

Commitment to the Future

**THE GLOBAL LEADER IN SUSTAINABLE LITHIUM MICA PROCESSING**

**Fastmarkets Lithium Supply & Battery Raw Materials 2022**

June Quarter 2022



**LEPIDICO**

## **IMPORTANT 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.

## **Competent Person Statement**

The information in this report that relates to the Helikon 1 and Rubicon Ore Reserve estimates is extracted from an ASX Announcement dated 28 May 2020 ("Definitive Feasibility Study Delivers Compelling Phase 1 Project Results") and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

The information in this report that relates to the Rubicon and Helikon 1 Mineral Resource estimates is extracted from ASX Announcements dated 30 January 2020 ("Updated Mineral Resource Estimates for Helikon 1 and Rubicon") and 12 March 2021 ("Karibib Mineral Resource expanded"), which completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.

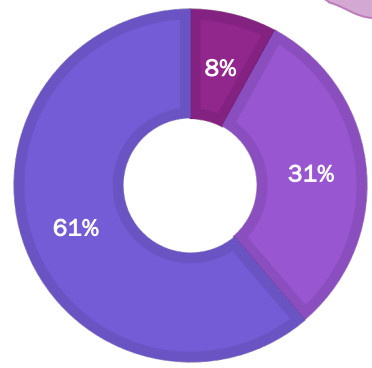
The information in this report that relates to the Helikon 2 - Helikon 5 Mineral Resource estimates is extracted from an ASX Announcement dated 16 July 2019 ("Drilling Starts at the Karibib Lithium Project") and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are represented have not been materially modified from the original market announcement.



# THE FUNDAMENTALS: VERTICALLY INTEGRATED FROM MINE TO LITHIUM CHEMICAL

Lepidico's tech-focused, pilot-proven, ESG-led business model delivers lithium from far less contested mineral sources, with first delivery due in 2024

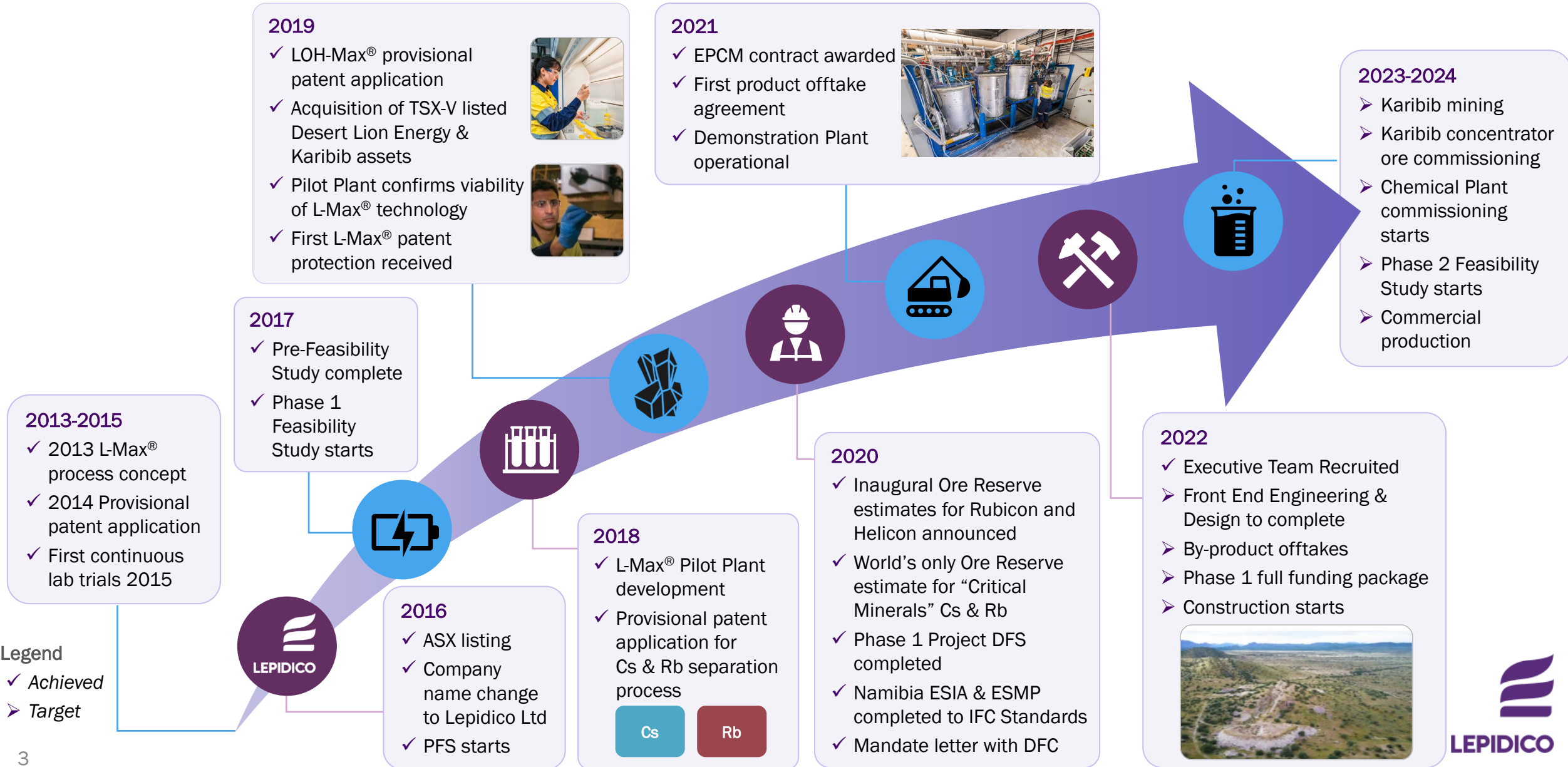
<b>Market</b>
ASX
<b>Ticker</b>
LPD
<b>Market Cap</b>
A\$195m (share price A3.0c) (at 30 April 2022)
<b>Cash</b>
A\$9.9m (no debt) (at 30 May 2022)



