

ASX ANNOUNCEMENT



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VSPC's cathode material independently tested – confirms high-quality product

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HIGHLIGHTS

- **VSPC's LFP has been independently tested against commercially available product by leading battery research, test equipment, and services company, NOVONIX Battery Technology Solutions.**
- **These results support Lithium Australia's commitment to commercialise its LFP cathode manufacturing technology and provides further support for offtake discussions.**
- **OEM manufacturers continue to make the shift from nickel/cobalt chemistry to LFP due to characteristics such as safety, cost, performance, and sustainability.**
- **Of the three LFP samples tested, VSPC's LFP was the most stable, demonstrating commercial viability of the product. Cells with VSPC LFP and NOVONIX graphite demonstrated the strongest performance of all material combinations tested.**
- **Production of commercial volumes of VSPC LFP offers diversification of supply chain risks and security of supply.**

Background

Lithium Australia Limited (ASX: LIT) ('**Lithium Australia**', or 'the **Company**') is pleased to advise that lithium ferro phosphate ('**LFP**') cathode powder produced at its wholly owned subsidiary, VSPC Pty Ltd ('**VSPC**'), has been independently assessed at NOVONIX Battery Technology Solutions Inc. (ASX: NVX, NASDAQ: NVX, OTCQX: NVNXF) ('**NOVONIX**'), a manufacturer of some of the most accurate and precise lithium-ion battery cell testing equipment globally and a leading expert in battery materials research and development services. This testing was undertaken as part of a customer joint materials selection program to independently validate the quality of VSPC LFP to support offtake development.

VSPC supplied a sample of its energy product for testing against two leading commercial brands. The results demonstrated that VSPC's LFP was the most stable of the three LFP samples tested and indicated that the combination of commercial grade graphite and VSPC's LFP has the potential to support for long-lifetime cell designs. Such cells deliver sustained, continuous operation over a long period of time, often in aggressive conditions, making them ideal for use in applications ranging from EVs and grid energy storage, to e-scooters and e-bikes.

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These results re-confirm Lithium Australia's unwavering commitment to commercialising its LFP cathode manufacturing technology, providing customers with a solution to diversifying supply chain risks and a security of supply. North America, Europe and Australia remain key jurisdictions for potential commercial production, with pre-qualification in progress.

Comment from Lithium Australia's CEO, Simon Linge

"These independent results from NOVONIX confirm our belief that we have an LFP battery cathode material that currently competes with the best in the market. The results assist us in our current discussions with potential offtake partners and, consequently, takes us one step closer to bringing our pre-qualification plant to realisation."

Lithium Ferro Phosphate

LFP is a type of lithium-ion battery chemistry that has gained significant popularity in recent years due to its excellent safety and long cycle life. LFP batteries are widely used in various applications, including EVs, grid energy storage systems, portable electronics, and backup power supplies. One of the main advantages of LFP batteries is their high thermal stability, which makes them less prone to thermal runaway or fire compared to other lithium-ion chemistries. Additionally, LFP batteries offer a longer cycle life, meaning they can sustain a higher number of charge and discharge cycles without significant degradation. Advances in LFP battery pack design have also significantly reduced the energy density gap with nickel/cobalt battery packs. These advantages have resulted in LFP batteries becoming increasingly popular for applications that require high performance, safety, and durability.

The increasing application of LFP was highlighted by Benchmark Mineral Intelligence in February 2023's *The Rise of LFP Batteries Outside of China* (Benchmark Mineral Intelligence, 2023) which stated that:

- Automakers in North America are increasingly adopting LFP chemistry, since it is cheaper, longer lasting and does not require nickel and cobalt.
- LFP cells are also becoming the most popular choice for energy storage systems.
- Tesla already uses LFP cells, while Stellantis, Volkswagen, Mercedes, and Hyundai are also adopting the chemistry. Tata Motors in India is also using LFP.
- Ford said last year that LFP cells would give it a 10% to 15% cost savings for materials compared to nickel cobalt manganese batteries.
- Prices for NCM622 lithium-ion cells were assessed at USD145.2/kWh in January 2023 compared to USD95/kWh for LFP cells, according to Benchmark's Lithium Ion Battery Cell Assessment.

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Test Work Program

Testing battery materials to get meaningful results for cell lifetimes and the rate of cell degradation can be a time-consuming process, involving charge/discharge cycling of test cells over thousands of cycles. However, this data is vital to assess the quality of a cathode like LFP that is valued for its long cycle life and slow rates of degradation.

