

Submission to the 2026-27 Safeguard Mechanism Review

SmartCrete Cooperative Research Centre | 18 September 2026

The Safeguard Mechanism is driving emissions reduction within Australia’s largest industrial facilities—but that decarbonisation opportunity stops at the facility gate. Australia lacks policies and programs that catalyse critical supply-chain coordination that will determine whether sector-wide decarbonisation is achieved. **A narrow facilities-based approach can deliver only part of the required transition and provides limited incentive for sustainable practices across the built environment ecosystem, where major decarbonisation potential is being left on the table.** Substantial progress towards net-zero can be achieved through engineering design optimisation, enhanced material use, asset re-use and life extension, end-of-life circular economy practices all of which have significant potential to reduce demand for heavy materials. In order to unlock this emissions reduction potential, the scope of the Safeguard Mechanism objectives must be broadened to incentivise full supply chain decarbonisation action.

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SmartCrete CRC supports continuation of the Safeguard Mechanism and a predictable decline in facility baselines beyond 2030. The mechanism provides an essential investment signal for Australia’s largest industrial emitters and should continue to deliver a share of the national emissions reduction task.

However, **the present framework addresses only part of the decarbonisation opportunity.** In cement and concrete, the Safeguard Mechanism principally rewards changes within the boundary of a covered manufacturing facility, however, some of the largest and most readily deployable emission reductions opportunities depend on decisions made by those in the wider supply chain such as governments, designers, engineers, specifiers, contractors, concrete suppliers, asset managers and recyclers. Material substitution, leaner structural design, longer asset life, adaptive reuse and end-of-life recovery can reduce demand for emissions-intensive production, yet no supply chain participant can deliver or reliably capture the value of that abatement.

Declining baselines must remain at the core of the scheme. This is not an argument to dilute facility accountability; it is an argument to empower and amplify the existing program with a parallel controlled pathway that mobilises the wider supply chain and recognises verified reductions that the current production-adjusted framework does not adequately reward. A program framework; the ‘Concrete Sustainability Alliance’ (CSA); capable of delivering this controlled pathway has been developed by SmartCrete CRC through extensive industry consultation over a three-year period. The program has been submitted to the Government for funding

consideration. CSA is a strategic, collaborative initiative to accelerate concrete decarbonisation that has been officially endorsed with more than 30 letters support from relevant industry associations.

1. Recommendations

Safeguard Mechanism Extension

1. **Retain the core architecture.** Continue the Safeguard Mechanism, preserve declining production-adjusted baselines, and set the 2030–35 trajectory early enough to support long-lived investment decisions.
2. **Maintain ambition.** Retain the proportional-share approach, updated using the most representative pre-reform data. Calibrate the post-2030 decline rate toward the more ambitious end of Australia's 2035 target range, supported by a prudent reserve.

Expand the Scope and Impact

3. **Enable the supply chain.** Establish a funding pathway to support technology and market system innovation that advances decarbonisation across the built environment, not just capital investment of existing clinker and cement technology.
4. **Create a Safeguard Supply Chain Abatement Pathway.** Establish a staged mechanism through which covered facilities can form registered partnerships with downstream infrastructure participants to identify, deliver and verify additional emissions reductions across the material and asset lifecycle.
5. **Pilot before crediting.** Commence with sector pilots and Safeguard Transformation Agreements. Test methods, attribution and national-inventory impacts before any supply-chain outcome becomes eligible for a compliance unit or other financial reward. CSA offers a vehicle to deliver these pilots.
6. **Recognise the full hierarchy of solutions.** Include low-carbon material substitution, material-efficient design and engineering, construction efficiency, life extension and adaptive reuse, and end-of-life recovery and recarbonation where reductions have been proven measurable and additional.
7. **Build the enabling market.** Link the pathway to harmonised embodied-carbon measurement, government procurement, standards and approvals reform, shared performance evidence, demonstration projects and workforce capability.
8. **Protect integrity.** Require progressive infrastructure project carbon baselines, clear ownership, independent verification, durability where relevant, and a prohibition on double counting across projects, facilities, ACCUs, SMCs, grants and corporate claims.
9. **Update the roadmap.** Reassess and update the sector-wide "[Decarbonisation Pathways for the Australian Cement and Concrete Sector](#)".

