Submission from the AQA to the Environment Committee enquiry into Seabed Mining

June 2023

Introduction

The Aggregate and Quarry Association (AQA) is the industry body representing quarrying companies which produce 50 million tonnes of aggregate and quarried materials consumed in New Zealand each year.

Funded by its members, the AQA has a mandate to increase understanding of the need for aggregates to New Zealanders, 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 would like to thank the Environment Committee for the opportunity to comment on its inquiry into the potential benefits and risks of seabed mining in New Zealand.

Key points

The Environment Committee should consider the following:

- Seabed mining has been operating successfully in New Zealand waters for over 75 years.
- The mining/dredging of offshore aggregate material (sand and gravel) forms a large industry around the world (estimated at over 150 million tonnes p.a.) for supply to the construction sector and for repairing eroded or storm damaged beaches (referred to as beach nourishment).
- Aggregate is in short supply in many parts of New Zealand and planning processes are crucial to ensuring access to potential aggregate resources is not shut off.
- There is some commonality in the regulatory frameworks underpinning the marine aggregate industry globally that can be adopted easily in New Zealand.
- Due to their bulk and weight relative to value, New Zealand sources its aggregate needs domestically and must continue to do so.

Aggregate demand in New Zealand

Accessing, extracting, processing and transporting aggregate (crushed rock, gravel and sand) is needed for the construction of infrastructure in New Zealand. This material forms the foundation of every road and building, either directly or as part of materials such as concrete. Such infrastructure is always important and is at the core of the Infrastructure Commission's Rautaki Hanganga o Aotearoa, New Zealand's Infrastructure Strategy accepted by the Government in 2022. There will be increased demand for aggregate and sand to build infrastructure and housing to meet population projections, and to address the nation's infrastructure deficit.

Additionally, as catastrophic events earlier this year have confirmed, the impacts of climate change including rising sea levels will put added pressure on rock supply for sea walls, riverbank protection and restoration, and other adaptation strategies.

It is therefore more vital than ever that local aggregate (rock and sand) resources throughout the country are identified, protected and effectively managed to build resilient new infrastructure and homes.

An overview of seabed mining operations in New Zealand

Seabed mining has existed for more than 75 years in New Zealand with McCallum Bros. Limited (MBL) dredging sand in the Mangawhai-Pakiri embayment. Throughout this time, this high-quality sand has been primarily used to supply concrete plants in the greater Auckland area and is an essential construction material for the continued growth of the Auckland region and beyond (refer to Appendix A).

Sand extracted by MBL from Pakiri is principally used in the construction industry due to its ideal mineralogy, cleanliness and sizing. MBL currently supplies approximately 50% of the construction sand requirements for the Auckland Region and the ubiquitous nature of its use belies its importance to the local economy and housing supply.

MBL undertake regular and stringent monitoring to ensure they are meeting or exceeding their consent conditions. For their marine consents, they undertake bathymetric work to determine any impacts to the seafloor or marine biota plus surveys of the beach to investigate and monitor changes to the beach volumes. Monitoring has been undertaken since 1994 with no impacts to the Mangawhai-Pakiri embayment being linked to sand extraction.

It is estimated that just over 1,000,000 tonnes of sand was sold in the Auckland market in 2021. Of this, 720,000 tonnes was used for ready-mix concrete, 73,000 tonnes for pre-cast concrete, with a further 206,000 tonnes for other applications[1].

There are also two long term seabed dredging operations located at the Taporapora sandbank north of Helensville which supply the bulk of the remaining 50% demand for

[1] Pakiri Sand Extraction – Assessment of Economic Effects (M.E Consulting June 2022)Appendix A

construction sand in the Auckland Region. Sand is also supplied into Auckland from river based operations in Northland and Waikato.

The opportunities that could arise from seabed mining in New Zealand, including through best-practice emerging extractive technologies

The contribution of marine dredged sand and gravel resources as part of the wider portfolio of construction aggregate supply has significant potential and is growing in importance. Where local primary aggregates are constrained, either because resources are not geologically present or because existing resources have become depleted, alternative sources of supply must be found.

With the growing threats posed by sea level rise and increased storm activity, the use of marine sand and gravel to protect vulnerable communities and infrastructure around our coast will become increasingly important. Beach nourishment will be increasingly necessary for maintenance of beach ecosystems, recreation, and tourism. It makes sense to return sand deposited on the seabed from tidal erosion to the very beaches it eroded from through dredging or other means.

All marine aggregate extraction is undertaken to a high degree of accuracy, with reference to high resolution shallow seismic profile data and seabed core samples. When loading a vessel, the dredger's position and tracks can be displayed on the bridge in real time, together with geological and licence boundaries, to ensure that the best quality resources are extracted – and from the correct location. The vessel's activity can also be constantly recorded by an electronic monitoring system linked to the navigation receiver and the dredge gear sensors. This records when and where the ship is dredging to ensure compliance with licence conditions. Exclusion zones can be included based on seasonal requirements for fisheries, or on the discovery of a wreck or other features of archaeological importance.

