CEMENT CONCRETE
& AGGREGATES AUSTRALIA

CCAA 2025-26
Pre-Budget Submission

JANUARY 2025

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Pre-Budget Submission

Table of recommendations

That:

1. The Australian Government invest in developing a mechanism to allow consideration of how the decarbonisation pathways identified by the Climate Change Authority and in the industry report Decarbonisation Pathways for the Australian Cement and Concrete Sector can be advanced.
2. Procurement documentation should be designed to encourage the adoption of performance/outcome based sustainability targets.
3. The Australian Government work with Cement Concrete & Aggregates Australia to consider how the Embodied Carbon Measurement for Infrastructure Technical Guidance, approved by the Infrastructure and Transport Minister's meeting on 7 June 2024, could be implemented through the construction industry supply chains to meet the government's net zero goals.
4. The Australian Government set out a plan and timetable for rolling out the infrastructure that would conveniently permit the refuelling of Zero Emission Vehicles (ZEVs), irrespective of whether they are electric or fuel cell electric vehicles (hydrogen powered) vehicles throughout the entire Australian road network.
5. The Australian Government develop incentives for industry to take up ZEVs for use in the cement and concrete related product supply chain.
6. The Australian Government investigate the viability for biodiesel to be a transitional fuel to ZEV, given it is compatible with existing plant while potentially delivering a 60% reduction in CO2.
7. The Council of Federal and Financial Relations be instructed to explore alternative methods of funding roads, including funding on a distance/location basis, to ensure the availability of funds to maintain and construct roads of a standard to allow the efficient movement of cement and concrete related products.
8. The Australian Government continue to support the development of the hydrogen industry through several initiatives, including the Hydrogen Headstart program, the Regional Hydrogen Hubs Program and the development of the Guarantee of Origin Scheme.
9. The Australian Government continue its support for a low carbon liquid fuels industry in Australia on the proviso that fuel quality standards (particularly for diesel) are introduced in such a way as to minimise the disruption to industry as part of the transition to net-zero.
10. National Competition Policy payments to the States and Territories should be conditioned on jurisdictions adopting performance based infrastructure specifications.

11. Relevant Australian Standards should be reviewed so they support and accelerate the decarbonisation of the Australian built environment and encourage a performance based approach, with AS 3972-2010 General Purpose and Blended Cements reviewed to support the use of lower carbon and innovate cements and concretes as a priority.
12. Procurement documentation prepared by the Australian Government should consider, and encourage where relevant, standards in force in the US and Europe.
13. National Competition Policy payments to the States and Territories should be conditioned on jurisdictions developing a Heavy Construction Materials Supply Plan.
14. The Australian Government should lead the States and Territories in identifying and resolving supply chain barriers, to improve and monitor local supply of key construction materials.
15. State and Territory governments be incentivised to introduce performance-based specifications for road infrastructure to increase demand for recycled and alternative materials, reducing reliance on prescriptive standards.
16. State and Territory governments be incentivised to review and remove regulatory barriers, such as additional consents, preventing the re-processing of concrete waste by quarries, streamlining approval processes.
17. The Australian Government introduce a national grant program, similar to the USA Environmental Protection Agency Scheme to support businesses that manufacture cement and concrete to develop and verify Environmental Product Declarations (EPDs).
18. The Australian Government financially incentivise State and Territory Governments so their “as built” infrastructure meets carbon targets for Federally funded infrastructure projects, so as to discourage alternative higher carbon concretes from being substituted by designers, project managers, contractors and sub-contractors.
19. The Climate Change Authority be funded to ensure that decarbonisation pathways identified in the *Decarbonisation Pathways for the Australian Cement and Concrete Sector* document is reflected in Australia’s circular economy framework.
20. The Department of Finance is funded to review the contents of the Commonwealth Procurement Rules to reflect the contents of the Circular Economy Framework document.
21. The Australian Government should consider the development of a production credit, similar in nature to the New Green Aluminium Production Credit, to support the transition of industry to the use of green concrete.

Introduction

Cement Concrete and Aggregates Australia (**CCAA)** welcomes the opportunity to make a pre-budget submission for the 2025-26 Federal Budget.

Cement Concrete & Aggregates Australia is the voice of the heavy construction materials industry in Australia.

CCAA members produce the majority of Australia's cement, concrete, and aggregates, which are crucial to Australia's building and construction sectors. These materials support the development of our nation's transport, energy, water, housing, defence, and social infrastructure.

The industry generates approximately $15 Billion in annual revenues and employs approximately 30,000 Australians directly and a further 80,000 indirectly.