Delivery framework: Significant commonwealth investment has already been implemented through the successful delivery of the SmartCrete CRC. SmartCrete has established national partnerships, built industry trust and delivered practical knowledge to support the concrete sector's decarbonisation transition. As SmartCrete moves towards program completion in June 2027 it has developed the CSA proposal for a systems-based innovation program. CSA is designed to unlock the potential of existing technology and process innovations through facilitated translation, adoption and impact pathways. CSA offers a shovel-ready vehicle to work in parallel with the Clean Energy Regulator to implement many of these recommendations and unlock the decarbonisation capacity of the full supply chain. No existing industry association or program has the supply chain breadth or technical remit to catalyse full supply chain collaboration to address the systemic barriers to achieving net zero in the built environment. CSA as an independent, full ecosystem, collaborative systems innovation program provides a pathway to coordinate across the complex and fragmented built environment.

2. Why this matters for the Review

The Consultation Paper asks whether important areas are not covered by government policy and whether the Mechanism should cover a larger portion of national emissions.^[1] The learning from SmartCrete CRC is that there are areas not covered which would add significantly to achieving national emissions targets. The principal gap in opportunity to abate is not only the small number of facilities above a threshold. It is the absence of a mechanism that connects facility incentives to the demand, design, procurement and circular-economy decisions that determine how much industrial material Australia needs and which products the market will accept. Additional Government investment into existing cement manufacturing technologies does not guarantee a secure sovereign capability. All participating built environment parties must commit to and collaborate in a future made in Australia that accelerates decarbonised pathways using applied technology and innovative solutions with manageable risk.

3. The current framework captures only part of concrete decarbonisation

Cement process emissions sit appropriately within the existing Safeguard Mechanism. The sector has responded through clinker substitution, alternative fuels, energy efficiency and work toward carbon capture. These measures must continue. But concrete is produced and used through a fragmented ecosystem. The emissions intensity and total material demand of an infrastructure asset are shaped well before a cement kiln, or concrete batch plant receives an order.

The independent 2021 Australian cement and concrete decarbonisation roadmap, which was funded by SmartCrete CRC, identified eight complementary pathways: innovation in construction and design; innovation in concrete; clinker-efficient cements; increased use of supplementary cementitious materials; alternative fuels and green hydrogen; electrical energy efficiency and renewable energy; accounting for concrete carbonation; and carbon capture, use and storage (CCUS).^[2] The highest carbon potential carbon emissions are reported to come from CCUS which is estimated to contribute 33% of the sector's ability to achieve net zero. While technology is maturing both globally and locally, the capital cost of both set up and operation is inhibiting broad roll out of CCUS technology. Apart from a 7% emissions reduction potential through new CO₂ efficient cements, the remaining 60% of sectoral emissions reduction potential sits wholly or partly outside the operational boundary of a Safeguard cement facility.

