



Lithium Australia (ASX: LIT)

## Lithium Australia Eyes Port Hedland for Sileach Plant

If Lithium Australia (ASX: LIT) managing director Adrian Griffin has his way, the Perth-based company will soon revolutionise the processing of hard-rock lithium ores. *By Stephen Bell*

AROUND THE MIDDLE OF 2016 a pilot plant in New South Wales will begin trials of the company's trademarked 'Sileach' process, designed to recover lithium from silicates without the expensive roasting step that has long been the mainstay of processing silicate lithium ores, including spodumene.

Due for completion in August, the pilot testing will provide data for a study on a full-scale Sileach demonstration plant to be built in Western Australia, probably at Port Hedland.

A commercial decision to build that plant, expected to cost about \$20 million, could be taken as early as December.

"We would hope to have most of the data from that series of pilot runs – it will be processing more than one type of material from more than one location – by the end of August," Griffin told Resources Roadhouse.

The testing will be carried out at the Lucas Heights facility operated by ANSTO Minerals, a division of the Australian Nuclear Science and Technology Organisation.

ANSTO Minerals has an intellectual property agreement with LIT as a result of the company this month winning a grant under the Entrepreneur's Programme run by the Federal Government's Department of Industry and Science.

The pilot runs are expected to treat spodumene ore from the Pilbara and mica ore from the Lepidolite Hill deposit, a joint venture between Lithium Australia and Focus Minerals near Coolgardie.

There is also the possibility North American ore will feature in the trial if current negotiations bear fruit.

"The aim is to then commit to a demonstration plant by the end of the year," Griffin said.

"This would be contingent on Lithium Australia completing a prefeasibility study which confirmed Sileach as a sensible and commercial proposition."

The demonstration plant would aim to break-even on revenue by producing a couple of thousand tonnes of lithium carbonate and/or hydroxide per annum.

Lithium Australia is working with the WA government on potential locations for the demonstration plant, with Port Hedland its preferred location.

"You've got an up-and-coming spodumene production centre around Pilgangoora, which is only 120 kilometres south of Port Hedland," Griffin said.

"That location, led by Pilbara Minerals' project, plans to produce spodumene concentrates for export to China's lithium processing facilities.

"But there will be 'off-spec' material - that won't be commercial – that will be available for treatment and we believe that we viably process that material at much lower grades than can be tolerated with conventional roast/leach.

"There will also be lithium silicates, including micas and tourmalines, that we can recover the lithium from, so we believe that long-term there will be an abundant supply of lithium minerals available for processing in the Pilbara."

Port Hedland's other advantage is its role as a substantial industrial port able to import materials relatively cheaply.

"Port Hedland looks like a fairly sensible location, but we need to do the trade-off studies with other locations to verify that," Griffin said.

A successful demonstration plant is likely to be needed to convince the market in Australia and overseas that Sileach can, indeed, lower the cost of lithium ore processing.

It is an integral step in project de-risking required for finance of a full scale processing facility.

LIT describes the technology as 'disruptive', i.e. a breakthrough or paradigm change in extracting lithium from any silicate mineral.

Sileach could make existing and new spodumene production more cost-competitive by reducing cut-off grades and expanding resources with no additional capital cost.

"Sileach could 'catapult' Australia into the forefront of the lithium battery boom by supplying optimal grade and purity material from low-energy production of lithium chemicals," Griffin declared.

"It has the potential to make hard-rock production cost competitive with the huge lithium brine processors in South America.

"The breakthrough is removing the energy required for the processing steps that are normally used to convert spodumene to lithium chemicals."

After the standard mining/crushing/crushing/flotation sequence, spodumene concentrates are usually roasted at high temperatures for several hours before cooling them and applying sulphuric acid.

"Most of the cost in that process is the energy," Griffin explained.

"What Sileach does - for the first time - is recover lithium from the

spodumene without the requirement to roast the spodumene first.

“Its great potential is to dramatically reduce the operating cost for converting spodumene to lithium chemicals.”

“Currently almost most spodumene concentrates from Australia are roasted in Chinese ‘converter’ facilities.

“They are, to a large extent, the bottleneck in the lithium chemical process – there is only a limited amount of installed conversion capacity whereas there is no shortage of supply at the resources end.

