

**DISRUPTIVE LITHIUM CHEMICAL
PRODUCTION TO FUEL THE NEW
INDUSTRIAL REVOLUTION**

Adrian Griffin
Managing Director
Lithium Australia NL

Lithium
Australia^{NL}

The only company in the world with the capability of
processing all lithium silicates without roasting

Listed on the ASX
Ticker: LIT

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capital expenditures, ore reserves and mineral resources and anticipated grades and recovery rates and are, or may be, based on assumptions and estimates related to future technical, economic, market, political, social and other conditions.

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Many known and unknown factors could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements. Such factors include, but are not limited to: competition; mineral prices; ability to meet additional funding requirements; exploration, development and operating risks; uninsurable risks; uncertainties inherent in ore reserve and resource estimates; dependence on third-party smelting facilities; factors associated with foreign operations and related regulatory risks; environmental regulation and liability; currency risks; effects of inflation on results of operations; factors relating to title to properties; native title and Aboriginal heritage issues; dependence on key personnel, and share-price volatility. They also include unanticipated and unusual events, many of which it is beyond the Company's ability to control or predict.

Photographs in this presentation do not depict assets of the Company.

COMPETENT PERSON'S STATEMENT

The information in this report that relates to reporting of Exploration Results is based on and fairly represents information and supporting documentation prepared by Adrian Griffin, a member of the Australasian Institute of Mining and Metallurgy. Mr Griffin is a shareholder in, and managing director of, LIT and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration. He is qualified as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Griffin consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

The reporting of mineral species is generic in nature, and the term 'lepidolite' – as it is applied to mineral species, and not necessarily locality names – includes mineral species widely considered to be part of the solid solution series of polyolithionite/trilithionite, of which the Competent Person considers lepidolite to be approximately a median member. It is also acknowledged that material processed from Lepidolite Hill has bulk compositions tending towards trilithionite, although the rubidium concentration is outside the range generally expected in such minerals.

Similarly, the term 'zinnwaldite' has been applied to minerals approximating the accepted composition of zinnwaldite but with variations tending towards lepidolite. This terminology is considered acceptable by the Competent Person.

The drivers to change in the lithium industry



Lithium Australia's goal to establish low-cost, global lithium production

Lithium Australia has developed disruptive processing technology for the recovery of lithium from hard-rock sources. Lithium Australia is the only company with the capability of processing any lithium silicate without roasting. Lithium Australia plans to develop regional processing hubs to compete with the lowest-cost producers. Keys to achieving this are:

- 100% ownership of advanced processing technologies including the Sileach™ and Liena™ processes*,
- Commercialisation agreement on a major spodumene project (Pilbara Minerals at Pilgangoora); and
- IP agreement with ANSTO Minerals (a division of the Australian Nuclear Science and Technology Organisation).

The Team

Lithium Australia has a team of dedicated professionals. They have extensive experience in exploration, project financing, implementation and development of processing technology. Team experience includes pioneering high-pressure acid leaching for nickel, recovery of heavy rare earths and development of the Company's proprietary lithium extraction technologies. The team has a significant equity in the Company. Team members take a combination of cash and equity as part of their remuneration packages and are strongly incentivized by shareholder approved bonus packages. The management team is supported by the best available technical resources including ANSTO Minerals (a division of the Australian Nuclear Science and Technology Organisation) and Murdoch University (Western Australia).

Lithium Australia – working towards resource security

Lithium Australia has taken strategic positions in many of the world's predominate lithium provinces. In Australia it has achieved this by acquiring ground in all established and emerging lithium provinces, and developing strong partnerships with other market participants. These partners include Pilbara Minerals Ltd, Focus Minerals Ltd, Cazaly Resources Ltd, Tungsten Mining NL, and Venus Metals Corp Ltd. In Mexico, Lithium Australia has partnered with Toronto listed Alix Resources Corp, and in Canada with emerging explorer MetalsTech Ltd (soon to be listed on the ASX).

Australian government support

The Western Australian Government, under the aegis of the Minerals Research Institute of Western Australia (MRIWA), has provided a grant to research solution purification and generation of valuable by-products during the production of battery-grade lithium using the Sileach™ process. Lithium Australia has also been awarded two Innovations Connections Grants under the Entrepreneur's Programme run by the Australian federal government's Department of Industry and Science specifically to research the recovery of lithium from mica.

* Lithium Australia also holds exclusive licences for the LMax process (Platypus Minerals owner and licensor). The licence agreement provides exclusive licensing rights in Western Australia and two other locations globally.

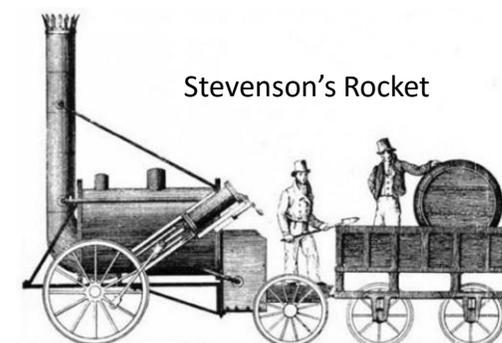
Lithium – what's it all about?

It's about the biggest change in energy management since the industrial revolution

The industrial revolution made beasts of burden almost obsolete and provided power to the factories that advanced civilization like no other change. The industrial revolution changed every aspect of civilization and the key was the delivery of power. The lithium age will take the delivery of power one step further, making power a truly portable and tradeable commodity. Lithium has the capacity to place power in the palm of your hand, or in any object that requires energy.

