CEMENT CONCRETE & AGGREGATES AUSTRALIA

8 April 2022

Ms Camilla Drover
Deputy Secretary, Infrastructure and Place
Transport for NSW
231 Elizabeth Street
Sydney NSW 2000

Dear Camilla,

RE: Sustainable Procurement in Infrastructure – Discussion paper

Cement, Concrete and Aggregates Australia (CCAA) is the peak industry body representing the $15 billion-a-year heavy construction materials industry in Australia. Our members are involved in the extraction and processing of quarry product and cement raw material products, as well as the production and supply of cement, pre-mixed concrete, and supplementary materials. We thank you for the opportunity to provide a submission on the ***Sustainable Procurement in Infrastructure – Discussion paper***.

CCAA and the heavy construction materials supply sector has a long history of collaboration with TfNSW. CCAA works with TfNSW on material specifications for improved performance, environmental and value outcomes. CCAA is also partnering with TfNSW through the Smartcrete CRC on a project to evaluate the greater use of supplementary cementitious materials (SCMs) in concrete to reduce embodied carbon.

CCAA members provide approximately 95% of the cement, aggregates and concrete used in TfNSW projects, with almost all materials sourced locally in NSW or within Australia, providing substantial employment and economic benefit to NSW.

SCMs, such as fly ash are also sourced locally from coal fired power stations and is an excellent re-use of a waste product and delivers carbon emission reductions. It is also worth noting the long design life of concrete infrastructure which reduces the volume of replacement materials over the lifecycle of the assets when compared to alternative materials.

General Comments:

CCAA is supportive of TfNSW's sustainability focus areas and goals and commends TfNSW for supporting progress in this area.

CCAA recommends that the use of the terms embodied carbon and energy be clearly defined to ensure consistency of approach and purpose.

We recommend that to deliver true assessment of carbon emissions for a given project that they are assessed over the entire lifecycle of a project, i.e. 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.

We recommend that the definition of embodied carbon be aligned to the EN15804 definitions and reporting modules (modules A-D) and the Product Category Rules for construction products (PCR 2012:01 Construction Products and Construction Services, Version 2.33, 2020-09-18) to ensure that they are consistent with those used in the development of Environment Product Declarations (EPDs). To compare construction materials as fairly as possible, they should be compared across modules A1-A4, C1-C4 & D covering as much of the lifecycle carbon emissions as possible, including end of life treatment.

We strongly recommend that consideration be given to the application of performance/outcome based sustainability targets rather than the use of prescriptive/input based sustainability targets. 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. Performance based sustainability targets are recommended which allow flexible and innovative approaches in delivering the desired outcomes.

The balance between performance based and prescriptive requirements is a matter that TfNSW should decide in close consultation with industry to ensure the desired outcomes are achieved.

Responses to Discussion Paper Questions:

The following section details specific responses to the questions posed in the Sustainable Procurement in Infrastructure – Discussion paper.

Q1: Should Transport consider any additional or alternative objectives (outlined on page 9) for the initiative?

Response:

- *We recommend amendment to the 4th bullet point on p9 of the Sustainable Procurement in Infrastructure – Discussion paper which currently states "decarbonising our infrastructure activities by material and process selection which considers levels of embodied energy and carbon, and by applying practices that reduce greenhouse gas emissions". We suggest that life cycle considerations be incorporated to ensure full accounting of the impacts of materials in use including maintenance and end of life considerations. This can be achieved by amending this as follows "… decarbonising our infrastructure by material and process selection over the life cycle …".*
- *We suggest the objectives be clarified to, for example, indicate if there any targets proposed for circular economy, embodied carbon by material, etc.*
- *The meaning of "automatically calculate emissions and embodied carbon on key materials" should be clarified.*

Q2: Are there any that should be eliminated?

- Response: *No.*

Q3: Do you support the introduction of baseline sustainability requirements? Please outline your reasons.

Response:

- *Yes, baseline sustainability requirements will help send clear messages to the industry about what is needed and will help with the uptake of low carbon concrete products.*
- *The Australian cement, concrete and aggregates industry already contributes greatly to circular economy via the use of waste products in cement and concrete manufacturing as well as 82%[1] of concrete, bricks, and rubble at their end of life being recycled and converted into other products.*
- *The industry is also focussed on decarbonisation with the release late last year of the Decarbonisation Pathways for the Australian Cement and Concrete Sector report,. aiming for net zero carbon by 2050. Collaboration across the supply chain is needed to achieve net zero carbon so clear market signals such as TfNSW baseline sustainability requirements will support action in this area.*

Q4: What other baseline sustainability performance measures should we consider?