- Board and Management
- Top 40 Public shareholders
- Balance



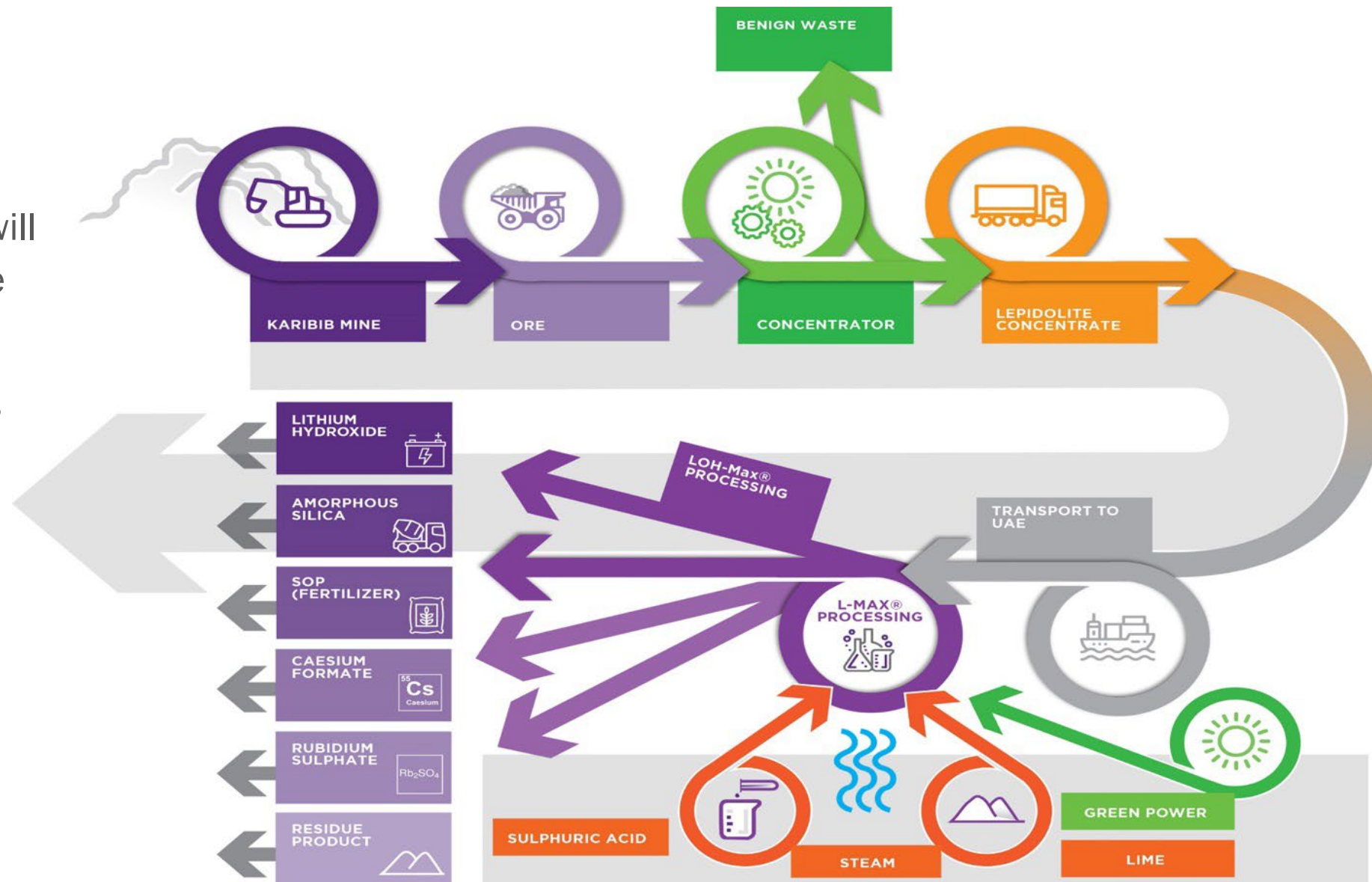
# Corporate Timeline



# THIS IS WHAT WE DO: FROM MINE TO MARKET – a low carbon value chain

When operations come on stream in 2024, lithium mica ore mined and concentrated in Namibia will be shipped as concentrate for processing in the UAE.

Our patented technologies transform the concentrate into lithium hydroxide - or carbonate - as well as in-demand strategic chemicals, caesium and SOP - and other saleable outputs, with no solid process waste.



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# OUR TECHNOLOGIES & ESG



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# L-Max<sup>®</sup> – the conversion solution for Li-mica minerals

- **Innovation:** efficiently leaches and refines lithium from less contested lithium micas and phosphates
- **Patents:** Australia, Europe, Japan & US patent protection received for this Lepidico owned technology
- **Sustainable:** utilises common use, inexpensive reagents; conventional equipment; operates at atmospheric pressure and modest temperatures; is energy efficient; and has modest emissions
- **High value:** as well as caesium-rubidium by-products, L-Max<sup>®</sup> also delivers potassium sulphate fertiliser (SOP), amorphous silica and gypsum residues; with zero-solid waste potential
- **Scalable:** Pilot proven; Demonstration Plant now operational; scale up to 5,000tpa LCE Phase 1 c.200 to 1; Scoping Study underway for larger Phase 2 Plant with 10,000 to 20,000tpa LCE output



# LOH-Max<sup>®</sup> - a more sustainable Lithium Hydroxide solution<sup>1</sup>

- **Patent** – provisional patent lodged early 2019; international patent phase started August 2020; national and regional phases started September 2021
- **Broad application** – in lithium mineral conversion that employs sulfur-based chemistry; includes Spodumene
- **Recovery enhanced** – +4% versus conventional Spodumene process; +1,000tpa LiOH at nominal 20,000tpa rate
- **CapEx reduced** – by US\$52M (14%) on 20,000tpa LCE reference case Spodumene converter on simplified flowsheet
- **OpEx reduced** – by US\$8M pa versus reference Spodumene converter case on lower power and reagent consumption
- **CO<sub>2</sub> reduced** – lower Scope 1, 2 and 3 emissions versus conventional processing
- **Value enhanced** – by +US\$100M per 20,000tpaLiOH.H<sub>2</sub>O over 10-years
- **Waste** – benign gypsum/alunite waste
- **Risk reduced** – sodium sulphate not produced; a potential fatal flaw for conventional plants if disposal required
- **Ownership** – 100% owned by Lepidico; royalty sharing arrangement with original developers for third party licenses



<sup>1</sup> ASX Announcement: LOH-Max<sup>®</sup> process technology acquisition & improvements, 29 October 2020