It's about batteries

Portable power is more than engines, pulleys, gears and wheels. When asked what he did for a living, Enzo Ferrari said "I build engines and attach them to wheels". He would be turning in his grave to know that lithium batteries are now somehow connected to the wheels. Marconi did not think about the mobile phone when he discovered radio waves nor did Stevenson appreciate the enormous consequences when he harnessed the first practical portable power in the Rocket. But today, who wants a steam driven phone – portable power is about lithium-ion batteries.



33rd most common element

Lithium is not an uncommon metal, but although having a crustal abundance of about 20ppm, only a few geological environments contain the metal in sufficient abundance to be of commercial importance. These include pegmatites, continental brines, and certain types of clay deposit. Only the pegmatites and brines are presently exploited while the clays offer enormous potential and are currently the focus of a number of North American projects. Indeed Lithium Australia has an interest in the Electra Project, located adjacent to the world's largest known lithium clay deposit, in Sonora County, Mexico.

More lithium is rejected as waste than is recovered as lithium

While analysts continue with concerns about long-term supply, more lithium ends up in waste streams than ever gets to the lithium supply chain – and the lithium miners are not the greatest offenders! With the cost of mining already covered, some of these waste streams are attractive sources of lithium, all they need is the technology to recover it, and Lithium Australia has the technology.

The recycling imperative

Supply chain constipation and a reliance on conflict metals, cobalt in particular, will place enormous strain and cost pressure on battery components in the immediate future. Less than 1% of lithium from batteries is recycled. Cradle to grave custodianship of battery materials will ultimately dictate a change in industry practice, alleviating some supply constraints by giving birth to a new industry.

1	IA	1A
1	H	Hydrogen 1.008
3	Li	Lithium 6.941
11	Na	Sodium 22.990
19	K	Potassium 39.098
37	Rb	Rubidium 84.468
55	Cs	Cesium 132.905
87	Fr	Francium 223.020

Lithium chemicals originate from two sources – brines and hard rock

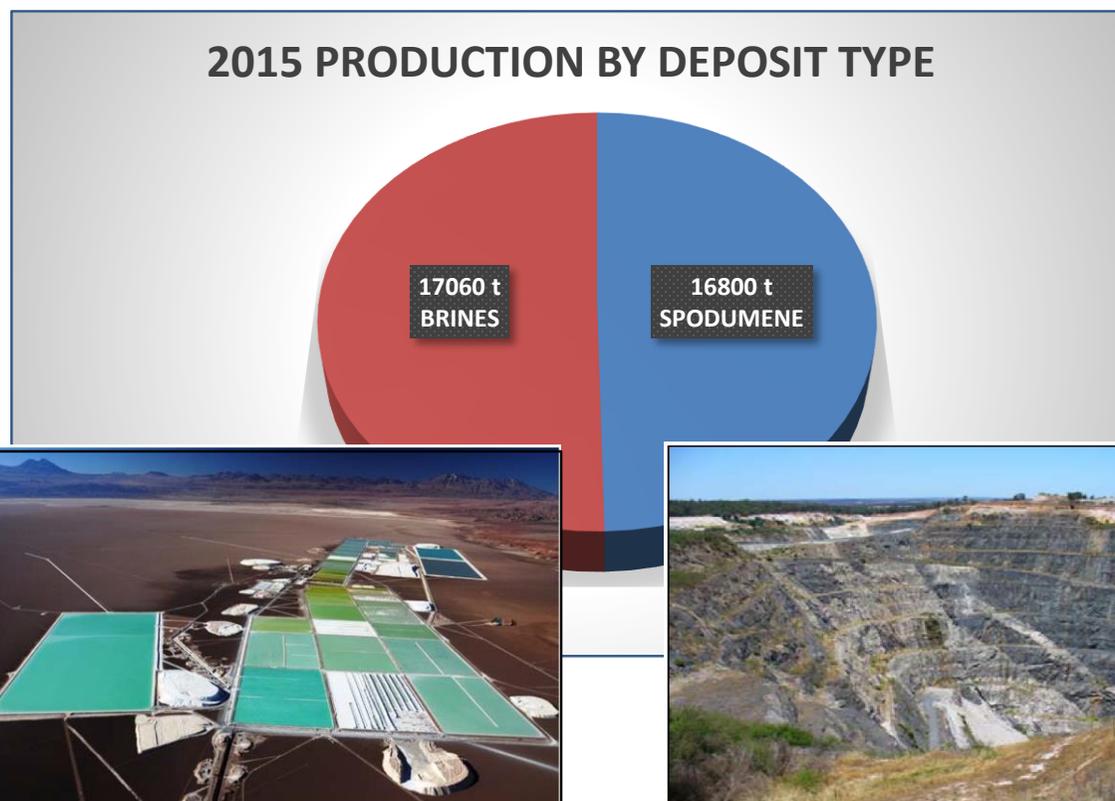
Lithium Brines

Brine deposits in South America initially focused on the production of borates and potash however elevated lithium levels in the brines often makes them an attractive target for the production of lithium chemicals.

Lithium recovery generally uses solar evaporation in large ponds. The plants required for processing are generally capital intensive however the operating cost, being largely funded by free solar power, is low.

Process residence time is long, as the required evaporation may take up to two years. Climatic conditions are paramount and the driest climate on earth, the Atacama Desert, is ideally suited to this type of production.

