Submission on the consultation document on New Zealand's second Emissions Reduction Plan

21 August 2024

Introduction

The Aggregate and Quarry Association (AQA) is the industry body representing quarrying companies which produce 45-50 million tonnes of aggregate and quarried materials consumed in New Zealand each year. The New Zealand Limestone Producers Association is a sub-group within the AQA, and this submission is on behalf of our members, including those producing limestone products.

Funded by its members, the AQA has a mandate to increase New Zealanders' understanding of the need for aggregates, improve our industry and users' technical knowledge of aggregates and assist in developing a highly skilled workforce within a safe and sustainable work environment.

We welcome the opportunity to provide feedback on the consultation document on New Zealand's Second Emissions Reduction Plan (consultation document).

Key points

- We support the shift in emphasis away from gross emissions towards net emissions.
- We would like to see formal recognition in New Zealand of carbon uptake in the use of hydrated lime for water treatment, industrial processes such as sugar manufacture, and in agriculture.
- We would like to see the introduction of new sources of CO2 removal into the policy mix.
- We support greater use of recycled construction and demolition waste, particularly in Government procurement practices.

Meeting fast-changing societal expectations

For the New Zealand quarry sector, the challenge is clear: we need to collectively lift our game on ESG – in other words, on how we measure and manage the environmental, social and ethical expectations of local iwi, communities and our stakeholders.

The AQA has prepared a "Road Map for the Aotearoa New Zealand Quarry Sector" to deliver on this challenge. This sets out the sector's material environmental and social

impacts, and identifies actions the sector can take, and is taking, to address those impacts. It also has points for government to consider in helping quarry operators meet their ESG objectives.

Besides the political and regulatory drivers for change, a commitment to ESG is to do the right thing by the communities in which the quarry sector lives and works, and by the environment.

The Emissions Reduction Plan

Net vs Gross

We support the consultation document's shift in focus towards net emissions, away from gross, and the newfound emphasis on removals of carbon dioxide alongside reductions.

The Climate Change Response Act 2002 has a 'net zero' emissions target not a 'gross' target so this shift in focus is entirely appropriate. Climate science dictates that removing carbon from the atmosphere is just as important as reducing gross carbon emissions and so net emissions matter more than gross.

As it says top of page 24, "under our climate change targets, removing one tonne of carbon dioxide through forestry, for example, is recognised as equivalent to preventing the emission of one tonne of carbon dioxide in the first place". Focusing on net emissions provides options for both reducing and removing emissions.

Carbon sequestration / Mineral use in technologies to store carbon dioxide

We agree CCUS technology is one of many tools that should be available to New Zealand to help it achieve the net target, and that sequestration opportunities other than forestry be considered.

On page 22 the document says "In future, we may have other viable options for removing emissions, such as restoring wetlands, and capturing and storing carbon." In fact there are several sequestration options that should be explored.

We support the discussion in chapter 9 – Non forestry removals. There are a number of non-forestry removal mechanisms that can and should be considered. Currently, carbon dioxide emitted from the manufacture of lime from limestone is captured by the ETS but the regime does not recognise that when the lime is applied in industry there is significant reabsorption of the CO2 generated during production – 100% in the case of lime applied to water treatment. While the emitting of carbon during production of calcium oxide is included in calculations of gross emissions, there is no calculation of the reabsorption of that carbon when hydrated lime is used in water treatment, processes involved with the production of sugar, and other agricultural applications.

The CO2 absorbing process accounts for on average 33% of direct emissions from lime manufacture (European Lime Association commissioned research) including industrial applications and cement in concrete, or 20-100%, most of this sequestered within one year.

The IPCC recognised in its 6th Assessment Report (AR6) "recarbonation", or "carbon uptake" as the cement and concrete industry terms this process, as a mechanism for removing atmospheric CO2 and proposes policy steps to recognise other removal mechanisms.

Waste

Currently there is little incentive for recycling and re-use of construction and demolition waste due to the cost of processing these products relative to natural products and the reluctance of customers to specify and/or allow the use of recycled products. These customers include central and local government who are both significant users of aggregates and sand (more than 50% of annual consumption).

Crushed aggregate from demolition concrete can be re-cycled and used as an alternative to coarse aggregate for use in new concrete products, roading or drainage materials.

In the case of concrete only coarse recycled aggregate is used as the fine aggregate has a significantly higher water demand. This leads to a demand/production imbalance at the recycling operation. The coarse recycled aggregate will also push up water demand inevitably increasing the cement demand. Typically, the increase in cost doesn't make recycled aggregate in concrete an attractive option.

In roading materials, recycled aggregate typically needs to be blended with raw coarse aggregate as it is difficult to know the properties of recovered material and a high percentage of recycled aggregate can negatively affect the performance of the product. As with virgin aggregate, the high cost of cartage (both gathering material as well as distributing products) and the need for a reliable source of recovered material at a consistent quality affect the economic feasibility of recycling materials. It seems very unlikely that recycled aggregate could substitute for more than a fraction of the range of materials available from newly quarried material.

A cost/benefit analysis for recycling and re-use of construction waste needs to be conducted by the Government in consultation with industry, in order to establish the types of incentives, and/or penalties needed to achieve positive outcomes from the principle of a circular economy.

Wayne Scott
Chief Executive Officer
Aggregate and Quarry Association
Wayne@aqa.org.nz
021 944 336