# Environmental excellence through technology

- **Competitive carbon intensity** – GHD reported “low” chemical plant emissions intensity vs other LiOH plants; 8.8tCO<sub>2</sub>-e/t LiOH.H<sub>2</sub>O (10.0tCO<sub>2</sub>-e/t LCE) for integrated project Scope 1 & 2 emissions – 90% in chemical plant, 10% mine & concentrator; renewable power and green hydrogen can lower emissions to just 3.0tCO<sub>2</sub>-e/t LCE
- **Other emissions & pollutants** – negligible
- **Water intensity** – 33m<sup>3</sup>/t LCE, 44% allocation to LiOH; 20% Namibia/80% UAE for first 5 years, with 85% of concentrator water recycled
- **Land use intensity** – 962Ha integrated project on predominantly industrial land; mine closure plan to return land to agricultural use; Category B designation
- **Biodiversity** – ESIA identifies no material impacts at Karibib & UAE operations are located within a designated industrial park
- **Industrial waste generation** – no TSF required, benign mine and concentrator waste co-disposed; no sodium sulphate generated from converter; & opportunity for zero solid waste chemical plant





# Social Responsibility & Governance

## Health & Safety

- Lost Time Injury & Total Recordable Incidents Frequency Rates 0 > zero harm
- More than 154,000 hours worked with no Recordable Incidents since records began in 2016



## Social

- **Creation of 115 direct jobs and +800 indirect jobs in Namibia**
- 119 new direct jobs in the UAE
- No relocation requirement
- Water supply to local farmers
- Medical equipment donation



## Governance

- Experienced Board of Directors with complementary skills
- Sustainability & best practice ESG integrated with strategic planning
- **Talented Operations Executives appointed April '22: GM Op's Namibia, GM Op's UAE & GM Sustainability**



