

ASX ANNOUNCEMENT

9 October 2023

Evaporation and Direct Lithium Extraction (DLE) Metallurgical Testwork Programmes Advancing at Solaroz Lithium Project

SUMMARY

- Detailed evaporation and salt deposition testwork is underway by Norlab, supported by the Alex Stewart laboratories in San Salvador Jujuy, Argentina.
- Evaporation test ponds have been installed on the Solaroz Project site with evaporation monitoring and brine testing in progress.
- Representative brine samples are also undergoing detailed larger scale test work in Lanshen DLE laboratory pilot plant located in Santiago, Chile, building upon previous bench-scale testing by Lanshen.
- Conventional evaporation and salt deposition test work combined with larger scale DLE test work provides the benefit of alternative potential production pathways for the Solaroz Project.

Lithium Energy Limited (ASX:LEL) (**Lithium Energy** or **Company**) is pleased to provide an update on the progress of the Company's flagship Solaroz Lithium Brine Project in Argentina (**Solaroz**), located next to Allkem's Lithium Facility in the Salar de Olaroz basin (the **Olaroz Salar**) in the heart of South America's world renowned 'Lithium Triangle' (refer Figure 3).

Laboratory Pilot Plant Evaporation and LCE Development Metallurgical Testwork

Norlab S.R.L (**Norlab**) has been contracted in Argentina to conduct evaporation testwork on representative samples of lithium rich brines from Solaroz. Norlab is recognised as one of South America's leading experts in lithium brine evaporation and testwork.

The objective of the testwork programme is to determine the optimal process conditions required to extract lithium and produce battery grade lithium carbonate. The scope of the comprehensive testwork programme will:

- Verify the ion balance of the brine;
- Detail the salt precipitation conditions for each stage of the evaporation pond process;
- Define the percentage solids separated in the evaporation process;
- Analyse the brine solution post solid separation;
- Produce lithium carbonate from the brine sample;
- Determine recovery of lithium from raw brine by means of evaporation pond processing;
- Determine specific consumption of Reagents; and
- Determine specific freshwater consumption.

Norlab will be assisted with chemical assay and analysis by the highly respected Alex Stewart Laboratory, based in San Salvador Jujuy (refer Figure 1).



Figure 1: Norlab /Alex Stewart Laboratory

Site Based Evaporation Pond Testwork

To support the laboratory evaporation and salt precipitation testwork, test ponds have been installed on site to validate the local environmental and site evaporation conditions in a pond simulation environment (refer Figure 2). The real time evaporation rates will underpin the evaporation pond designs.

The brine and precipitated salt analysis results will contribute to the process design data that will be established during the laboratory pilot testwork conducted by Norlab.

The results established during the laboratory and site evaporation testwork will provide a comprehensive and representative data set, to under pin the process design work that will occur during the next phase of feasibility studies.



Figure 2: Solaroz Lithium Project Site Test Evaporation Ponds

DLE Metallurgical Laboratory Pilot Scale Testwork

In parallel with assessing conventional evaporation pond technology for the development of Solaroz, LEL is assessing the applicability of Direct Lithium Extraction (**DLE**) technology. This evaluation is progressing principally through an agreement with Xi'an Lanshen New Material Technology Co. Ltd (**Lanshen**)¹, in which Lanshen have agreed to construct a battery grade lithium plant at Solaroz capable of producing 3,000 tonnes of lithium carbonate per annum.

