CEMENT CONCRETE & AGGREGATES AUSTRALIA

22 December 2022

The Hon. Rob Stokes MP
Minister for Infrastructure, Cities and Active Transport
Member for Pittwater
GPO Box 5341
SYDNEY NSW 2000

Email: office@stokes.minister.nsw.gov.au

Dear Minister Stokes,

**DECARBONISING INFRASTRUCTURE DELIVERY DISCUSSION PAPER RESPONSE**

We welcome the opportunity to comment upon the NSW Government's Decarbonising Infrastructure Delivery Discussion Paper. The state's record infrastructure pipeline ($112.7 Billion this financial year) presents a significant opportunity to identify ways to reduce emissions across all asset stages, including the consideration of embodied carbon into business decision-making given the Government's adoption of a goal of Net Zero emissions across the entire NSW economy by 2050 and a 50% cut in emissions below 2005 levels by 2030.

Cement Concrete & Aggregates Australia (CCAA) is the peak industry body for cement manufacturers, concrete suppliers and extractive operators throughout New South Wales. Collectively known as the heavy construction materials industry, our members are engaged in the quarrying of sand, stone and gravel, the manufacture of cement and the supply of pre-mixed concrete to meet New South Wales's building and construction needs. These businesses range from large global companies to SMEs and family operated businesses.

Cement, concrete, stone and sand are the critical materials that enables the $56 Billion New South Wales construction industry, employing 370,000 workers and contributing 45% of the New South Wales taxation revenue base. CCAA notes that the COVID-19 pandemic has had a significant impact upon the economy of New South Wales and the construction sector, supported by an efficient heavy construction materials supply chain is playing a pivotal role to help deliver an economic rebound.

Our industry is committed to the protection and improvement of environmental values and minimising environmental impacts when they arise. We strongly believe that we have an obligation to supply construction materials in an environmentally responsible and sustainable manner.

CCAA notes the discussion paper's guiding principles which seek to decarbonise the delivery of public infrastructure across the planning, design and construction phases to reduce embodied emissions. We also note that the paper seeks to address one of the key barriers to reducing embodied emissions – the lack of a mandate and incentives for government agencies and delivery partners.

Our members support the general thrust and purpose of the discussion paper and in particular, welcome efforts to adopt a consistent and collaborative approach which seeks to include all members of the value supply chain as part of business decision-making.

Central to our support for the paper is the Cement & Concrete industry's 2021 declaration of its ambition to deliver net zero carbon cement and concrete to Australian society by 2050[1]. Our ambition statement references the challenges of climate change and our industry's commitment to decarbonising throughout the value chain with an emphasis on technological, regulatory and behavioural change.

***"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."***

Following our sector's declaration, we released an independent report[2] from VDZ, a world-renowned research centre that highlighted a greater understanding of the technologies and practices to decarbonise Australian Cement and Concrete and identifying eight key pathways and future research points across a whole-of-life context:

- Zero emissions electricity and transport;
- Innovation through design and construction;
- Concrete Innovation;
- 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
- Carbon Capture Utilisation and Storage (CCUS)

**Whole of Life Carbon to deliver a Net Zero society**

Across its whole life cycle, concrete is a remarkably sustainable construction material from the sourcing of materials, the design and operation of buildings and to end-of-life re-use or recycling. It is a natural carbon absorber and is increasingly manufactured with materials that would otherwise go to waste such as fly ash from electricity generation and blast furnace slag from steel making, all helping to reduce carbon emissions and waste. Due to its excellent thermal mass, concrete buildings provide more stable and comfortable internal temperatures resulting in reduced energy costs and emissions over the life of the structure[3].

Concrete 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

[1] CCAA Climate Ambition Statement
[2] VDZ - Decarbonisation Pathways for the Australian Cement and Concrete Sector
[3] Concrete_Sustainable_for_Life_Final.pdf (futureproofwithconcrete.com.au)

housing as well as public infrastructure expected to rise strongly in response to population and economic growth, the demand for concrete will increase.

