

'Critical' silica gains global spotlight

BY ANTHONY FENSOM

The sun is shining on Australia's silica sand industry amid rising demand from the solar energy and electronics industries.



Exploration at Diatreme's Galalar Silica Project, Far North Queensland. Image courtesy of Diatreme Resources

THE SURGE IN demand from the clean energy sector has attracted some new participants to the silica sand industry, which has gained increased recognition due to its role as a ‘critical mineral’ and its importance in decarbonisation.

Already listed as a critical mineral in the European Union, India and Japan, silicon was added to the Australian Government’s Critical Minerals Strategy in its March 2022 report.

High-quality silica sand is used as a raw ingredient for semiconductors used in electronics, computer processors and photovoltaics, making it vital for a number of key industries.

‘High-purity silica, such as that available in Australia, is an increasingly strategic product, with demand increasing but supply constrained,’ says Neil McIntyre, CEO of emerging producer Diatreme Resources.

‘Our projects in Far North Queensland are well placed to benefit, given our proximity to Asian markets, the quantity available of high-quality silica sand and the environmental, social and governance benefits of a well-regulated and sustainable industry.’

Located near the world’s biggest silica sand mine at Cape Flattery, Diatreme’s projects have attracted international attention.

In June, Diatreme announced a ‘transformational’ strategic partnership with Brussels-based Sibelco, a global material solutions company, to advance its silica sand projects towards production.

Under the agreement, Sibelco will become a significant shareholder in Brisbane-based Diatreme, while also investing in its projects, with the total investment reaching \$52 million.

A market leader in specialty silica, Sibelco boasts 120 production sites and 5100 employees worldwide, having operated internationally for 150 years.

‘Having access to Sibelco’s world-leading technical, processing and marketing expertise is a step change for Diatreme that propels us onto the global stage, enhancing the successful development of our projects,’ McIntyre says.

‘Sibelco is the perfect partner for us to unlock the value of our world-class silica sand deposits for the benefit of both companies and all our stakeholders, including our First Nations partners and other local communities.

‘Having grown our silica sand resource base to around 200 million tonnes, and with room for further expansion, we are now perfectly placed

with Sibelco’s support to secure a leading position in the fast-growing global high-quality silica sands industry, and assist in powering Asia’s solar energy revolution.’

Diatreme is moving to expand its high-grade silica resource base, with further drilling planned at its Northern Resource project. It is also working with port authority Ports North to access the existing Port of Cape Flattery, reducing environmental impacts and transport costs, and providing a pathway to market for its exports.

Significantly, Diatreme estimates that production from its projects could be used to produce more than 3.2 billion solar panels, saving the equivalent greenhouse gas emissions of 38.7 million Australian households or 132 million cars.

With Australian Prime Minister Anthony Albanese recently commenting that most solar panels in the world are ‘made overseas’, the potential for a homegrown industry exists.

‘Diatreme has previously held discussions with the authorities in Townsville regarding potential opportunities for downstream processing. There’s no doubt that with the right incentives in place and support from all stakeholders, Australia could expand production of its own solar panels for the fast-growing solar power industry,’ McIntyre adds.

The company is also working hard to ensure that it has a social licence to operate, having given traditional owners a direct equity stake in its key project, and with high Indigenous employment and training targets for its planned operations.

‘No mining company can operate without the support of the local community. Building a strong relationship with traditional owners and other local stakeholders has been a focus for Diatreme since day one,’ McIntyre says.

Other new silica project proponents have emerged, too, with ambitions to support the nation’s supply growth.

Also located near Cape Flattery, Brisbane-based Metallica Minerals is advancing its own Cape Flattery silica project. In August, it signed a memorandum of understanding with Japanese trading house Mitsui for potential offtake. Earlier the same month, it appointed a study manager for a definitive feasibility study for the project.

WESTERN AUSTRALIAN PROJECTS

Western Australian silica sand projects are also progressing, with a number of different companies involved in the sector.



Drone exploration at Diatreme's silica sand projects, Far North Queensland. Image courtesy of Diatreme Resources

In August, VRX Silica announced a maiden mineral resource for its Boyatup silica sand project, located 125 kilometres east of Esperance, adding to its Arrowsmith and Muchea projects.

The company is targeting first production in 2023 at its Arrowsmith North project, followed by Muchea, Arrowsmith Central and Boyatup.

Also in Western Australia, Perpetual Resources' flagship asset is the Beharra project, located 96 kilometres south of Geraldton. In August, the company announced that Beharra's silica sand was 'extremely high-quality', aiding potential talks with offtakers.

Elsewhere, Australian Silica Quartz is examining a scoping study for its Albany White Hill silica sand project, while Suvo Strategic Minerals has studies underway for its Eneabba project near Geraldton and its Muchea project near Perth.

With silica sand 'the most used commodity on the planet behind water', Suvo points to the market growing to US\$30.9 billion by 2027, up from US\$21.6 billion in 2022.

Some 40 million tonnes per annum of high-quality silica sand is needed for the Asia-Pacific region by 2026, according to IMARC Group, with this region also the fastest-growing globally.

The solar panel photovoltaics market is also seeing significant growth, and is forecast to reach US\$48.2 billion by 2025.

'High-grade silica sand is relatively rare, and is experiencing booming demand. This is because high-purity sand is required for making both flat glass and container glass, as impurities such as sulphides and iron will cause imperfections,' Evolution Capital Advisors said in a July 2021 report.

'Supply is diminishing, as a lot of the sand used in Asia comes from rivers where environmental concerns are increasingly restricting extraction,' Diatreme Resources noted in a July 2022 presentation.

'No direct substitutes exist for the majority of applications,' it added.

For emerging miners such as Diatreme, the outlook is exceptionally bright for an industry considered key to the world's decarbonisation drive.

'There's no question that the world needs our product, and we have the right high-grade product in the right location to benefit. It's our time to shine as, backed by our partners, we advance our projects into production to meet the ever-growing demand,' McIntyre says. ⚡