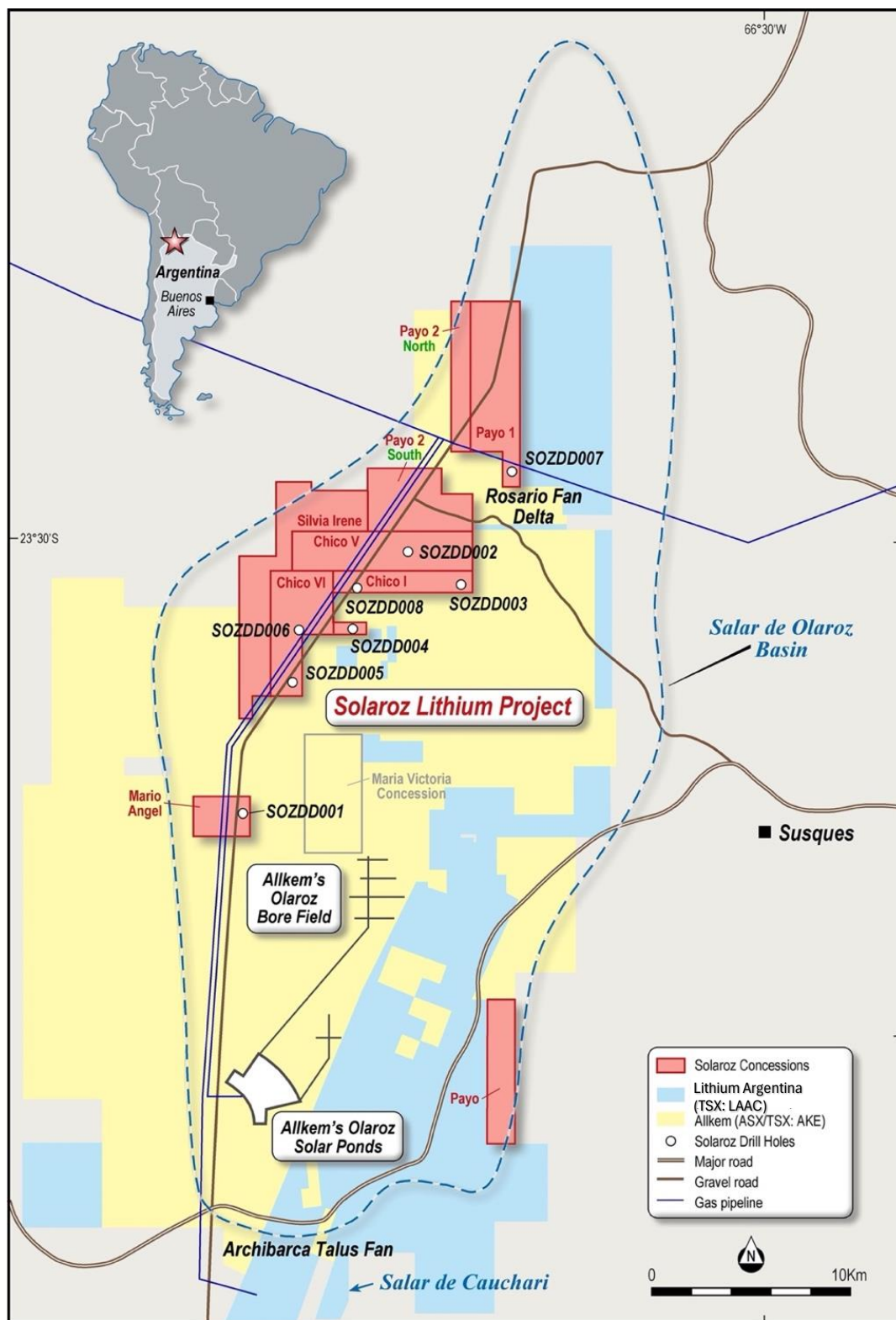
Preliminary bench scale lithium resin extraction, undertaken by Lanshen on lithium rich brines from Solaroz, has provided the Company with the confidence in the Lanshen DLE technology to proceed to laboratory pilot scale testwork. This will now be undertaken by Lanshen in their laboratory facilities in Santiago, Chile using a ~2,000 litre representative sample of brine from Solaroz.

This work will form the basis of determining preliminary engineering design data and for supporting future site-based pilot plant operations.

Solaroz Lithium Project

The Solaroz Lithium Project (LEL:90%) comprises 12,000 hectares of lithium mineral concessions located strategically within Olaroz Salar in South America's "Lithium Triangle" in north-west Argentina (refer Figure 3), where an initial maiden JORC Inferred Mineral Resource of 3.3Mt of Lithium Carbonate Equivalent (**LCE**) has been delineated. Lithium Energy shares the lithium rights in the Olaroz Salar basin with lithium carbonate producers Allkem Limited (ASX/TSX:AKE) and Lithium Argentina (TSX:LAAC).

1 Refer LEL ASX Announcement dated 20 June 2023: Agreement with Lanshen to Build and Fund a 3,000tpa Battery Grade Lithium Plant at Solaroz



**Solaroz Lithium Project, Argentina
Solaroz Concessions Location Plan**

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*Figure 3: Solaroz Drill Hole Locations within Solaroz Concessions in Olaroz Salar
(Adjacent to Allkem and Lithium Argentina Concessions)*

Solaroz Mineral Resource Estimate

Lithium Energy has delineated an initial maiden JORC Inferred Mineral Resource Estimate (MRE) of **3.3Mt of LCE** (as outlined Table 1). Within the 3.3Mt LCE Resource, there is a **high-grade core of 1.34Mt of LCE** with an average concentration of **405 mg/l lithium** (at a 350 mg/l lithium cut-off grade) (as outlined in Table 2).

Table 1: Solaroz JORC Inferred Mineral Resource Estimate

Lithology Units	Sediment Volume m ³	Specific Yield %	Brine volume		Lithium (Li)			LCE Tonnes
			m ³	Litres	mg/l	grams	Tonnes	
A (Upper Aquifer)	8,290,800,000	13.0	1,077,804,000	1,077,804,000,000	255	274,840,020,000	274,840	1,460,000
B (Halite Salt Unit)	1,968,600,000	4.0	78,744,000	78,744,000,000	345	27,166,680,000	27,167	140,000
C (Lower Aquifer)	7,584,000,000	11.5	872,160,000	872,160,000,000	374	326,187,840,000	326,188	1,730,000
Total	17,843,400,000	11.4	2,028,708,000	2,028,708,000,000	310	628,194,540,000	628,195	3,330,000

Notes:

- (a) This Mineral Resource Estimate encompasses the Mario Angel, Chico I, Chico V, Chico VI, Payo 2 South and Silvia Irene concessions
- (b) Lithium (Li) is converted to lithium carbonate (Li₂CO₃) equivalent (LCE) using a conversion factor of 5.323
- (c) Totals may differ due to rounding
- (d) Reported at a zero Lithium mg/l cut-off grade