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# OUR PHASE 1 PROJECT

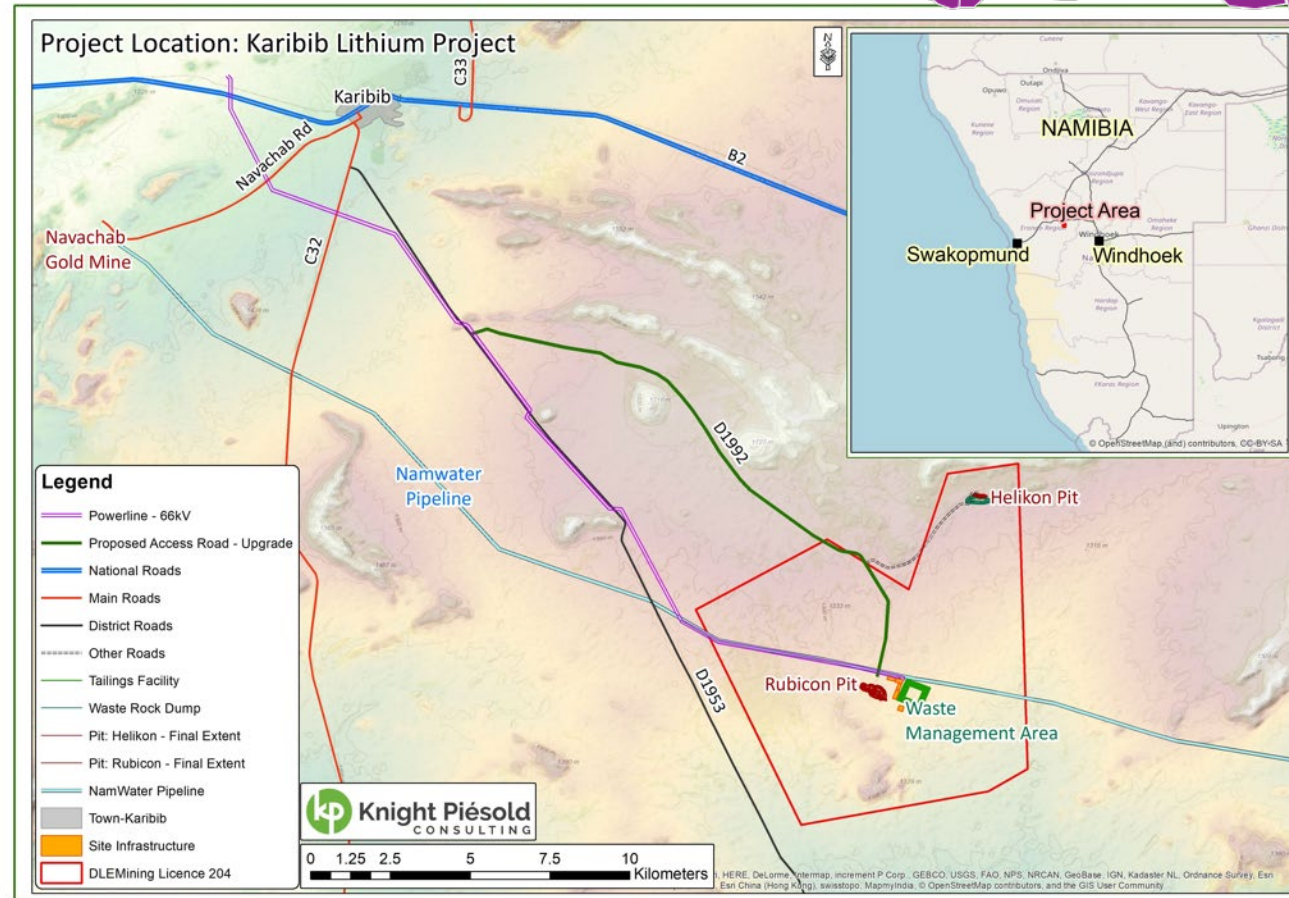


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# Karibib Project, Namibia

- Brownfield re-development of Rubicon & Helikon mines
- Fully permitted: Granted 68km<sup>2</sup> Mining Licence
- Water extraction licence given - 85% of process water will be recycled
- Construction of new small-scale 60,000tpa concentrator
- Direct access to excellent existing regional infrastructure
- New 25km line for grid power
- Large ground position prospective for lithium, caesium, rubidium & gold



Exploration: Mineral Resource expansion drilling and regional programs resumed January 2022  
– results pending, to extend Phase 1 life & support the Phase 2 Project Scoping Study

# RESERVES & RESOURCES: Unique source of Critical Minerals

## Ore Reserve Estimate<sup>1</sup> Rubicon & Helikon 1 deposits

Reserve Category	Tonnes (M)	Li <sub>2</sub> O (%)	Rb (%)	Cs (ppm)	Ta (ppm)	K (%)
Proved	1.93	0.59	0.28	410	50	2.10
Probable	4.79	0.41	0.21	290	40	1.99
<b>Total Reserves</b>	<b>6.79</b>	<b>0.46</b>	<b>0.23</b>	<b>320</b>	<b>50</b>	<b>2.02</b>

