



Lithium Australia

builds tenement portfolio to support technological edge

Lithium Australia (ASX: LIT) was one of the first ASX-listed companies to realise lithium's potential.

The company came to market spruiking the development of radical disruptive processing technology that it subsequently applied to lithium silicates.

Lithium Australia's trademarked Sileach process is a hydrometallurgical method of recovering lithium from spodumene, currently the primary source of hard-rock lithium production.

The Sileach process aims to reduce the cost of producing lithium chemicals by recovering lithium without the need for roasting, an energy-intensive and expensive step required with conventional methodology.

The cost of roasting is so high with current processes that in most cases it renders low-grade lithium deposits uneconomic.

Sileach emerged triumphant from independent laboratory tests, with its feats of strength including lithium extractions of up to 98 per cent in four hours from alpha spodumene.

Further testing proved the process can be adapted to the recovery of lithium from all lithium silicates.

With commercialisation of the Sileach process now well underway, Lithium Australia is confident it can change the profile of the lithium production cost curve, establishing parity between hard-rock and brine producers.

The success of the Sileach process led to Lithium Australia being awarded an Innovations Connections Grant under the Australian Government's Entrepreneurs' Programme, which is overseen by the Department of Industry and Science.

Under the terms of that grant, the company has partnered with ANSTO Minerals, a division of the Australian Nuclear Science and Technology Organisation.

The partnership allows Lithium Australia to utilise ANSTO Minerals' testing facilities at Lucas Heights in New South Wales and also affords the company 100 per cent of the intellectual property rights in the Sileach process, with equipment and services for pilot testing and technical services provided on an ongoing basis.

Lithium Australia's development plan is to establish alternative processing options for companies with hard-rock lithium assets.

With Sileach offering a lower-cost alternative to the conventional roast/leach processes, the company believes it can render stranded assets viable by facilitating the processing of lower-grade spodumene deposits previously considered uncommercial.

"I think it's important that people take a close look at our corporate philosophy – we want to establish processing hubs on a global basis wherever lithium mining and production is expanding,"

Lithium Australia managing director Adrian Griffin told *The Resources Roadhouse*.



That philosophy involves the launch of a new wave of lithium production, based on factors that include: a paradigm shift in the costs of processing lithium minerals; the development of central processing hubs; the establishment of partnerships that match resources with the most efficient processing technology, and development of the company's own resources as insurance for feed supply into the processing hubs.

"Our main strategy in establishing such a comprehensive portfolio of lithium projects is the processing," Griffin explained.

"Technology is the first string to our bow, and the second is developing resources that back it up.

"That way, it doesn't matter what happens to another company's operations we'll always have an alternative source of material to put through our plant."

As an early mover in the lithium sector, the company has identified a number of emerging lithium provinces around the world, and is working to acquire and develop a strategic footprint in those locations.

Included in Lithium Australia's expanding inventory are deposits in the Yilgarn Craton of Western Australia, covering such iconic mining jurisdictions as Kalgoorlie (Goldfields Lithium Alliance) and Ravensthorpe.

At Ravensthorpe, the company is focusing its exploration on lithium-bearing pegmatite swarms extending to the southwest of a neighbouring development currently the subject of a \$700 million merger between Galaxy Resources (ASX: GXY) and General Mining Corporation (ASX: GMM).

"Ravensthorpe is a good example of what we're trying to achieve, given we have a \$700 million merger operating right next door," Griffin said.

"Those pegmatites at Mt Cattlin are in the same geological sequence as our substantial swarm of pegmatites along strike and in the same geological environment.

"The area has the potential to add significant quantities of lithium mica to our inventory, and to become an integral part of our plan to establish a processing facility for lithium micas in WA.

"They contain a lot of lithium; there's no doubt about that."

Lithium Australia's portfolio also takes in deposits at Lake Johnson and at Greenbushes, the latter adjacent to the world's largest existing lithium mine.

The company's portfolio is further augmented by the potential for both spodumene and lithium mica mineralisation styles identified in WA's emerging Pilgangoora lithium district, south of Port Hedland.

Lithium⁺ Australia^{NL}

The region is quickly becoming a desirable location for explorers aiming to establish a toehold with lithium resources based around previously identified spodumene-bearing pegmatite mineralisation.

“The reason we're so focused on Pilgangoora is that it's endowed with enormous amounts of spodumene, and we believe we have the right technology to get the operating costs of producing lithium chemicals from spodumene down to rock bottom,” Griffin said.

“Potentially, we can provide an avenue for companies to become the cheapest lithium chemical producers with respect to the material that comes out of spodumene.

“We can do that by getting their operating costs down, which means they can process a much lower grade of material than their competitors.

“If you look at conventional processing, the commercial grade of spodumene is nothing less than six to seven per cent, which often results in a great deal of lower-grade, sub-economic material being thrown away.

“What we're helping achieve is the ability to build a sustainable business that processes low-grade material all the time.”

Around the middle of 2016, a pilot plant in NSW will begin trials of the Sileach process.

The pilot testing will provide data for the study of a full-scale Sileach demonstration plant in WA.

Port Hedland is the company's favoured destination for that plant, which is expected to cost around \$20 million.

A commercial decision on its construction could be taken as early as December.

Lithium Australia makes no apologies for focusing on WA as the location of its first regional production hub, believing it would be enormously beneficial for the state.

“If you set up the processing hubs we're proposing, Western Australia could lead the game and be home to some of the cheapest lithium production in the world,” Griffin maintains.

As things stand, 40 per cent of the world's lithium is exported from WA as spodumene concentrate, which is then processed into lithium chemicals in China.

Lithium Australia believes that establishing a local facility to produce and export lithium chemicals would allow the state to instead capture some of the premium generated from a value-added product.

There is a big difference between current lithium carbonate spot prices in excess of \$20,000 per tonne, and the spodumene concentrate which sells for about \$3,500 per tonne of lithium carbonate equivalent.

“The lithium industry is expanding so rapidly at the moment, but we're still exporting concentrates rather than the value-added product,” Griffin said.

“Imagine the royalty stream Western Australia is missing out on because miners export the concentrate rather than the value-added product.

“We've got the technology to take spodumene run it into an integrated circuit and send the lithium straight to factories in Japan or Korea, bypassing the Chinese converters that are a bottleneck in the supply chain.”

With spot lithium carbonate prices currently around \$23,000 per tonne, the annual revenue differential generated by exporting the value-added product could be around \$800 million dollars.

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(ASX: LIT)

... the short story

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