

Road Map for the Aotearoa New Zealand Quarry Sector



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FOREWORD

The world over, quarry operators are working hard to meet fast-changing societal expectations of how they manage their impacts on people and the environment. In Aotearoa New Zealand, this is no exception.

New Zealand relies heavily on locally sourced aggregate resources for infrastructure repair following disasters, for road and rail transport corridors, major projects and for affordable housing development, all of which are essential for the social, economic and cultural wellbeing of communities.

Government roading procurement now weighs sustainability in its tenders, and that affects the supply chain for aggregate. There's more focus on protecting freshwater and biodiversity in law and regulations, and on reducing waste, while quarry dust, traffic and noise continue to be of public concern.

Across the economy, New Zealand firms are building ESG (environmental, social, corporate governance) into their strategies for dealing with wide-ranging regulatory reform. Key areas include climate change, workplace health and safety, and resource management.

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 and our stakeholders.

The Aggregate and Quarry Association 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. I commend the Road Map to the attention of anyone with an interest in the quarry sector, and how it can and does meet the ESG challenge.

Wayne Scott Chief Executive Officer Aggregate and Quarry Association of NZ

ABOUT THE AQA

The Aggregate and Quarry Association (AQA) is the industry body representing construction material companies which produce an estimated 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.

Aggregates are fundamental to the lives of New Zealanders. Without an ongoing supply of aggregates, the production of concrete and the development of buildings, roads and other infrastructure would come to a standstill.

The quarry industry is committed to working alongside iwi and local communities, and follows stringent planning, environmental and operating conditions.

New Zealand needs to plan ahead and protect our aggregate supplies so we can provide affordable houses for Kiwis and continue to build and repair our infrastructure.

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SOME FACTS ABOUT AGGREGATE



New Zealand uses

9-10 tonnes

of aggregate every year for each adult and child.



To build an average house, you need about

250 tonnes

of aggregate – for use in concrete, asphalt, mortar and building products.



To build 1km of a two-lane motorway, you need around



of construction aggregates (400 truckloads).



Quarrying needs to be carried out close to where materials will be used. This keeps transportation costs low and helps minimise building costs and emissions in local communities. Note that the price of aggregate doubles after 30km of transport from the quarry gate.

INTRODUCTION – applying an ESG approach

The world has fundamentally changed, and the quarry sector must change with it, to engage with community and societal concerns. They include climate change, the environment, human rights and the rights of indigenous peoples, and human health. The 2020s started with the Covid-19 pandemic, bringing profound changes in how people behave, and how we go about earning our living.

Change has happened in another way. Our society is more urbanised and less connected to how land is used for economic wellbeing. Many New Zealanders would not know that each of us consumes around 9 tonnes of aggregate a year, in housing and construction, power stations and roads, seawalls and flood protection, and much more. The Stone Age is still with us, in a sense, hidden in plain sight.

Today the quarry sector is seeking to identify, measure and act on its material impacts on people and the environment. One approach is ESG – "environment, social, corporate governance" – and firms around the world are increasingly using ESG to gain or retain social licence to operate.

The ESG approach measures the expectations of all people who have an interest in a business or sector. They range from central and local government, to iwi/Māori, the NGO sector, down to landowners and people in communities. Understanding society's issues, we can deal with them.

Until now, a commitment to sustainability has been largely voluntary. It went by names such as "triple bottom line" and "social performance". It was something more than regulatory compliance, but seemingly not enough to gain society's trust or acceptance.

ESG differs from other sustainability approaches in being a response to governments regulating for sustainability. New Zealand now requires the 200 largest companies to disclose their climate-related financial risks. Government procurement weighs sustainability as a factor in the tender process.

There are cultural drivers as well. Younger people are increasingly expecting their prospective employer to be ethical and responsible. As the Treaty partner, iwi/ Māori have higher expectations of engagement.

This Road Map encapsulates the AQA's understanding of the quarry sector's material impacts on people and the environment, negative and positive. It provides a direction for quarry companies to understand how they impact others, and how to reduce those impacts.

Quarrying typically affects freshwater and biodiversity, and creates waste rock. It can affect local communities in terms of traffic, noise and airborne dust. Extraction, processing and transport of quarried materials produce carbon dioxide emissions. Workplaces are high-hazard environments. Operators must manage all of these issues, and iwi and stakeholder engagement is part of that.

