, the abundant stock of banked ACCUs would be absorbed more rapidly, without producing an equivalent increase in the share of Safeguard liability met by offsets.

B2.2 Progressive ratios require the Cost Containment Mechanism to be redesigned

The existing cost-containment mechanism (CCM) would be in partial conflict with progressive ACCU surrender ratios.

Under the present CCM design, the government supplies one ACCU to extinguish one tonne of Safeguard liability. Under progressive surrender ratios, more than one ACCU may be required to discharge a tonne of liability. Allowing government-supplied ACCUs to count one-for-one would undermine the goal of minimising scheme-wide risk and lifting incentives for abatement.

This does not remove the need for cost containment. ACCU and SMC markets are relatively thin and lumpy, with uncertain patterns of supply and demand. Facilities should not be exposed to potentially extreme compliance costs caused by temporary scarcity—although if ACCU and SMC prices repeatedly reach the cost-containment level, this may suggest that the market ceiling is set too low for the level of abatement ambition, and the Cost Containment Mechanism price should be reviewed.

Were progressive surrender ratios introduced, the CCM should continue to place an upper bound on compliance costs in each period, without fully extinguishing the ACCU liability established by progressive ACCU surrender.

B2.3 A mechanism for managing surrender ratios and the Cost Containment Mechanism

The CCM would instead change the timing of compliance. Where a compliance tonne is relieved through the CCM but not matched by the number of ACCUs required under the progressive surrender schedule, the unmet emissions liability should remain on the Safeguard ledger to be made good in later periods. For example:

- if ACCUs presently make up 65% of Safeguard compliance;
- following the illustrative schedule in Appendix B2.1, the required ACCU ratio is 2.0; and

- a facility purchases its last 5% of compliance at the cost-containment ceiling;

then the CCM supplies one ACCU where two are required to discharge each tonne of Safeguard liability. The CCM therefore discharges 0.5 tonnes of liability for every ACCU supplied, while 0.5 tonnes of liability is treated as unmet and deferred to the facility's next compliance period.

The CCM would therefore be converted from an exception to prudential rules into a form of partial borrowing through time. Firms retain protection from extreme temporary prices, and confidence in the overall emissions path is maintained.

Deferral would be exceptional and bound by rules. The volume of deferred liability would be recorded transparently, with repayment occurring automatically over a specified period. Beyond a reasonable limit, cumulative deferred liability should trigger a review into the use of the CCM, to determine whether it is being used persistently rather than for tail events. Optionally, a modest "interest rate" on tonnes could be considered to compensate for the climate cost of delayed mitigation.

This would be TSI's preferred approach to modifying the CCM where progressive ratios are introduced.

B2.4 An alternative mechanism for managing surrender ratios and the Cost Containment Mechanism

A simpler alternative is to disconnect the CCM from ACCUs; facilities would pay the cost-containment price for each tonne of unmatched liability, and the full liability deferred to the facility's next compliance period. The advantage of this approach is avoiding dependence on Government ACCU procurement, while retaining the marginal incentive set by the CCM. It is one step closer to an ordinary carbon price.

Appendix B3: Why the difference in ACCU and SMC floor mechanism?

The first reason is that the two instruments are structurally different.

If the SMC floor was implemented with a levy, it would create a large 'kink' in incentives at the baseline: firms may be paid the floor price (e.g. $60/t) for each tonne cut above the baseline (avoiding both SMC market price and surcharge), and only the market price (e.g. $40/t) for each tonne cut below the baseline. No analogous kink arises for ACCUs, because they are not generated by crossing below a Safeguard baseline, and a below-baseline facility has no need to purchase ACCUs for Safeguard compliance.

If the ACCU floor was implemented with guaranteed purchases, this could generate enormous liabilities: the excess of ACCUs produced each year, alongside the 50-60

million in banked ACCUs, could be tendered. This problem is immaterial for SMCs at any realistic price floor.

The second reason is that the goal is to increase the predictability of the industrial decarbonisation incentive. We do so with the SMC price floor. But because SMCs and ACCUs are substitutes for compliance, an SMC floor without an ACCU floor may have the unintended consequence of crowding out SMCs purchased for compliance. Facilities would continue to generate SMCs below the SMC floor price, but would not use them; they would then need to be purchased at that floor price, generating potentially large liabilities.

We raise the ACCU floor not to create additional rewards for ACCU generation, but to prevent low raw ACCU prices from undercutting the minimum industrial abatement incentive established by the SMC floor.[44]

Further Information

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[44] Price floors induce artificial rents for suppliers, when they would otherwise sell below the floor price. The two floor designs treat these rents differently. SMC generators receive the floor price because this is necessary to establish the common marginal industrial-abatement incentive. ACCU producers continue to receive the competitive market price; the surcharge raises the price of using ACCUs for compliance without creating an additional producer-side price guarantee.

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