

## ASX ANNOUNCEMENT



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## Lithium Australia subsidiary VSPC plans entry into battery supply chain

### HIGHLIGHTS

- Lithium ferro phosphate ('LFP') batteries experiencing significant growth.
- Major automotive manufacturers choosing LFP cathode powder.
- Major battery producers investing in expanded LFP production capacity.
- Quality of VSPC's novel LFP production process vindicated.
- VSPC advancing from memorandum of understanding to final agreement for near-term production of cathode powders.
- Low-capital entry into LFP cathode market planned.

### Introduction

VSPC Ltd ('VSPC'), a wholly owned subsidiary of Lithium Australia NL (ASX: LIT), operates a research facility and pilot plant in Brisbane, Australia. There it has been researching and developing advanced cathode materials for the past 13 years.

VSPC has now finalised its strategy for entering the battery market, initially by producing LFP cathode powders within China and subsequently through expansion to other markets as demand increases.

### The move to LFP batteries

LFP batteries provide significant benefits over other established lithium-ion battery ('LIB') chemistries; in particular, nickel-cobalt-manganese ('NCM') LIBs. Importantly, LFP batteries offer the following advantages:

- lower production costs;
- more sustainable metal inputs;
- greater longevity;
- a wider operational temperature range, and, above all,
- greater safety (little probability of thermal overrun and fire during normal operation).

Further research on LFP derivatives is likely to narrow the comparative energy-density gap between LFP and NCM battery types, and major battery producers are investing in expanded production, not only for electric vehicle ('EV') and energy storage applications but also for the booming lead-acid battery replacement market. This environment has seen new investment in LFP batteries by Contemporary Amperex Technology Co. Ltd (aka CATL) and even LFP-powered Teslas being planned for China. Meanwhile, manufacturers of traditional lead-acid batteries are gearing up to produce LFP batteries and in so doing avert a fate similar to that of Kodak all those years ago.



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In China, the market for LFP battery-powered trucks and buses is strong, with reduced subsidies in that country driving consumers towards lower-priced EVs in which the use of LFP batteries dominates.

### VSPC advances towards production

Having adopted a two-stage approach to entering the commercial battery market, VSPC will begin with cathode powder production in China through already established manufacturing facilities. To that end, VSPC is negotiating with Chinese process-technology company Beijing Saideli Technology Incorporated Company Ltd ('SDL') to produce LFP to VSPC specifications in an existing SDL plant. The structure of the pending agreement will not only allow VSPC market entry with little capital expenditure but also meet the final hurdle, that being cost, in its agreement with DLG Battery Co. Ltd (Shanghai) ('DLG') and achieve preferred supplier status. That will occur subsequent to VSPC product meeting DLG's electro-chemical and physical specifications for LFP cathode material, as tested in commercial-format cells manufactured by DLG.

VSPC plans initial production of up to 1,200 tonnes per annum ('tpa') to supplement Chinese supply and also test markets elsewhere. To that end, VSPC is in discussions with cathode producers for the supply of 500-1000 tpa in various jurisdictions by 2022.

While COVID-19 has had an impact on markets everywhere, a rapid recovery in China's domestic market for LFP is likely. VSPC will expand its strategy by conducting a definitive feasibility study on a commercial plant outside China in 2021.

VSPC research has been augmented by the federal government via an Advanced Manufacturing Growth Centre (AMGC) grant to evaluate low-cost process consumables, as well as a Co-operative Research Centres Project ('CRC-P') grant, which will see VSPC partner with CSIRO, the University of Queensland and others to develop a rapid-charge battery for use in public transport applications, light rail in particular.

### Competitive advantage

VSPC has undertaken cost analysis of competitive LFP production in China and anticipates being able to produce a product with better performance characteristics than those of competitors in the same cost bracket. The low-capital market entry has an estimated payback of two years and an EBITDA of US\$3.4 million per annum. And, while this represents a modest market entry, longer-term development outside China includes much more attractive financial metrics.

The second stage of VSPC's anticipated approach involves expansion to a 5,000 tpa cathode powder production plant that can service the fast-growing international markets.

### Comment from Lithium Australia MD Adrian Griffin

"VSPC produces some of the most advanced LFP cathode powders available and has struck a number of deals to pave the way for first commercial production in the near future. The first stage of development will allow market penetration with minimal capital investment and is a convenient means of establishing a customer base. The second stage will enable delivery into expanding and more lucrative markets."

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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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