The more than 1,000 quarries in New Zealand also provide significant benefits. Aggregate is used in roading and other construction, and in concrete. It is a fundamental input into New Zealand reducing its infrastructure deficit. Quarrying provides jobs, purchases local inputs, and contributes to tax and other government revenue.

Using the Road Map, the quarry sector has a clear aim to improve benefits and reduce negative impacts, and to communicate this story to policymakers, decisionmakers, and the public. Wider society also has a role in helping the quarry sector apply an ESG approach to its work.

QUARRY SECTOR MATERIAL IMPACTS

BIODIVERSITY SOCIO-ECONOMIC Impacts are managed by avoiding, Quarries provide products that remedying, mitigating, offsetting and society needs, employment, and compensating for adverse effects. financial support for communities. **HEALTH AND SAFETY** Quarry companies have systems to target zero harm in GOVERNANCE workplaces. Environment, social, corporate governance are at the heart of everything we do. **FRESHWATER** Quarry operators manage impacts on waterways and wetlands. \bigcirc **IWI AND** WASTE AND **STAKEHOLDER CIRCULAR ECONOMY ENERGY AND ENGAGEMENT** Recycling and reuse promotes **EMISSIONS** Engagement is essential as a circular economy approach to Dust, noise vibration, visual quarry operators live in the guarried materials. The quarry sector can impacts, and traffic can be rohe of iwi/Māori and work in reduce fossil fuel use. managed in areas where communities. quarries are operating.



ENERGY AND EMISSIONS

WHAT WE WILL DELIVER

- Support for members to report on and reduce energy use and emissions
- Explore grid connections to quarries, and upgrade heavy fleet to higher-tier diesel engines, or to hybrid and electric, or more use of biofuels
- Drying processes using solar energy or biomass

-00% energy





Quarrying is relatively energy and emissions intensive. Even though all carbon dioxide emissions are accounted for by others under the New Zealand Emissions Trading Scheme (eg diesel importers), the sector has a responsibility to directly reduce emissions. The Government has committed New Zealand to become net zero carbon by 2050, and we need to play our part.

Diesel use in machinery and generating electricity, and from the fossil fuel component of grid electricity dominate quarrying emissions, while those emissions arising from supply chains are accounted for by suppliers and customers. The closer the quarry to where aggregate is used, the lower the CO2 emissions from transport.

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GOVERNMENT TO CONSIDER

There is a capital cost to lower-emissions technology change, and operating costs for renewable energy can be significantly more than that of conventional sources. These can be significant barriers for quarry companies in reducing emissions. Incentives could include emissions standards for offroad vehicles, and co-investment in coalfired product drying conversions.

The resource management reform aims to reduce the costs and time of planning and consenting. It's also an opportunity to ensure quarries are situated close to sites of use, reducing transport emissions.



WHAT WE WILL DELIVER

The AQA supports the net zero carbon goal. It can assist members measure and report on energy use and emissions, and identify opportunities for direct emissions reductions. They include, where feasible and practicable, connecting quarry sites to the grid, and upgrading heavy fleet to higher-tier diesel engines, or to hybrid or electric as these become available. Where product must be dried, operators are exploring or moving from fossil fuels to renewable options, eg solar. Biofuels and biomass energy are options where supply exists and if affordable.

CASE STUDY: BLACKHEAD QUARRIES' ELECTRIC HAUL TRUCK AT LOGAN POINT QUARRY, DUNEDIN

The Hunter family travelled to China to watch a 30-tonne electric dump truck in action at a gold mine, and then bought one of the first 100 models to be made under the XCMG brand. In operation since January 2020, the e-truck can work close to three days before recharging, and makes substantial savings in energy costs, as well as in carbon dioxide emissions. The first e-truck at a quarry in New Zealand heralds a lower-carbon future for the industry.

https://aqa.org.nz/mimico-award/





SOCIO-ECONOMIC

- Raised awareness of the socio-economic benefits
 of aggregate
- Support for workforce development and promote careers in quarrying
- Support for research into mapping aggregate resources, and advocate for better regulation
- Support of communities through volunteer activities and community projects





New Zealand quarries produce annually around 50 million tonnes of aggregates, or about 9-10 tonnes per person per year, of which 60% is used in roading construction and maintenance. Much of the remainder is used to make concrete. More than 4 million cubic metres of ready-mixed concrete are used each year around New Zealand. Processed limestone is used in cement manufacture and for pasture soil conditioning, among many industrial uses. Other industrial minerals that are quarried or where there is potential include: clay for porcelain manufacture, pozzolans as low-carbon cement additives, zeolites having wide applications, and serpentine and dolomite, also used for soil improvement.

