Submission on draft advice of He Pou a Rangi – the Climate Change Commission

March 2021

Introduction

The Aggregate and Quarry Association (AQA) acknowledges the international imperative to reduce carbon emissions and we support New Zealand's obligations to reduce our emissions.

New Zealand needs to play its part in global commitments to meet the objectives of the 2015 Paris Agreement and to reduce carbon dioxide emissions. In reducing our emissions, it is essential that policies do not lead directly to constraints on the supply of vital materials essential for the social, economic, and cultural wellbeing of communities.

New Zealand's aggregates profile

Currently an average of around nine tonnes (one rigid truckload) of stone, gravel and sand per New Zealander is required each year to meet New Zealand's ongoing infrastructure demand. The Government's 10-year Minerals and Petroleum Strategy released in November 2019 included a clear statement that:

"***Projections indicate that the population of New Zealand could grow as high as between 5.3 and 7.9 million by 2068. To meet the needs of this growing population we will require more housing, more energy, and expanded infrastructure. The minerals and petroleum sector has a critical role to play in building this future.***

We need to make sure we have the aggregate (crushed rock and stone) required, or alternative replacement material, to build the foundations of our houses and roads."

Central and local government will need to invest an unprecedented amount of money into infrastructure, such as schools, hospitals, roads and transport, to meet this population growth. New Zealand relies heavily on locally sourced aggregate resources for infrastructure repair following disasters, for road, cycleway and rail transport corridors, major projects and for housing development.

In Auckland alone, population is projected to reach 2.4 million by 2050. This represents a population growth rate that is higher than the national average. To accommodate this growth, Auckland's built environment will change significantly. This could mean 313,000 new homes, along with new infrastructure, commercial buildings and community facilities. This number of homes alone will require an additional 78 million tonnes of aggregate, or 2.6 million tonnes per year from now until 2050.

Climate change and rising sea levels are going to put added pressure on rock supply for sea walls, riverbank protection and restoration. Based on the draft advice of the Climate Change Commission,

13 wind farms, each the size of the country's largest, will need to be built in the next 15 years to power the country's new electric cars and boilers. The construction of these wind farms alone will require an additional 1 million tonnes of aggregate and sand.

New Zealand needs a secure supply of quarry materials to provide affordable housing and infrastructure now and for future generations. Quarry materials are not universally available and can only be sourced from where they are located. Without planning to provide for adequate access to resources at workable locations there is the real risk of losing access to such proximate resources.

To do this, it is critical that planning is streamlined, quarry resources are protected so they can supply vital construction materials and quarry land is returned as an asset to the community once extraction is complete.

We make the following submission in relation to the draft advice from the Climate Change Commission.

The six big issues

Big issue question 1. Do you agree that the emissions budgets we have proposed would put Aotearoa on course to meet the 2050 emissions targets?

We have no comment on this question

Big issue question 2. Do you agree we have struck a fair balance between requiring the current generation to take action, and leaving future generations to do more work to meet the 2050 target and beyond?

We have no comment on this question

Big issue question 3. Do you agree with the changes we have suggested to make the NDC compatible with the 1.5°C goal?

We have no comment on this question

Big issue question 4. Do you agree with our approach to meet the 2050 target that prioritises growing new native forests to provide a long-term store of carbon?

Neutral

The Commission's economic modelling suggests that the land area in dairy, sheep and beef would decrease and the land area in exotic and native forestry would increase over the course of the first three emissions budgets. This does not however consider other land uses such as mineral and aggregate extraction and the impact of increased forestry on locationally constrained land uses.

In many regions of New Zealand, quarrying is the most highly productive use of land for primary production. In 2016/17 the revenue per land mass comparison showed the following revenue generated per hectare from various primary production activities:

Dairy	$ 6,928 /ha
Beef/lamb	$ 749 /ha
Horticulture	$ 10,166 /ha
Quarrying	$ 78,012 /ha

(Note: Estimates calculated from available data)

In 2017, the New Zealand aggregate and quarrying sector produced 41 million tonnes of aggregates, including limestone and other products, with an economic contribution to New Zealand estimated at $2.8 billion.

In the Government's 2019 proposed NPS Highly Productive Land discussion document, the reference to "highly productive land" recognises there are other factors in addition to soil that determine the productive capacity of land for primary production and this is certainly the case with quarrying. These include factors listed such as climatic conditions, water availability, proximity to transport infrastructure and labour. These factors also include location of aggregate sources, local demand, proximity to market (urban fringes) and potential for future productive use of the land once quarrying is completed.

