ASX / MEDIA ANNOUNCEMENT

6 April 2021

Lithium Carbonate Process Developed

- **New proprietary process developed for production of high purity lithium carbonate from lithium hydroxide via sequestration of upstream generated carbon dioxide (CO_2)**
- **Provisional patent application filed with the Australian Patent Office**
- **Process provides the ability to produce either lithium hydroxide or lithium carbonate from the same chemical conversion facility, allowing flexibility to respond to shifts in market demand and customer product preferences**
- **Process materially reduces chemical plant CO_2 emissions when upstream emissions are recycled and consumed in lithium carbonate production**
- **Process design work has started for equipping the Phase 1 Plant with lithium carbonate production capability from year two of operation**

Lepidico Ltd (ASX:LPD) ("Lepidico" or "Company") is pleased to announce that it has lodged a provisional patent application for the production of nominal battery grade specification lithium carbonate from a LOH-Max® intermediate crude lithium hydroxide via the sequestration of carbon dioxide – planned to be captured from the upstream L-Max® process – followed by refining. The new process is designed so that it can be integrated with either L-Max® and/or LOH-Max® or potentially in the chemical conversion of spodumene concentrates.

Growing need for lithium chemical flexibility

It is evident from discussions with both lithium-ion battery cathode manufacturers and electric vehicle (EV) makers that there is an emerging need for lithium chemical companies to be able to efficiently switch between production of lithium carbonate and lithium hydroxide. Automakers are broadening out their range of EV models that employ both lithium iron phosphate (LFP) and high nickel content nickel-cobalt-manganese oxide (NCM), as well as other existing and evolving cathode chemistries. Adoption of a mixed cathode strategy such as this will likely require supplies of both lithium carbonate and lithium hydroxide, in quantities that are currently difficult to determine, due to the uncertainty of future demand for different categories of EVs, be it for example compact, mid-range or prestige passenger vehicles, or light commercial vehicles.

LEPIDICO LTD
ABN 99 008 894 442

ASX: LPD

23 Belmont Avenue
Belmont WA 6104

PO Box 330
Belmont WA 6984

Phone: + 61 8 9363 7800
Email: info@lepidico.com

Lepidico has received positive feedback from lithium chemical consumers within the EV supply chain for integrating functionality that provides the flexibility to produce both hydroxide and carbonate from the Phase 1 Plant. Offtake discussions are progressing well and the lodgement of the provisional patent for this new process will allow for optionality to be included in offtake agreements.

New proprietary lithium carbonate process

Following more than a year of research and development work, Lepidico has filed a provisional patent application for a process that involves the sequestration of CO_2 into a crude LOH-Max® lithium hydroxide intermediate and subsequent refining to a nominal battery grade lithium carbonate. The process flowsheets for the refining of these two lithium chemicals mostly share common equipment, aside from the need for CO_2 reticulation and gas sparges in specific process reactors. Approximately 0.6 tonnes of CO_2 will be required for each tonne of lithium carbonate produced, equivalent to around 25% of process emissions from the upstream L-Max® plant. A preliminary evaluation by Strategic Metallurgy indicates a capital cost of less than US$1 million will be required to integrate this lithium carbonate functionality into the back end of the Phase 1 Plant. Process design work is scheduled to be completed this quarter, which will allow feasibility study work to start for retrofitting lithium carbonate functionality to the Phase 1 Plant in production year two.

CO_2 elimination

The existing Phase 1 plant design includes the capture and scrubbing of CO_2 emitted from process reactor vessels. Work is ongoing to determine the optimal solution for CO_2 scrubbing and compression to support the production of lithium carbonate.

Two alternatives for further minimising chemical plant CO_2 emissions are being evaluated:

1) caustic scrubbing of surplus CO_2 to produce sodium carbonate/bicarbonate, which is a common use industrial chemical that includes use in conventional spodumene conversion; and

2) compression of the majority of CO_2 emitted, with the surplus going to industrial use (the global commercial CO_2 market is estimated at 230 million tonnes per year[1]; US$7.9 billion in 2020[2]). This trade-off study is expected to be completed in the current quarter.

Lepidico's Managing Director, Joe Walsh said, "Engagement with lithium chemical consumers over the past two years has revealed a growing need for suppliers to be able to contract for either lithium carbonate or lithium hydroxide. Lepidico's new lithium carbonate process coupled with its existing L-Max® and LOH-Max® process technologies provide a unique solution to this need, which is both cost competitive and can lead to reduced CO_2 emissions from levels which are already low within the industry. This competitive edge will be important in securing supply agreements to leading lithium chemical consumers in the EV supply chain. Furthermore, continual improvement in environmental and social performance is imbedded into the Company's strategic planning, with the ultimate objective to eliminate process greenhouse gas emissions."

"Work on this new lithium carbonate process is being kept independent of the Phase 1 Project to allow development activities under an EPCM contract to start without delay. Award of the EPCM contract with a highly qualified engineering firm is imminent, which will allow critical path early services and front-end engineering and design work to start."

[1] Source: International Energy Agency
[2] Source: Grand View Research

Further Information

For further information, please contact

Joe Walsh
Managing Director
Lepidico Ltd
Tel: +1 647 272 5347

David Waterhouse
Waterhouse IR
Tel: +61(0)3 9670 5008

Email: info@lepidico.com
Website: www.lepidico.com

About Lepidico Ltd

Lepidico Ltd is an ASX-listed Company focused on exploration, development and production of lithium chemicals. Lepidico owns the technology to a metallurgical processes that have successfully produced lithium carbonate from non-conventional sources, specifically lithium-rich mica minerals including lepidolite and zinnwaldite. The L-Max® Process has the potential to complement the lithium market by adding low-cost lithium carbonate supply from alternative sources. More recently Lepidico has added LOH-Max® to its technology base, which produces lithium hydroxide from lithium sulphate without by-product sodium sulphate. The Company has completed a Definitive Feasibility Study for a nominal 5,000 tonne per annum Lithium Hydroxide Monohydrate capacity Phase 1 lithium chemical plant, targeting commercial production for 2023. The Project incorporates the Company's proprietary L-Max® and LOH-Max® technologies into the chemical conversion plant design. Feed to the Phase 1 Plant is planned to be sourced from the Karibib Project in Namibia, 80% owned by Lepidico, where a predominantly Measured and Indicated Mineral Resource of 11.24 Mt grading 0.43% Li_2O, (including Measured Resources of 2.20 Mt @ 0.57% Li_2O, Indicated Resources of 6.66 Mt @ 0.38% Li_2O and Inferred Resources of 2.37 Mt @ 0.43%, at a 0.15% Li_2O cut-off) is estimated. Ore Reserves total 6.72 Mt @ 0.46% Li_2O, 2.26% rubidium, 2.02% potassium and 320ppm caesium.

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.