- JORC Code (2012) compliant Ore Reserve estimate for lithium, rubidium, caesium & potassium
- 76% conversion of Measured & Indicated Resources to Reserves for a 14-year project life
- Inferred Resource potential supports expansion potential or Phase 2 Project development
- Ore exposed at surface and deposits pre-stripped by historical mining
- Strip ratio just 0.5 to 1 for the first 2 years and 3.8 to 1 Life of Mine
- Most mine development work complete including haul road to Helikon 1 & water supply

## Karibib Project Global Mineral Resources<sup>2</sup>

Deposit	Resource Category	Tonnes (M)	Li <sub>2</sub> O (%)	Rb (%)	Cs (ppm)	Ta (ppm)	K (%)	Cut-off (% Li <sub>2</sub> O)
Rubicon & Helikon 1 <sup>3</sup>	Measured	2.2	0.56	0.27	389	51	2.14	0.15
	Indicated	6.66	0.38	0.20	274	42	2.07	0.15
	Inferred	0.17	0.7	0.29	1100	150	2.18	0.15
Helikon 2, 3, 4 & 5 <sup>4</sup>	Inferred	2.2	0.41					0.20
Rubicon tailings <sup>5</sup>	Indicated	0.07	0.99	0.42	538	60		0.00
Rubicon & Helikon stockpiles <sup>5</sup>	Inferred	0.57	0.79					0.00
Global	Measured	2.2	0.57	0.27	389	51	2.14	
	Indicated	6.73	0.39	0.21	277	42		
	Inferred	2.94	0.5					
	<b>Total</b>	<b>11.87</b>	<b>0.45</b>					