Hard-rock deposits Lithium production from hard rock is dominated by pegmatite deposits. Talison Lithium's giant Greenbushes operation (pictured above) presently produces about 40% of the world's lithium! Lithium Australia holds a very large area of prospective ground, covering numerous pegmatites, adjacent to Talison's world class lithium orebody.



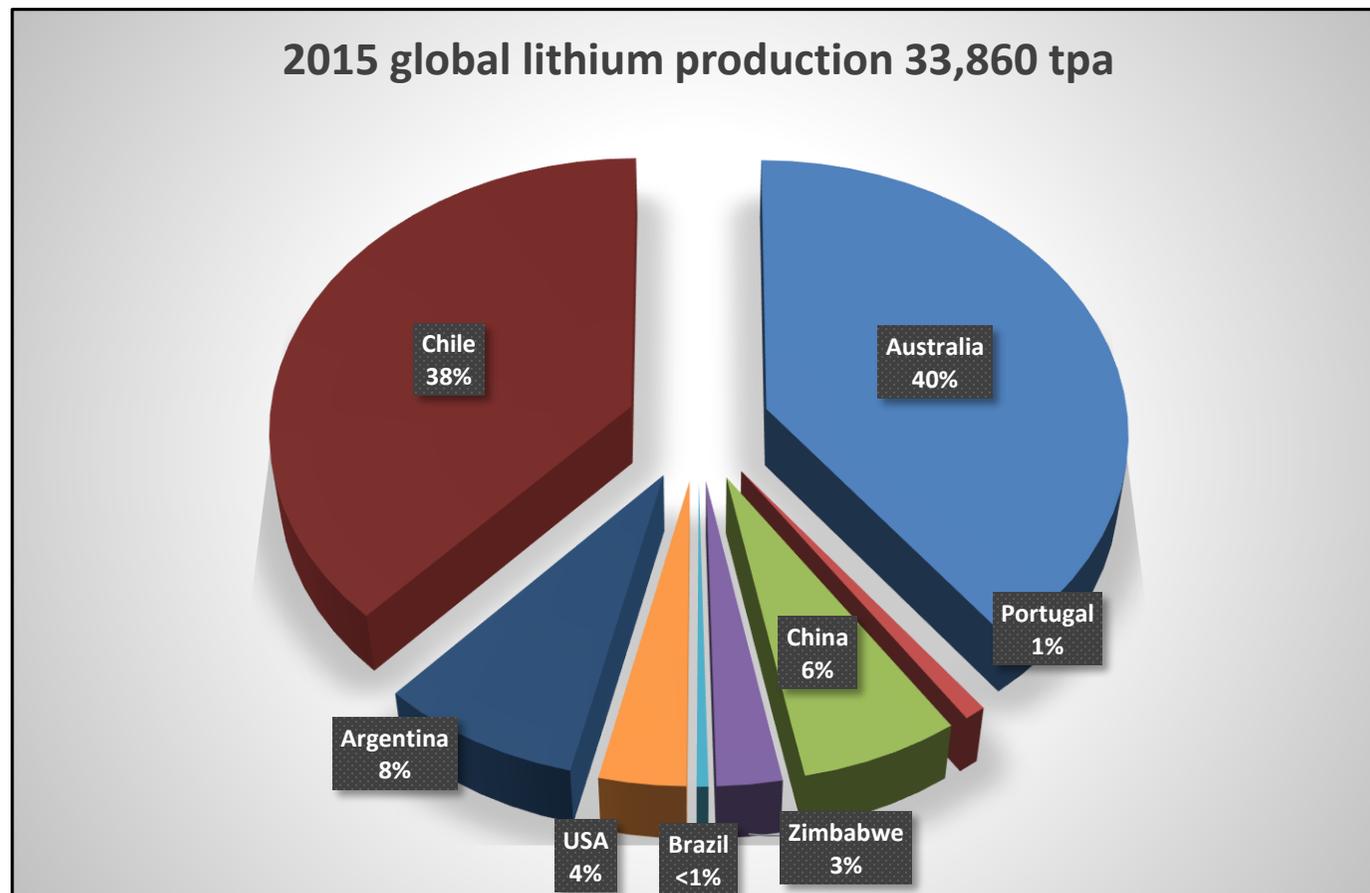
Feed is dominated by two countries

A resurgence in hard-rock lithium production has recently seen such output eclipse that of brine production (mainly in Chile). New hard-rock capacity has lower capital intensity than brine production, is quicker to bring on line and hence better suited to responding to changes in market demand. Australia lies at the forefront of planned production increases from spodumene bearing pegmatites, presently the main source of hard-rock lithium.

An expansion of Talison Lithium's Greenbushes operation has been announced, together with a new lithium hydroxide plant at Kwinana, south of Perth, in Western Australia.

NeoMetals Ltd is commissioning a spodumene concentrator at Mt Marion (near Kalgoorlie, WA) as is Galaxy Resources Ltd at Mt Cattlin, WA, close to Lithium Australia's Ravensthorpe Project.

Pilbara Minerals Ltd is planning on spodumene production from its Pilgangoora Project (WA) where it has partnered with Lithium Australia to commercialise the Sileach™ process specifically for application on concentrates recovered from that deposit. Lithium Australia has a further agreement with Pilbara Minerals to evaluate the commercial potential of lithium micas from the Pilgangoora Project.