It is vital that local aggregate resources throughout the country are identified, appropriately protected from urban encroachment or other non-compatible land use, and able to be developed for extraction subject to appropriate environmental controls and site restoration planning.

Big issue question 5. What are the most urgent policy interventions needed to help meet our emissions budgets? (Select all that apply)

Action to address barriers - Pricing to influence investments and choices - Investment to spur innovation and system transformation

We agree that transitioning New Zealand to a low emissions economy requires a coherent and coordinated approach to climate change across government agencies, and across levels of government.

We also agree that government procurement policies, including leveraging their purchase power, to support low emissions products and practices could also help reduce emissions. It is important here to decrease the need for carbon-intensive transportation and improve energy efficiency in the long-term by ensuring quarries are close to their markets, thus significantly reducing transport costs, transport congestion and carbon emissions.

We support creating a more discretionary regulatory approach for certain activities, including quarries, that are necessary to facilitate a response to the effects of climate change.

Big Issue question 6. Do you think our proposed emissions budgets and path to 2035 are both ambitious and achievable considering the potential for future behaviour and technology changes in the next 15 years?

We have no comment on this question

Detailed questions on the Commission's advice

1. ***Do you support the principles we have used to guide our analysis?***

We have no comment on this question

2. ***Do you support budget recommendation 1? Is there anything we should change and why?***

We have no comment on this question

3. ***Do you support our proposed break down of emissions budgets between gross long-lived gases, biogenic methane and carbon removals from forestry? Is there anything we should change, and why?***

We have no comment on this question

4. ***Do you support budget recommendation 4? Is there anything we should change, and why?***

We have no comment on this question

5. ***Do you support enabling recommendation 1 on cross-party support for emissions budgets? Is there anything we should change and why?***

We have no comment on this question

6. ***Do you support enabling recommendation 2 on coordinating efforts to address climate change across Government? Is there anything we should change and why?***

Fully support

We agree that transitioning New Zealand to a low emissions economy requires a coherent and coordinated approach to climate change across government agencies, and across levels of government.

We also agree that Government procurement policies, including leveraging their purchase power, to support low emissions products and practices could also help reduce emissions. It is important here to decrease the need for carbon-intensive transportation and improve energy efficiency in the long-term by ensuring quarries are close to their markets, thus significantly reducing transport costs, transport congestion and carbon emissions.

We agree that coherent policy is important to ensure that households, business, and communities receive clear and consistent signals about the transition to low emissions, and the nature and speed of change required.

The proposed National Policy Statement for Indigenous Biodiversity requiring territorial authorities to "avoid" any subdivision, use and development within an SNA containing the four main effects is inconsistent with the Government's Resource Strategy, and other current initiatives around urban development, use of highly productive land, infrastructure spending, and climate change.

Rather than taking an integrated approach to resource management, it appears that officials across government departments are acting in their separate silos creating unnecessary duplication and imposition of additional costs and restrictions, all with similar stated goals but with inevitable unintended consequences. We have seen this recently with introduction of the NES Freshwater Regulations, particularly concerning earthworks around wetlands.

It is vital that local aggregate resources throughout the country are identified, understood and effectively managed. Quarrying is a high value and temporary land use, with site restoration a critical element to ensure that land is available for future generations. In many cases, site restoration can result in the delivery of valuable new habitats, contributing towards national biodiversity targets, wider 'net gain' ambitions, and in some areas, new housing.

We also support the use of incentives to promote restoration and enhancement of land.

We are pleased the document acknowledges "many technologies important in the transition to a low emissions economy – including wind turbines, solar panels, and batteries – require mineral and metal inputs." However, it goes on to imply that extracting these minerals could have negative environmental impacts here and overseas. This is wrong, and certainly does not need to be the case.

Quarrying in New Zealand is done within the confines of strict environmental regulation. Projects do not get approved unless they meet very high environmental standards. This is as it should be. Quarrying has arguably a much lower environmental impact than many other land uses in New Zealand.

It is wrong to conflate potential negative environmental impacts of extraction on local environment and raising these issues is totally outside the scope of the Advice. Where there are environmental impacts these are being addressed by the appropriate legislation.

7. ***Do you support enabling recommendation 3 on creating a genuine, active and enduring partnership with iwi/Māori? Is there anything we should change and why?***

We have no comment on this question

8. ***Do you support enabling recommendation 4 on central and local government working in partnership? Is there anything we should change and why?***

Fully support

We agree that transitioning Aotearoa to a low emissions economy requires a coherent and coordinated approach to climate change across government agencies, and across levels of

government. It is essential that working together addresses the allocation of risk and funding to ensure incentives for behavioural change are appropriate at the national and regional levels.

