

ASX ANNOUNCEMENT

4 December 2023

10,000L Lithium Brine Sample From Solaroz Sent to Lanshen for DLE Plant Design Specification and Test Works

SUMMARY

- Lanshen have agreed to construct a battery grade lithium DLE Plant at the Solaroz Lithium Brine Project capable of producing 3,000 tonnes of lithium carbonate per annum, subject to receipt of all necessary approvals and permits.
- Lanshen to fund at their sole cost, the engineering and design, construction, transportation, assembly, commissioning and initial operation of the Plant.
- The DLE Plant Project continues to progress well with the commencement of large-scale laboratory test work by Lanshen to drive specifications of the Plant design.
- 10,000 litres of representative lithium brines from the Solaroz Project now delivered to Lanshen's laboratory in Santiago, Chile to undergo detailed test work, building upon previous bench-scale testing by Lanshen.
- The key objectives of this testwork are to optimise the Lanshen direct lithium extraction (DLE) process flowsheet, optimise resin performance and provide preliminary engineering data for the development of the proposed Lanshen DLE Plant Facility to manufacture battery grade lithium carbonate from Solaroz brines.
- Recent Scoping Study confirmed conventional pond evaporation remains the go-forward base development case for Solaroz, however the third-party funded DLE Plant with Lanshen provides the benefit of alternative potential production pathways.

Lithium Energy Limited (ASX:LEL) (**Lithium Energy or Company**) is pleased to provide an update on the progress of its agreement with Xi'an Lanshen New Material Technology Co. Ltd (**Lanshen**)¹, for Lanshen to construct a demonstration Direct Lithium Extraction (**DLE**) plant capable of producing up to 3,000 tonnes per annum of battery grade lithium carbonate (**Plant**) at its 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 4).

The DLE Plant Project continues to progress well, with Lanshen having now commenced large-scale laboratory testwork. This testwork will drive the engineering and design specifications for the Plant and provide important data required for the preparation of applications for relevant environmental and other approvals. Lanshen will sole fund the construction of the Plant.

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

10,000L Lithium Brine Sample Sent to Lanshen's Santiago Facility for Laboratory Scale Testwork

Lithium Energy's recent Scoping Study² confirmed conventional pond evaporation remains the go-forward base development case for Solaroz, however the third-party funded DLE Plant Project with Lanshen provides the benefit of alternative potential production pathways for Solaroz.

As part of the process towards progressing to construction of the Plant, a 10,000 litre lithium brine sample from Solaroz has now been delivered to Lanshen's laboratory in Santiago, Chile to undergo detailed testwork, building upon previous bench-scale testing by Lanshen.

Preliminary bench scale lithium resin extraction, undertaken by Lanshen on lithium-rich brines from Solaroz has previously provided the Company with the confidence in the Lanshen DLE technology to proceed to large-scale laboratory testwork.

The key objectives of this testwork are to optimise the Lanshen DLE module process flowsheet, determine optimal resin performance, minimise water consumption and provide preliminary engineering data for the development of the proposed 3,000 tpa battery grade lithium carbonate Plant at Solaroz.

The large-scale laboratory testwork is expected to be completed in Q1 CY2024 and will be a significant milestone in the advancement of the proposed Lanshen DLE Plant.



Figure 1. 10,000 litres of Solaroz brines loaded for transport to Lanshen Laboratory

