

Soon we will be at Christmas and what a year it has been



Covid eased, fuel costs soared, the economy limped along and we've had a change of Government. Meantime, demand for all aggregates continues to grow.

Our CEO Wayne Scott gave an insightful paper to the Future Roads conference in November about sand. As with rock and stone supplies, demand for sand is rising and that comes before the new Government starts rolling out its major infrastructure programme.

As Wayne reports on page 3, 90 percent of sand is used in concrete.

Given infrastructure and housing needs, not to mention 100,000 plus new net migrants arriving every year, particularly in

Auckland, we will need to access every possible source of sand and aggregate in the years ahead.

We will be engaging with the relevant new Ministers and their officials to keep that firmly in their sights as they roll out new policies.

One area we want to see change is in the National Policy Statement for Highly Productive Land. Wayne led an effort to get a consenting pathway for quarries in what's included as highly productive land but now there are problems with definitions which have already seen one council commissioner say it allows extraction of aggregate but not removal of overburden.

Clearly this is a nonsense that we are calling for that to be urgently rectified – see story page 4.

One highlight of this year for me and for AQA was hosting the Global Aggregates Information Network GAIN meeting in Queenstown.

It's irrepressible convenor Jim O'Brien has done some analysis of world supply issues noting how China dominates global production and its current economic retraction is biting. Meanwhile though, India is ramping up production. Jim shares his international perspective with us on page 5.

Another international development has been for the AQA to reach out to its British counterpart, the Mineral Products Association.

Wayne Scott has had an introductory Zoom with MPA CEO Jon Prichard. The UK faces some familiar issues; rising demand, difficulties with consents and labour shortages. Jon shares some insights into the British industry on page 2.

AQA Technical Adviser Mike Chilton supports the industry group that continues to plug away to secure the final shape of the new M04 specs that he covers in his update along with news that Waka Kotahi is changing the way it registers quarries.

I trust you'll enjoy reading this edition of Aggregate News, perhaps as you start your summer break.

Enjoy the time off – no doubt 2024 will be just as busy.

Jayden Ellis
Chair, AQA



All quarries need to be on the conveyor belt to approval to meet demand.

A common wealth of shared issues

The AQA has reached out to open links with its UK equivalent

– the Mineral Products Association (MPA).

AQA CEO Wayne Scott recently met MPA's CEO Jon Prichard over Zoom.

The initial focus was learning more about the UK's much lower workforce death rate, but the discussion widened into some of the other challenges and opportunities the two organisations face.

The MPA is vertically integrated with around 640 quarries operated by members (similar to AQA), more than 1000 sites involved in concrete production, 273 asphalt plants and 137 recycling facilities among the 2300 sites actively managed by members.

The UK is also a leading exponent of sand and aggregate dredging off its coast, particularly near major markets such as London.

In 2022, 191 million tonnes of primary aggregates (quarried crushed rock and both quarried and marine-dredged sand and gravel) were produced in the UK. That's around four times our own production, recalling we are a population of just five million, compared to the UK at 62m.

Recycled aggregates figure much more prominently than here as does moving aggregate by ships, barges and rail as complements for road transport.

"It's getting much harder to win new material because of the

increasing population and population density," says Jon.

Echoing AQA's current messaging to our politicians, the MPA warns UK aggregates are being consumed almost twice as fast as they are being replaced with new permitted quarries.

Between 2012 and 2021, for every 100 tonnes of land-won sand and gravel sold, only 63 tonnes have been replaced through new planning consents.

For crushed rock, the replenishment rate falls to 52 percent. The continuing decline in permitted reserves for primary aggregates over the past 15 years is said to be unsustainable, raising the prospect of future local supply shortages.

Most independent small and medium size quarrying companies in the UK are MPA members, as well as nine major international and global companies.

Jon Prichard says the industry provides a foundation to the British economy as represented in the graphic in its promotional booklet.

He says growth in demand for materials in the UK is rising with more than one million tonnes of materials produced daily across the UK. Industry turnover had risen from 16 billion sterling in 2016 to 22 billion sterling last year – \$45 billion.

Moreover, the 80,000 people employed by MPA members are said to be highly productive – 1.5 times more than the UK average.

Labour recruitment is a challenge, particularly after Brexit, which ended easy access to labour from across the Channel.

Jon says the UK industry now has to compete in a reduced labour market that struggles with promoting vocational skills.