<sup>1</sup> ASX Announcement: DFS Delivers Compelling Phase 1 Project Results, 28 May 2020

<sup>2</sup> Resources are inclusive of Ore Reserves

<sup>3</sup> ASX announcement dated 30 January 2020: Updated Mineral Resource Estimates for Helikon 1 and Rubicon

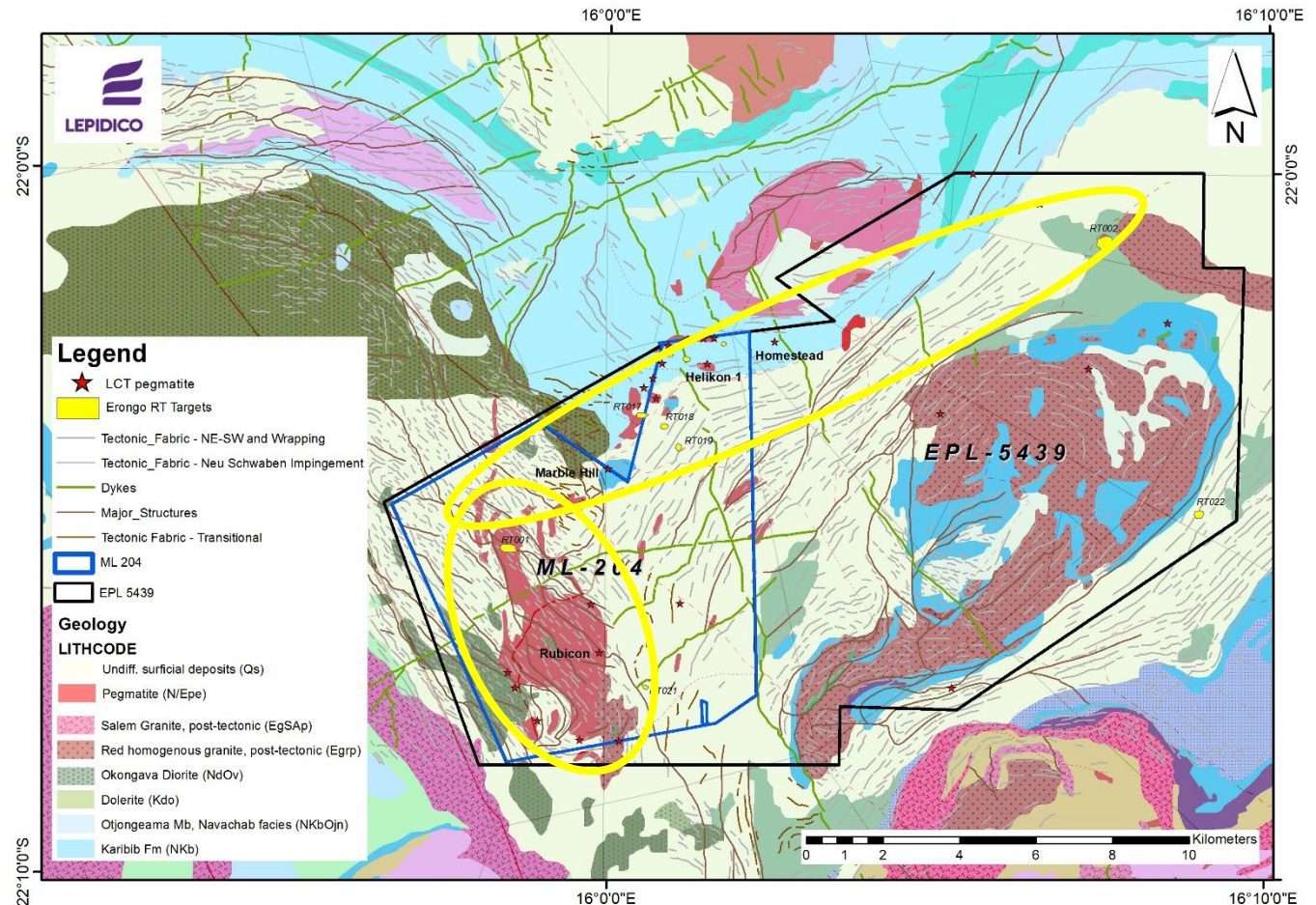
<sup>4</sup> ASX announcement dated 16 July 2019: Drilling starts at the Karibib Lithium Project

