

19 October 2022

## **Pilot trial reports completed & vendor testwork produces “very clean” lithium hydroxide crystals**

- **Strategic Metallurgy has completed pilot trial reports on both lithium hydroxide refining and by-product manufacture that confirm Phase 1 design parameters and battery grade lithium hydroxide can be recovered using LOH-Max<sup>®</sup>**
- **Third-party crystalliser vendor test-work advise; lithium hydroxide “crystals produced are much more pure than that produce from the sodium sulfate route”**
- **Independent Engineer review of final pilot trial reports underway; completion of this technical due diligence is a key gating item for securing Phase 1 Project debt**
- **By-product pilot trials result in, “excellent separation of potassium sulfate from impurities” & “high recovery of caesium”**

**Lepidico Ltd (ASX:LPD) (“Lepidico” or “Company”)** is pleased to announce that all test-work associated with the demonstration and pilot scale trials that started in November 2021 has successfully completed and reported on by Strategic Metallurgy, with excellent results received that confirm the Phase 1 L-Max<sup>®</sup> and LOH-Max<sup>®</sup> design. The two final reports, lithium hydroxide refining and by-product manufacture, have been reviewed by Lepidico. These are now being provided to Behre Dolbear Australia Pty Ltd (BDA), Independent Engineer to lender International Development Finance Corporation (DFC), along with the latest Karibib mine schedule, allowing it to complete its technical review. This represents a major gating item for closing out due diligence and finalising Project lending.

Of particular note, a sample of crude lithium hydroxide generated from the pilot trial using the LOH-Max<sup>®</sup> process was provided to a leading crystalliser vendor to undertake confirmatory test-work using its own equipment. The vendor processed the crude product through dissolution, sulfate removal and recrystallisation under Phase 1 design conditions. The recovered product satisfies Livent<sup>i</sup> and Targray<sup>ii</sup> battery grade specifications for lithium hydroxide monohydrate. Furthermore, Strategic Metallurgy has advised that, “the crystals produced are much more pure than that produced from the sodium sulfate route”, Figure 1.

Managing Director Joe Walsh said, “Final data from these most recent extensive pilot trials provide enormous confidence in Lepidico’s process technologies and further reduce Phase 1 risk, as the learnings have been progressively included into the process design criteria. It is most gratifying that independent third-party test-work has demonstrated that LOH-Max<sup>®</sup> can produce a “more pure” lithium hydroxide than the conventional sodium sulfate process and result in high quality crystal morphology. We now look forward to taking our project debt initiatives to the finish line.”

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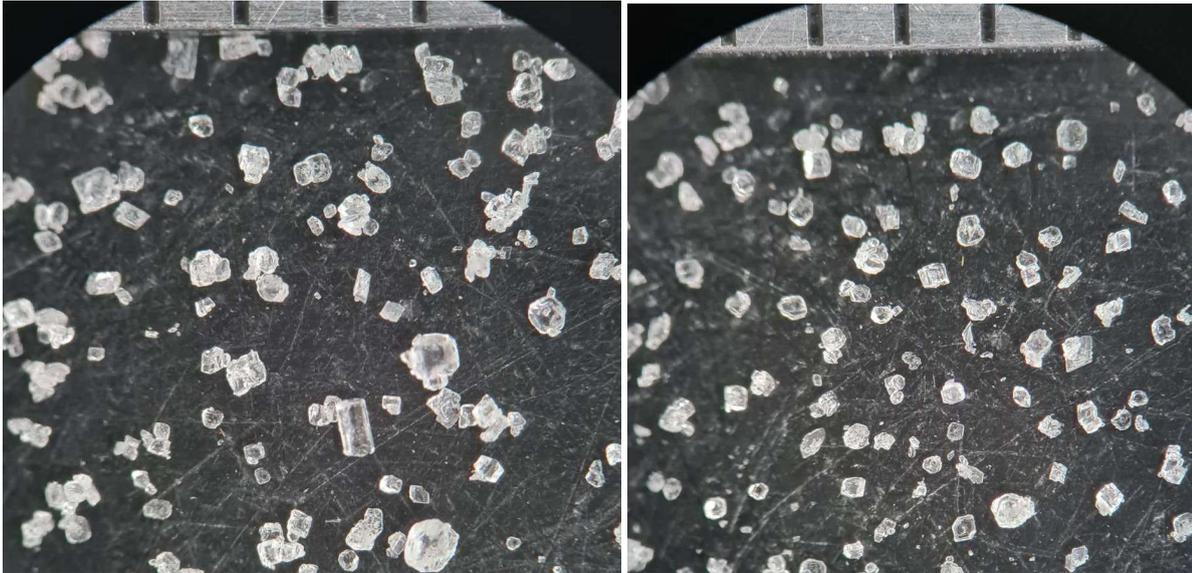


Figure 1: Large cubic shaped lithium hydroxide monohydrate crystals generated from two separate crops displaying a  $d_{50}$  of  $\sim 320 \mu\text{m}$

The final phase of crystalliser vendor test-work started in early July 2022 and included trials on the potassium-caesium-rubidium by-product stream. This work, coupled with the extensive piloting at Strategic Metallurgy's facilities in Perth, Western Australia has successfully validated the Phase 1 by-product recovery circuit process design in continuous operation at pilot scale. Third-party crystalliser test-work produced a market specification sulfate of potash (SOP) with key impurities all below the required levels. SOP recoveries were lower than design due to the need for higher crystallisation evaporation rates, with losses reporting to the gypsum residue. Optimisation of this circuit will be undertaken once operational.

Excellent caesium recoveries were achieved to a raw sulfate. Strategic Metallurgy subsequently refined this in a new pilot circuit to remove rubidium, successfully producing a marketable specification product. Further research and development work is planned to convert both caesium and rubidium into other commercial industrial compounds of the critical metals, with this conversion expected to be undertaken by third parties.

The Managing Director has authorised this announcement for release to the market.

#### **About Lepidico Ltd**

Lepidico is an innovative developer of sustainable lithium hydroxide and other critical minerals, and the global leader in lithium mica processing.

With a tech-focused, ESG-led business model that is pilot-proven, our first lithium production – from far less contested mineral sources – are due in 2025. The Phase 1 Project will provide a meaningful contribution to decarbonisation the world's alkali metals supply chains. We are also working to grow our business with our second project, Phase 2. Other businesses have already begun to licence our patented-protected L-Max<sup>®</sup> and LOH-Max<sup>®</sup> technologies providing an avenue for royalty revenues.

For more information, [please visit our website](#).

### Further Information

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### Forward-looking Statements

All statements other than statements of historical fact included in this release including, without limitation, statements regarding future plans and objectives of Lepidico, are forward-looking statements. Forward-looking statements can be identified by words such as "anticipate", "believe", "could", "estimate", "expect", "future", "intend", "may", "opportunity", "plan", "potential", "project", "seek", "will" and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that are expected to take place. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, its directors and management of Lepidico that could cause Lepidico's actual results to differ materially from the results expressed or anticipated in these statements.

The Company cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this release will actually occur and investors are cautioned not to place any reliance on these forward-looking statements. Lepidico does not undertake to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this release, except where required by applicable law and stock exchange listing requirements.

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<sup>i</sup> <https://livent.com/wp-content/uploads/2018/09/QS-PDS-1021-r3.pdf>

<sup>ii</sup> <https://www.targray.com/li-ion-battery/battery-grade-lithium/lithium-hydroxide>