Quarries form part of a nodal network, needing to be placed close to where aggregate is used. Transport of materials from the quarry to sites of use is also an economic activity, to the extent that some quarry companies are also haulage companies or vice versa.

A looming shortage of many types of aggregates nationwide imposes an economic burden on regions, having to source crushed rock at long distances for roading and other projects. The transport cost can exceed all other aggregates production costs.

Quarrying provides rewarding careers for around 2,100 people working directly in the sector and a further 4,000 supporting the sector, including machinery operators, engineers, trades, management, environmental and stakeholder engagement work, and equipment and other suppliers. As for many sectors of the economy, quarrying faces a labour and skills shortage, exacerbated by travel-related Covid restrictions.



WHAT WE WILL DELIVER

The AQA works with government (including the Infrastructure Commission) and with others to raise awareness of the importance of aggregate – including for natural hazards resilience and climate change adaptation – and supply constraints. It supports the extractives sector Workforce Development Strategy and promotes careers in the sector.

The AQA has supported government-funded research into mapping aggregate resources around the country. It advocates for regulation that enables the sector to deliver societal and economic benefits for New Zealand.

Working with the Institute of Quarrying New Zealand, the AQA organises an annual conference that fosters connections within the sector, improves practice, and raises interest in quarrying. An extensive, and longstanding awards programme recognises excellence in the sector.

Individual companies and their staff carry out a range of volunteer activities, and support of community initiatives, including sports clubs and charities.

GOVERNMENT TO CONSIDER

Shortages in aggregate supply are looming around the country. Improved planning and consenting processes can recognise the role of aggregates and that resources are locationally constrained. Streamlined and fast-tracked regulation can ensure good management of the social and environmental footprint of quarrying.

CASE STUDY: THE INFRASTRUCTURE COMMISSION INFRASTRUCTURE RESOURCES STUDY

There are very few materials that do not have a suitable substitute, but bulky, low-value materials like sand, stone, and rock are unlikely to go out of fashion any time soon – they're needed in almost everything we build from cycleways to cell phone towers and wind farms. With a growing pipeline of major projects on the horizon we need to protect the availability of our best resources for generations to come. (Ross Copland – CEO Infrastructure Commission).

https://www.tewaihanga.govt.nz/policy/reports/infrastructure-resources-study/





HEALTH AND SAFETY

- Improved health and safety performance at quarries through engagement with WorkSafe and MinEx
- Promote diversity in the workplace including for women, and quarrying as a career for all demographics





New Zealand now has world-leading workplace health and safety legislation and regulation. Quarries are classified as high-hazard activities, and manage hazards at sites with the aim of zero harm to workers. Risk is reduced to as low as reasonably practicable; nonetheless, there will be lost-time injuries and "near misses" at sites. Workers document and report all incidents, including a failure to observe company health and safety procedures.

Worker health is also an important area of attention. This includes workers' mental health, and their physical health and fitness to carry out their work, which can be demanding. A further focus is managing exposure to occupational health hazards, such as noise, vibration and airborne dust.



GOVERNMENT TO CONSIDER

Health and safety regulations affecting quarrying need continuous review to ensure they remain relevant. Government can do this in consultation with industry, also to ensure regulation is proportionate to the scale and complexity of the activity. Quarries vary from large sites employing hundreds of people to an individual on a riverbank operating an excavator, loader and crusher.

CASE STUDY: ROAD METALS' AWARD-WINNING APPROACH TO HEALTH AND SAFETY MANAGEMENT

Road Metals has been operating for over 60 years in the industry and has always taken the health & safety of their employees seriously. They have welcomed both operational and legislative changes and aim to be a leader for other companies to follow when it comes to the safety of their crews. Road Metals continues to provide strong leadership in all aspects of health & safety and is at the forefront of the industry in creating a safer working environment. Regular staff meetings with management take place where safety issues are discussed and actioned if required.

https://www.minex.org.nz/assets/Uploads/Mineral-Sector-Awards-2018.pdf



WHAT WE WILL DELIVER

The AQA is working with the regulator, WorkSafe, to improve the health and safety performance of quarries throughout New Zealand. The AQA works with MinEx, the extractive industries' health and safety council, which provides training and guidance to improve performance at sites.

The AQA also promotes diversity in workplaces, including more opportunities for women in the quarry sector, and the promotion of quarrying as a rewarding career for all demographics.

