



**CEMENT INDUSTRY
FEDERATION**



**CEMENT INDUSTRY FEDERATION
SUBMISSION**

NSW Draft Climate Change Policy and
Action Plan

3 November 2022



BORAL™



The CIF welcomes the opportunity to contribute to the consultation on the NSW Draft Climate Change Policy and Action Plan.

1. Introduction

The CIF is the national body representing all Australian integrated cement manufacturers and comprises the three major Australian cement producers – Adbri Ltd, Boral Cement Ltd and Cement Australia Pty Ltd. Cement is a critical input for Australia's residential and commercial construction industry, as well as for major infrastructure projects.

Portland cement (cement) is the critical material required to produce most concrete types used in Australia. After water, concrete (with cement being the key ingredient) is the most used material in the world and will continue to be crucial in supporting a modern world.

The CIF has been a strong advocate for a consistent and integrated approach to climate and energy policy across all Australian government jurisdictions in order to provide certainty and stability across the economy.

It should be noted that state-based greenhouse gas reduction targets are not necessarily the most efficient and equitable means to achieve meaningful levels of carbon abatement. A single, nationally agreed approach is preferred that includes measures to maintain the international competitiveness of key manufacturing industries while meeting nationally agreed climate goals.

State-based actions, such as those outlined in the NSW Draft Climate Change Policy Action Plan, must seek to align with Federal climate policy wherever possible and avoid increasing the regulatory and resource burden unnecessarily on those operating in critical industries such as cement manufacturing.

2. Key Points

Any proposal to increase the regulatory burden at the state level on critical Australian industries such as cement manufacturing must also recognise and account for existing legislative and regulatory measures that are in place or being developed by the Federal Government (including Safeguard Mechanism Reforms to be introduced on 1 July 2023).

This should also apply in situations where a company/facility has existing targets that are aligned with what the latest climate science deems necessary to meet global emissions reduction goals of the Paris Agreement (for example, [Boral's Commitment to Net Zero](#)).

Both existing legislative/regulatory measures and existing targets applicable to the facility should be recognised in the facility's Environmental Protection Licence as meeting NSW EPA requirements in the context of NSW's overall emissions reduction framework, negating the requirement for additional measures (such as greenhouse gas emissions limits at the sector or facility level).

It is also critical that the EPA has a detailed understanding of the emissions profile of cement manufacturing when making climate-change-related decisions – namely the currently unavoidable process emissions associated with heating the limestone raw material – as well as the technology options and expected timelines for technology development and deployment.

As such, the proposed gathering of information via a mandatory survey of licensees will be critical in terms of understanding emissions profiles and climate actions already being undertaken (including existing climate measures such as the SGM), which will then be used to focus regulatory effort.

It should also be noted that decarbonising the Australian cement and concrete sector by 2050 is possible¹, however, this will require action across the entire value chain – from mining to design, use and end-of-life. Simply focussing on emissions reductions at the clinker and cement production stage rules out significant emissions reduction opportunities available within our sector and across the economy.

¹ [Decarbonisation Pathways for the Australian Cement and Concrete Sector \(VDZ 2021\)](#)