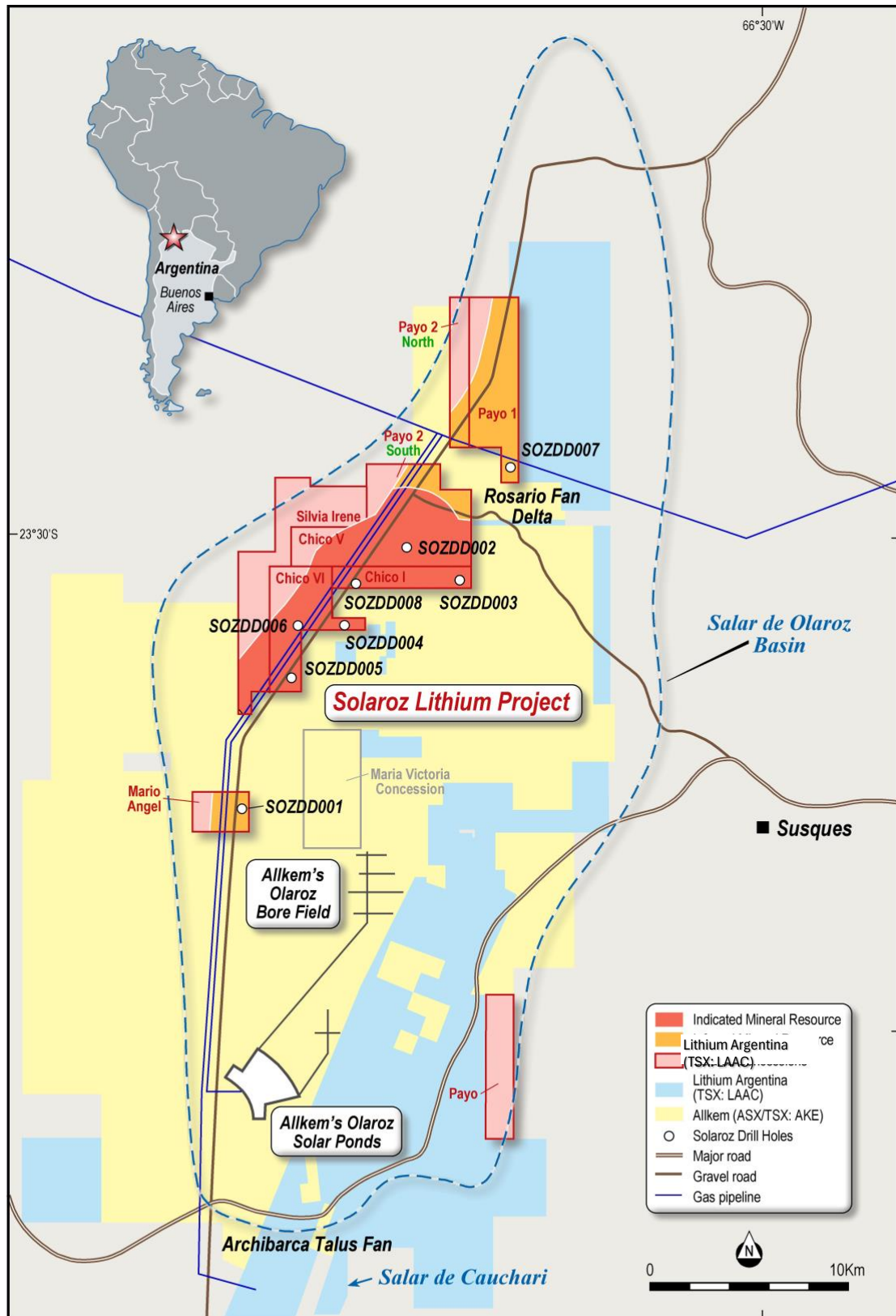
2 Refer LEL ASX Announcement dated 31 October 2023: Scoping Study Highlights Solaroz Potential as a Large Scale, Long Life, High Margin Lithium Project



Figure 2. Solaroz brines unloaded at Lanshen Laboratory in Santiago, Chile



Figure 3: Lanshen Laboratory DLE Carousel



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

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Figure 4: Mineral Resource Areas within Solaroz Concessions (and Drillhole Locations) in Olaroz Salar (Adjacent to Allkem and Lithium Argentina Concessions)

ABOUT SOLAROZ LITHIUM BRINE PROJECT (ARGENTINA)

(90%)

Lithium Energy Limited (ASX:LEL) (**Lithium Energy** or the **Company**) recently announced the outstanding results of the Scoping Study (**Study**) for the Company’s flagship Solaroz Lithium Brine Project in Argentina (**Solaroz** or **Project**), located next to Allkem’s Olaroz Lithium Facility in the Salar de Olaroz basin (the **Olaroz Salar**) in the heart of South America’s world renowned ‘Lithium Triangle’ (refer Figure 4).