9. ***Do you support enabling recommendation 5 on establishing processes for incorporating the views of all New Zealanders? Is there anything we should change and why?***

We have no comment on this question

10. ***Do you support our approach to focus on decarbonising sources of long-lived gas emissions where possible? Is there anything we should change and why?***

Partially support

Our sector utilises off-road vehicles and machinery extensively, most of which is currently powered by diesel or electricity where commercially viable.

The Commission's advice assumes that generally these motor applications would electrify in the long term and can use low carbon liquid fuels in the interim.

Most quarry sites are on urban fringes and infrastructure required for electricity supply would be cost prohibitive without financial incentives and/or a significant decrease in the cost of electricity for the life of the site. The Commission does acknowledge that off-road vehicles and equipment may be challenging to electrify, especially the types that work long hours in remote locations.

The Commission's own modelling suggests that commercially available quantities of biofuels for heavy and off-road vehicles is unlikely to be available before 2035 and therefore low carbon liquid fuels are unlikely to be an option for our sector in the interim.

For remote sites, the electricity for electric machinery would have to be made with generators – that use diesel. The most practical option now is the gradual replacement of tier 3 engines with tier 4 diesel engines, and where possible, tier 4 engines with tier 5 engines. In the pursuit of emissions reductions, this does not always translate into increased fuel efficiency, however.

Electric heavy off-road vehicles may be an option at sites where they can recharge during operation, e.g. operating uphill empty, and downhill loaded. One quarry site in New Zealand currently operates an electric dump truck, however very few sites operate in a manner that would make such vehicles economic or practical.

11. ***Do you support our approach to focus on growing new native forests to create a long-lived source of carbon removals? Is there anything we should change and why?***

We have no comment on this question

12. ***Do you support the overall path that we have proposed to meet the first three budgets? Is there anything we should change and why?***

We have no comment on this question

13. ***Do you support the package of recommendations and actions we have proposed to increase the likelihood of an equitable, inclusive and well-planned climate transition? Is there anything we should change, and why?***

We have no comment on this question

14. ***Do you support the package of recommendations and actions for the transport sector? Is there anything we should change and why?***

Support some of the action

Currently 50 million tonnes of aggregate and sand is consumed domestically in New Zealand per annum (detail in Appendix 1), the majority transported in trucks over 30 tonnes gross vehicle mass. This equates to over 7,000 truck deliveries per day.

We agree with the Commissions' findings that heavy trucks are the most challenging vehicles to electrify as they operate close to legal size and weight limits, so heavy batteries could reduce the payload the truck can carry.

Like food and perishable goods, aggregate moves over short distances, and very few quarries or delivery sites have access to rail or coastal shipping. Aggregates need to be delivered quickly and reliably as customers do not have areas to stockpile material. Therefore, aggregate delivery cannot shift travel type.

While the report identifies that these deliveries are most likely to be carried out by electric trucks in the future, at this point too much is unknown about the kinds of future energy that will power heavy vehicles.

15. ***Do you support the package of recommendations and actions for the heat, industry and power sectors? Is there anything we should change and why?***

We have no comment on this question

16. ***Do you support the package of recommendations and actions for the agriculture sector? Is there anything we should change and why?***

We have no comment on this question

17. ***Do you support the package of recommendations and actions for the forestry sector? Is there anything we should change and why?***

We have no comment on this question

18. ***Do you support the package of recommendations and actions for the waste sector? Is there anything we should change and why?***

Support some of the actions

We acknowledge the importance of the circular economy in the aggregates sector and generally,

maximising the use and reuse of the same resources for as long as possible. However, while increased recycling and resource efficiency will have some impact, the technology is nowhere near ready to fully, or even significantly, replace the need for extraction of natural aggregates.

For a "circular economy" to work, the waste hierarchy needs to be applied starting with the reduction in commodities that generate waste. This must then be supported by incentives for customers and suppliers to re-use or recycle products. Currently there is little incentive for recycling and re-use 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.

MfE data provided in their 2020 discussion document "Reducing Waste: A more effective landfill levy" identified that in 2018/19, 2,482,563 tonnes of construction and demolition waste was disposed of in Class 1 and 2 landfills. Of this total, we have estimated that 874,122 tonnes of concrete, bricks, rubble and landscape materials may be available for recycling into replacement aggregate products.