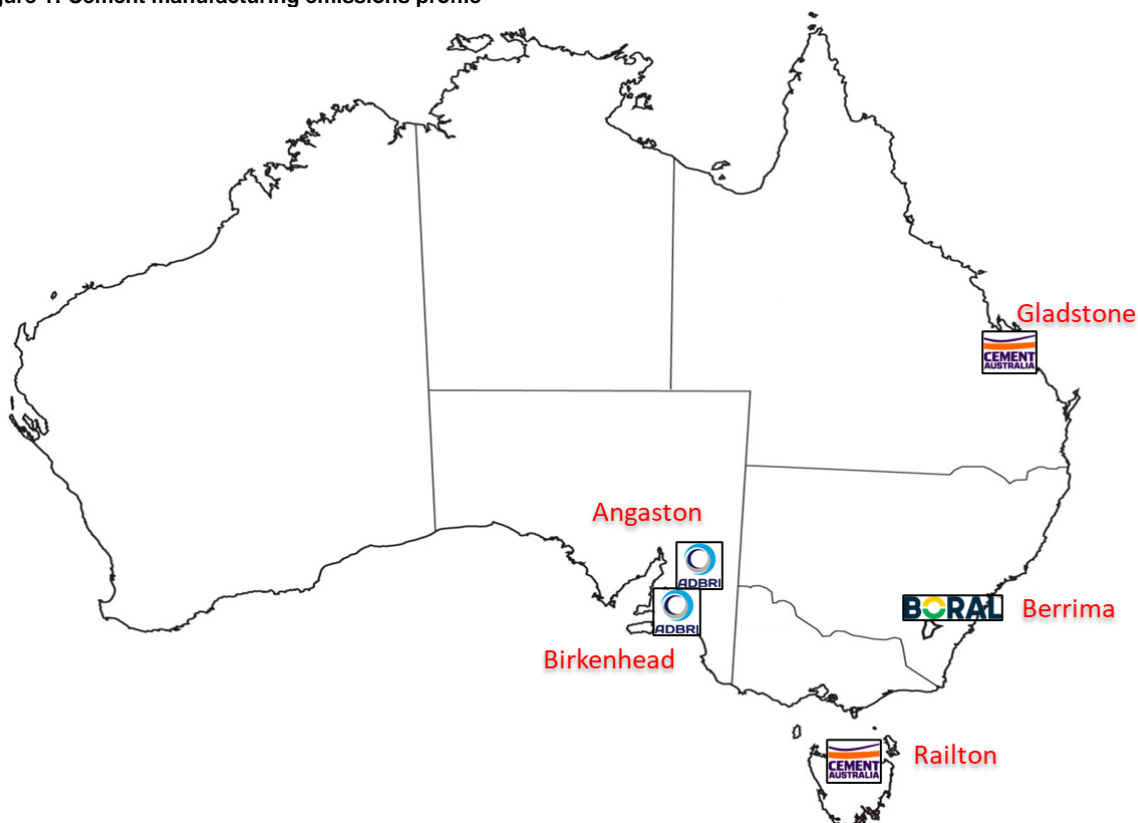
3. Australian Integrated Cement Manufacturing

There are five integrated cement manufacturing facilities carrying out limestone mining, clinker production and cement production (**Figure 1**).

In NSW, there is one integrated cement manufacturing plant located in Berrima - operated by Boral (EPL 1698). Boral also has EPLs in place for a range of related works, such as Boral Maldon Cement Works (EPL 212) and Marulan South Limestone (EPL 944) *inter alia*.

All CIF members report emissions and energy use through the National Greenhouse and Energy Reporting Scheme (NGERs) and are liable entities under the existing Safeguard Mechanism.

Figure 1: Cement manufacturing emissions profile

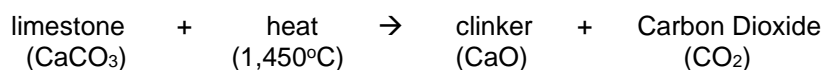


4. Cement Manufacturing Emissions Profile

Process emissions resulting from the calcination of limestone to produce clinker, the main ingredient in Portland Cement, are unavoidable.

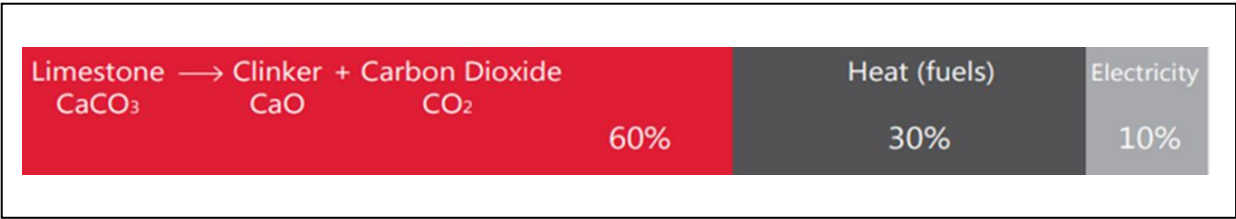
The Australian cement sector has a long history of reducing emissions – having delivered a 25 per cent reduction over the last two decades. The sector understands the challenge of decarbonising by 2050 will require significant regulatory, technological, structural and behavioural changes across all segments of the cement and concrete value chain.