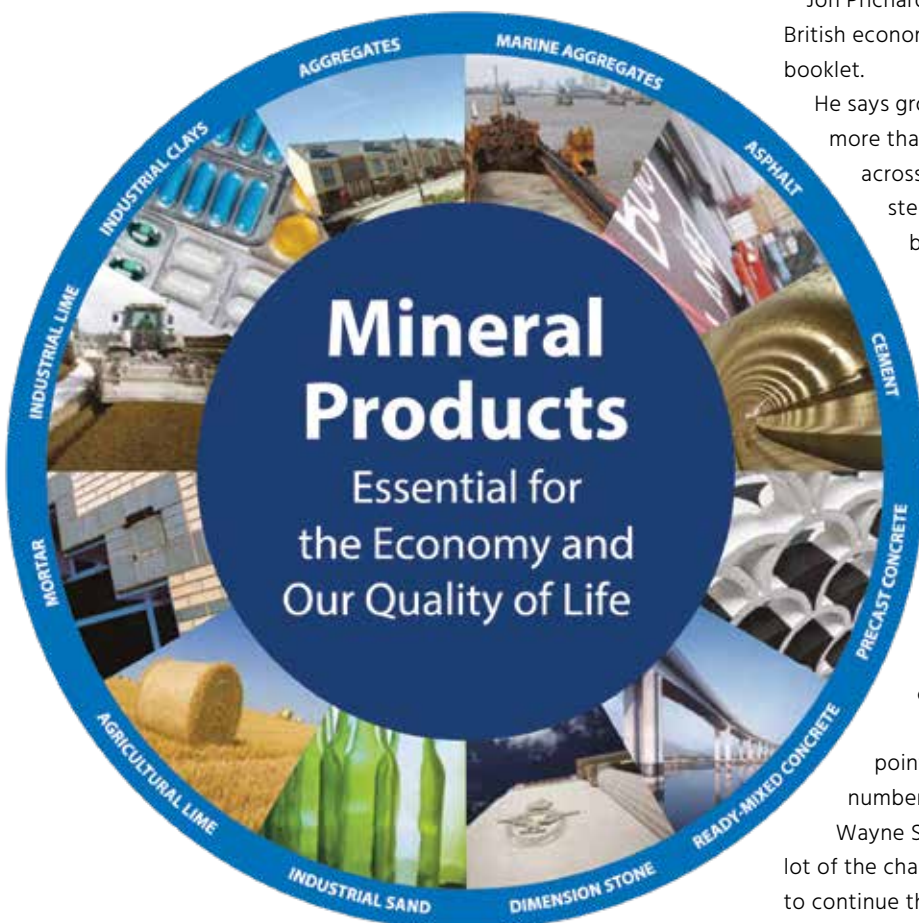
There are also challenges in recruiting British labour with millennials wanting warmer, more comfortable environments than a quarry or concrete plant.

The result was having to increase the range of entry points for school leavers including offering a greater number of apprenticeships.

Wayne Scott says the AQA and NZ quarry industry shares a lot of the challenges faced by the UK and he and Jon have agreed to continue the dialogue. **AQA**



Jon Prichard.



Time to take the sand out of the gears

New Zealand needs to have some adult conversations about where the aggregate and sand is going to come from to meet infrastructure, housing and roading demand as well as an increasing population.

That was the key focus of a presentation by AQA CEO Wayne Scott at November's Future Roads conference in Hamilton framed around sand production.

Wayne noted much of the rest of the world uses the word 'sand' to cover all aggregates. He says looming demand shortages for both apply here in New Zealand, and we are already the third largest user of sand and aggregates per capita after China and Canada – largely due to our long roading networks.

He says we produce around 3.8 million tonnes of sand annually, 70 percent from rivers and alluvial sources, 25 percent from marine extraction – principally around or near Auckland's coastline – and five percent manufactured sand or from beaches.

Some 90 percent of our sand is used in concrete production.

Wayne says climate change is impacting the ability to continue extracting most of our sand from North Island rivers and nearby alluvial deposits. The Wairarapa used to principally rely on these sources for both sand and aggregate, but two years of drought had forced a move to land-based extraction.

The public perception of riverside extraction is also 'negative', despite the fact that this helped reduce flood risk.

Taking marine sand also faced strong opposition although this was increasing around the world. "It's seen as more environmentally friendly than dredging near rivers or beaches."

Here, environmental NGOs were trying to get marine extraction banned and the attitude of the new Government was not yet clear.

There'd been some talk of manufactured sand replacing marine sand when renewal consents for McCallum Bros Pakiri operations were in the media, but Wayne said this has its own environmental and cost constraints.