Australian cement, lime, concrete and aggregate producers form part of a critical manufacturing industry of national importance, especially given the need for sovereign capability to support Australia's infrastructure (such as roads, bridges, water supply structures, medical facilities, defence structures, housing and commercial buildings) and as part of the overall transition to net zero.

Understanding each material component that makes up our industry is critical to recognising the specific challenges and actions required to decarbonise each component of our sector.

***The Infrastructure Australia Market Capacity Report 2024*[1] (the Market Capacity Report)**

The Market Capacity Report indicated that transport infrastructure investment is projected at $126 billion and remains the largest expenditure category, accounting for 59% of the Major Public Infrastructure Pipeline.

However, this is a $32 billion reduction on the previous year's outlook, due to factors including the completion of some 'megaprojects' in 2023-24 as well as fewer new projects to commence in coming years (particularly in New South Wales and Victoria).

This reduction can be expected to continue following the Australian Government's policy decision announced in its Infrastructure Policy Statement[2] that its 'preference' is to fund nationally significant land transport infrastructure projects on a 50:50 basis rather than the former 80:20 funding split.

Conversely, buildings infrastructure investment is projected at $71 billion, which accounts for 34% of the Major Public Infrastructure Pipeline and is expected to peak in late 2026.

This is up $8 billion on the previous year's outlook. Buildings infrastructure is driven by health ($24 billion) and residential buildings ($17 billion), followed by other building types ($12 billion), such as convention centres, offices, art facilities and laboratories.[3]

The Report found that concrete is the top construction material needed by volume to complete major infrastructure works (with an estimated need of 137 million tonnes of product each year over the next five years[4] and that there has been:

- an 'extraordinary escalation in cost trends over the past three years; and that
- concrete and steel, the construction materials most in demand, are vulnerable to cross-sector competition in the event of supply shortages.[5]

[1] https://www.infrastructureaustralia.gov.au/sites/default/files/2024-12/2024%20Infrastructure%20Market%20Capacity%20report_1.pdf

[2] https://www.infrastructure.gov.au/sites/default/files/documents/infrastructure-policy-statement-20231114.pdf. See also Market Capacity Report:8

[3] Market Capacity Report: 5 and 6

[4] Market Capacity Report:29

[5] Market Capacity Report: 7

In this context, CCAA recognises the budgetary pressures faced by the Federal Government, with a deficit of $26.9 billion and a headline cash balance (incorporating 'off-budget' spending) expected to record a $47.8bn deficit this financial year.[6]

Nevertheless, there are several government initiatives that can be considered through a budgetary prism if the supply of cement and concrete are to meet the demands of the Australian economy.

This submission should be read in conjunction with that of the Cement Industry Federation.

Recommendations are made under three subject areas:

1. **Net Zero by 2050**
2. **Planning and standards**
3. **Circular economy**

1. Net Zero by 2050

Australia has committed to achieve net zero emissions by 2050 Australia, commencing with a commitment to reduce greenhouse gas emissions by 43% below 2005 levels by 2030.

Commitments made under the United Nations Framework Convention on Climate Change requires Australia to update its Nationally Determined Contribution (**NDC**) by the end of February 2025.

Australia's updated NDC will include the 2035 target and is due by the end of February 2025. Each new target is to be more ambitious than the last. This is to support the global goal of holding the increase in the global average temperature to well below 2 °C, and pursuing efforts to keep it to 1.5 °C.

Work has already been conducted that has identified issues relating to the cement and concrete sector.

CCAA also encourages government policies that incentivise innovation, improve standards, and showcase successful low-carbon projects. Interim solutions, such as biodiesel and performance-based material specifications, can help bridge the gap as Australia transitions to more sustainable practices.

Some specific recommendations include:

Exploring already identified decarbonisation pathways

As the Climate Change Authority said in its 2024 *Sector Pathways Review – Industry and Waste*[7]:

Emissions from the industry and waste sector were 64 Mt CO2-e in 2022 (CCA, 2024a). The sector's emissions are concentrated at a small number of large facilities (over 50% of emissions emanate from just 20 major facilities). Reducing emissions at many major facilities hinges on replacing or retrofitting large industrial assets at a suitable time.

[6] Parliamentary Budget Office https://www.pbo.gov.au/publications-and-data/publications/budget-charts/2024-25-MYEFO-snapshot

[7] P2 https://www.climatechangeauthority.gov.au/sites/default/files/documents/2024-09/2024SectorPathwaysReviewIndustryandWaste.pdf

Further significant emissions reductions in the sector could occur from the 2030s as new and emerging technologies become available. There may be residual emissions after all available technologies have been taken up.