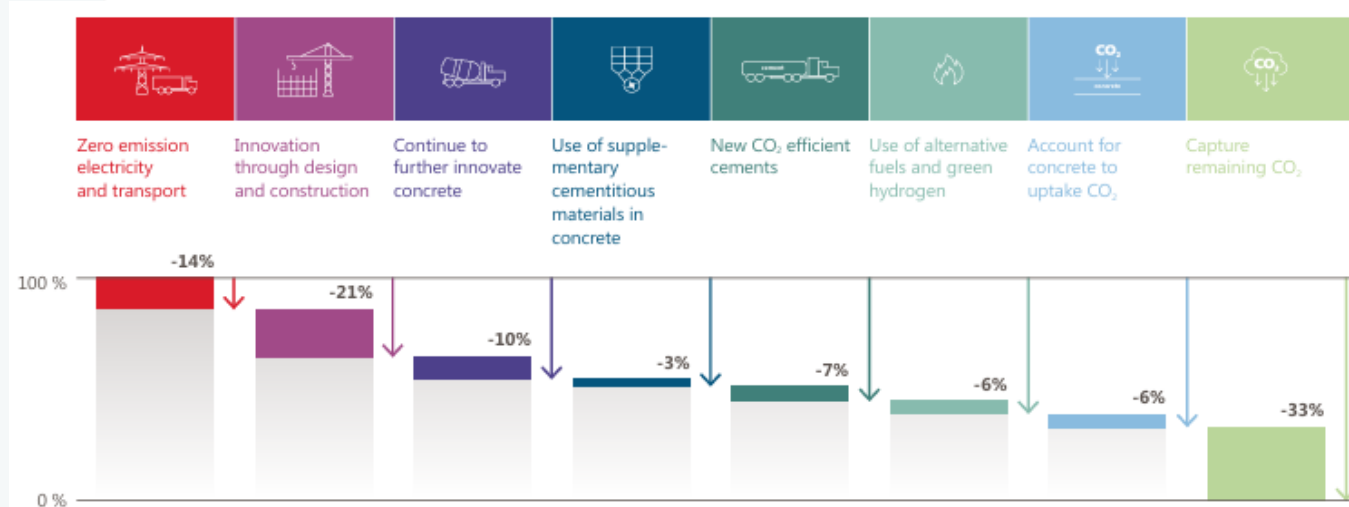


Figure 1. Cement and concrete decarbonisation pathways – percentage CO₂ reductions 2020-2050^[2]

Infrastructure NSW's Decarbonising Infrastructure Delivery Policy demonstrates the role of the client: it mandates management and reporting of upfront carbon, supported by **nationally adopted measurement guidance**.^[3] This is a valuable demand-side signal, but it is not yet connected to the central industrial incentive created by the Safeguard Mechanism. **The scale is material.** Australian Government analysis estimates that construction activity would produce 37–64 Mt CO₂-e of upfront embodied emissions each year over five years, or 247 Mt in total.^[4] Critical emissions reduction decision making capacity for this emissions profile vests in the infrastructure supply chain, rather than the cement producers which interact with the Safeguard Mechanism.

4. SmartCrete CRC evidence

SmartCrete CRC was established in 2020 to translate research into **economic, environmental and social impact** across the concrete supply chain. Its portfolio of 62 collaborative projects, representing more than \$75 million in research effort, has generated and tested innovations including lower-carbon mixes using novel supplementary cementitious materials, higher-value uses for industrial by-products and recycled materials, advanced manufacturing and construction methods, and sensor-enabled asset monitoring that supports earlier intervention and longer infrastructure life.^[5]

The innovation base for concrete decarbonisation solutions is plentiful. The problem is not a lack of innovation or invention. SmartCrete's translation work has repeatedly found technically credible solutions slowing or stopping at adoption due to barriers that are systemic in nature:

Barrier	How it blocks abatement
Fragmented accountability	Carbon, cost, performance and delivery risk sit with different parties. The actor able to change a decision is often not the actor receiving the carbon benefit.
Procurement and risk	Lowest-price and prescriptive specifications favour familiar materials. Carbon is introduced late, weakly weighted or transferred as unpriced risk.
Standards and approvals	Evidence requirements, conservative deemed-to-satisfy pathways and inconsistent specifications create long and costly routes to acceptance.

Barrier	How it blocks abatement
Data and language	Inconsistent boundaries, product data and definitions make comparison difficult and weaken confidence in claims.
Performance evidence	Long asset lives make clients cautious. Shared testing, demonstration and accelerated validation are needed to establish confidence at scale.
Skills and capability	Designers, procurers, certifiers, contractors and trades need practical capability to specify, assess and use emerging materials and methods.
Investment coordination	Individual firms need appropriate market signals to justify capital investment in new decarbonised product categories. They cannot justify funding shared evidence, logistics, standards and market development from which the whole ecosystem benefits.

