

SIZZLING SANDS

BY ANTHONY FENSOM

The global solar energy boom is driving increased demand for low-iron, high-purity silica sand. Fortunately for Australia, that is exactly what the nation's silica sand mining industry can deliver.



THE INTERNATIONAL ENERGY Agency's (IEA's) 'World Energy Investment 2025' report highlights the scale of demand, with around US\$2.2 trillion expected to be invested this year in renewables, nuclear, grids, storage, low-emission fuels, efficiency and electrification – twice as much as the US\$1.1 trillion going to oil, natural gas and coal.

'Spending on low-emissions power generation has almost doubled over the past five years, led by solar photovoltaic (PV). Investment in solar, both utility-scale and rooftop, is expected to reach US\$450 billion in 2025, making it the largest single item in our inventory of the world's investment spending,' the IEA says.

The IEA expects solar PV to become 'the largest renewable energy source by 2029', surpassing both wind and hydropower. Reaching net zero targets by 2050 could require the equivalent of 'installing the world's current largest solar park roughly every day', according to the Paris-based organisation.

With 70 per cent of every solar panel comprised of glass made from high-purity, low-iron silica, Australian silica sand miners are eyeing an enormous opportunity.

Other demand drivers include demand from the construction sector for flat glass used in windows,



Neil McIntyre, CEO, Diatreme

as well as for automobile glass and from the foundry market.

Australia is currently the largest exporter of silica sand in the Asia-Pacific region, with 2025 exports estimated to exceed 2024's 3.3 million tonnes.

Industry analyst IMARC predicts the global silica sand market will grow from US\$25.4 billion in 2024 to US\$38.3 billion in 2033.

'There's no question that the world needs more of Australia's silica sand to power the solar energy boom. We're working as fast as we can to develop new projects to satisfy the growing demand, boosting regional



Water testing at Diatreme's Northern Silica Project



Onsite at the Northern Silica Project

development, while also supporting the global clean energy transition,' says Neil McIntyre, CEO of silica sand miner Diatreme Resources.

Diatreme is focused on developing its Northern Silica Project (NSP) north of Cooktown, Queensland, into a long-life silica sand mining operation. The company is currently progressing a pre-feasibility study for the project, together with an environmental impact statement, targeting a final investment decision by the second half of 2026.

'The NSP has the potential to become a multi-decade-long operation, producing up to five million tonnes annually of silica sand over 25 years, with around 200 employees in construction and 120 in operation, providing significant economic benefits for the Far North Queensland economy,' McIntyre says.

'Importantly, the NSP will support Australia's national Critical Minerals Strategy as a proven source of high-purity, low-iron silica for the solar PV and specialty glass industry.'

Diatreme estimates its silica sand resource exceeds 500 million tonnes across its Cape Flattery and Cape Bedford projects, with the potential for an additional 115 million to 275 million tonnes from the Casuarina East and West systems near Cape Flattery.

During a site visit in July 2025, the company noted the proximity of the Port of Cape Flattery to Diatreme's proposed development area, with the port estimated to only be using half its nameplate capacity of six million tonnes per annum.

'We are continuing to engage with the Queensland Government's port authority, Ports North and others

to ensure a sensible access regime is implemented, minimising environmental (marine) and cultural disturbances, while ensuring the development of this critical mineral is undertaken in the near term, in a market where we compete against offshore developers that do not apply the same environmental rigour,' McIntyre says.

WESTERN AUSTRALIA PROJECTS

New silica sand projects are also under development in Western Australia. On 2 September, VRX Silica announced its Arrowsmith North silica sand project had received environmental approval from the Western Australian Government.

VRX Managing Director Bruce Maluish describes the approval as 'a significant milestone for VRX and clears the pathway to finalise remaining approvals and permitting ... we now look forward to maintaining engagement with all our Arrowsmith North stakeholders as we move towards commencement of construction followed by mining.

'VRX is now actively focused on finalising infrastructure solutions for the project, binding offtake agreements and project finance, with a goal of first production in 2026.'

Located 270 kilometres north of Perth, Arrowsmith North is described by VRX as containing a 'globally significant deposit of high-quality silica sand underpinning a mining project that will enable long-term production for the foundry, container glass and flat-glass markets in Asia'.

Also in Western Australia, McLaren Minerals has streamlined its portfolio of silica sand projects, retaining

only the Sparkler A, Pink Bark A and Dune Buggy projects, in addition to its flagship McLaren mineral sands project.

‘The retained silica projects remain in good standing and are being actively reviewed for their future viability, and while there has been interest expressed by third parties, no formal engagement has yet taken place,’ the company stated in its annual report.

Industrial Minerals (IND) announced on 5 August that it had secured a 12-month extension of the option agreement for its Pippingarra Quarry Project in Western Australia.

‘The extension reflects the substantial progress made by IND under the agreement to date, including extensive geological assessment, metallurgical testwork, and the development of 3D modelling to define high-purity quartz and lithium targets,’ the company said in a statement.

IND said it is ‘targeting the growing global market for high-purity quartz products used in

advanced manufacturing, semiconductor, solar and electronics industries’.

Another Western Australian company, Perpetual Resources, says it has received ‘inbound corporate interest’ in its Beharra silica sand project, located 96 kilometres south of Geraldton.

CAN THE SILICA SANDS INDUSTRY’S GROWTH SPURT CONTINUE?

Diatreme’s McIntyre says all the drivers are in place, based on continuing demand growth and constrained supply, added to the benefits of Australia’s proximity to Asian markets.

‘Queensland has a strong claim to having the highest-quality silica in the world, with this high purity positioning the state and the nation as a significant player in the global supply chain for this critical mineral of the 21st century,’ he says. ↩