For the industry and waste sector to decarbonise, a portfolio of solutions will be required:

- *widespread deployment of energy efficiency and adoption of a circular economy approach*
- *electrification and fuel switching (including to hydrogen and biofuels) to decarbonise high temperature process heat to produce iron and steel, alumina, ammonia and cement*
- *substitution of feedstock materials, including using electrolytic hydrogen, to produce iron and ammonia, alternative materials for cement, and captured CO2 for chemicals, plastics and building materials*
- *carbon capture use and storage (CCUS) to capture emissions not abatable through other measures.*

Decarbonisation of the industry sector and unlocking associated opportunities is highly dependent on the availability of a reliable supply of sufficiently firmed decarbonised electricity, and new fuels where they are required.

Other barriers to decarbonisation include technological readiness of solutions for key processes and issues associated with access to sufficient raw, recycled or recovered material, as well as to infrastructure. Substantial new private investment will be required to replace or retrofit large assets, including in major facilities in trade exposed industries.

Addressing these issues will require improved planning and coordination within industries and government, and between them. Development of low emissions industrial precincts and improving materials circularity is likely to aid decarbonisation efforts. (Emphasis added)

The industry has commissioned VDZ[8], a world-renowned cement and concrete research centre, to undertake a study entitled *Decarbonisation Pathways for the Australian Cement and Concrete Sector* (**the industry report**) [9] to better understand the technologies and practices necessary to decarbonise Australian cement and concrete.

It highlighted key actions including:

- Adopting whole-of-life carbon approaches for infrastructure.
- Revising outdated standards to enable lower-carbon solutions.
- Promoting material efficiency and the use of supplementary cementitious materials.
- Supporting the transition to zero-emission heavy vehicles.

CCAA has subsequently developed a Decarbonisation Facilitation Plan to assist it to meet its declared ambition to deliver net zero carbon cement and concrete by 2050[10].

An overview of the Plan is **attached** to this submission.

Recommendation

1. The Australian Government invest in developing a mechanism to allow consideration of how the decarbonisation pathways identified by the Climate Change Authority and in the industry report Decarbonisation Pathways for the Australian Cement and Concrete Sector can be advanced.

Adoption of performance/outcome based sustainability targets

CCAA strongly recommends that consideration be given to the application of performance/outcome based sustainability targets rather than the use of prescriptive/input based sustainability targets.

[8] VDZ is a world-renowned research centre, providing practical and quality-oriented joint research and services in the field of cement and concrete

[9] https://www.ccaa.com.au/CCAA/CCAA/Public_Content/SUSTAINABILITY/Decarbonisation_Pathways_Report.aspx?hkey=2b452a7b-5b70-4e78-b0d3-1a829e5bd319

[10] https://www.ccaa.com.au/Common/Uploaded%20files/CCAA/CCAA%20Decarbonisation%20Plan_A3%20Brochure_06%20-%20Web%20Version.pdf

Prescriptive requirements can limit much needed innovation in the industry and lead to unforeseen consequences in the market which counteract the intention of the requirement.

However, performance based sustainability targets are recommended which allow flexible and innovative approaches in delivering the desired outcomes.

Recommendation

2. Procurement documentation should be designed to encourage the adoption of performance/outcome based sustainability targets.

Embodied carbon

CCAA believes that to deliver a true assessment of carbon emissions from a given project, that they are assessed over the entire lifecycle of a project, that is, they consider embodied emissions as well as operational, maintenance and end of life considerations to ensure that all aspects of the project are appropriately accounted for.

Recommendation

3. Australian Government should work with CCAA to consider how the document Embodied Carbon Measurement for *Embodied Carbon Measurement for Infrastructure: Technical Guidance*,[11] approved by the Infrastructure and Transport Minister's meeting on 7 June 2024 could be implemented through the construction supply chains to meet the Government's net zero goals.

Decarbonising transport

Decarbonising transport is also a key focus for Australian cement, lime and concrete manufacturers. In terms of moving cement (a key ingredient in concrete) and lime – our industry collectively operates Australia's third largest transport fleet (29% of all freight by weight and 12% of all freight by kilometre).

Transport is a key component of the time-critical delivery of cement and concrete – critical materials that underpin our built environment.

Cement and lime manufacturers are highly reliant on road, sea and rail transport to move required inputs and the final product to market, and approximately 6,500 concrete agitators are required to transport concrete from the batch plant to construction site[12].

While Australian manufacturers are already making inroads into incorporating electric vehicles into their fleets, widespread uptake will require significant investment into transport infrastructure and services.