These barriers explain why a facility-only signal is necessary but insufficient to provide the scale to address large emissions targets effectively. A falling cement baseline encourages lower-emissions production per tonne. It does not consistently reward a project team that redesigns an asset to use fewer tonnes, retains an existing structure, specifies a novel blend, or creates a viable recovery route at end of life. Because baselines adjust with production, avoided demand can reduce both emissions and the facility baseline without generating a **Safeguard Mechanism Credit unit (SMC)**, a tool which should be incentivising the avoided demand in the first place.

5. A Safeguard Supply Chain Abatement Pathway

Building on the expertise and insight it has developed over 6 years embedding innovation into the concrete sector, SmartCrete CRC recommends a staged and accelerated pathway within the broader Safeguard policy architecture. It should connect covered facilities with the parties capable of unlocking downstream abatement, while keeping current facility obligations intact.

Stage 1 Registered transformation partnerships

A covered facility could sponsor or join a registered partnership with one or more infrastructure clients, designers, suppliers, constructors, asset owners or recovery businesses. The partnership would prepare a Supply Chain Abatement Plan defining the reference case, intervention, participants, allocation of responsibilities, measurement method, expected national-inventory effect and treatment of existing public support.

Stage 2 Demonstration and measurement

Government should select collaborative sector pilots through a competitive, expert-led process. Pilots would use common data and reporting rules and could receive co-investment for shared testing, demonstration, approvals, supply-chain development and training. Infrastructure NSW's policy, National Measurement Guidance and carbon-management templates provide a practical foundation for consistent project-level measurement.^[3]

Stage 3 Verified recognition

Following evaluation, verified outcomes could receive one or more forms of recognition: eligibility within Safeguard-related transformation funding; procurement preference or contract incentives; public reporting against facility abatement plans; and, only where accounting integrity is proven, a prescribed supply-chain credit or SMC-equivalent treatment. Government should not create compliance credits until methods show that an outcome is additional, attributable, reflected in Australia's inventory and not already rewarded through a facility baseline, ACCU, SMC or another scheme.

6. Eligible solution classes

The pathway should be technology-neutral but should expressly allow and incentivise interventions that the current facility boundary overlooks:

- **Material substitution:** lower-clinker cements, supplementary cementitious materials, alternative binders, recycled aggregates and fit-for-purpose lower-carbon concrete, supported by verified product data.
- **Design and engineering efficiency:** performance-based specification, structural optimisation, digital design, modularity and construction methods that deliver the required service with less material.
- **Reuse, repurpose and life extension:** retaining structures, adapting assets, repair, condition monitoring and predictive maintenance where these avoid premature replacement.

- **Construction efficiency:** reduced over-ordering and waste, improved quality control, off-site manufacture, logistics optimisation and recovery of returned concrete.
- **End-of-life circularity:** design for disassembly, selective deconstruction, high-value reuse and recycling, and credible accounting for carbonation or mineralisation.

7. Integrity requirements

Supply-chain recognition must strengthen, not displace, gross emissions reduction. In applying broader supply chain participation to the Safeguard Mechanism, the following safeguards are essential:

- Facility baselines and the obligation to surrender units remain unchanged.
- A standardised reference case which is realistic and evidence based is set before the intervention and reflects normal practice, regulation and committed investment.
- Only additional outcomes are recognised; ordinary compliance and already-funded business-as-usual activity are excluded or adjusted.
- One tonne can be claimed once. A registry records ownership and links project claims to relevant facilities, products and assets.
- Independent verification assesses quantity, causation, uncertainty, leakage, permanence where relevant, and alignment with the national inventory.
- Crediting, if introduced, applies a conservative discount where measurement or attribution uncertainty remains.
- Methods and pilot results are public, enabling scrutiny and progressive harmonisation across sectors and jurisdictions.

This design would also improve the quality of facility carbon abatement plans. Rather than becoming another disclosure exercise, plans could identify dependencies beyond the facility gate and nominate concrete partnerships needed to remove them.

