

26 May 2021

LITHIUM REFINERY CLEANTECH FORMS PART OF DUAL-FEED PILOT PROGRAM

Emerging mineral processing technology company, Zeotech Limited (ASX:ZEO, “Zeotech” or “the Company”) is pleased to announce that after early commercial interest in the potential to apply the Company’s proprietary mineral processing technology as a cleantech solution for the lithium refinery industry, the decision has been made to expand the current pilot plant program¹ to include leached spodumene residue (“Li Process Residue”) as an additional feed type for the synthesis of zeolites.

The opportunity to develop a commercial cleantech solution for lithium refinery industry is compelling. The growing demand from electric vehicle (EV) batteries is driving the expansion of lithium hydroxide production globally, which will produce material volumes of Li Process Residue.

Highlights

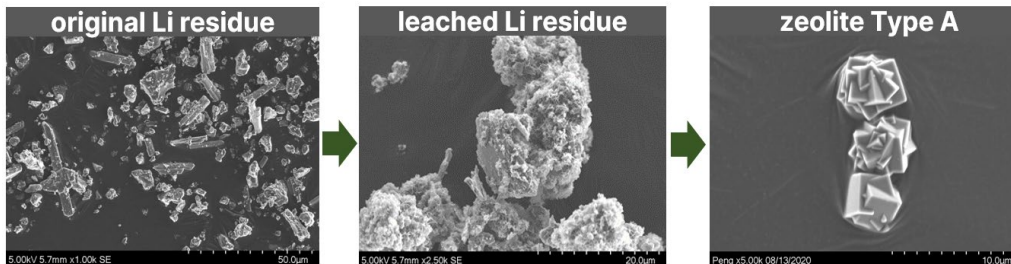
- Zeotech has committed to the development and construction of a dual-feed pilot plant, capable of using kaolin and Li Process Residue, as feed types to produce commercial grade synthetic zeolite.
- The decision to include Li Process Residue into the current program is driven by the potential to validate promising process economics delivered during lab-scale studies undertaken in the second half of 2020. The objective is to accelerate potential licencing opportunities within the growing lithium refinery sector.
- The dual-feed pilot plant research program will be supported by researchers from The University of Queensland’s School of Chemical Engineering (“UQ”), which have synthesised commercial grade 4A and 3A molecular sieve zeolite under ZEO’s patent-pending conditions, with lab-scale results delivering promising process economics utilising Li Process Residue as feed² (refer image overleaf).
- The Company’s dual-feed pilot plant program is fully funded, with capital on hand ensuring the ability to meet a range of initiatives planned for 2021/22, including expansion of synthetic zeolite carbon capture and conversion program.
- The program will further optimise the flowsheet of the Company’s low-cost synthetic zeolite manufacturing technology to de-risk future commercial investment, attract off-take partners and support potential licensing opportunities.

¹ Refer to ASX announcement 16/02/2021 “Synthetic Zeolite Pilot Plant Program Commences”

² Refer to ASX announcement 28/10/2020 “Commercial Grade Zeolite Produced from Li Process Residue”

The process of converting spodumene concentrates to lithium hydroxide requires about 7 tonnes of concentrate feed to produce 1 tonne of lithium hydroxide i.e. a nominal operation annually producing around 10,000 tonnes of lithium hydroxide, about 60,000 tonnes of the 70,000 tonnes of starting feed material reports to residue tailings stream.

Zeotech's objective is to deliver a commercially viable solution to optimise lithium refineries Li Process Residue streams by converting these tailings into high value molecular sieve grade synthetic zeolites. The aim is to offer lithium hydroxide refineries an integrated approach that can potentially improve project margins by adding downstream revenues via implementing Zeotech's patent-pending technology.



The University of Queensland's School of Chemical Engineering, Associated Professor James Vaughan commented:

"We remain focused on delivering the highest level of technical support to ensure Zeotech achieves its commercial goals. The inclusion of leached spodumene to expand the research program currently underway into a dual-feed pilot offers the opportunity to optimise promising results achieved during 2020 into an exciting commercial proposition for Zeotech."