Work will also be required to understand and address some of the key challenges associated with new types of electric vehicle transport – for example increased weight and changes in vehicle weight distribution – which may have significant implications for large sections of the Australian road network accessed by concrete agitators.

Transport of concrete and aggregates is practically unique in that much of the product needs to be delivered using local roads, not just state or federally funded roads, and this remains a major barrier to the adoption of electric trucks, as recognised by the National Heavy Vehicle Regulator (NHVR) and all infrastructure agencies across Australia.

Recommendations

4. The Australian Government set out a plan and timetable for rolling out the infrastructure that would conveniently permit the refuelling of Zero Emission Vehicles (ZEVs), irrespective of whether they are electric or fuel cell electric vehicles (hydrogen powered) vehicles throughout the entire Australian road network.
5. The Australian Government develop incentives for industry to take up ZEVs for use in the cement and concrete related product supply chain.

[11] https://www.infrastructure.gov.au/sites/default/files/documents/embodied-carbon-measurement-for-infrastructure.pdf

[12] CCAA Agitator Design – Good Practice Design (Issued 2023)

6. The Australian Government investigate the viability for biodiesel to be a transitional fuel to ZEV, given it is compatible with existing plant while potentially delivering a 60% reduction in CO2.
7. The Council of Federal and Financial Relations be instructed to explore alternative methods of funding roads, including funding on a distance/location basis, to ensure the availability of funds to maintain and construct roads of a standard to allow the efficient movement of cement and concrete related products.
8. The Australian Government continue to support the development of the hydrogen industry through several initiatives, including the Hydrogen Headstart program, the Regional Hydrogen Hubs Program and the development of the Guarantee of Origin Scheme.
9. The Australian Government continue its support for a low carbon liquid fuels industry in Australia on the proviso that fuel quality standards (particularly for diesel) are introduced in such a way as to minimise the disruption to industry as part of the transition to net-zero.

2. Planning and standards

On 29 November 2024, Commonwealth, state and territory treasurers signed a landmark agreement to revitalise National Competition Policy to drive growth and put downward pressure on prices.[13] The Government has committed $900 million over the period to 2035–36 for payments to states and territories to implement pro-competitive reforms.

This includes commercial land use and planning reforms and reforms to level the playing field for modern methods of construction to drive down housing costs.

Some recommendations to consider advancing this agenda include:

Shift from prescriptive to performance based infrastructure specifications

CCAA advocates for a shift from prescriptive to performance based infrastructure specifications to enable innovation and maximise resource utilisation.

Overly prescriptive specifications and restrictive material requirements are creating barriers to industry innovation and contribute to the increasing cost of infrastructure.

Recommendation

10. National Competition Policy payments to the States and Territories should be conditioned on jurisdictions adopting performance based infrastructure specifications.

Part of this process should include the review of relevant Australian Standards, so that they have the flexibility to capture improvements in processes without comprising safety outcomes.

One such Standard that should be reviewed as a matter of priority is AS 3972-2010 *General Purpose and Blended Cements*.

[13] https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/media-releases/national-agreement-revitalise-competition-consumers#:~:text=Commonwealth%2C%20state%20and%20territory%20treasurers%20have%20today%20signed,a%2010%E2%80%91year%20reform%20of%20National%20Competition%20Policy%20%28NCP%29.

In the context of moving towards performance-based specifications and away from prescription, the minimum amounts of Portland cement required by the standard should be reviewed to promote the greater uptake of higher limestone additions and other supplementary cementitious materials (SCM) such as Fly Ash and Blast Furnace Slag and so facilitate the adoption of new, lower-carbon cement types.

When it is fully utilised the change would save 10% of the embodied carbon in concrete, and so support the Government's Net Zero objectives.

Recommendation

11. Relevant Australian Standards should be reviewed so they support and accelerate the decarbonisation of the Australian built environment and encourage a performance based approach, with AS 3972-2010 General Purpose and Blended Cements reviewed to support the use of lower carbon and innovate cements and concretes as a priority.

Adopting global practices

Fast-tracking standards and specification changes by adopting best practices from the US and Europe should also be encouraged, so that the best ideas from around the world can be adopted in Australia.

Recommendation

12. Procurement documentation prepared by the Australian Government should consider, and encourage where relevant, standards in force in the US and Europe.

Development of a Heavy Construction Materials Plan

An efficient cement and concrete supply chain will provide for the sustainable, reliable, affordable and predictable supply of heavy construction materials to meet the growing needs of the Australian economy.