IWI AND STAKEHOLDER ENGAGEMENT

- Proactive engagement with iwi and communities
 on operations and projects
- Engagement with communities as part of an ESG approach to understanding and managing iwi/ Māori and stakeholder expectations





Social licence is fundamental to the development of, and continued existence of quarries in communities. Iwi/Māori and community concerns can include impacts on amenity (refer to separate section), and on cultural and heritage values. Operators aspire to gain the trust of iwi and stakeholders, and to the extent possible, their acceptance of quarrying.

Community engagement is not only a requirement of any notified resource consent process, or under other environmental legislation and regulation, it is good practice for any quarry project. Topics will include the adverse impacts of quarrying and their management, as well as the benefits, and scoping and addressing people's interests and concerns.

A political and societal shift towards giving effect to te Tiriti o Waitangi is raising the ante on engagement with iwi/Māori, and their expectations of engagement, including for quarries.

WHAT WE WILL DELIVER

Quarry companies can be proactive in their engagement with others. While not everyone will always be happy with quarrying, operators can show they are being responsible in how they manage impacts on people and the environment. Stakeholder maps, and communications strategy help identify relevant audiences, and how and when to communicate and engage.

Engagement underpins the quarry sector's ESG approach; by understanding iwi/Māori and stakeholder expectations, operators can manage them to the standards society expects.



GOVERNMENT TO CONSIDER

Quarries can only be developed where there are economic resources, and ideally close to where materials are needed to reduce transport costs and emissions. The Resource Management Reform is an opportunity to streamline the planning and consenting systems, and to address looming shortages of aggregate resources around the country.

CASE STUDY: WINSTONE AGGREGATES' PUKEKAWA QUARRY PARTNERSHIP WITH IWI

On the banks of the Waikato River, Winstone Aggregates has taken quarrying to the next level in a partnership with local iwi, and nature conservation work. At Pukekawa quarry, the company holds regular hui four times a year with the kaitiaki forum to discuss kaitiakitanga (stewardship) responsibilities in relation to quarrying operations and environmental management. Works have proceeded in a staged manner, to improve the condition of streams and wetlands in the gully environment and the wetlands and other waterways are on the rebound.

https://aqa.org.nz/wp-content/uploads/2021/11/Pukekawa-Quarry-casestudy.pdf



AMENITY

- Reduced visual impacts, airborne dust, noise and vibration, as part of operators' engagement with communities
- Support local community activities such as schools, sports teams and community conservation work





Quarries can produce visual impacts, airborne dust, noise and vibration, affecting neighbours. Traffic movements to and from the quarry gate can also cause concern. These issues have led to excessive complexity in resource consent processes, even though all of these issues can be managed to reduce their impacts on communities. Where quarries are prevented from establishing, this means transporting aggregate from further afield to sites of use, increasing the costs of aggregate, and CO2 emissions.

There is a positive aspect to amenity. Closed quarries can form lakes or other recreational areas. Planting hillsides reduces erosion and improves biodiversity. Quarry companies work with communities to achieve environmental and other outcomes for communities.



GOVERNMENT TO CONSIDER

Quarry operators accommodating iwi/Māori and community concerns is one matter; dealing with a "not in my backyard" mentality is another. Striking the right balance between competing interests is a matter the resource management reform can address.

WHAT WE WILL DELIVER

Quarry operators already comply with resource consent conditions for their activities, eg limits on dust, noise and vibration. Quarry perimeters are often planted in trees, also reducing visual impacts. Operators often exceed regulatory requirements as part of their engagement with iwi/Māori and communities. Volunteer activities are part of earning and retaining social licence, eg supporting local clubs and sports teams, and community conservation efforts.

There is also a communications aspect for the sector: aggregates are essential for developing and maintaining infrastructure, for concrete, and for construction, eg affordable housing. Resources have to come from somewhere, with due regard to cost and logistics of transporting rock from the quarry to sites of use, and to managing adverse impacts on others.