If financially viable to do so, this would produce 786,700 tonnes of aggregate or fill products, or 2 percent of the existing national aggregates market. This is consistent with Auckland Transport's assessment that recycled construction waste available would not exceed 2% of demand. The Commission's modelling suggests that these volumes will reduce by 20 % by 2035 on 2018 volumes, therefore providing less material for recycling into replacement aggregate products.

We do not have accurate data on construction waste in New Zealand and general statements of the scale of construction waste mask weaknesses in understanding of the composition of the total waste stream. Such perceptions are simplifying what is ultimately a complex situation. More consistent and comprehensive data collection, and monitoring of waste streams and resource use is needed.

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

19. ***Do you support the package of recommendations and actions to create a multisector strategy, and is there anything we should change?***

We have no comment on this question

20. ***Do you agree with Budget recommendation 5 on the rules for measuring progress? Is there anything we should change any why?***

We have no comment on this question

21. ***Do you support our assessment of the country's NDC? Do you support our recommendation?***

We have no comment on this question

22. ***Do you support our recommendations on the form of the NDC?***

We have no comment on this question

23. ***Do you support our recommendations on reporting on and meeting the NDC? Is there anything we should change, and why?***

We have no comment on this question

24. ***Do you support our assessment of the possible required reductions in biogenic methane emissions?***

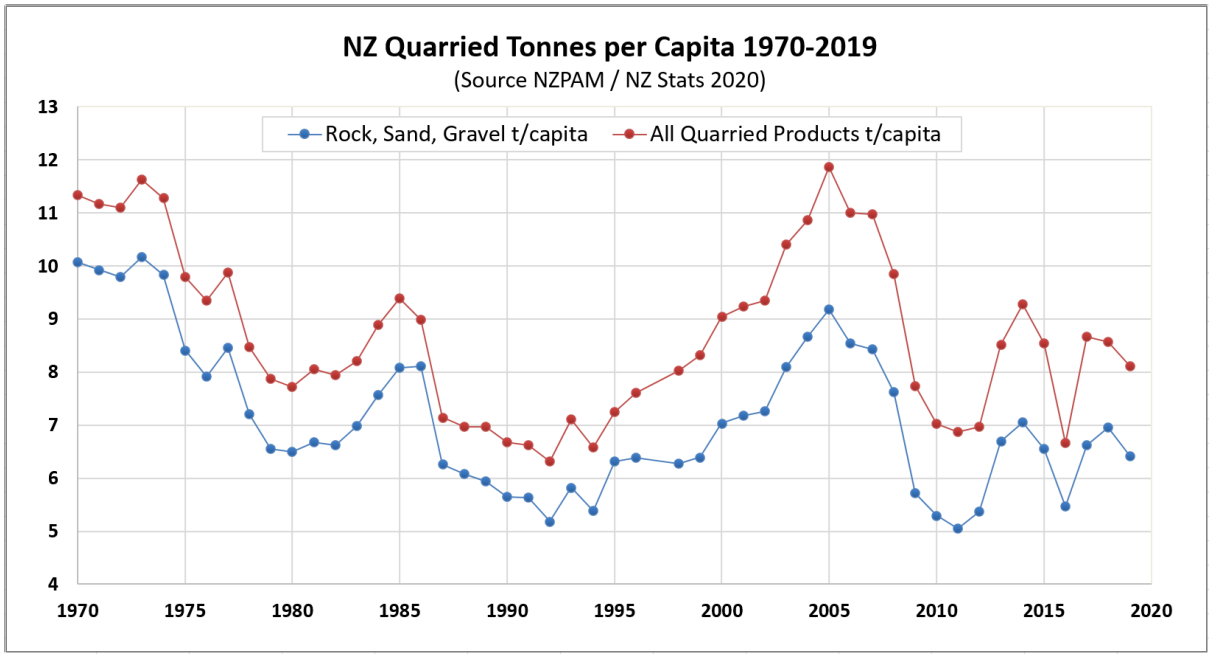
We have no comment on this question

Appendix 1.