Processing innovation creates a paradigm change

Froth flotation is widely considered to be the greatest invention to ever come out of the Antipodes. It took a brewer, a metallurgist, a mining engineer and others to turn the waste dumps of Broken Hill into ore and untold wealth.



Broken Hill Proprietary Company Ltd about 1888

“Broken Hill led the world in the profitable treatment of zinc-lead sulfides. At the turn of the 20th century, three out of every four tons that came out of the mine could not be treated. It was stacked in huge dumps along the line of lode; dumps that would mark the grave of Broken Hill unless silver, zinc and lead could be separated cheaply,

In 1902 D.G. Delprat, the general manager of Broken Hill Proprietary Company Limited, invented a process that promised to extract the treasure in the dump. He added oil, salt cake and other chemicals to a tank of pulped ore, and pumped air in through a blower at the bottom. He was delighted to observe that the particles of minerals clung to the rising air bubbles and overflowed the tank which the barren particles sank to the bottom. His company erected the first efficient flotation plant in the world

Taken from StumpJump Plough to InterScan, A. Walsh, Australian Academy of Science, 1977.

The Sileach™ process has the potential to transform the lithium industry the way froth flotation did for the base metals industry. This innovative halogen based process is owned 100% by Lithium Australia. Sileach™ potentially provides a means of recovering lithium from waste materials and low-grade concentrates. Sileach™ has a very low energy footprint and is capable of generating significant by-product credits. If the anticipated low operating cost can be achieved, many lithium occurrences, both waste and low-grade ore, will become viable.

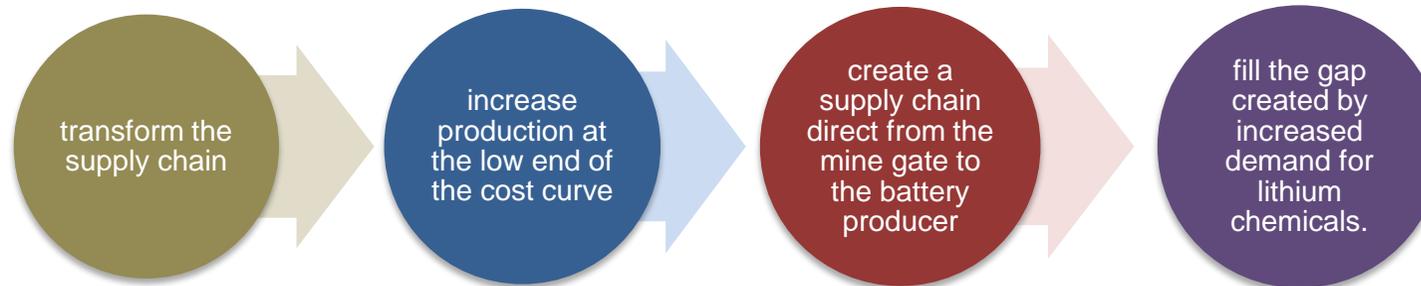
The plan

Sustainability

For long-term sustainability, lithium presently being discharged as waste needs to be recovered. The Sileach™ process may provide the key. Lithium Australia has focused on the processing of materials not conventionally used for the production of lithium chemicals (including micas and clays and petalite) and low-grade concentrates e.g. contaminated spodumene. Lithium Australia is also reviewing recycling streams as a commercial source of lithium, albeit less than 1% of lithium is recycled today

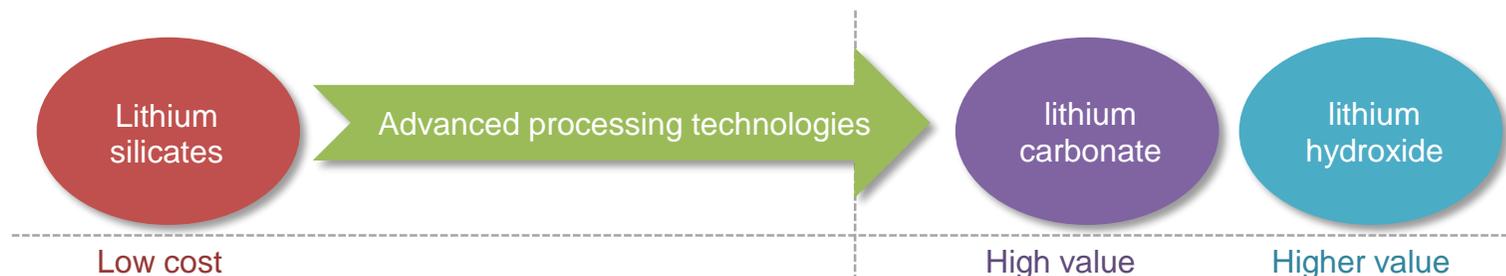
A complete lithium supply chain solution

Chinese converters represent a major bottleneck in the supply chain that delivers lithium chemicals from hard-rock sources to end-users. At present, only China has the necessary conversion capacity. Consumers – and Japan in particular – are seeking supply from outside China. LIT plans to:



To achieve its aims, LIT is working towards:

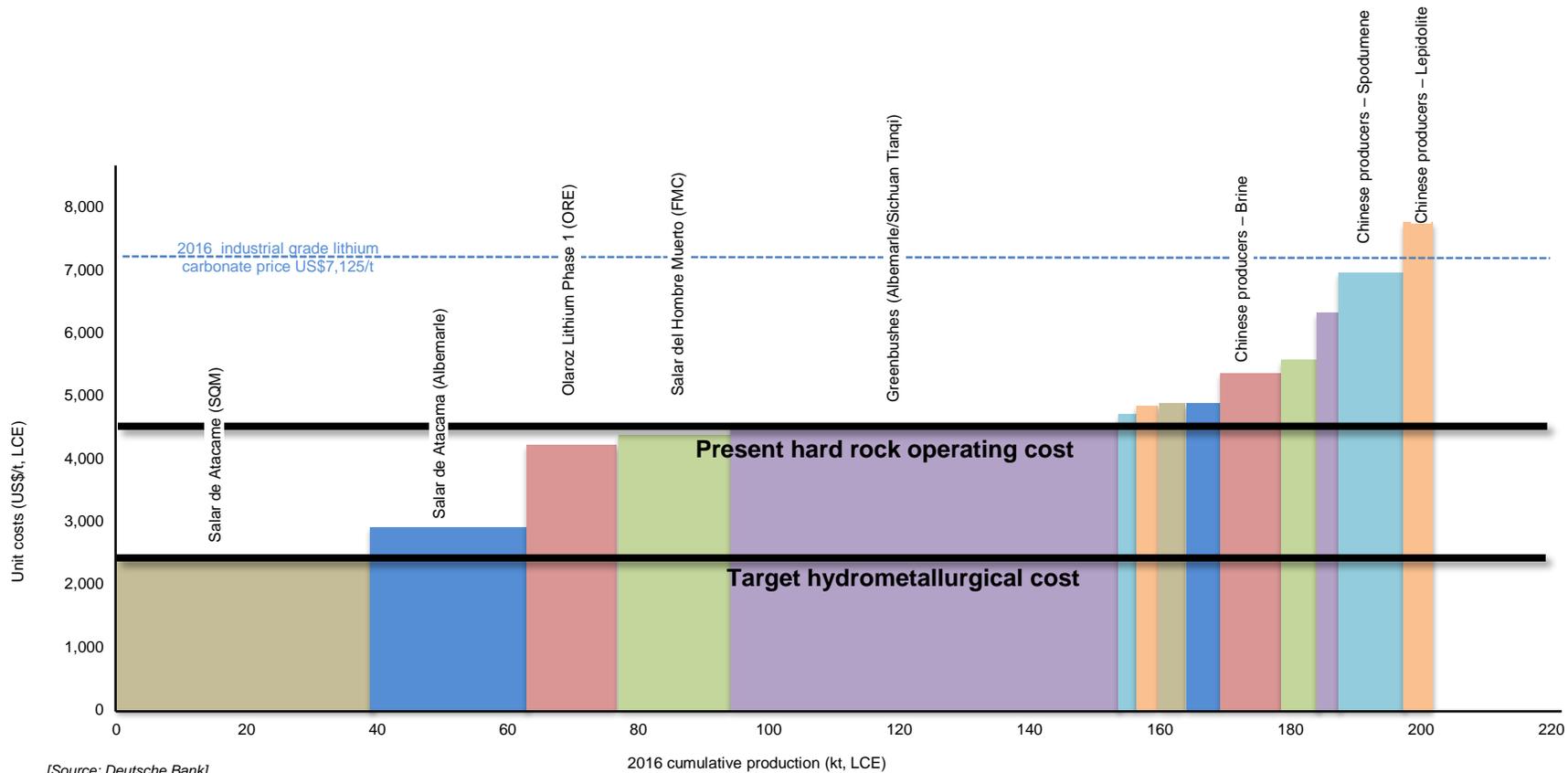
- controlling processing technology – Sileach™;
- commercialising the Sileach™ process;
- implementing key production hubs, and
- ensuring secure supply of lithium chemicals.



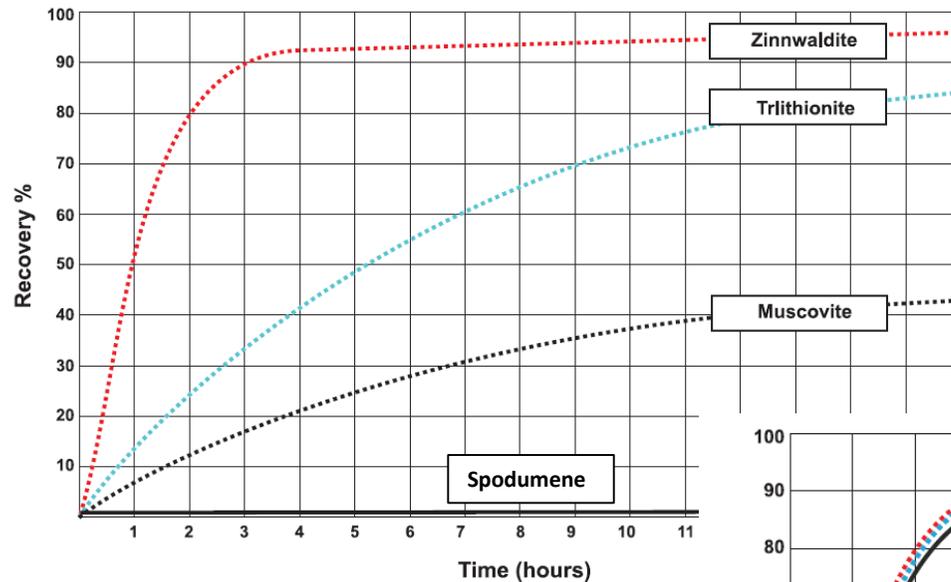
Aspirational statement

The performance of the Sileach™ process

The Sileach™ process is a halogen-based, hydrometallurgical process that has a number of advantages over the more conventional roast/leach processing route. The energy footprint is very low and all metals in the material being processed can be extracted in the aqueous phase. Under such conditions a range of metals is available for the production of valuable by-products. The reduced energy costs and significant by-product credits can potentially drive the operating cost, to produce lithium chemicals, into the bottom quartile. Under such circumstances, lithium chemicals, produced from hard-rock may be amongst the cheapest in the industry. In the Sileach™ process, the magnitude of reagent consumption, and total by-product credit available, varies with the mineral composition of the feed material.