Such a supply chain is at risk due to:

- A long, slow, complex development approvals process across multiple government agencies for new or extension of existing operations
- Encroachment of state significant quarry resources and key concrete batch plants by incompatible land uses
- Prescriptive standards and specifications acting as barriers to the increased use of innovative materials that will decarbonise the economy

It is particularly concerning to industry that quarries are being forced further and further away from high population centres where the aggregates are most needed. This, in turn, increases the transport related carbon emissions in supplying these materials.

The Infrastructure Australia Market Capacity Report 2023 elaborated on this point:

Acute quarry shortages loom in a few hotspots across the country. Shortages in local quarry supply threatens the deliverability of major public infrastructure works, increases project costs and schedule delays, and contributes greater emissions by bringing heavy materials to site from further afield via truck or train. Data availability of raw quarry products varies by state and territory, while long quarry approval times (5—10 years) impede efforts to plan supply for demand. While quarries are monitored and managed by state and territory governments predominantly, national regulation and policies across biodiversity and environment, cultural heritage, and net zero requirements, may also contribute to delays in quarry approvals.[14]

Of equal concern is a reduction of sufficient amounts of industrial lands in urban areas to accommodate concrete batch plants near to the construction sites that build the modern urban environment. Operations are continually being encroached on by sensitive land users.

[14] Page 12 https://www.infrastructureaustralia.gov.au/publications/2023-infrastructure-market-capacity-report

Jurisdictions should receive an incentive to develop a Heavy Constructions Material Plan that will (among other things):

- Ensure proximate and adequate materials supply for housing, infrastructure and renewable energy projects.
- Protect extractive resources and concrete batch plants from urban encroachment and sterilisation.
- Establish a permanent Quarry Approvals Coordinator, similar to the system in force in Victoria to navigate joined up approvals for priority sites and resolve approval roadblocks across State and Local Governments.
- Commit to regular demand:supply data collection and analysis to better understand barriers to increasing supply of material and to better plan for major infrastructure project delivery to ensure efficient and economical delivery into projects.
- Deliver stronger planning protection for strategic extractive resources to give priority to extracting quarry materials.
- Protect key concrete batch plants and quarries from encroachment.
- Enable a streamlined environmental and development approval process.
- Align State and Federal energy and climate change policies to minimise complexity and ensure national targets are met.
- Encourage public procurement practices that reflect government policies on reducing emissions.
- Remove barriers for lower carbon concrete by moving from prescriptive to performance based specifications.
- Support the introduction of lower carbon cement standards.

Facilitate the circular economy by fast tracking the introduction of recovered materials frameworks such as the Queensland End of Waste Codes[15], including priority materials such as construction and demolition waste, fly ash, lithium byproduct and incinerator bottom ash aggregate.

Recommendation

13. National Competition Policy payments to the States and Territories should be conditioned on jurisdictions developing a Heavy Construction Materials Supply Plan.

The Market Capacity Report found that concrete, one of the construction materials most in demand, is vulnerable to cross-sector competition in the event of supply shortages and recommended that opportunities should be explored to expand construction non-labour supply through improving local production capacity of key construction materials and explore opportunities to coordinate national demands for specific materials facing strong global competition.[16]

Recommendation

14. Australian Government should lead the States and Territories in identifying and resolving supply chain barriers, to improve and monitor local supply of key construction materials.

[15] https://www.business.qld.gov.au/running-business/environment/waste-management/regulated-waste/eow-codes

[16] Page 33

3. Circular Economy

The Infrastructure Australia *2024 Infrastructure Market Capacity Report* also discussed the Circular Economy.

It said:

Over the next 5 years, Australia will need over 192 million tonnes of construction materials to deliver planned infrastructure projects. Key materials used in construction, such as concrete, asphalt and steel, produce significant embodied carbon emissions throughout their lifecycle. Buildings and infrastructure are directly responsible for almost one-third of Australia's total carbon emissions and indirectly responsible for over half of all emissions.

In 2022, Infrastructure Australia estimated that based on current technology and standards, approximately 27% of the conventional material tonnage needed to deliver 998 road projects across Australia between 2015–31 could be replaced with a range of recycled materials.

This year we have estimated the current (2022–2023) national uptake of three recycled materials used in construction to replace conventional materials:

- *13.9% supplementary cementitious materials – used to replace cement in concrete mixes across buildings, transport, water and energy infrastructure.*
- *9.3% reclaimed asphalt pavement – used to replace asphalt in pavements for different road classes.*
- *1.5% recycled crushed concrete – used to replace aggregate in road pavements.*[17]

On 18 December 2024 the Government published *Australia's Circular Economy Framework*[18], which aims to recover 80 per cent of Australia's resources for a circular economy by 2035.