Manufacturing sand requires quarried rock and getting consents for quarries was getting harder and harder.

The most recent major new quarry approval – Fulton Hogan's Roydon quarry near Templeton on the outskirts of Christchurch – took three years, cost millions of dollars, and came with over 200 consent conditions though the nearest affected neighbour was 700 metres away.

Manufacturing sand was also energy intensive with crushing and re-crushing that meant it tended to be more costly.

A conference delegate noted that manufactured sand had not taken off here despite the presence of Kayasand for a decade or more, and asked if this would change.

Wayne said traditionally sand manufacturing was done dry while most New Zealand quarries operated with water to reduce dust, so that presented a further challenge.

However, he said manufactured sand did reduce cement usage although workability issues needed to be addressed and in Australia they produced a blend with natural sand.

Another possible source of sand was that left over from mineral sand extraction. Two operations existed but given both were in the South Island, there would need to be a huge investment in shipping and port infrastructure to make exporting and importing the sand viable.

These are all parts of the conversation New Zealand now needs as we scramble to meet rising demand for sand and aggregates, says Wayne. **AQA**



Wayne Scott

The Aggregate & Quarry Association appreciates the support of our members





AQA wants quarries better defined in planning document

After a win that saw a consenting pathway for quarries included in a Government document on Highly Productive Land, the AQA is now having to submit on necessary amendments.

CEO Wayne Scott says poor definitions in the *National Policy Statement for Highly Productive Land* (NPS HPL) has already seen one quarry resource consent get the bizarre approval to be able to extract aggregate without the capacity to remove overburden.

He says the current NPS-HPL places a significant focus on land-based primary production and reliance on use of the soil.

"That does not align with the original intent of the NPS-HPL, which aimed to protect HPL for future primary production (including quarrying) and recognise more than soil in the productive capacity of land for primary production."

He says the NPS-HPL does provide for 'aggregate extraction', but the Commissioner in a resource consent hearing for Peach Island quarry in Tasman, determined this only meant extraction; therefore, no other activities associated with quarrying – including stripping and stockpiling of overburden – would be allowed through the exemption given under the NPS-HPL.

The Commissioner went on to say that the "public benefit" test need not consider the cost of aggregates from elsewhere nor the carbon emissions.

Wayne's submission is that the term 'aggregate extraction' should be replaced with 'quarrying activities'.

He also notes that a third of NZ's active quarries, over 300, are on or intersect with Land Use Capability (LUC) Classes 1, 2 and 3.

This includes many in Auckland/Waikato (Smythe's and Whitehall Quarries among them), Otaki Quarry near Wellington,

Poplar Lane quarry in Bay of Plenty and various Canterbury quarries.

These would all be directly impacted by the NPS-HPL as first drafted which has a clause stating: "Aggregate extraction that provides significant national or regional public benefit that could not otherwise be achieved using resources within New Zealand."

Wayne says the phrase "could not otherwise be achieved using resources in New Zealand" is both ambiguous and unnecessary in terms of quarrying activities.

"Taken literally there will never be another quarry approved on HPL as there will always be resources elsewhere, albeit that they may be difficult to access, very expensive to cart long distances and create significant increases in carbon emissions from transport."

He says this lack of clarity could lead to inconsistent decisions by councils across the country.

"We consider it imperative that local authorities are directed to protect key resource areas and enable their development, including as a use of Highly Productive Land.

"Quarries are mostly located in rural areas and need protection from encroachment of non-compatible land uses such as housing, reduction of reverse sensitivity potential, and to enable the expansion of these resources and development of new greenfield resources."

A decision on the final shape of the National Policy Statement for Highly Productive Land is expected early next year. **AQA**



China – The world's biggest aggregate producer and biggest GAIN delegation in Queenstown. Jim O'Brien fourth from right.

China and India key to world aggregates production

World aggregates production has still not returned to pre-Covid levels and China's economy is the biggest question-mark, according to analysis by GAIN – the Global Aggregates Information Network.

Jim O'Brien, the irrepressible GAIN Convenor, has provided the analysis in an article he wrote for the International Cement Review publication.

Jim says the AQA-hosted meeting of GAIN in Queenstown in July this year found the industry in resilient recovery post-pandemic and poised to address and benefit from future challenges.

He says China's aggregate production declined by 11.5 percent in 2022 due to the country's economic weaknesses. That still saw 17.4 billion tonnes produced and demand picked up a little in the early part of this year with hopes this would continue. Per capita use of aggregates in China remains at a healthy 12.2 tonnes, although Jim notes some nervousness on possible future volatility in demand and pricing due to over-capacity.

