

ASX ANNOUNCEMENT

5 September 2023

Conventional Solar Evaporation Option for Solaroz Lithium Project as Multiple EV Battery Parties Seek Partnership

SUMMARY

- Scoping Study work completed to date confirms the suitability of conventional solar pond evaporation as a development pathway for the Solaroz Lithium Brine Project.
- Pond evaporation is a tried and tested production methodology on the Olaroz Salar, currently used by adjacent global lithium neighbours Allkem and Lithium Americas Corporation for battery grade lithium carbonate production.
- Study work indicates the Solaroz Project is also suitable for Direct Lithium Extraction (DLE), providing the Company with the significant benefit of having multiple potential development pathways.
- The release of full Scoping Study results including production targets and economics is targeted for early Q4 2023.
- The Company confirms that it has been approached by multiple, major third parties active in the EV battery sector seeking strategic partnership or investment opportunities with Lithium Energy in the development of the Solaroz Project.

Lithium Energy Limited (ASX:LEL) (**Lithium Energy** or **Company**) is pleased to provide an update on the progress of its Scoping Study undertaken on the Company's flagship Solaroz Lithium Brine Project in Argentina, 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' (**Solaroz**) (refer Figure 2).

Lithium Energy refers to its announcement dated 20 March 2023¹, in which the Company advised that it had appointed global professional services firm Hatch to undertake a Scoping Study (**Study**) for the production of battery grade lithium carbonate from lithium rich brines at Solaroz.

As detailed in that announcement, the Study includes engineering studies and analysis to determine the optimal processing methodology for Solaroz lithium brines. As part of this work, Hatch has undertaken a trade-off study to develop alternative flowsheet configurations for the processing and upgrading of lithium brines and production of battery grade lithium carbonate at Solaroz, including the following:

- (1) A conventional brine evaporation pond process design - as implemented by Solaroz neighbours in the Olaroz Salar, the Olaroz Lithium Facility of Allkem Limited (ASX/TSX:AKE) and the Cauchari-Olaroz Project of Lithium Americas Corporation (TSX:LAC), and other lithium brine projects in South America; and
- (2) Direct Lithium Extraction (**DLE**) options, which replaces the use of evaporation ponds - DLE consists of several chemical processes that can bypass the need for large evaporation ponds for the production of lithium from brines.

¹ Refer LEL ASX Announcement dated 20 March 2023: Commencement of Lithium Brine Scoping Study at Solaroz

As well as engineering studies, consideration has been given to local environmental, infrastructure, community and permitting factors at the Olaroz Salar.

The Study has been conducted in parallel to the resource definition drilling and evaluations which in June 2023 delivered the Company's initial maiden **JORC Inferred Mineral Resource Estimate (MRE) of 3.3 Million tonnes of Lithium Carbonate Equivalent (LCE)** at Solaroz.² The Study has been based upon the size and concentrations of lithium as determined in the MRE, with specific focus on the **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 Table 2 below) contained within the overall 3.3Mt LCE MRE.

Lithium Energy is currently advancing an infill drilling programme to update a portion of the MRE to a JORC Indicated level, which will allow the release of robust Study details including proposed production details and associated financial information, targeted for Q4 2023.

Based upon the work undertaken by the Company and Hatch to date, Lithium Energy is very pleased to report that conventional pond evaporation (as used by Allkem and Lithium Americas, Lithium Energy's neighbours on the Olaroz Salar) has been confirmed as a suitable development methodology for Solaroz. Further, DLE has also been confirmed as a potential development pathway, which puts Lithium Energy in the excellent position of having significant optionality with regard to the choice of development alternatives for Solaroz.

Conventional Evaporation Pond Works on Olaroz Salar

Lithium production through traditional brine evaporation techniques represents a well-established and widely adopted production methodology in the industry including the methodology chosen by Olaroz Salar neighbours, Allkem and Lithium Americas.

This process begins with the extraction of lithium-rich brine from underground reservoirs. Once extracted, the brine is directed into a series of shallow ponds designed for controlled evaporation. These evaporation ponds allow nature to take its course as sunlight and wind work together to gradually reduce the water content of the brine.

As the brine evaporates, it undergoes a series of chemical transformations, causing the concentration of lithium and other valuable minerals to increase. To further enhance lithium recovery, additives may be introduced at various stages to facilitate the precipitation of impurities. This process continues over several months, during which time the lithium concentration in the remaining brine steadily rises.

Once the brine has reached the desired lithium concentration, it is transferred to processing facilities where lithium is extracted through a combination of chemical processes, including precipitation and filtration.

Traditional brine evaporation techniques are valued for their efficiency, cost-effectiveness and minimal environmental impact, making them a well recognised methodology for lithium production.

² Refer LEL Announcement dated 29 June 2023: Significant Maiden JORC Lithium Resource of 3.3Mt LCE at Solaroz Project in Argentina

The diagram below illustrates proposed layouts for evaporation ponds within the Olaroz Salar developed through the Study works to date indicating potential locations of evaporation ponds within the boundaries of Lithium Energy’s considerable tenement holding.