Table 2: High-Grade Core within Solaroz JORC Inferred Mineral Resource Estimate

Lithology Units	Sediment Volume m ³	Specific Yield %	Brine volume		Lithium (Li)			LCE Tonnes
			m ³	Litres	mg/l	grams	Tonnes	
A	325,000,000	13.0	42,250,000	42,250,000,000	376	15,886,000,000	16,000	85,000
B	690,400,000	4.0	27,616,000	27,616,000,000	379	10,466,464,000	10,000	56,000
C	4,787,600,000	11.5	550,574,000	550,574,000,000	408	224,634,192,000	225,000	1,195,000
Total	5,803,000,000	10.7	620,440,000	620,440,000,000	405	250,986,656,000	251,000	1,340,000

Notes:

- (a) The high-grade core is a JORC Inferred Mineral Resource estimated within the mineralisation envelope of (not in addition to) the Mineral Resource Estimate outlined in Table 1 (above)
- (b) Reported at a 350 mg/l Lithium cut-off grade
- (c) Refer Notes (b) and (c) of Table 1 (above)

For further details, refer to the Company's ASX Announcement dated 29 June 2023 entitled "Significant Maiden JORC Lithium Resource of 3.3Mt LCE at Solaroz Project in Argentina".

AUTHORISED FOR RELEASE - FOR FURTHER INFORMATION:

William Johnson
Executive Chairman
T | (08) 9214 9737

E | chair@lithiumenergy.com.au

Peter Smith
Executive Director
T | (08) 9214 9737

E | cosec@lithiumenergy.com.au

ABOUT LITHIUM ENERGY LIMITED (ASX:LEL)

Lithium Energy Limited is an ASX listed battery minerals company which is developing its flagship Solaroz Lithium Brine Project in Argentina and the Burke and Corella Graphite Projects in Queensland. The Solaroz Lithium Project (LEL:90%) comprises 12,000 hectares of highly prospective lithium mineral concessions (where an initial JORC Inferred Mineral Resource of lithium has been delineated) located strategically within the Salar de Olaroz Basin in South America's "Lithium Triangle" in north-west Argentina. Lithium Energy shares the lithium rights in the Olaroz Salar basin with lithium carbonate producers Allkem Limited (ASX/TSX:AKE) and Lithium Argentina (TSX:LAAC). The Burke and Corella Graphite Deposits (LEL:100%) in Queensland, Australia, contains high grade JORC Indicated and Inferred Mineral Resources of graphite; Lithium Energy is undertaking a Prefeasibility Study on a proposed vertically integrated battery anode material manufacturing facility in Queensland.

JORC CODE COMPETENT PERSON'S STATEMENT

(1) The information in this document that relates to Mineral Resources estimates (dated June 2023) in relation to the Solaroz Lithium Brine Project is extracted from the following ASX market announcements made by Lithium Energy Limited dated:

- 29 June 2023 entitled "Significant Maiden JORC Lithium Resource of 3.3Mt LCE at Solaroz Project in Argentina"

The information in the original announcement is based on information compiled by Mr Murray Brooker (MAIG, MIAH), a Competent Person who is a Member of the Australian Institute of Geoscientists (**AIG**). Mr Brooker is an employee of Hydrominex Geoscience Pty Ltd, an independent consultant to Lithium Energy Limited. Mr Brooker has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code. 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 (referred to above). The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement (referred to above).

FORWARD LOOKING STATEMENTS

This document contains "forward-looking statements" and "forward-looking information", including statements and forecasts which include without limitation, expectations regarding future performance, costs, production levels or rates, mineral reserves and resources, the financial position of Lithium Energy, industry growth and other trend projections. Often, but not always, forward-looking information can be identified by the use of words such as "plans", "expects", "is expected", "is expecting", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes", or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might", or "will" be taken, occur or be achieved. Such information is based on assumptions and judgements of management regarding future events and results. The purpose of forward-looking information is to provide the audience with information about management's expectations and plans. Readers are cautioned that forward-looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Lithium Energy and/or its subsidiaries to be materially different from any future results, performance or achievements expressed or implied by the forward-looking information. Such factors include, among others, changes in market conditions, future prices of minerals/commodities, the actual results of current production, development and/or exploration activities, changes in project parameters as plans continue to be refined, variations in grade or recovery rates, plant and/or equipment failure and the possibility of cost overruns. Forward-looking information and statements are based on the reasonable assumptions, estimates, analysis and opinions of management made in light of its experience and its perception of trends, current conditions and expected developments, as well as other factors that management believes to be relevant and reasonable in the circumstances at the date such statements are made, but which may prove to be incorrect. Lithium Energy believes that the assumptions and expectations reflected in such forward-looking statements and information are reasonable. Readers are cautioned that the foregoing list is not exhaustive of all factors and assumptions which may have been used. Lithium Energy does not undertake to update any forward-looking information or statements, except in accordance with applicable securities laws.