As indicated in the paper:

Embedding the circular economy in new builds

Australia is undergoing a national infrastructure upgrade, focused on projects that improve long term productivity, supply chains and economic growth. This includes modernising to support clean energy and boost technology, housing and local services infrastructure and investments. These projects present opportunities to embed whole-of-lifecycle thinking from the outset and drive uptake of sustainable, circular materials and practices.

Opportunities include using cross-laminated timber to replace steel in low- and medium-density buildings, prefabrication to reduce waste, modular construction to support repair and partial replacement over rebuilds, and designing for smaller, more flexible buildings.

Developing recycled content markets

Scaling the use of recycled materials paves the way for materials innovation elsewhere in the economy. Priority materials that will significantly lift national recycling rates and reduce material footprint include secondary concrete and steel, ash from coal-combustion, and asphalt.

Infrastructure Australia estimates that around 27% of virgin materials used for road projects could be replaced with a range of recycled materials, lifting to 43% with advanced standards and technology.

Demand for recycled materials can be supported by developing and using recycled content procurement clauses in construction contracts, and associated material and product standards – which are predominantly managed by state and territory and local governments. Businesses also need to be able to readily identify and access secondary materials to build with them.

Australian governments, as the largest tenants in the economy, are major buyers of goods and services, particularly for infrastructure and buildings. Governments can leverage their purchasing power to create stable markets for sustainable and circular goods and services.

[17] Page 48

18 https://www.dcceew.gov.au/environment/protection/circular-economy/framework

This may involve purchase of recycled materials or prioritising reuse or asset sharing.

Better design

Circular design strategies can substantially reduce waste and carbon emissions associated with new developments throughout their lifecycle. The following circular economy design priorities support all 3 of Australia's circular economy targets, and Australia's net zero target:

- design to reuse or refurbish existing assets or materials
- design to enable disassembly (including information about materials in buildings)
- design for longevity
- design for modularity
- design for best practice operational waste management
- design with recycled content
- design with others to make use of waste outputs as material inputs[19]

CCAA was also pleased that many of the themes contained in its submission to the Productivity Commission Inquiry into the Circular Economy[20] were reflected in *Australia's Circular Economy Framework*, including:

- **Developing Environmental Incentives:** Encouraging government-supported environmental incentives to promote the adoption of circular economy principles across industries.
- **Reviewing Regulatory Barriers:** Removing regulatory barriers preventing the re-processing of concrete waste by quarries, ensuring concrete waste is recognised as a product, not subject to waste regulations.
- **Updating Building Standards:** Revising standards and approval processes to accommodate recycled and alternative materials, and enabling the use of innovative, low-carbon materials such as supplementary cementitious materials (**SCM**s).
- **Harmonising Waste and Planning Regulations:** Streamlining processes to support the use of recycled materials in infrastructure projects.
- **Adopting Performance-Based Specifications:** Advocating for performance-based specifications in road infrastructure to increase demand for recycled materials and reduce reliance on prescriptive standards.

Many of the recommendations made earlier in this paper are relevant in advancing the circular economy agenda. Others are:

Recommendations

15. State and Territory governments be incentivised to introduce performance-based specifications for road infrastructure to increase demand for recycled and alternative materials, reducing reliance on prescriptive standards.
16. State and Territory governments be incentivised to review and remove regulatory barriers, such as additional consents, preventing the re-processing of concrete waste by quarries, streamlining approval processes.
17. The Australian Government introduce a national grant program, similar to the USA Environmental Protection Agency Scheme to support businesses that manufacture cement and concrete to develop and verify Environmental Product Declarations (EPDs).
18. The Australian Government financially incentivise State and Territory Governments so their "as built" infrastructure meets carbon targets for Federally funded infrastructure projects, so as to discourage alternative higher carbon concretes from being substituted by designers, project managers, contractors and sub-contractors.

[19] Within Chapter 7 (no page numbers in the text)

[20] https://www.ccaa.com.au/common/Uploaded%20files/CCAA/Policy/2024%20Submissions/CCAA%20Submission%20-%20PCs%20Circular%20Economy%2007.pdf

19. The Climate Change Authority be funded to ensure that decarbonisation pathways identified in the *Decarbonisation Pathways for the Australian Cement and Concrete Sector* document is reflected in Australia's circular economy framework.
20. The Department of Finance is funded to review the contents of the Commonwealth Procurement Rules to reflect the contents of the Circular Economy Framework document.
21. The Australian Government should consider the development of a production credit, similar in nature to the New Green Aluminium Production Credit, to support the transition of industry to the use of green concrete.

