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## Patent application for Lithium Australia's revolutionary lithium-extraction technology accepted

### HIGHLIGHTS

- Lithium Australia has received a 'Notice of Acceptance' from IP Australia for its revolutionary LieNA<sup>®</sup> technology patent application.
- The International Bureau of the World Intellectual Property Organisation ('WIPO') has published the second-generation LieNA<sup>®</sup> patent application, which incorporates the recently announced lithium phosphate patent application improvements ([ASX 14 January 2020](#)).
- Publication is the next step towards the grant of a patent, which provides legal protection in international jurisdictions.

Lithium Australia (ASX: LIT) (or 'the Company'), together with the Australian Nuclear Science and Technology Organisation ('ANSTO'), continues its R&D of the Company's ground-breaking LieNA<sup>®</sup> proprietary technology for the recovery of lithium from spodumene, the most common hard-rock source of lithium for the production of critical battery chemicals.

While the recovery rate of lithium from conventional spodumene beneficiation varies, it can be as low as 50% owing to the concentrate offtake specification constraints applied by thermal convertors. LieNA<sup>®</sup> (which, importantly, does not require a roasting stage) can recover lithium from the fine spodumene that otherwise reports to waste or tailings streams during current concentration processes.

Being able to utilise the fine spodumene that would otherwise go to waste, LieNA<sup>®</sup> has the potential to not only expand current hard-rock lithium resources, thereby reducing mining costs, but also enhance the sustainability of spodumene production and subsequent manufacture of lithium chemicals.

Recent receipt of the 'Notice of Acceptance' from IP Australia for Lithium Australia's LieNA<sup>®</sup> patent application (filed in August 2017) is vindication of the value of the Company's intellectual property.

Lithium Australia has also received notification from WIPO that its patent application for the second-generation LieNA<sup>®</sup> process technology, which includes the enhancements achieved by recovering lithium phosphate, has been published.

# ASX ANNOUNCEMENT

## Intellectual property

The Company's intellectual property ('IP') – a valuable asset derived from its R&D activities – is managed by way of formal patent processes to convert 'know-how' as trade secrets into registered patent assets/rights, with the support of specialist legal practitioners.

IP Australia, an agency of the federal government's Department of Industry, Innovation and Science, manages and grants patent applications in the Australian jurisdiction. Receipt of a 'Notice of Acceptance' from IP Australia is a positive next step towards granting of a patent for the LieNA<sup>®</sup> process. Based on normal approval timing, Lithium Australia expects the patent to be granted by end Q2 2020, with legal protection for the patent lasting 20 years from the date of filing of the application.

WIPO administers the filing of international patent applications, which provide preliminary patent protection in more than 150 jurisdictions around the world, including the United States, Europe, and Australia. Publication of the Company's patent application is a significant fourth step in what is essentially a seven-step process for the granting of patents within the jurisdictions elected by Lithium Australia. That process can therefore take several years to achieve.

## The patent applications

Patent application PCT/AU2017/050808, the subject of IP Australia's acceptance notice, details the first version of the caustic digestion process for extracting and recovering lithium values from a lithium-bearing material; in particular, from lithium-bearing silicates such as spodumene and lepidolite. The process is based on the pressure alkaline leach of a slurry using an autoclave, with the lithium recovered as a lithium carbonate.

Patent application PCT/AU2019/050773, the subject of the WIPO publication, details Lithium Australia's process for extracting lithium from an uncalcined lithium-bearing silicate and recovering the lithium as a lithium phosphate. It is based on the pressure alkaline leach of a slurry using an autoclave, with the lithium-rich sodalite subject to an acid leach as well as impurity removal unit processes that are also trademarked by the Company as LieNA<sup>®</sup>.

## Comment from Lithium Australia managing director Adrian Griffin

"The ability to process fine spodumene that would otherwise never enter the supply chain represents a real opportunity. Processing such material can reduce the environmental impact of hard-rock lithium mining and improve sustainability with no additional mining costs or footprint.

"Importantly, application of LieNA<sup>®</sup> could not only change the economics of spodumene production but also provide a means of producing lithium-ion batteries that includes fewer processing steps and better quality control.

"We appreciate the involvement of ANSTO, a leader in the field of lithium-extraction technologies."

## ASX ANNOUNCEMENT



Authorised for release by the Board.

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**About Lithium Australia NL**

Lithium Australia aims to ensure an ethical, sustainable and efficient supply of energy metals to the battery industry (enhancing energy security in the process) by creating a circular battery economy. The recycling of old lithium-ion batteries to new is intrinsic to this plan. While rationalising its portfolio of lithium projects/alliances, the Company continues with R&D on its proprietary extraction processes for the conversion of *all* lithium silicates (including mine waste), and of unused fines from spodumene processing, to lithium chemicals. From those chemicals, Lithium Australia plans to produce advanced components for the battery industry globally, and for stationary energy-storage systems within Australia. By uniting resources and innovation, the Company seeks to vertically integrate lithium extraction, processing and recycling.

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