The Study is supported by the recently upgraded Solaroz Mineral Resource Estimate (**MRE**) of **3.3Mt** Lithium Carbonate Equivalent (**LCE**) (refer Table 1).³ Within the 3.3Mt LCE Total Mineral Resource, there is a **high-grade core of 1.3Mt of LCE** with an average concentration of **400 mg/l Lithium** (refer Table 2). This high-grade core underpins the Study outcomes, being **~36 years of life of mine LCE production at 20ktpa or ~19 years production at 40ktpa** using conventional evaporation ponds processing.⁴ The Study also indicated that direct-lithium extraction (**DLE**) can potentially provide better recoveries and a more cost-effective operation. The Company will continue with its assessment of DLE technology, including the advancement of a 3,000 tpa DLE demonstration plant in collaboration with Lanshen⁵.

Solaroz is located on the Olaroz Salar adjacent to the Allkem Limited⁶ (ASX:AKE) (**Allkem**) Olaroz Lithium Facility, with FY22 production of 13ktpa and targeted ramp-up in production to 42.5ktpa LCE⁷. Also neighbouring the Project is the recently commissioned Lithium Argentina Corporation⁸ (TSX:LAAC) (**Lithium Argentina**) Cauchari-Olaroz Facility, targeting an annual production capacity of 40ktpa LCE⁹.

Solaroz Mineral Resource Estimates

The initial maiden JORC Mineral Resource for Solaroz (defined in June 2023¹⁰) was recently upgraded in October 2023¹¹ to:

- **Total Mineral Resource of 3.3Mt LCE** (at a zero Li mg/l cut-off grade), comprising (refer Table 1):
 - **Indicated Mineral Resource of 2.36Mt LCE**; and
 - **Inferred Mineral Resource of 0.9Mt LCE**.
- Within the 3.3Mt LCE Total Mineral Resource, there is a **high-grade core of 1.3Mt of LCE** with an average concentration of **400 mg/l Lithium** (at a 320 mg/l Li cut-off grade) (refer Table 2).

Table 1 : Upgraded Total JORC Indicated and Inferred Mineral Resource

Mineral Resource Category	Lithology Units	Sediment Volume (million m ³)	Specific Yield %	Brine volume	Lithium (Li)		LCE Tonnes
				million m ³	mg/l	Tonnes	
Indicated Mineral Resource	A (Upper Aquifer)	7,200	10.0%	720	245	176,600	940,000
	B (Halite Salt Unit)	1,731	4.0%	69	340	23,600	125,000
	C (Lower Aquifer)	4,671	6.5%	304	363	110,000	590,000
	D (Tertiary Bedrock)	5,651	5.8%	328	406	133,000	705,000
	Total	19,253	7.4%	1,421	312	443,200	2,360,000
Inferred Mineral Resource	A	3,589	10.0%	359	245	88,000	470,000
	B	3,060	4.0%	122	340	42,000	220,000
	C	1,058	6.5%	69	362	25,000	130,000
	D	634	5.8%	37	405	15,000	80,000
	Total	8,340	7.0%	587	289	170,000	900,000
TOTAL INDICATED & INFERRED MINERAL RESOURCE			7.3%		305		3,260,000

3 Refer LEL Announcement dated 26 October 2023: Significant Solaroz Milestone Achieved with Upgrade to 2.4Mt LCE JORC Indicated Resource

4 Refer LEL ASX Announcement dated 31 October 2023: Scoping Study Highlights Solaroz Potential as a Large Scale, Long Life, High Margin Lithium Project - the Company confirms that all material assumptions underpinning the production targets and forecast financial information derived from the production targets in this announcement continue to apply and have not materially change