VSPC cathode material has been tested by NOVONIX using their cell prototyping line and Ultra High Precision Coulometry ('UHPC') equipment, which allows highly accurate measurements of the electrochemical processes in a cell in short periods of time. This enables non-destructive testing of how battery chemistry is changing from cycle to cycle. UHPC allows for rapid selection of materials for favourable electrochemical properties, which correlate to long lifetime. In addition to UHPC testing, complementary cycle life testing is also underway. A VSPC (Energy) product and two commercial LFP products were tested with two different synthetic graphite counter electrodes, one from NOVONIX and a second from a leading tier 1 Chinese supplier. 1.0Ah stacked pouch cells were made from the six combinations of materials and a common benchmark electrolyte system. UHPC testing was performed at a slow current rate of C/10 for both charge and discharge (10 hour charge/discharge) at 40°C for 24 cycles. Cycle aging was performed at a C/3 charge and discharge (3 hour charge/discharge) at 22°C and 40°C.

Test Results

Independent testing concluded that all LFP-Graphite combinations tested show good capacity retention in UHPC and long-term cycling at 22°C and 40°C. Therefore, this material combination is a good choice for a long lifetime battery design and application. Initial results of this study support the high stability of VSPC LFP demonstrated by UHPC and cycle aging. Cells with VSPC LFP showed the lowest rate of capacity fade during UHPC testing and the highest electrochemical stability of the three LFP materials tested. Cells with VSPC LFP and NOVONIX graphite demonstrated the strongest performance of all material combinations. VSPC LFP performed similarly to the other two commercial cathodes during cycle aging testing up to 400 cycles out of the planned 1,000 cycles. Cells with VSPC LFP and NOVONIX graphite have retained about 97% of their initial capacity after 400 cycles at 22°C, compared to 93.5% for VSPC LFP with Graphite #2. Cycling is on-going to provide enough data to differentiate fully between the capability of the cathodes tested.

Authorised for release by Lithium Australia's CEO, Simon Linge.

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About NOVONIX

NOVONIX (NASDAQ: NVX, ASX: NVX, OTCQX: NVNFX) is a leading battery technology company revolutionising the global lithium-ion battery industry with innovative, sustainable technologies, high-performance materials, and more efficient production methods. The company manufactures industry-leading battery cell testing equipment in Canada and is growing its high-performance synthetic graphite anode material manufacturing operations in the United States. Through advanced R&D capabilities, proprietary technology, and strategic partnerships, NOVONIX has gained a prominent position in the electric vehicle and energy storage systems battery industry and is powering a cleaner energy future. To learn more, visit NOVONIX at www.novonixgroup.com or on LinkedIn, and Twitter.

Forward-looking statements

This announcement contains forward-looking statements. Forward-looking statements are subject to a variety of risks and uncertainties that it is beyond the Company's ability to control or predict and which could cause actual events or results to differ materially from those anticipated in such forward-looking statements.

About Lithium Australia

Lithium Australia (ASX:LIT) is at the forefront of advanced materials development to ensure an ethical and sustainable future for the global battery industry. Lithium Australia is achieving this via its business divisions:

Envirostream (100%-owned LIT subsidiary): Envirostream, which is leading Australia's battery recycling industry, is at the cutting edge of delivering safe and innovative management solutions to one of the Australian waste industry's biggest (and getting bigger) challenges – battery disposal.

Its state-of-the-art Victorian-based battery processing facilities are providing a sustainable solution by collecting, sorting and processing critical battery metals from all types of spent batteries to power the batteries of tomorrow.

With battery recycling partnerships alongside some of Australia's leading brands (including Bunnings, Officeworks and Battery World), Envirostream benefits from the Australian government-backed battery recycling scheme which is providing rebates across collection, sorting, and processing of batteries. These combined provide the platform for national expansion.

VSPC (100%-owned LIT subsidiary): With over 20 years' experience, VSPC develops leading-edge materials for e-mobility and energy storage applications and, ultimately, a zero-carbon economy. Its patents cover the production of advanced powders for next generation lithium-ion batteries, especially lithium ferro phosphate ('LFP').

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Currently, demand for LFP represents more than half the global market for lithium-ion battery materials. The Company is one of only a few entities outside of China with the technical expertise to manufacture LFP powder of the highest quality to meet those burgeoning market pressures.

VSPC is now on a clear path to production. With a Research & Development (R&D) facility (pilot plant) located in Queensland, a Definitive Feasibility Study ('DFS') for an initial 10,000tpa LFP manufacturing facility is well underway, and with customer offtake discussions advancing in parallel, VSPC is positioning for its first commercial footprint.

References

Benchmark Mineral Intelligence. (2023, February 14). *The rise of LFP batteries outside of China*. Retrieved from Benchmark Source Web Site:
<https://source.benchmarkminerals.com/article/the-rise-of-lfp-batteries-outside-of-china>