2019 Aggregate Production Statistics

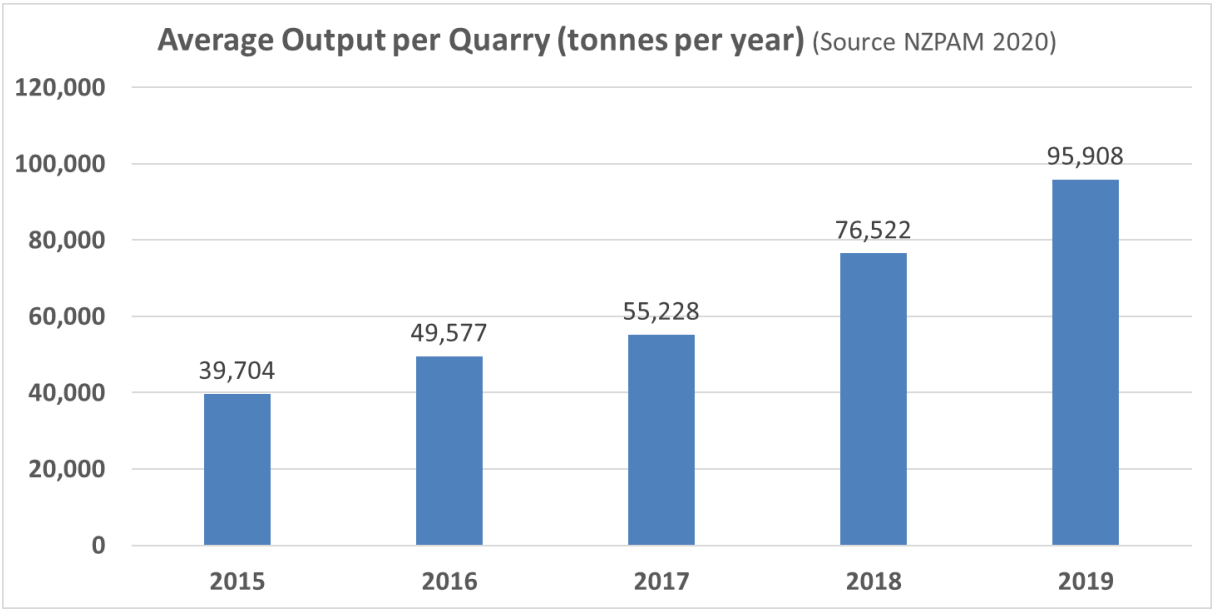
New Zealand Petroleum and Minerals (NZPAM) published the latest (2019) statistics at the end of November 2020. This represents 416 quarries out of 522 surveyed, a healthy 80% response rate.

A total quarried material production of just below 40 million tonnes was reported for the year, which is 8.1t per capita (in red below). When corrected for response rate, total production is just over 50Mt for the year which equates to 10.2t per capita.



This annual survey is the best source of information we have on aggregate production in NZ. MBIE rely on it for policy formation and industry strategies.

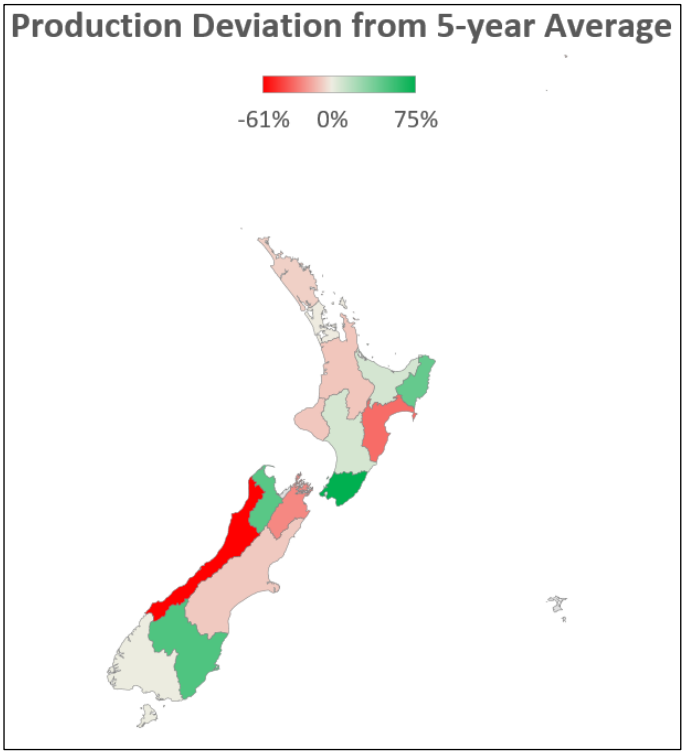
The output per quarry continues its upward trend. The annual average output per quarry is over 95,000t.



Regionally, there were some significant deviations from the previous 5-year averages. Gisborne, Nelson/Tasman and Otago were up 40-50% while Wellington was up 75%.

Hawke's Bay and Marlborough were down around 30% while the West Coast was down by 60%.

Other regions had less than 10% change.



2019 was the first year since 1995 that roading aggregate made up over 60% of quarried materials consumed.

Roading products (24Mt) increased tonnage for the third year in a row.

Building aggregates declined to 15% (5.8Mt) which was significantly down on the previous 5-year average of 9Mt.