Comparison to other methods for obtaining minerals (e.g. land-based)

The development of offshore aggregate industries is driven by the need for: closer sources of aggregate material to major urban centres; coastal protection in a period of increasing coastal erosion due to sea level rise; and re-evaluation of the environmental management of terrestrial and marine resources.

Marine sand and gravel resources vary in thickness and quality, as well as their proximity to markets. Unlike land-based quarry sites, production from marine resources does not always take place in the same deposit and is driven by customer demand.

The barging of extracted sand directly from Pakiri Beach to the Ports of Auckland by MBL is the most efficient method of distributing sand. Barging sand directly into the Ports of Auckland, as opposed to transporting sand via truck and trailer from other distant sand supplier networks has the following benefits:

- Reduces truck and trailer transport on our roads by at least 21,000 return truck and trailer movements per annum, or; 2.3 million kilometres travelled amalgamating to a reduction of carbon dioxide emissions by 1,300 tonnes p.a.;

- Reduced trucking on roads reduces potential road fatalities and injuries as well as congestion and wear and tear on Auckland's already busy roads.

How seabed mining is managed internationally

The nature of any offshore aggregate industry in New Zealand, its sustainability, the regulatory regime in which it works, and the stakeholder consultation practices that are used, can be significantly improved through a good understanding of international practice.

The mining/dredging of offshore aggregate material (sand and gravel) forms a large industry around the world (estimated at over 150 million tonnes p.a.) for supply to the construction sector and for repairing eroded or storm damaged beaches. Increasing population growth and development in coastal regions and decreasing supplies of on-land aggregate resources has led to an expanding industry. The development of offshore marine aggregates is driven by the need for: closer sources of aggregate and sand to major urban centres; coastal protection in a period of increasing coastal erosion due to sea level rise; and re-evaluation of the environmental management of terrestrial and marine resources[2].

In the UK the contribution of marine dredged sand and gravel resources as part of the wider portfolio of construction aggregate supply is growing in importance. Where local primary aggregates are constrained, either because resources are not geologically present or because existing resources have become depleted, alternative sources of supply have to be found[3].

Economies of scale allow marine aggregate supplies to play an important role using a fleet of highly specialised dredgers to load sand and gravel from licensed areas located around the coast of England and Wales. A single dredger can transport between 2,000 and 10,000 tonnes over considerable distances for delivery to wharves in coastal towns and cities, close to where construction aggregates are needed. Along the River Thames alone, 8 million tonnes of marine sand and gravel were delivered to support construction activity during 2019 – equivalent to over 1,100 truckloads every day.

The UK has a large and established commercial offshore aggregate industry with applicable industry-specific legislation. The US has extensive beach nourishment activities (offshore dredging) operated through the Government; and recent legislation, adapted from the offshore oil and gas industry, has been developed for the initiation of a commercial offshore aggregate industry in the outer continental shelf region. Japan has a well-established, government-regulated offshore aggregate industry controlled by on-land mining legislation; however, increasingly depleted aggregate resources in rivers and the near shore environment has pushed the industry further offshore.

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[2] International Regulatory Regimes and Stakeholder Consultation for the Offshore Aggregate Industry: Models for Good Practice in Australia (CSIRO 2010)'-Appendix B

[3] https://mineralproducts.org/Mineral-Products/Aggregates/Marine-Aggregates.aspx

For the marine mining sector in Europe, the major driver is to ensure that extraction is sustainably managed and minimises potential effects on the environment and other marine uses[4]. This is managed by a Code for Environmental Management of Marine Mining, 2011. The voluntary code consists of a statement of Environmental Principles for marine mining, followed by a set of Operating Guidelines for application as appropriate at specific mining sites. These guidelines are designed to serve industry, regulatory agencies, scientists and other stakeholders, as benchmarks for development, implementation and assessment of environmental management plans and as advice on best fit for purpose practices at sites targeted for marine minerals research, exploration and extraction.

There is some commonality in the regulatory frameworks underpinning the marine aggregate industry globally. Some indicators of good practice are:

- Consistent industry-specific legislation in state and federal waters.
- Environmental studies and local/regional management plans.
- Stakeholder consultation associated with the environmental impact assessment (EIA) process.
- Active public stakeholder consultation surrounding the offshore aggregate industry through government and industry programs.

In New Zealand, the increasing need for aggregate resources has and will be based upon future increasing populations in coastal areas and rising sea levels. In particular, the development of the offshore aggregate industry will depend on the opinions and involvement of stakeholders at all levels.

I wish to speak to this submission in hearings conducted as part of this enquiry.

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[4] https://maritime-spatial-planning.ec.europa.eu/sites/default/files/sector/pdf/mspforbluegrowth_sectorfiche_marineaggregates.pdf