<sup>5</sup> ASX announcement dated 12 March 2021: Karibib Mineral Resources Expanded



## Mineral Resource expansion drilling & regional programs – to extend Phase 1 life & support Phase 2 Project Scoping Study

- Helikon 3-4: broad high-grade lepidolite zones intersected in recent drilling:
- 40 m @ 1.08% Li<sub>2</sub>O
- 20 m @ 1.16% Li<sub>2</sub>O
- 6 m @ 2.15% Li<sub>2</sub>O
- Homestead: massive lepidolite intercepted over 250m of strike; drilling continues
- Regional Targets 1 & 18: high Rb anomalies in soils; pegmatitic granite intersected in drilling
- Objective 1: convert Inferred Mineral Resources to Measured-Indicated & extend Phase 1 life to +20 years
- Objective 2: delineate new Mineral Resources to support a Phase 2



# Karibib Concentrator – conventional flotation, small footprint

- Lycopodium started EPCM works May 2021
- Final FEED completed June Quarter 2022
- Limited Stage 2 EPCM works started March 2022
- Site works start September Quarter 2022
- Mining starts second half 2023
- Concentrator commissioning end-2023



# Phase 1 Chemical Conversion Plant – Abu Dhabi

- Lycopodium started EPCM works May 2021
- 25 year land lease agreement October 2021
- FEED to complete July 2022
- Final Investment Decision September quarter 2022
- Construction start December quarter 2022
- Chemical plant commissioning mid-2024

- Located in Khalifa Port Free Trade Zone, Abu Dhabi – no corporate tax and duties; 100% foreign ownership allowed
- Existing infrastructure available through “plug and play” approach
- Abu Dhabi ESIA complete and environmental permit to construct in place
- 25-year land lease agreement signed
- Green H<sub>2</sub> supply being evaluated





# Phase 1 Project Definitive Feasibility Study<sup>1</sup>



**Construction Cost**  
(Inc. 13% contingency)  
**US\$139M**



**Post Tax**  
**NPV<sub>8</sub> of US\$221M**  
**NPV<sub>0</sub> of US\$521M**  
**IRR of 31%**



**Project Payback**  
(from start of production)  
**3 years**



**Operating Costs**  
(by-product LCE basis)  
**C1 Cash Cost US\$/t 1,656**  
**ASIC US\$/t3,221**



**Average Annual**  
**Free Cash Flow<sup>3</sup>**  
(post ramp-up)  
**US\$49M**



**Lithium Hydroxide**  
**Production<sup>2</sup>**  
**4,879 tpa**



**Sulfate of Potash**  
**Production<sup>2</sup>**  
**12,000 tpa**



**Caesium Sulfate**  
**Production<sup>2</sup>**  
**240 tpa**



**Total LCE**  
**All Products<sup>2</sup>**  
**7,060 tpa**



**Project Life**  
**14 years**

<sup>1</sup> ASX Announcement 28 May 2020: DFS delivers compelling Phase 1 Project results.

<sup>2</sup> By-products at steady state operation expressed as a salt.

<sup>3</sup> Cash flows based on Benchmark Mineral Intelligence Q1 2020 LiOH price forecast (US\$12,910/t long term).



# Finance & Offtakes

- **Lithium Hydroxide** – binding term sheet signed December 2021 with Traxys for 35,000t over 7 years, includes sales-marketing, trade finance and logistics
- **Caesium** – binding term sheets being negotiated with multiple consumers for sulphate, with Traxys as agent
- **Bulk Products** – 150% of annual SOP under MOU; strong demand for silica; gypsum MOU under negotiation
- **Testing** – samples of all products have been dispatched for customer assessment; Demonstration Plant being run now to generate additional samples & for product development
- **Debt Finance** – formal mandate signed with the U.S. International Development Finance Corporation for Karibib; commercial lenders engaged for UAE debt; due diligence advanced; commitments targeted September Q 2022
- **Strategic Partner** – under evaluation
- **Prepayment/Streaming** – under evaluation



## IN SUMMARY

Lepidico is a sustainable developer set to capture first-mover advantage in the new price cycle



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Thank you



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Creative Resources Leadership

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