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SILICA SURGE

Australian Resources & Investment, Melbourne



Diatreme exploration drilling at the Galalar silica project.

BY ANTHONY FENSOM

Silica continues to be considered a commodity of the future as demand expectations grow off the back of expansion in the solar panel market.



Diatreme Resources CEO Neil McIntyre.

Australia's emerging silica sand producers are eyeing a bright future, as the 'new economy' mineral benefits from a global economic upturn and solar energy boom.

With new projects under development across the east and west coasts, production is ramping up amid increasing demand and dwindling supply.

"Silica sand is in demand, particularly premium quality silica, as it is an essential ingredient for the fast-growing solar industry and other high-tech glass applications," Diatreme chief executive officer Neil McIntyre says.

"For Australia, this is an enormous opportunity as we create the minerals vital for the clean economy of the 21st century."

NEXT LITHIUM

Just how much of an opportunity is highlighted by the latest data from the International Energy Agency (IEA).

In its World Energy Outlook 2020, the Paris-based organisation described solar as "the new

king of electricity," with solar PV (photovoltaic) "consistently cheaper than new coal or gas-fired power plants in most countries."

Solar is expected to lead a renewable energy boom across the Asia-Pacific, with analysts Fitch predicting solar capacity will overtake wind as early as 2021, growing at an average annual rate of 9.8 per cent.

Top markets for the solar PV surge include China, India, Japan and Taiwan, while Australia ranks first in the world for installed PV capacity per capita.

Solar PV electricity generation is seen rising from 664 terawatt hours (TWh) in 2019 to 4813 TWh through to 2040, and potentially as high as 8135 TWh over the same period should nations pick up the pace on emissions reduction, according to the IEA.

Researchers at LUT University of Finland predict solar could become the major energy supplier by the middle of the century, generating as much as 76 per cent of global electricity demand.



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With high purity silica a major component of solar panels, demand is booming, together with other applications including smartphone screens and even vials for vaccines.

Lower quality silica is seeing rising demand too, driven by its use in construction, foundries and other industrial uses, particularly as the world emerges from the COVID-19 pandemic.

IMARC estimates the global silica sand market could expand from \$US8 billion (\$10.27 billion) in 2019 to \$US20 billion in 2024, boosted by accelerating growth in the solar panel market, which is projected to reach \$US48 billion by 2025. The Asia-Pacific is seen as the fastest growing silica sand market, with the potential to reach \$US8 billion by 2026.

The bullish forecasts have prompted analysts to describe silica as the 'next lithium,' given its potential to emerge from relative obscurity to become a major force in the clean energy boom.

This is particularly the case due to growing environmental concerns over illegal sand mining in Asia, with Australia offering a more sustainable and regulated product.

NEW PRODUCERS

Australia's listed miners have seized the moment to launch a number of new silica sand projects, including both in Queensland and Western Australia (WA).

In Queensland, Diatreme's Galalar silica project is picking up speed, with the company planning to produce a high quality, low iron product for the solar PV market. The project is located near Cape Flattery, home to the world's largest silica sand mine.

In March, Diatreme announced a 30 per cent expansion in the estimated silica resource to more than 61 million tonnes, increasing the prospects for a long-term operation.

The company has also reported positive results from metallurgical testwork, showing the project's ability to produce a premium product.

Political impetus has also advanced, with federal lawmaker, Warren Entsch, describing Galalar as "transformational for Hope Vale and Cooktown ... a great example of how sensible, low impact development can have a profoundly positive impact on local communities."

With the Galalar project set to create more than 110 local jobs, the economic benefits for the Cooktown and Hopevale region will be significant.

The company aims to secure the necessary environmental and mining lease approvals this year, with potential first production from 2022.

Diatreme is also examining downstream processing opportunities in Townsville, which could potentially host glass manufacturing operations to supply the solar panel market.

"Galalar has enormous potential to deliver benefits for the whole region, supporting its post-pandemic recovery and helping to advance the clean energy revolution," Diatreme's McIntyre says.

Similar to Galalar, another Queensland company, Metallica Minerals is planning to develop a project near Cape Flattery. The company has estimated a 38 million tonne silica resource at its project, Cape Flattery Silica, with a scoping study to be released in 2021.

Meanwhile in Western Australia, VRX Silica is developing three projects in the state with a combined estimated resource of more than 1 billion tonnes.

In a May investor presentation, the company outlines that the scale of its projects could provide a long-term opportunity for the



Diatreme water boring activities at the Galalar project.

WA glass manufacturing industry. It aims for first production at its Arrowsmith North project in late 2021, followed by its Muchea and Arrowsmith Central projects.

Also in WA, Perpetual Resources has estimated a 139 million tonne resource at its Beharra silica sand project. A pre-feasibility study (completed in March 2021) says the project has "capability to become an essential low impurity supplier of high-quality silica sand products to the rapidly growing Asia-Pacific glass and foundry sand markets."

Other WA project proponents include Australian Silica Quartz, which is progressing its Albany White Hill silica sand project and Suvo Strategic Minerals, which is advancing its Nova silica sands project.

WILL AUSTRALIA'S SILICA BOOM CONTINUE?

A March 2021 report by CNBC highlighted that an insatiable global appetite for sand could spark a major shortage of this key commodity. The global rate of sand use, which has tripled over the past two decades due to urbanisation, has eclipsed the natural rate of replenishment.

"Is it time for panicking? Well, that will certainly not help, but it is time to take a look and change our perception about sand," Pascal Peduzzi, a climate scientist with the United Nations Environment Programme, is quoted saying.

For a long underappreciated commodity, silica has suddenly become very big news. ARRSI