From alpha-spodumene to zinnwaldite Sileach™ ultimate processing solution

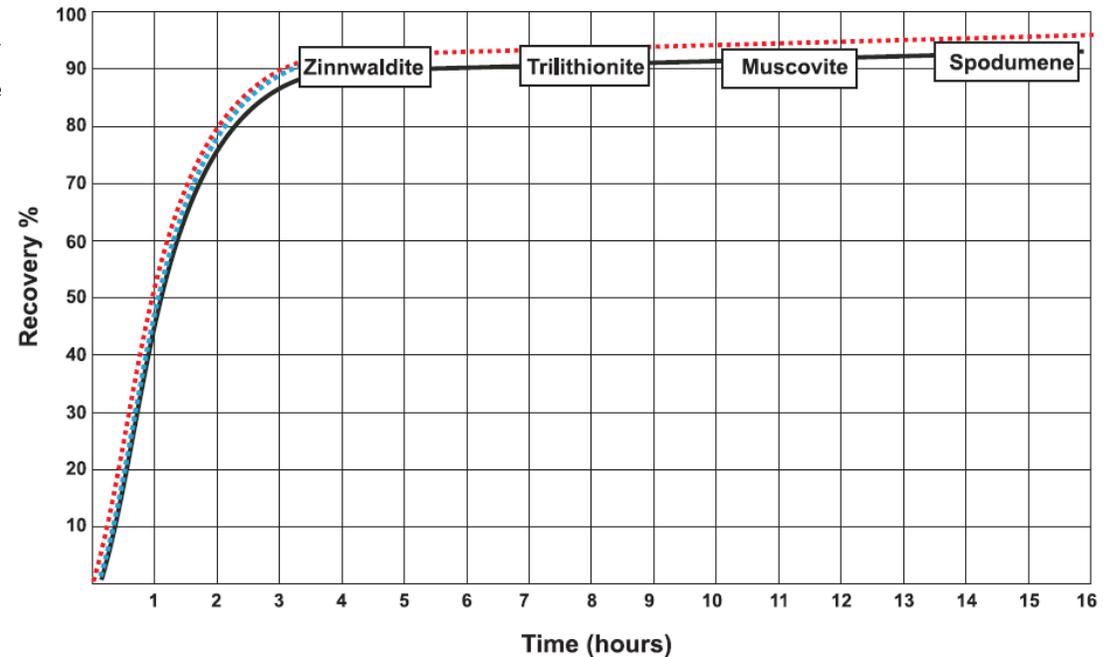


Lithium bearing mineral species have a range of leach performances in sulphuric acid, from very reactive in the case of zinnwaldite, to completely unreactive in the case of spodumene. The lack of reactivity of the primary source of lithium, spodumene, is what has historically led to roasting followed by leaching, as the accepted means of processing hard-rock concentrates.

Processing without roasting is a challenge resolved by Sileach™.

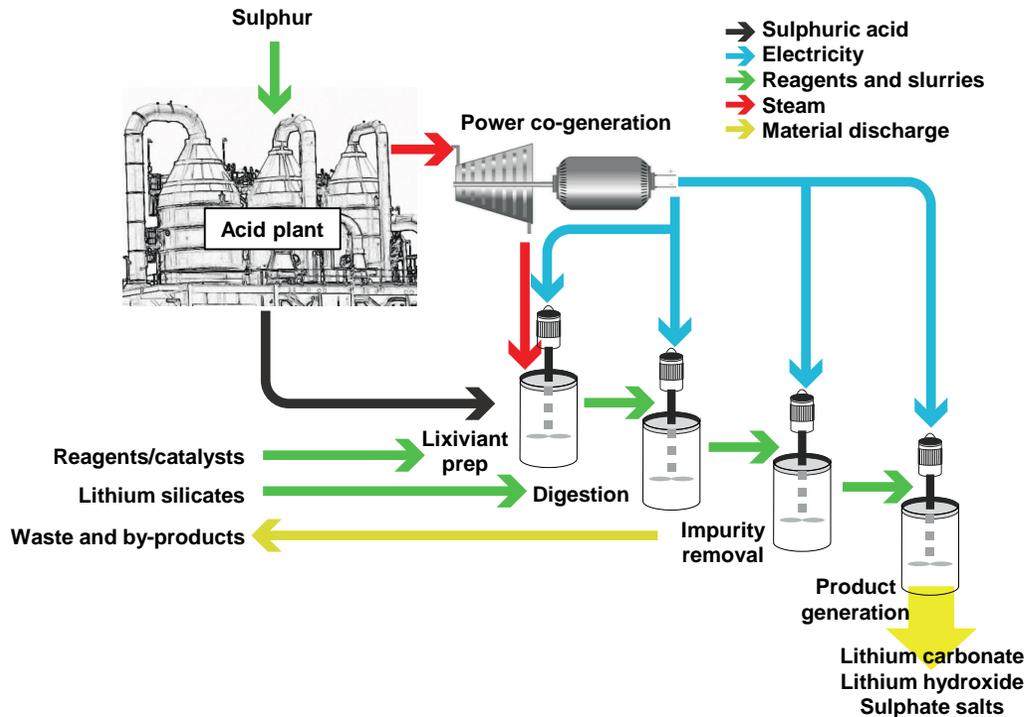
The bespoke lixivants used in the Sileach™ process optimize the dissolution rates for most silicate materials. Lithium recovery can be achieved in short periods of time providing the potential to use the more refractory minerals, such as spodumene as feed sources for the Sileach™ process.