8. Implications for the Review's settings

Baseline decline and the 2035 target

Policy stability should not mean static ambition. SmartCrete CRC supports continued baseline decline after 2030 and the Government's proposal that Safeguard facilities deliver a proportional share of the 2035 target. Updating the proportional share from 28.1% to 29.8% using the two years immediately preceding the reforms is reasonable if applied consistently and transparently.^[1] The decline trajectory should be announced early, track toward the more ambitious end of the 62–70% national target range and include a prudent reserve for production variability. Reviews should adjust technical settings, not reframe the objectives or strategy.

Coverage

Lowering the facility threshold may address specific competitive distortions and add some abatement, but it is not a substitute for supply-chain coverage. The Consultation Paper estimates that reducing the threshold from 100,000 to 50,000 t CO₂-e would add 108 facilities but only 7.8 Mt of covered emissions, with additional compliance and administrative costs.^[1] Government should assess threshold changes sector by sector and provide long lead times. In parallel, the Supply Chain Abatement Pathway would reach high-impact decisions made by thousands of organisations without imposing facility-style compliance on every designer, contractor or supplier.

Offsets and on-site abatement

Access to flexibility remains important for genuinely hard-to-abate processes, but the scheme should increase the relative value of real industrial transformation. Any future restriction on ACCU use should be predictable and phased. Supply-chain outcomes should not be treated as generic offsets: they must represent verified industrial reductions connected to covered products and Australian assets. The hierarchy should be clear; first reduce emissions at source and across the supply chain; use high-integrity offsets for residual emissions.

Government support

Existing programs tend to fund a technology or capital project owned by a single applicant. They are poorly configured for the shared, multi-party work needed to change specifications, validate performance, coordinate supply, train practitioners and create demand. Government should establish a dedicated systems-innovation stream, delivered through sector partnerships and linked to broader Safeguard outcomes. The proposed Concrete Sustainability Alliance offers a ready platform for a concrete-sector pilot, building on SmartCrete CRC's national network, governance capability and research portfolio.^[5]

9. Conclusion

The Safeguard Mechanism as it stands, serves a limited purpose and potential within the broader procurement, use, maintenance and end-of-life treatment of carbon intensive materials. It should continue to demand that existing facilities decarbonise and honour credible declining baselines to 2035 and beyond. Its next phase should also recognise a practical truth: industrial decarbonisation does not stop at the facility gate. In concrete, an estimated 60% of the sector's emissions reduction potential depend on coordinated decisions across manufacturing, design, procurement, construction, asset management and recovery^[2].

A carefully staged but accelerated Safeguard Supply Chain Abatement Pathway, e.g. the Concrete Sustainability Alliance, would preserve the discipline of facility baselines while mobilising those downstream decisions. It would turn proven applied research into demand, reduce the long-run cost of compliance, strengthen Australian capability and help ensure that the infrastructure Australia must build is also infrastructure Australia can afford to decarbonise.

10. References

- [1] Department of Climate Change, Energy, the Environment and Water, Safeguard Mechanism Review Consultation Paper, August 2026.
- [2] VDZ, Decarbonisation Pathways for the Australian Cement and Concrete Sector, prepared for CIF, CCAA and SmartCrete CRC, 2021. https://cement.org.au/wp-content/uploads/2021/10/Decarbonisation_Pathways_Australian_Cement_and_Concrete_Sector.pdf
- [3] Infrastructure NSW, Decarbonising Infrastructure Delivery Policy and National Measurement Guidance. <https://www.infrastructure.nsw.gov.au/expert-advice/decarbonising-infrastructure/>
- [4] DCCEEW, Commercial buildings: embodied carbon projections for Australian infrastructure and buildings, updated 23 July 2026. <https://www.dcceew.gov.au/energy/energy-efficiency/buildings/commercial-buildings>
- [5] SmartCrete CRC, Concrete Sustainability Alliance Proposal and supporting materials, 2025–26.
- [6] Global Cement and Concrete Association, Cement Industry Net Zero Progress Report, 2023.