India is the second-largest and fastest-growing aggregates market globally and is likely to continue rising given current Indian per capita demand at 3.9t is only one-third that of China, illustrating its huge further growth potential.

After suffering an 18.5 percent decline in demand in 2020 during the pandemic, India had returned to strong growth with 5.6 billion tonnes of production expected in 2023.

However, India's aggregates industry remains highly fragmented and does not have a functioning national aggregates association, though this is now being addressed.

"Current growth is being driven principally by massive infrastructural investments in roads, railways, ports and airports," says Jim.

By way of contrast, he says New Zealand continues positively with 50Mt production corresponding to 9.6t/capita and Australia remains in positive mode with national production estimated at 211Mt, equivalent to per capita demand of 8.4t.

Jim says both countries have challenges accessing resources,

particularly around Auckland and more so Sydney, which is now receiving aggregates from 175 kilometres away.

He says China's slowdown and the lingering impacts of Covid in developing regions were the principal causes of a drop in world aggregate production.

The world total had dropped from 44 billion tonnes in 2019 to 41.2Bt in 2023 – a decline of 6.5 percent.

"It is hoped that the pre-pandemic global demand of 44Bt could be regained by 2025, but that will depend predominantly on Chinese demand remaining stable.

"Looking ahead towards 2030, assuming a positive global geopolitical outlook with resultant economic growth, coupled with the twin demands of population growth and urbanisation, there is a possibility that global demand could reach 50Bt by 2030.

"These figures demonstrate that aggregates are by far the most-used product on the planet, with the industry having an economic value similar to that of the cement sector – both points that are often overlooked," says Jim.

The global aggregates industry is estimated to employ 3.5M people worldwide, offering global career opportunities.

He says GAIN members are enhancing communications to all stakeholders, explaining the vital roles the industry is playing in providing an essential product through local employment, caring for the environment, promoting recycling and fostering biodiversity.

Jim says there are very successful sustainable development awards run by several GAIN members, including Europe, USA, Australia and New Zealand, which showcase industry excellence.

The next GAIN meeting will be hosted by Argentina in November 2024 and virtual meetings continue at quarterly intervals. **AQA**

AQA Technical update

Quarry Products Technical Training

- Scripts are being prepared for the short videos. These will be finished this year and probably recorded early in the new year.
- Discussions with the Institute of Quarrying Australia and the wider networks of the NZ Institute of Quarrying is ongoing to prepare the proposed one-day training course. There has been wide interest in this training already.

Asset Management Data Standard (AMDS)

- The Waka Kotahi AMDS aims to be a system to provide more streamlined planning and implementation for activities on the roading network by collecting data in a consistent way.
- As part of the programme, the Transport Agency is looking at the current data – mainly limited to name and location – for quarry providers and planning a “tidy up” which AQA is helping with.
- There are several quarries that are known by different names which is causing confusion and change requests. AQA will

provide advice to sort this out.

Hawke's Bay Recovery

- The Hawke's Bay Regional Council arranged aerial photos and LiDAR collection shortly after the cyclone in February.
- The aerial photos were available shortly after the event, but the LiDAR has required more processing. This has now been published through LINZ. Go to www.data.linz.govt.nz and search for “Gabrielle” to find the latest aerial information.

NZP&M Production Figures

- There is still time to enter your quarry production for 2022 on the NZP&M website. This is very important information to our industry and your participation is strongly encouraged.
- If you do need help with preparing the return, please contact AQA Technical Adviser Mike Chilton: tech@aqa.org.nz **AQA**



AQA Board

Chair

Jayden Ellis
Stevenson Aggregates

Tim Hazell
Winstone Aggregates

Ian Wallace
Winstone Aggregates

Deputy Chair

Mike Higgins
J Swap Contractors

Tony Hunter
Blackhead Quarries

Peter Walsh
Fulton Hogan

<https://aqa.org.nz/our-members/>

Aggregate & Quarry Association of NZ

PO Box 10668
Ground floor 93 The Terrace
Wellington 6143
0800 469 272

Chief Executive Wayne Scott
wayne@aqa.org.nz
021 944 336

www.aqa.org.nz

Technical Committee

Chair

Clare Dring
Fulton Hogan

Jayden Ellis
Stevenson Aggregates

Michelle Farrell
Civil Contractors NZ

Paul Donoghue
Concrete NZ

Stacy Goldsworthy

David Morgan
Winstone Aggregates

Cobus van Vuuren
Aggresmith

