

## ASX ANNOUNCEMENT



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## ‘Novelty and inventiveness’ of Lithium Australia’s second-generation LieNA<sup>®</sup> technology confirmed

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### HIGHLIGHTS

- Lithium Australia’s revolutionary extraction technology for recovering lithium from fine and variable-grade spodumene moves towards patent grant.
- Positive feedback received on the patentability of the second-generation LieNA<sup>®</sup> technology, following an international preliminary examination of its patent.
- The report of the International Preliminary Examining Authority noted that all claims in the patent application are considered novel, involve an inventive step and are industrially applicable.
- This endorsement allows Lithium Australia to progress its application for the second-generation LieNA<sup>®</sup> technology to the ‘National Phase’ of selected jurisdictions.

### Background

Hard-rock lithium production has a major sustainability issue; that is, poor overall recoveries of lithium from spodumene. The LieNA<sup>®</sup> process developed by Lithium Australia NL (ASX: LIT) (‘Lithium Australia’ or ‘the Company’), in collaboration with the Australian Nuclear Science and Technology Organisation (‘ANSTO’) can reduce the footprint of mining operations, recover lithium from fine and variable-grade spodumene that otherwise reports to waste or tailings streams during current concentration processes, lessen environmental impacts overall and enhance sustainability.

Lithium Australia continues to work towards commercialisation of its proprietary LieNA<sup>®</sup> technology for improving the recovery of lithium from spodumene. On 9 February 2020, The Hon. Karen Andrews MP, Federal Minister for Industry, Science and Technology, announced that the Company was a successful CRC-P grant recipient for Round 8. Lithium Australia will receive \$1.3 million from the CRC-P round 8 programme to progress to the next development stage of its second-generation LieNA<sup>®</sup> technology, the total project cost of which is \$3.6 million.

### Intellectual property development

Intellectual property, a valuable asset derived from the Company’s research and development activities, is managed by way of formal patent processes to retain ‘know-how’ as trade secrets, with the support of specialist legal practitioners.

On [6 April 2020](#), Lithium Australia announced that the Commissioner of Patents had granted Patent Number 2017306576 with priority details 2016903041, effective from 2 August 2016, for its first-generation LieNA<sup>®</sup> development. This being a standard patent, the Company now has long-term protection and control over the invention for up to 20 years.

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The second-generation LieNA<sup>®</sup> development patent application PCT/AU2019/050773) has now been reviewed by the International Examining Authority for its patentability. Key points from this examination include the following.

- Claims are novel and therefore comply with PCT Article 33(2).
- Claims involve an inventive step and therefore comply with PCT Article 33(3).
- The invention defined in the claims is considered to meet the requirements of Industrial Applicability under Article 33(4) of the PCT because it can be made by, or used in, industry.

Leveraging off that positive endorsement, the application will now progress into a National Phase assessment in jurisdictions in which the Company seeks legal protection.

### Propriety technology

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 the current generation of lithium chemical producers, all of which commence the process by roasting the concentrate.

LieNA<sup>®</sup> (which, importantly, does not require a roasting or calcination stage or the conversion of alpha to beta spodumene) can recover lithium from the fine and variable-grade spodumene that may otherwise report to waste or tailings streams during current concentration processes. This is because the LieNA<sup>®</sup> process is not constrained by particle feed size or high concentrate grades. Rather, it uses an alkaline source, such as caustic soda, at the temperature and pressure required to convert the mineral spodumene to a lithium-bearing sodalite phase. The sodalite is then recovered and selectively leached to produce a lithium-bearing solution that is further treated to produce a high-purity, refined tri-lithium phosphate ('LP') product.

Together, Lithium Australia and ANSTO have completed extensive test work on the LieNA<sup>®</sup> technology. As a result of this test work, the Company is confident of committing to semi-continuous pilot-plant evaluation of the flowsheet (which is the scope of the CRC-P programme).

As a part of its commitment to 'closing the loop' on the energy-metal cycle, Lithium Australia seeks to establish a position in the battery-raw-materials supply chain and provide a production pathway not constrained by the requirements of conventional spodumene converters. In offering a novel method for processing fine and variable-grade spodumene, LieNA<sup>®</sup> has the potential to unlock significant value for Australian hard-rock lithium producers (as well as for those projects currently in development).

### Comment from Lithium Australia MD Adrian Griffin

"Further recognition of Lithium Australia's 100%-owned LieNA<sup>®</sup> technology by the International Preliminary Examining Authority has followed close on the heels of the federal government's grant to the Company for the construction of a pilot plant that will advance the process towards commercialisation. Recovering material that would otherwise go to waste is a fundamental building block in Lithium Australia's quest to enhance sustainability, reduce costs and negate environmental impacts throughout the

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battery production cycle. If we as a society want to maintain current living standards, we cannot afford to squander resources and need to minimise our environmental footprint. Commercialisation of LieNA® will take the lithium industry one step closer to achieving that goal."

Authorised for release by the Board.

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**About Lithium Australia NL**

Lithium Australia aims to ensure an ethical and sustainable 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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