Conclusion

CCAA believes the recommendations in this submission balances the promotion of the Government's ambitious climate agenda and the improvement of the efficiency of the Australian economy in the context of a tight government financial position and a moderate Australian economy.

Attachment:
Cement and Concrete Industry Decarbonisation Facilitation Plan-On-A-Page

https://www.ccaa.com.au/Common/Uploaded%20files/CCAA/CCAA%20Decarbonisation%20Plan_A3%20Brochure_06%20-%20Web%20Version.pdf

Ambition to deliver net zero cement and concrete by 2050

WHO WE ARE

Cement Concrete & Aggregates Australia (CCAA) is the voice of the heavy construction materials industry, CCAA members produce the majority of Australia's cement, concrete, and aggregates, which are crucial to Australia's building and construction sectors.

The Cement Industry Federation (CIF) is the peak industry association for manufacturers of clinker, cement and cement products in Australia. CIF membership accounts for 100 per cent of Australian integrated clinker and cement production.

The Cement & Concrete industries have declared an ambition to deliver net zero carbon cement and concrete to Australian society by 2050.

Concrete, of which cement is the key ingredient, is the world's most widely used building and construction material and is vital to securing a resilient built environment that is sustainable for life. With demand for durable and sustainable housing as well as public infrastructure expected to rise strongly in response to population and economic growth, the demand for concrete will increase.

The public statement of ambition below reinforces that the industries recognise the challenges of climate change and outlines the commitment to work towards decarbonisation throughout the value chain, with a strong emphasis on technological, regulatory, structural, and behavioural change.

Achieving these significant decarbonisation objectives will require changes to policy settings, material technology and design practices which can only be achieved through collaboration across the construction supply chain.

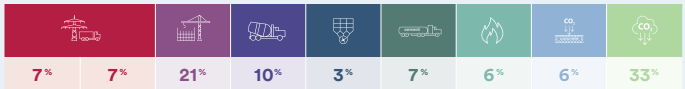
"Australia's cement and concrete industries recognise the challenges of climate change and adaptation."

"Our industries hold an ambition to reduce their CO_2 footprint and deliver society with Net Zero carbon concrete by 2050. We are committed to work across the value chain to deliver this in a circular economy, whole-of-life context to support a sustainable built environment."

KEY PATHWAYS TO NET ZERO BY 2050 IDENTIFIED

An independent report developed by VDZ[1] titled **'Decarbonisation Pathways for the Australian Cement and Concrete Sector'** was released, following the Australian cement and concrete industries declaring the ambition to deliver net zero carbon cement & concrete by 2050. This report enables a better understanding of the technologies and practices necessary to decarbonise Australian cement and concrete, and identifies the pathways and key future research requirements to support decarbonisation:

- Zero emission electricity and transport;
- Innovation through design and construction;
- Further innovation in concrete;
- Increased use of supplementary cementitious materials in concrete;
- New CO_2 efficient cements;
- Alternative fuels and green hydrogen;
- Accounting for concrete to uptake CO_2 (recarbonation); and
- Capture remaining CO_2 (CCUS).



Flip page for Decarbonisation Facilitation Plan

[1] VDZ is a world-renowned research centre, providing practical and quality-oriented joint research and services in the field of cement and concrete.

CEMENT & CONCRETE INDUSTRY DECARBONISATION FACILITATION PLAN-ON-A-PAGE

CEMENT CONCRETE & AGGREGATES AUSTRALIA | CEMENT INDUSTRY FEDERATION

IDENTIFIED DECARBONISATION PATHWAYS
Showing percentage contribution to total decarbonisation objective from 2020-2050.#