While cement makes up around 12 per cent of a typical concrete mix, it is the most emissions intensive component due to the nature of the manufacturing process – i.e., the emission of CO₂ as unavoidable 'process emissions' via the following (simplified) reaction:



Approximately 60 per cent of the carbon dioxide equivalent emissions from cement production originate from the calcination of limestone (Figure 2).

Figure 2: Cement manufacturing emissions profile



The remaining emissions are fuel-based (around 30 per cent) as well as indirect emissions from electrical energy usage (around 10 per cent).

Given the emissions profile described above, successful decarbonisation of the sector cannot be achieved by focusing on cement production alone. This will require action along the whole cement and concrete value chain.

It will also require cement and concrete customers, developers, designers, building material procurers, architects, standards authorities, government and non-government agencies, and concrete and cement manufacturers to work together closer than ever before.

While there are pathways to reduce emissions resulting from heating the kiln (e.g. through the increased use of alternative fuels and raw materials) and electricity used (decarbonising the grid) – there are no short-medium term pathways to reduce process emissions resulting from the calcination of limestone.

Carbon capture, use and storage (CCUS) has been identified as a critical emissions reduction technology for cement production around the world. However, while all CIF members are investigating capture technology options, the challenges involved are significant and will take time to overcome.

In addition, once the problem of capturing the emissions has been overcome, there is the question as to what transport, use and storage options may look like – especially in terms of the required infrastructure.

Alternatives to limestone cement (such as geopolymers) have been available for decades but are unlikely to replace limestone cements at scale. These products also rely on waste streams that may not be available over the longer term (e.g. fly ash from coal fired electricity production and blast furnace slag from steel production).

Cement produced from other, low temperature materials such as calcined clays are also being investigated – although there is no clear pathway for their development in the short term.

CIF COMMENTS ON PROPOSED NEW ACTIONS

1. EPA New Action 1

Support EPA Officers to make climate change related decisions

It is critical that the NSW EPA has a detailed understanding of the emissions profile of cement manufacturing when making climate-change-related decisions – namely the currently unavoidable process emissions associated with heating the limestone raw material – as well as the technology options and expected timelines for technology development and deployment.

This is especially important given the scope of EPA regulatory activities across not only regulations, licensing, notices, orders and other regulatory instruments – but also compliance actions, programs and grants.

Specifically, the NSW EPA should work closely with CIF and Boral to understand and consider sector/facility emission profiles, as well as the availability and technology readiness levels of key emissions reduction technologies when making licensing (and other) decisions.

Consideration should also be given to emission reduction opportunities that may sit outside of facility boundaries (e.g. lower carbon cements and concrete, concrete design/use and increasing use of SCMs).

2. New Action 2(a)

2(a) Focus our regulatory effort by first listening to our regulated community, so we understand the climate change actions already being taken

The proposed gathering of information via a mandatory survey of licensees will be critical in terms of understanding emissions profiles and climate actions already being undertaken, which should then be used to focus regulatory effort in a considered way.

This process should also aim to determine which, and to what extent, existing industries/facilities are already covered by existing programs and measures (such as the SGM).

It is also important that this process is not rushed, especially given that key elements of the current SGM reforms will not be known until early 2023 (for example, baselines settings, baseline decline rates, and general policy settings to ensure hard-to-abate sectors are not unnecessarily offshored).

Around 40 per cent of clinker and increasing amounts of cement are currently being imported into Australia to supplement domestic production. The carbon intensity of imports can be 5 to 15 per cent higher than domestically manufactured product.