“But that material can’t get through to the end users, such as battery producers, because the bottleneck is the converters.

“If you take Sileach as being an alternative process, and set up a Sileach plant on your mine site, then you would bypass the converters and go straight through to the end users.”

But, first off, LIT needs to demonstrate the process is feasible at a commercial scale via the planned demonstration plant.

The company’s share price has doubled in the past month as investors sought out credible lithium stories, and LIT is well-placed to fund that important step.

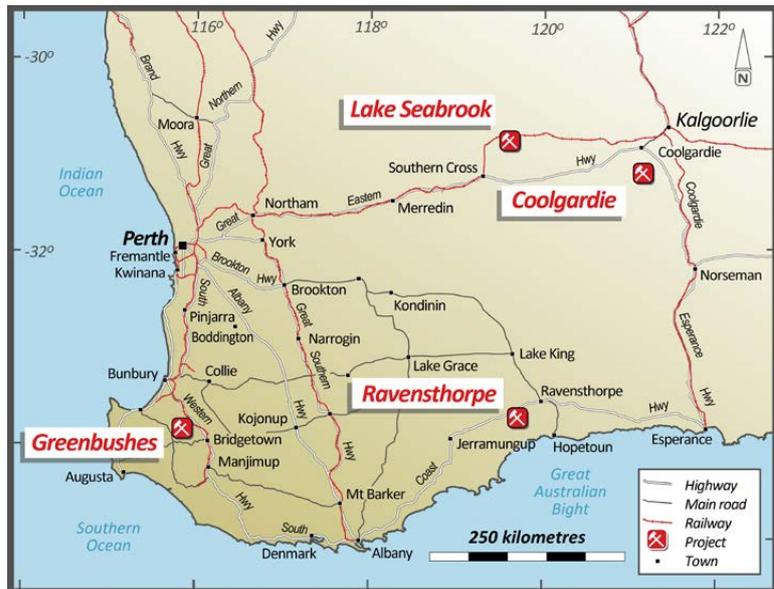
Lithium Australia has cash and facilities available for drawdown amounting to about \$10 million and is putting in place a bonus issue of 25-cent contributing shares.

“The drawdown capability on those will be \$28 million,” Griffin said.

“We will have sufficient financial resources available over the next 12 months to fund anything we need to in the current business plan.

“That doesn’t mean we will be doing an immediate drawdown on contributing shares – far from it.

“It means, with those sorts of facilities in place, we are in a terrific bargaining position to get the cheapest available money because you don’t



need to take just any deal that’s on the table.”

Alongside the Sileach test program, LIT is continuing exploration activities Australia-wide.

It recently established a foothold in the highly prospective Bynoe pegmatite field in the Northern Territory.

In WA, at the Ravensthorpe project, it has located at least 12 lithium pegmatites at Cocanarup, located only a few kilometres to the south-west of the Mt Cattlin lithium mine operated by Galaxy Resources and General Mining Corporation.

“With assays across the mineralised zone averaging 2.96 per cent lithium oxide, Cocanarup looks very promising indeed, Griffin said.

The company recently acquired ground adjacent to Greenbushes, the world’s largest lithium mine where it is targeting lithium micas, but the area is also prospective for spodumene in pegmatites.

Meanwhile, LIT is fielding “very significant commercial interest” in Sileach from the major global lithium producers,” according to Griffin.

They, along with the entire lithium industry, will be watching with interest the looming pilot tests at Lucas Heights.

If, the tests are favourable the odds will shorten for LIT becoming a key supplier to the emerging Li-Ion battery sector.

LIT believes the ability to recover lithium from silicates, without roasting, would again put Australia at the forefront of mineral processing technology, the importance of which may eclipse froth flotation. 🏠

## The Short Story

Lithium Australia NL (ASX: LIT)

### HEAD OFFICE

Suite 3,  
23 Belgravia Street,  
Belmont WA 6104

Ph: +61 8 6145 0288  
Fax: +61 8 9475 0847

info@lithium-au.com  
www.lithium-au.com

### DIRECTORS

Adrian Griffin, Bryan Dixon, George Bauk

### MAJOR SHAREHOLDERS

Lanstead Capital LP 13.7%