Response:

- *In addressing carbon emissions associated with materials, aside from assessing as many of the lifecycle stages as possible (e.g. across EN15804 modules A1-A4, C1-C4 & D) when comparing materials, the industry would benefit from TfNSW setting embodied carbon benchmarks by asset type in consultation with industry. For example: XX kg CO_2-e / km of rail tunnel or XX kg CO_2-e / km of road project. Having an embodied carbon benchmark and an appropriately set reduction target would give the design/construction/supplier teams the greatest flexibility in meeting the targeted carbon reductions. This would be similar to how the NABERS rating tool assesses operational energy use in buildings. The reduction targets can then be changed over time. We believe that there should be sufficient project data available to develop these benchmarks directly or with the Infrastructure Sustainability Council (ISC).*

Q5: How effective will these proposed changes be in supporting improved sustainability in projects?

Response:

- *Reviewing specifications to remove any barriers to the uptake of low carbon materials should be supportive of their increased use and lower carbon emissions.*
- *EPDs play a vital role via 3rd party verification of the environmental performance of materials in a standardised way. Many CCAA members either have EPDs or are in the process of producing EPDs.*

Q6: What other changes could we make to support a circular economy and decarbonise transport infrastructure?

Response:

- *The Recycled Material Specification Register is a positive initiative and should lead to increased use of recycled content.*
- *A streamlined process to get new waste or recycled-content products approved would also be beneficial. Potentially there could be a team within TfNSW that is focussed on this.*

[1] The recycling rate of masonry materials in 2018-2019 was 82%. Masonry materials category includes heavy waste types such as concrete, bricks and rubble. Taken from the national waste report 2020. https://www.awe.gov.au/sites/default/files/env/pages/5a160ae2-d3a9-480e-9344-4eac42ef9001/files/national-waste-report-2020.pdf

- *Harmonisation of how waste streams are treated and classified across different State jurisdictions and government departments are necessary to boost circular economy outcomes.*
- *TfNSW should provide performance based concrete specifications to enable industry to innovate and deliver most effective response. The current prescriptive regime makes it very difficult for industry to put forward alternative lower carbon concrete mixes.*

Q7: What are the barriers and opportunities that might affect your business or operations?

Response:

Some barriers include:

- *The absence of performance based concrete durability requirements in standards and specifications is limiting the uptake of low carbon products.*
- *Availability of SCMs due to interruptions in supply due to availability and TfNSW prescriptive requirements. Also noting SCMs generally have to travel further in regional areas.*
- *Limited and inconsistent engagement with suppliers before procurement and specification requirement changes are made.*
- *Tight construction timelines limit the uptake of low carbon concrete. As some low carbon concrete products take longer to set and hit early strength targets for day 1, 3, 7 (note strength after 28 days is normally higher for low carbon concretes)*
- *Limited demand for low carbon concrete products currently in the market*
- *Construction team and sub-contractor inexperience with low carbon concrete mixes, as the placing and workability can be different to standard concrete.*

Some opportunities include:

- *Aligns with the Decarbonisation Pathways for the Australian Cement and Concrete Sector.*
- *TfNSW has the opportunity to create market demand for low carbon concrete products*
- *Clear market signals for more sustainable products support our industry's case for further research and development on low carbon products*
- *Education and collaboration with designers, engineers, contractors, clients & TfNSW to help remove some of the knowledge barriers to higher uptake of low carbon concrete products.*
- *Develop performance-based specifications to supplement the existing prescriptive requirements and encourage innovation.*
- *Consideration of the strength development properties of low carbon concretes in construction schedules to support their use e.g. 56 day strength requirements.*

Q8: Are there any additional issues to be considered?

Response:

- *We re-iterate our recommendations that embodied carbon and energy be clearly defined.*
- *We also recommend that carbon emissions be assessed over the entire lifecycle of a project.*
- *We recommend that the definition of embodied carbon be aligned to the EN15804 definitions and reporting modules (modules A-D) and the Product Category Rules for construction products (PCR 2012:01 Construction Products and Construction Services, Version 2.33, 2020-09-18) to ensure that they are consistent with those used in the development of Environment Product Declarations (EPDs). To compare construction materials as fairly as possible they*

should be compared across modules A1-A4, C1-C4 & D covering as much of the lifecycle carbon emissions as possible, including end of life treatment.

Q9: Do you have any comments or queries about the engagement approach?

Response:

- *As a significant stakeholder in this matter, we request that CCAA State Director- NSW, Mr Jason Kuchel and CCAA National Sustainability Manager, Mr Joel Clayton be included in the reference group and industry workshops and interviews..*

In summary, CCAA and its members are committed to the decarbonisation of concrete and heavy construction materials in general and we are already actively engaged in the circular economy.

We wish to further collaborate with TfNSW to ensure the sustainability of transport infrastructure in NSW whilst preserving its integrity and value. We see this collaboration as critical for both TfNSW and industry to achieve the desired sustainable procurement outcomes.

Thank you for the opportunity to provide comments on the Sustainable Procurement in Infrastructure – Discussion paper. To further discuss any of the issues raised in the submission, please contact Jason Kuchel on 0448 848 848 or Jason.Kuchel@ccaa.com.au

Yours sincerely

Jason Kuchel
CCAA State Director – New South Wales & South Australia