Research on the dissolution of lithium minerals is being undertaken by ANSTO Minerals and the recovery of valuable by-products by Murdoch University.



Controlling processing technology – Sileach™

Sileach™ can rapidly digest any silicate mineral.



Sileach™ is a halogen based digestion system

- processing occurs at atmospheric pressure;
- energy requirement is low;
- the carbon footprint is small;
- recovery from most lithium minerals is high, and
- extensive by-product credits are possible.

The path to commercial production

Commercial development relies on a systematic risk mitigation program. At Lithium Australia this program is underway and is being successfully managed with positive pilot testing results being achieved. Further pilot tests are planned and engineering design is due to commence to evaluate capital and operating costs for a larger-scale pilot (demonstration) plant.



The critical Sileach™ partnerships De-risking commercialization



Funding

Lithium Australia has an active capital management program and invites all of its shareholders to participate. This has been fostered through the bonus issue of contributing shares and more recently with a Share Purchase Plan, which allows shareholder to purchase stock at a discount to market, and without brokerage fees. Listed contributing shares provide the company with a long-term capital drawdown capacity which, at the moment, sits at approximately \$33,000,000. Research has been further supported by grants from Australia's federal government and the government of the state of Western Australia.

Intellectual property and pilot testing

ANSTO Minerals (a division of the Australian Nuclear Science and Technology Organisation) has partnered with Lithium Australia to successfully pilot test the Sileach™ process. This work has been assisted by two Innovations Connections Grants under the Entrepreneur's Programme run by the Australian federal government's Department of Industry and Science. ANSTO and Lithium Australia are party to an intellectual property agreement by which all intellectual property developed, for the Sileach™ and Liena™ processes, is vested in Lithium Australia. The focus of this work is the extraction of lithium from silicates and recovery as high-purity lithium carbonate.

Materials handling and by-product generation

Lithium solutions recovered from the ANSTO pilot plant are being evaluated by Murdoch University to maximize the potential revenue stream generated from by-product credits and to optimize impurity deportment. This work has been supported by the Western Australian Government by way of a Minerals Research Institute of Western Australia (MRIWA) research grant.

Commercial development

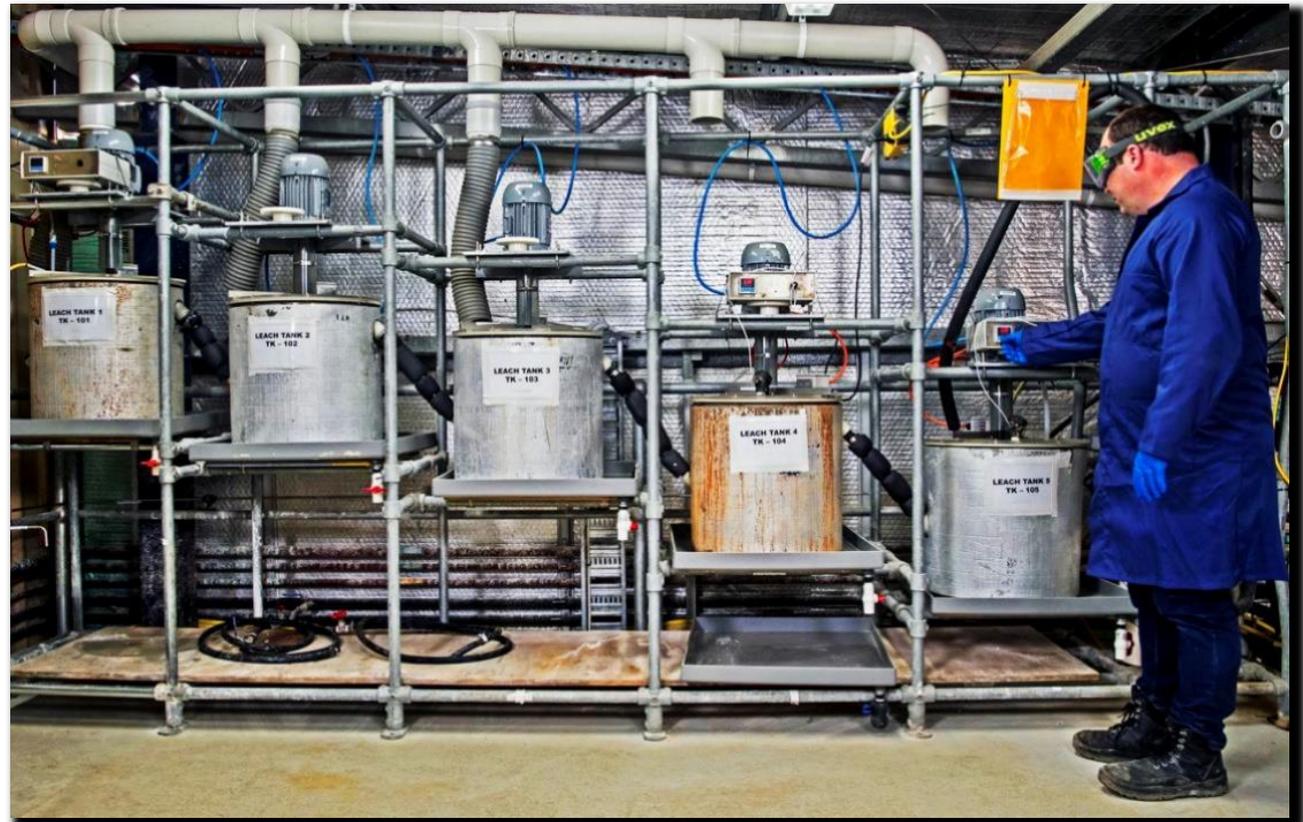
Pilbara Minerals and Lithium Australia are working together to commercialize Sileach™ for use on the Pilgangoora project. Pilbara Minerals is supplying feed material for pilot testing at ANSTO and sharing the initial operating cost. If successful, Lithium Australia will commit to the construction of a larger scale pilot plant. Pilbara Minerals will supply the spodumene concentrate to feed the plant. A positive result may lead to a 50/50 joint venture production facility to process spodumene from Pilgangoora.