CASE STUDY: RAVENSDOWN'S SUPREME LIME QUARRY

Ravensdown converted two small adjacent dams in a gully used as bioremediation for quarry process water, in an area frequented by cattle, as well as a small gully on higher ground. This entailed fencing off the dams with an appropriate set back, and planting riparian indigenous vegetation around each of them. Species include cabbage trees, mānuka, harakeke (flax), grasses, and toetoe in the wetter areas, and pittosporums, broadleaf, kānuka, and other trees further back from the wetland margin.

https://www.straterra.co.nz/mining-in-nz/sustainability/case-studies/ ravensdowns-supreme-lime-quarry/



FRESHWATER

- Measurement and reporting on quarry impacts on freshwater
- Use of the effects management hierarchy avoid, remedy, mitigate, offset, compensate — to rehabilitate and improve freshwater ecosystems





In much of New Zealand, the moving of overburden, extraction of resources, and other quarry-related land disturbance will affect local hydrology. That includes the diversion or modification of waterways, taking of water and discharges to water. Related impacts can occur on freshwater and riparian ecosystems. There can also be amenity and cultural impacts.

Strict regulation under the Resource Management Act applies to managing impacts on freshwater, including natural wetlands. Local government is increasingly limiting gravel and sand extraction from rivers out of environmental concerns. This creates more impetus for land-based quarrying to meet demand for aggregate.



WHAT WE WILL DELIVER

As part of managing freshwater impacts, quarry operators can measure and report on them. That includes water consumption and discharges to water under resource consents, as well as riparian, wetland and instream restoration and other conservation work. Quarries capture and treat contaminated water before discharge. Operators avoid, remedy, mitigate, offset and compensate for effects on wetlands and other waterways.

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GOVERNMENT TO CONSIDER

Current freshwater regulation prevents earthworks in or near wetlands, and the Government is fixing this error by amending the national environmental standards to allow for the use of the effects management hierarchy. The approach may be extended to national policy statements and other RMA amendments to streamline planning and consenting.

CASE STUDY: STEVENSON AGGREGATES' DRURY QUARRY FRESHWATER MANAGEMENT

Peach Hill Stream and its tributaries undergo regular ecological monitoring for native fish species and macroinvertebrates. Of particular importance to Stevenson Aggregates is the stream diversion channel created to accommodate overburden from quarrying activities. To prevent fish disturbance, Envoco captured and relocated a total of 175 shortfin eels/tuna, and 1 banded kōkopu during the stream diversion, and released them into natural stream habitat downstream.

https://www.straterra.co.nz/mining-in-nz/sustainability/case-studies/druryquarry-case-study/





BIODIVERSITY

- Use of the effects management hierarchy avoid, remedy, mitigate, offset compensate — to manage biodiversity impacts
- Voluntary biodiversity conservation work
- Contribution to managing the national pest and weed problem





New Zealand's rich and internationally significant indigenous biodiversity is in decline. Chief among causes are introduced animal pests and weeds. Other threats include habitat disturbance for alternative land uses, among them farming, forestry, subdivision and infrastructure, and extractives. Unlike many other land uses, quarries over time are a temporary land use. During and after quarrying, operators rehabilitate land into a former use, or an enhanced or new use, including indigenous flora and fauna.

Resource management and conservation policy, law and regulation need to capture the context for biodiversity, and provide land users including quarry companies access to the effects management hierarchy.



GOVERNMENT TO CONSIDER

An earlier draft national policy statement for indigenous biodiversity has proved to be largely unworkable for quarrying and many other land-use activities. Government has acknowledged this. The NPS-IB needs to ensure access for locationally constrained activities to the effects management hierarchy, as does the resource management reform.

Over time quarry companies can recreate habitats on disturbed land, undertake pest and weed control, exclude livestock, and translocate fauna. The planning and consenting system can recognise and provide for these outcomes.



WHAT WE WILL DELIVER

The quarry sector respects significant biodiversity, eg "significant natural areas", and will seek to avoid operating in these areas. The tension is that quarrying is locationally constrained; it can only occur where there are resources. In managing impacts on biodiversity, operators can implement the effects management hierarchy – avoid, remedy, mitigate, offset and compensate for adverse effects. They may also carry out voluntary biodiversity conservation work, and thereby help manage the national pest and weed problem.

CASE STUDY: ISAAC CONSTRUCTION'S PEACOCK SPRINGS

Isaac Construction is unusual among quarry companies in having a conservation trust as its owner. The trust's partnership with the Canterbury contracting company ensures nationally significant conservation of some of New Zealand's rarest bird species.

https://www.straterra.co.nz/mining-in-nz/sustainability/case-studies/isaacconstruction-case-study/



WASTE AND CIRCULAR ECONOMY

- More recycling and reuse of aggregate, construction and demolition waste, and cleanfill opportunities
- Reduced waste at quarries by finding markets for product





The life cycle of aggregate includes infrastructure at end of life, or requiring maintenance, eg roads and flood protection works. It includes materials such as overburden for which there is currently no market. Construction and demolition waste can be recycled and reused. It can be used to backfill quarries and recontour disturbed land, or managed as clean and other types of fill. Former quarries can make good clean fill sites.