ZERO EMISSION ELECTRICITY AND TRANSPORT		INNOVATION THROUGH DESIGN AND CONSTRUCTION	CONTINUE TO FURTHER INNOVATE CONCRETE	USE OF SUPPLEMENTARY CEMENTITIOUS MATERIALS IN CONCRETE	NEW CO_2-EFFICIENT CEMENTS	USE ALTERNATIVE FUELS AND GREEN HYDROGEN	ACCOUNT FOR CONCRETE TO UPTAKE CO_2	CAPTURE REMAINING CO_2
7%	7%	21%	10%	3%	7%	6%	6%	33%
INDUSTRY OBJECTIVE								
Electricity emissions are reduced to zero.	Emissions from transport and mobile plant are reduced to zero.	Concrete remains an essential construction material as the built environment decarbonises.	Change Standards and Specifications to support increased flexibility in binder content and composition. Reduce concrete waste.	Increased ability to use Supplementary Cementitious Materials (SCMs), such as Fly Ash & Slag, as a replacement for Cement in Concrete.	Increased ability to innovate through the development of new clinker efficient cements - including those with higher limestone additions.	Increase alternative fuel use without affecting efficiency, cost and quality.	Recarbonation is factored into international and national carbon accounting frameworks.	Cost effective, efficient and fully capable CCUS is supported and commercialised.
AREAS OF FOCUS								
Advocate for and support the transition to renewable energy.	Advocate for and support the transition to zero emissions fleet and plant.	Support Concrete's position in the transition to decarbonise through design and construction.	Advocate for and support changes to Standards and Specifications. Promote concrete waste reduction.	Influence changes to Standards and Specifications removing barriers to increased SCM use. Educate on benefits of increased SCM use.	Influence standards and specifications, educate supply chain on lower carbon cement.	To ensure sustainability and energy policy supports the continued uptake of co-processing and alternative fuels.	Advocate for market acceptance and optimisation of Recarbonation.	Ensure that policy and regulatory frameworks support the development and commercialisation of CCUS as a priority.
MARKET ENABLERS: Positive regulatory and government support that enables and incentivises decarbonisation is critical to success across all pathways.								
STRATEGIES								

• Informing members of funding opportunities and efficiency improvements.
• Advocating for funding and cost competitive supply of renewable power and access.
• Advocate for the removal of barriers and limitations to sourcing renewable power.
	• Informing members of funding opportunities.
	• Advocating for funding and transition opportunities.
	• Advocate for the removal of barriers and limitations.
		• Educate key stakeholders on available decarbonisation opportunities.
		• Inform key stakeholders on Industry progress and successes.
		• Support the ability to measure construction carbon emissions.
		• Identify remaining barriers to progressive adoption of lower carbon construction solutions.
			• Using experience and data,
			  • Promote concrete practices that produce lower carbon results
			  • Advocate to remove any limitations to methods that enhance decarbonisation.
			• Promote improvements in waste management and recycling.
				• Advocate to remove limitations to SCM use and for performance metrics to enable SCM use.
				• Advocate for the removal of barriers to increase use of traditional SCM.
				• Identify potential new SCMs.
				• Advocate for the removal of barriers to introduce new SCMs.
				• Encourage, and educate on, the higher use of SCMs
					• Investigate the barriers to CO_2 efficient cement and binders, and advocate for alternatives supporting their use.
					• Remove barriers for CO_2 efficient cements and alternative binders.
					• Advocate for CO_2 efficient cements and alternative binders.
						• Ensure co-processing is recognised as a safe and effective method to reduce waste and fossil fuel usage.
						• That regulatory policies and programs continue to encourage co-processing and the development of alternative energy sources to fuel integrated cement facilities.
							• Raise stakeholder awareness.
							• Advocate to factor into concrete carbon measurement.
							• Enable optimisation of recarbonisation in Australia.
								• That government continues to recognise CCUS as a critical pathway to reduce domestic emissions, especially cement manufacturing emissions.
								• That supportive and consistent regulatory policies and programs are developed as a priority.
								• Collaborate with other industries around the development of Carbon Capture & Storage (CCS) hubs.

Note : Concrete scope 1, 2 and 3 emissions are included in the percentage emissions for each pathway.
These Decarbonisation Pathways were identified in the independent report Decarbonisation Pathways for the Australian Cement and Concrete Sector

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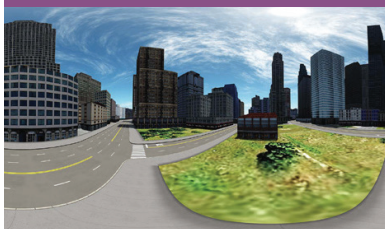
EXAMPLES OF DECARBONISATION INITIATIVES

	INNOVATION THROUGH DESIGN AND CONSTRUCTION	NEW CO_2-EFFICIENT CEMENTS	ACCOUNT FOR CONCRETE TO UPTAKE CO_2
			
INITIATIVE	CCAA Concrete EPD Support Program	Advocating for updates to AS3972 and related standards to support the use of low CO_2 cements	CCAA Market Information Sheet on Recarbonation
LAUNCHED	2023 Available to all Australian concrete suppliers	Industry Change Management Plan / Advocacy under way	Available at ccaa.com
INITIATIVE	CCAA Policy Webinars, incl. exploration of Decarbonisation & Sustainability related topics	CCAA Publications and Technical Resources, including related events	Australian Research underway through SmartCrete CRC – supported by CCAA and CIF
LAUNCHED	Late 2023	Ongoing	Underway, to conclude in 2024

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Pre-Budget Submission

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