Sileach™ achieves a world first

ANSTO Minerals successfully pilot test the Sileach™ process

Continuous pilot plant operations commenced at ANSTO Minerals' Lucas Heights facility in August 2016. On a planned 6 day run of the digestion circuit, very high plant availabilities were achieved and over 95% of the lithium contained in the ore feed was recovered to solution. High-purity lithium carbonate has since been precipitated.

The continuous pilot processing will generate technical data that will be incorporated into engineering design work used to complete capital and operating cost estimates for larger scale pilot testing on a wide range of lithium minerals, ores and concentrates.



Murdoch University by-product evaluation and impurity department

Specialists at Perth's Murdoch University have taken delivery of residues from the ANSTO pilot plant and also pregnant solutions, from the digestion process, generated during pilot plant testing. Research at Murdoch is focused on maximising the non-lithium (by-product) revenue that can be extracted from the ore feed.

Strategic positions in the global hot spots

Lithium Australia has taken positions in many of the major lithium provinces around the globe.

Numerous projects are being assessed in Western Australia and exploration has commenced in Mexico.

Prospective regions have been identified in Europe and cratonic areas in Africa are also being assessed.

The application of Sileach™ processing technology to materials not viable with other processing regimes, may provide a strong commercial opportunity in most of the hard-rock lithium provinces around the world. Lithium Australia is investigating many of the most prospective provinces.



The Projects

Western Australia

- Pilgangoora (LIT/Pilbara Minerals Ltd - commercialisation agreement) currently being tested at ANSTO Minerals.
- Pilgangoora MoU with Venus Metals – agreement to assess the commercial potential of Sileach™ on ground held by Venus.
- Goldfields Lithium Alliance (LIT, Cazaly, Focus) exploration JV 50% LIT and 50% Cazaly within a radius of 100km of Kalgoorlie. Focus free carried in the Coolgardie area.
- Seabrook Rare Metals Venture (Tungsten Mining 20% free carried) – The project is focused on lithium pegmatites north of Southern Cross.
- Lake Johnston (100% LIT) – newly discovered lithium pegmatites and commodity swap agreement with listed Lefroy Exploration Ltd.
- Ravensthorpe (100% LIT) – abundant lithium pegmatites in the same geological sequence as Galaxy's Mt Cattlin mine which is presently commissioning.
- Greenbushes (80% LIT) – large area with abundant pegmatites adjacent to the world's largest producing lithium mine.
- Gascoyne (100% LIT) – sparsely explored pegmatite province in Australia's North West

Northern Territory (Australia)

- Bynoe Project (100% LIT) – abundant pegmatites close to Darwin and flanked to the north and south by recent discoveries of ASX listed Core Exploration Limited.

Queensland (Australia)

- Cape York (100% LIT) – exploration licence applications over ground prospective for fertile granitic intrusions and pegmatites.

Canada

- Investment in MetalsTech Ltd – lithium pegmatites in Quebec, Canada. Soon to be floated on the ASX.

Mexico, Sonora County

- Adjacent to Bacanora's Sonora Project, the world's largest identified lithium clay deposit – earning up to 65% of Electra Project from Toronto listed Alix Resources Corp. Exploration under way and drilling soon to commence.



Company snapshot

LIT is the only company worldwide with the ability to process all lithium silicates without roasting.

BOARD OF DIRECTORS

George Bauk (non-executive chairman)

Expert in specialty metals, particularly rare earths – project management, marketing and financing.

Adrian Griffin (managing director)

Exploration, production, mine management.

Bryan Dixon (non-executive director)

Corporate, finance, mine development.

ASX ticker: LIT

- 243 M Ordinary Shares
- 133 M Partly Paid Shares
- 22 M Unlisted Options
- 11 M Performance Rights
- \$5.4 M Cash at bank 30 Sep 2016

Market cap. \$46M (October 2016)

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What else is happening?

SPP in progress

Proposed float of graphite assets and priority entitlement

Priority entitlement in the float of MetalsTech Limited

Lithium
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