Developing cleantech solutions aligns with our commitment in delivering sustainable outcomes for industry and the environment – especially in the rapidly growing EV sector."

Zeotech, Managing Director Peter Zardo added:

"A dual-feed pilot plant program will greatly enhance Zeotech's commercial potential and accelerate nearer term licencing opportunities of its patent-pending technology, by directly targeting a unique value-add environment management solution for lithium refineries."

Our achievements to date would not have been possible without the dedicated contribution of our partners at The University of Queensland's School of Chemical Engineering and we look forward to keeping our shareholders updated on progress."

Dual-Feed Pilot Plant Program

The dual-feed pilot plant program and associated data modelling should:

- Validate the patent-pending technology;
- Lower commercial plant project risk / verify process efficiency, yields and target grades;
- Support the findings and data generated throughout UQ bench-scale research;
- Finalise mass and energy balances;
- Test variability of feed;

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- Further optimise system design and capacity;
- Assist METSIM modelling to verify future production CapEx and OpEx requirements
- Determine system limitations and optimise process design for continuous production;
- Attract technology licencing opportunities and reduce commercial financing risk;
- Develop standard operating procedures;
- Produce a range of synthetic zeolite products for test applications and verification; and
- Support commencement of a Pre-Feasibility Study (PFS).

Dual-Feed Pilot Plant Funding

As announced on 24 May 2021³, the Company raised \$3.7m to support funding of the dual-feed pilot plant program and ensuring the need for capital across a range of initiatives planned for 2021 and 2022 are fully funded, including expansion of synthetic zeolite carbon capture and conversion program. It is important to note that as the dual-pilot plant research program revolves around validating Zeotech's patent-pending technology, it is classified as Research and Development and accordingly it will be eligible for the Australian Government's R&D tax incentive scheme.

This Announcement has been approved by the Board.

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About Zeotech

Zeotech Limited (ASX: ZEO) holds proprietary mineral processing technology developed by The University of Queensland, for the low-cost production of advanced materials 'synthetic zeolites' and aims to utilise their unique properties for a sustainable future.

The strategy focuses on innovative environmental management solutions, which include cleantech for lithium refineries to commercially manage by-product residue and developing economically viable carbon capture and conversion solutions, underpinned by low-cost 'adsorbents and catalysts' manufactured using Zeotech's patent-pending technology.

About Zeolites

Synthetic zeolites are manufactured aluminosilicate minerals with a sponge-like structure, made up of tiny pores (frameworks) that make them useful as catalysts or ultrafine filters. They are commonly known as molecular sieves and can be designed to selectively adsorb molecules or ions dependant on their unique construction.

³ Refer to ASX announcement 24/05/2021 "Placement Secures \$3.7m to Expand the Company's Projects"

Zeolites play an important role in a cleaner and safer environment.

- zeolites are an effective substitute for harmful phosphates in powder detergent, now banned in many parts of the world because of blue green algae toxicity in waterways;
- as catalysts, zeolites increase process efficiencies = decrease in energy consumption;
- zeolites can act as solid acids and reduce the need for more corrosive liquid acids;
- zeolites adsorbent capabilities see them widely used in water treatment i.e., heavy metal removal including those produced by nuclear fission; and
- as redox catalyst sorbents, zeolites can help remove exhaust gases and CFC's.

Forward-looking Statements

This release may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of Zeotech and certain of the plans and objectives of Zeotech with respect to these items.

These forward-looking statements are not historical facts but rather are based on Zeotech current expectations, estimates and projections about the industry in which Zeotech operates, and its beliefs and assumptions.

Words such as "anticipates," "considers," "expects," "intends," "plans," "believes," "seeks," "estimates", "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services.

These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties, and other factors, some of which are beyond the control of Zeotech, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward-looking statements.

Zeotech cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of Zeotech only as of the date of this release.

The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made.

Zeotech will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.