Overburden storage is usually in a dip or hollow in the topography, and this is also where waterways form. This waste stream can be reduced by commercialising it, eg as weathered rock suitable for lower-grade specifications.



GOVERNMENT TO CONSIDER

Making the economic case for the circular economy will often require incentives. This is certainly the case for much waste recycling and reuse. Incentives include higher waste disposal levies. More data on waste streams going to land or other fills would help government and others better understand waste disposal, and how to reduce it.

CASE STUDY: AB LIME'S WASTE-TO-ENERGY PLANT

AB Lime takes landfill from across the South Island, capturing methane then used to dry the agricultural limestone it produces at its Southland quarry, and reducing reliance on coal. The company also runs a dairy farm on land it owns, is creating a wetland as part of rehabilitating land, and has planted more than 60 hectares in native forest sourced from its own nursery. For AB Lime, this is the circular economy in action.



WHAT WE WILL DELIVER

The quarry sector can explore more avenues for recycling and reusing aggregate, construction and demolition waste, and cleanfill including overburden. The effects management hierarchy is used to reduce the environmental footprint of quarrying.





GOVERNANCE

WE WILL DELIVER

- Assistance for operators to measure and report on their material impacts on people and environment
- Support a better understanding of ESG in quarrying so that we can understand and reduce the social and environmental footprint of quarrying





To identify and manage material impacts on people and the environment, quarry companies need to have a management system to capture ESG data and other information. ESG governance in companies starts with Board-level strategy and policy on sustainability, including climate change, and social licence. Much of the information needed for ESG is already captured, eg health and safety statistics, energy consumption through financial reporting, and environmental information under resource consents. This needs pooling into one place to make effective use of it.

The ESG approach is an impetus for companies to assess their social and environmental footprint, and to devise ways of reducing that footprint alongside the socio-economic benefits. Quarrying can support climate change action in New Zealand, biodiversity and freshwater management, and communities and regional development.

Under this heading comes internal company policies ensuring regulatory compliance, and systems for taking appropriate action where compliance has not occurred.



GOVERNMENT TO CONSIDER

Internationally, the purpose of a company is moving from delivering value to customers and shareholders, to "sharing value" in a broad sense. Companies are becoming entities that provide rewarding careers, keep their people safe and healthy, engage with their communities and others, and care for their local environment. Governments can recognise this change, and are already doing so, eg new law on mandatory disclosure of climate-related financial risks and opportunities for large companies.

The speed of transition must be paced to allow firms to make rational improvements, in an ESG context. Quarrying does have impacts on people and the environment, and these can be managed effectively. Law and regulation need to recognise this paradigm.

WHAT WE WILL DELIVER



In bringing ESG into our business, quarry companies link their activities to the four wellbeings (economic, social, cultural and environmental), and review annually their social and environmental performance. This in turn leads to developing targets for improvement.

The AQA will assist quarry operators in measuring their material impacts on people and the environment, negative and positive. We can also provide direction for quarry companies in understanding how they impact others, and to consider how to reduce those impacts.

CASE STUDY: FLETCHER BUILDING SUSTAINABILITY REPORTING

Fletcher Building's sustainability strategy has six priority areas: making sustainable building products, reducing CO2 emissions, building healthy homes and sustainable infrastructure, supporting workers and communities, and "transparent environmental, social and governance reporting". The company reports annually on its material impacts on people and the environment, across its quarry, cement and concrete manufacturing, building materials, and construction and contracting businesses. This enables it to reduce its environmental and carbon footprint over time.

SUMMARY POINTS FOR GOVERNMENT TO CONSIDER

To assist the quarry sector adopt and deliver on its ESG commitments, government could consider the following:

- Recognise the role of quarrying in New Zealand society, and that aggregate is locationally constrained; quarrying can only occur where there are economic resources
- 2. Simplify and streamline resource management legislation and regulation, including the planning and consenting systems
- 3. Recognise that the net zero carbon transition will take time for the quarry sector, because of the capital cost of transition, and for the development and uptake of new technologies
- 4. Continue supporting research and other work to enable access to resources near where materials are needed, also to reduce costs and transport-related CO2 emissions
- 5. Continually review health and safety regulations affecting quarrying for relevance, and to ensure the level of regulation is proportionate to the scale and complexity of the activity



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