Unless trade exposure is addressed, there will be a strong incentive for producers to increasingly move towards an import model at the expense of domestic production and associated employment. The future sovereign risk of relying solely on imported cement products should not be an objective of any Australian Government.

3. New Action 2(b)

Progressively require and support our licensees to prepare, implement and report on climate change mitigation and adaptation plans (CCMAPs).

The perceived requirement for CCMAPs needs to be balanced against the overall regulatory burden already faced by facility operators – across all levels of government.

While it is acknowledged that the proposed guideline will recognise existing types of plans and statements to avoid duplication – it will be important that this approach remains as flexible as possible.

This is of particular concern given the increasing levels of regulatory burden faced by our members across all levels of government in terms of climate-related regulation and measures. The focus should be on utilising existing plans and statements wherever possible.

4. New Action 2(c)

Partner with DPE to seek to ensure climate change is being adequately addressed by proponents of activities we'll regulate, and that approvals contain appropriate conditions.

Alignment across planning and other regulatory authorities in terms of addressing climate change is strongly supported by the Cement Industry Federation.

This also highlights the importance of ensuring that all regulatory guidance documents require the NSW EPA to have a detailed understanding of the emissions profile of key industries such as cement manufacturing, and the emissions reduction opportunities and timelines associated with decarbonising the sector.

This is not only critical in terms of understanding the challenges in terms of addressing process emissions from cement production, but also the challenges and opportunities associated with other emission reduction levers available to our industry.

For example, all CIF members are seeking to offset their reliance on fossil fuels such as coal and gas through the increased use of alternative fuels and raw materials (AFRs) – which overlaps with waste to energy policy (and waste policy in general).

As new and existing sources of AFR streams become more available it is likely that development approvals and licence conditions will need to consider the climate change benefits in addition to the usual environmental considerations (e.g. air emissions).

The NSW EPA has a critical role in supporting current and future decarbonisation initiatives and will need to ensure it has a detailed understanding of the overall emissions profile of the industry as part of the decision-making process to achieve the desired outcomes.

5. New Action 7

Develop a series of greenhouse gas emission reduction targets and related pathways for key industry sectors we license, to help guide our regulatory effort.

The development of feasible, evidence-based emission reduction targets and related pathways for key industry sectors (i.e. stationary energy, transport, fuels, agriculture, industrial processes and waste) will assist in understanding the reductions required to meet NSW net-zero targets.

While it is acknowledged that the NSW EPA does not intend for sector targets to be translated directly into consent or licence conditions, they will guide and inform planning and licence conditions and therefore must be carefully considered in order to avoid unintended consequences for critical industries such as cement manufacturing.

6. New Action 8

Prepare or adopt climate change mitigation guidance for key industry sectors we license, including the performance outcomes we seek.

Climate change mitigation guides should be developed in close consultation with the relevant sector and draw upon existing material wherever possible. A good starting point for the cement sector is the [*Decarbonisation Pathways for the Australian Cement and Concrete Sector*](#).

This report highlights the importance of engaging the full value chain to decarbonise the sector by 2050.

7. New Action 9

Progressively place greenhouse gas emission limits and other requirements on licences for key industry sectors.

Industries or facilities that are subject to greenhouse gas emission reduction legislation and measures, such as the Federal Safeguard Mechanism, should not be required to have separate targets and related pathways at the state level. This would have significant implications for competitiveness, both in terms of domestic production and import competition.

Instead, EPA licences should recognise existing commitments (both legislative and in the form of appropriately developed targets) in the facility's Environmental Protection Licence as meeting NSW EPA requirements in the context of NSW's overall emissions reduction framework.

Where amendments are proposed, these should be clearly scoped and structured to ensure business has adequate time and stability to continue to operate whilst planning future compliance. Additionally, as this process is being driven by the regulator and not industry any associated costs with the EPL amendment process should be borne by the regulator.

It is noted that the EPA will focus its efforts by focusing on "high-emitting sectors where there is no other significant NSW or Commonwealth Government emission reduction strategy already in place." This approach is supported.