Importantly, as part of the whole of government approach as highlighted within the discussion paper, that Infrastructure NSW, Transport for NSW and other agencies focus policy and business decision making upon, not only to measure embodied emissions within infrastructure, but also with regards to engaging industry and the inclusion of carbon emissions and reduction plans in business cases from the earliest design phase.

As highlighted within Principle 3 – business case guidelines do not presently require agencies to articulate and/or mitigate the carbon emission associated with their projects and investment decisions are being made without understanding how whole of life carbon is being mitigated. This not only reduces the opportunity to evaluate and select lower emissions designs but also may lead to more expensive and costly retrofitting of solutions down the track to achieve net zero.

Understanding the mitigation of carbon across the whole of life is critical to achieving Net Zero and needs to be applied consistently at the design phase and across all government agencies. How that is determined, then communicated is also critical to achieving collaborative outcomes with industry to avoid any duplication and/or inconsistency in design approaches from one agency to another.

**Addressing Barriers to low emissions designs and approaches**

Earlier this year, CCAA responded to the Transport for NSW (TfNSW) ***Sustainable Procurement in Infrastructure Discussion Paper*** which provided comment upon a range of sustainable goals and barriers that might affect industry.[4]

As part of the engagement process with industry and suppliers and to ensure that the design and capability for low emissions infrastructure is effective, the absence of performance-based concrete in standards and specifications must be addressed.

If successful, this will almost immediately unlock the availability of a number of new low carbon concrete products.

CCAA seeks greater engagement with the construction value chain including Infrastructure NSW and TfNSW to facilitate the increased uptake of low carbon concrete products.

**Flood Resilience Design and Construction in Infrastructure**

The extreme rainfall and flooding events that decimated Australia's east coast in early 2022 underline the importance of flood-resilient design and construction solutions that incorporate strong, durable materials like concrete.

[4] NSW - Sustainable Procurement in Infrastructure (ccaa.com.au)

Many towns and cities across New South Wales were, by necessity or design, established on floodplains, close to water resources. Over time, their urban centres have grown rapidly, in many cases outpacing development controls. As a result, they are typically ill-equipped for the escalating impacts of storms and floods and even roads, bridges and houses constructed to then contemporary engineering standards and codes have been seriously impacted by these recent weather events.

Importantly, concrete is a safe and secure construction choice that is futureproofed against natural deterioration, weather extremes and climate and the ravages of fire, floods and cyclones. Critically, infrastructure resilience against extreme weather events must be prioritised over and above the minimising of material inputs, not only to ensure community and public safety but also to assist with reducing future carbon emissions.

**Discussion Paper Support**

CCAA and its members are supportive of the guiding principles and actions presented in the Decarbonising Infrastructure Delivery Discussion Paper. In particular, we support the following actions will contribute to greater participation and collaboration with industry:

- The adoption of a whole of NSW Government approach to measuring embodied emissions in infrastructure and engagement with industry as early as possible on low emission designs and approaches;
- Inclusion of whole of life carbon emissions and reduction plans in the business case;
- Assessment of life cycle embodied emissions performance measures in tender criteria; and
- Building knowledge and capability across the infrastructure delivery community and including material suppliers as part of this process.

CCAA and our members are committed to the decarbonisation of concrete and remain keen to collaborate with NSW Government agencies to ensure a consistent approach to embodied emission reductions in infrastructure to achieve the goal of net zero by 2050.

Thank you again for the opportunity to comment upon the Decarbonising Infrastructure Delivery Discussion Paper. We would appreciate the opportunity to discuss this matter with you in further detail. Accordingly, I can be contacted on 0448 848 848 or email Jason.Kuchel@ccaa.com.

Yours sincerely,

**JASON KUCHEL**
**State Director, New South Wales & South Australia**