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

6 Allkem has announced a merger with lithium processing technology company, Livent Corporation (NYSE:LTHM)

7 Source: Allkem ASX announcements

8 Lithium Argentina was separated, under a reorganisation, from Lithium Americas Corporation (TSX:LAC), in October 2023

9 Source: Lithium Argentina public releases

10 Refer LEL ASX Announcement dated 29 June 2023: Significant Maiden JORC Lithium Resource of 3.3Mt LCE at Solaroz Project in Argentina

11 Refer LEL ASX Announcement dated 26 October 2023: Significant Solaroz Milestone Achieved with Upgrade to 2.4Mt LCE JORC Indicated Resource

Notes:

- (a) The Indicated Mineral Resource Estimate encompasses the Chico I, Chico V, Chico VI, Payo 2 South and Silvia Irene (Central Block) concessions
- (b) The Inferred Mineral Resource Estimate encompasses the Mario Angel, Payo 2 South and Silvia Irene, Payo 1 and Payo 2 North concessions, and is in addition to the Indicated Mineral Resource Estimate
- (c) Lithium (Li) is converted to lithium carbonate (Li₂CO₃) equivalent (LCE) using a conversion factor of 5.323
- (d) Totals may differ due to rounding
- (e) Reported at a zero Lithium mg/l cut-off grade
- (f) Total Specific Yields are weighted averages

Table 2 : Upgraded High-Grade Core within Total JORC Indicated and Inferred Mineral Resource

Mineral Resource Category	Lithology Units	Sediment Volume (million m ³)	Specific Yield %	Brine volume million m ³	Lithium (Li)		LCE Tonnes
					mg/l	Tonnes	
Indicated Mineral Resource	A	878	10.0%	88	349	30,000	165,000
	B	1,289	4.0%	52	357	18,000	100,000
	C	3,288	5.6%	183	401	75,000	390,000
	D	4,881	4.8%	235	425	100,000	530,000
	Total	10,337	5.2%	557	400	223,000	1,185,000
Inferred Mineral Resource	B	92	4.0%	4	418	1,500	8,000
	C	436	5.7%	25	401	10,000	53,000
	D	109	4.9%	5	405	2,000	12,000
	Total	637	5.3%	34	403	13,500	73,000
TOTAL INDICATED & INFERRRED MINERAL RESOURCE (HIGH-GRADE CORE)			5.2%		400		1,258,000

Notes:

- (a) The high-grade core comprises JORC Indicated and Inferred Mineral Resources estimated within the mineralisation envelope of (not in addition to) the Mineral Resource Estimates outlined in Table 1
- (b) The Indicated Mineral Resource encompasses the Chico I, Chico V, Chico VI, Payo 2 South and Silvia Irene (Central Block) concessions
- (c) The inferred Mineral Resource encompasses the southern Mario Angel (Units B and C) and Payo 1 and Payo 2 North (Northern Block) (Unit D) concessions, and is in addition to the Indicated Mineral Resource Estimate
- (d) Reported at a 320 mg/l Lithium cut-off grade
- (e) Refer Notes (c), (d) and (f) of Table 1

Further details are in the Company's ASX Announcement dated 26 October 2023 entitled "Significant Solaroz Milestone Achieved with Upgrade to 2.4Mt LCE JORC Indicated Resource".

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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 a JORC Indicated and 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 Corporation (TSX:LAAC). Lithium Energy has completed a Scoping Study on Solaroz and is investigating the development of a 20/40ktpa lithium carbonate equivalent (LCE) production facility using conventional evaporation ponds; the Company is also evaluating direct-lithium extraction (DLE) technologies. The Burke and Corella Graphite Projects (LEL:100%) in Queensland, Australia, contains high grade JORC Indicated and Inferred Mineral Resources of graphite; Lithium Energy is investigating the proposed development of a 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 October 2023) in relation to the Solaroz Lithium Brine Project is extracted from the following ASX market announcement made by Lithium Energy Limited dated:

- 26 October 2023 entitled "Significant Solaroz Milestone Achieved with Upgrade to 2.4Mt LCE JORC Indicated Resource"

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 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (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.