Lake Resources NL: Positive Novonix Battery Results with Lake High Purity Lithium

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Brisbane, Australia - Clean lithium developer Lake Resources NL (ASX:LKE) (FRA:LK1) (OTCMKTS:LLKKF) confirms positive results from initial testing by Novonix for the production of NMC622-based lithium-ion battery test cells using samples of Lake's high 99.97% purity lithium carbonate.

Novonix Limited (ASX:NVX) (OTCMKTS:NVNXF) received commercial samples of NMC622-hydroxide precursor from Tier 1 producers, together with samples of Lake's high 99.97% purity lithium carbonate, to conduct a real-world direct comparison of Lake's product into NMC622 batteries and its suitability for the nickel cathode sector.

Lake's high-quality product yielded improved capacity retention and better electrochemical behaviour in coin cells compared to the commercially available product from Tier 1 producers.

Larger scale tests will be conducted using batch-scale synthesis to demonstrate repeatability, homogeneity, and cell characterisation and validation in full lithium-ion wound pouch cells, as part of Novonix's pilot scale cell line facilities in Nova Scotia, Canada. This will enable Lake and its potential partner and customers to make direct comparisons of Lake's lithium product's performance in familiar battery chemistries. Novonix anticipates this testing process to take some months. Lake will update the market as soon as results are available.

The cathode material was tested for electrochemical properties using coin half-cell testing. Powders were characterised using Scanning Electron Microscopy (SEM) and X-ray Diffraction (XRD) to understand morphology and phase purity (see Figure 2). The XRD showed no impurities. Lake's lithium carbonate was used as received and also milled but no appreciable difference was noted in the resultant NMC powders once synthesised.

NMC622 was mixed with conducting carbon and binder, cast on to an aluminium foil current collector, dried, punched and assembled into a lithium-ion battery half-cell which yielded similar voltage profiles, improved capacity retention and better electrochemical behaviour compared to the commercially available product from Tier 1 producers.

Novonix Limited provides high precision battery testing equipment to Tier 1 battery makers including Panasonic, CATL, Samsung, SK Innovation, LG Chem, Bosch, Honda and Dyson. Recently, world-renowned researcher in the field of lithium-ion batteries and materials, Prof. Jeff Dahn, announced his return to Novonix as Chief Scientific Advisor, while continuing with Dalhousie University, in a group sponsored by Tesla.

Novonix also recently completed a successful $115 million institutional equity raising, highlighting investor confidence in its technology. Lake's high purity lithium carbonate results have been obtained via a simple flowsheet without any anticipated changes to the operating costs previously forecast in Kachi's Pre-Feasibility Study (refer ASX announcement 30 April 2020). Low impurities are a key factor in determining battery quality and the pricing and acceptance of lithium products. Lake's high purity carbonate offers the potential for premium prices.

Managing Director Steve Promnitz commented: "The results from Novonix demonstrate the high quality of Lake's high purity lithium in batteries and future results are anticipated to reinforce the initial results. This provides electric vehicle makers and battery makers confidence around Lake's product quality, which is particularly important given the increasing demand for a high purity product.

"Lake is advancing the Kachi DFS amid a growing focus on sustainability and the need for a responsibly sourced product suitable for the supply chains of leading EV makers. With investor and industry engagement intensifying, Lake is in an excellent position to progress our product and unlock increased value for shareholders."

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About Lake Resources NL:

Lake Resources NL (ASX:LKE) (OTCMKTS:LLKKF) is a clean lithium developer utilising clean, direct extraction technology for the development of sustainable, high purity lithium from its flagship Kachi Project, as well as three other lithium brine projects in Argentina. The projects are in a prime location within the Lithium Triangle, where 40% of the world's lithium is produced at the lowest cost.

This method will enable Lake Resources to be an efficient, responsibly-sourced, environmentally friendly and cost competitive supplier of high-purity lithium, which is readily scalable, and in demand from Tier 1 electric vehicle makers and battery makers.

Source:
Lake Resources NL

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