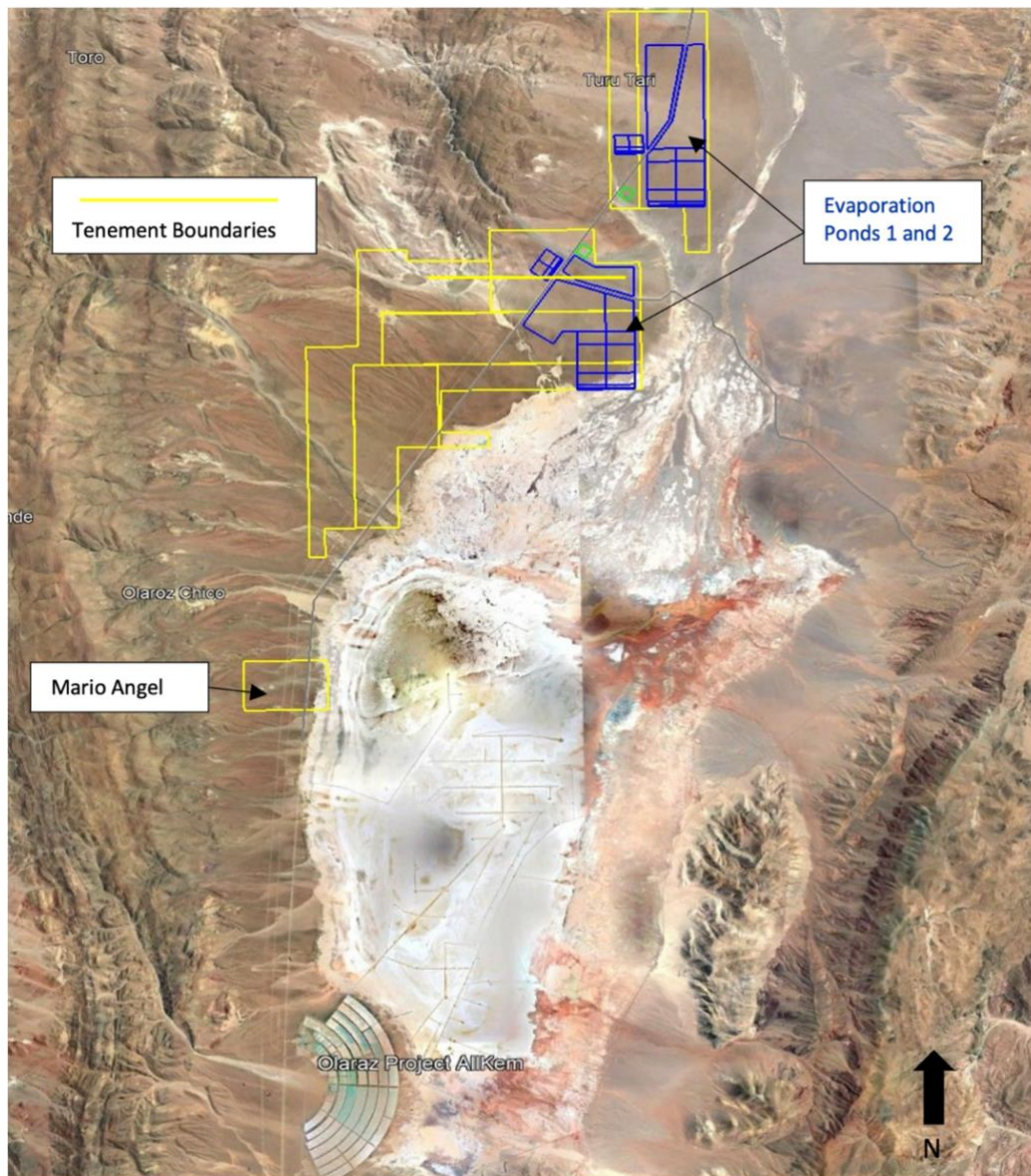


Figure 1: Illustrative Solar Evaporation Pond Locations within Solaroz Concessions in Olaroz Salar

Direct Lithium Extraction (DLE)

DLE consists of several chemical processes that can bypass the need for large evaporation ponds for the production of lithium from brines.

Lithium Energy notes that DLE offers among other potential benefits, higher recoveries of lithium from brines when compared to pond evaporation. In this regard, as previously announced³, the Company has executed an agreement with Xi’an Lanshen New Material Technology Co. Ltd (**Lanshen**) for Lanshen to construct a demonstration plant capable of producing up to 3,000 tonnes per annum of battery grade lithium carbonate (**Plant**) at Solaroz. The Plant will include Lanshen’s proprietary sorbent-based DLE technology, which has already been proven on industrial and commercial scale. The Company has already commenced works together with Lanshen to advance the Plant development.

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

Proposed Programme of Works to Advance the Solaroz Project

Based upon the encouraging results of the Study, the Company has determined to actively advance with a programme of further testwork and detailed studies to finalise evaluation of the relative merits of each technology, prior to finalising the preferred development pathway for Solaroz. Consideration is also being given to the use of both pond evaporation and DLE as potentially complimentary development methodologies with respect to different areas of the Salar.

The proposed forward programme of works to advance the Solaroz Project include the following:

- Further engineering and processing studies.
- Laboratory scale pilot testwork to produce samples of LCE from the lithium-rich Solaroz brines, using both pond evaporation and DLE methodologies.
- Evaporation and brine concentration testwork using above ground ponds located at Solaroz.
- Drilling of multiple Production Test wells.
- Drilling and studies to evaluate sources of fresh and industrial water located in the Solaroz concessions.
- Hydrogeological modelling.
- Environmental data collection and impact assessment studies (EIA).
- Preparation and submission of applications for relevant permitting and approvals.
- Resource expansion drilling (particularly in the Northern Block of concessions, where drillhole 7 recently confirmed a significant new occurrence of lithium rich brine in the Payo 1 concession)⁴.
- Resource Infill drilling to upgrade the confidence level of the MRE.

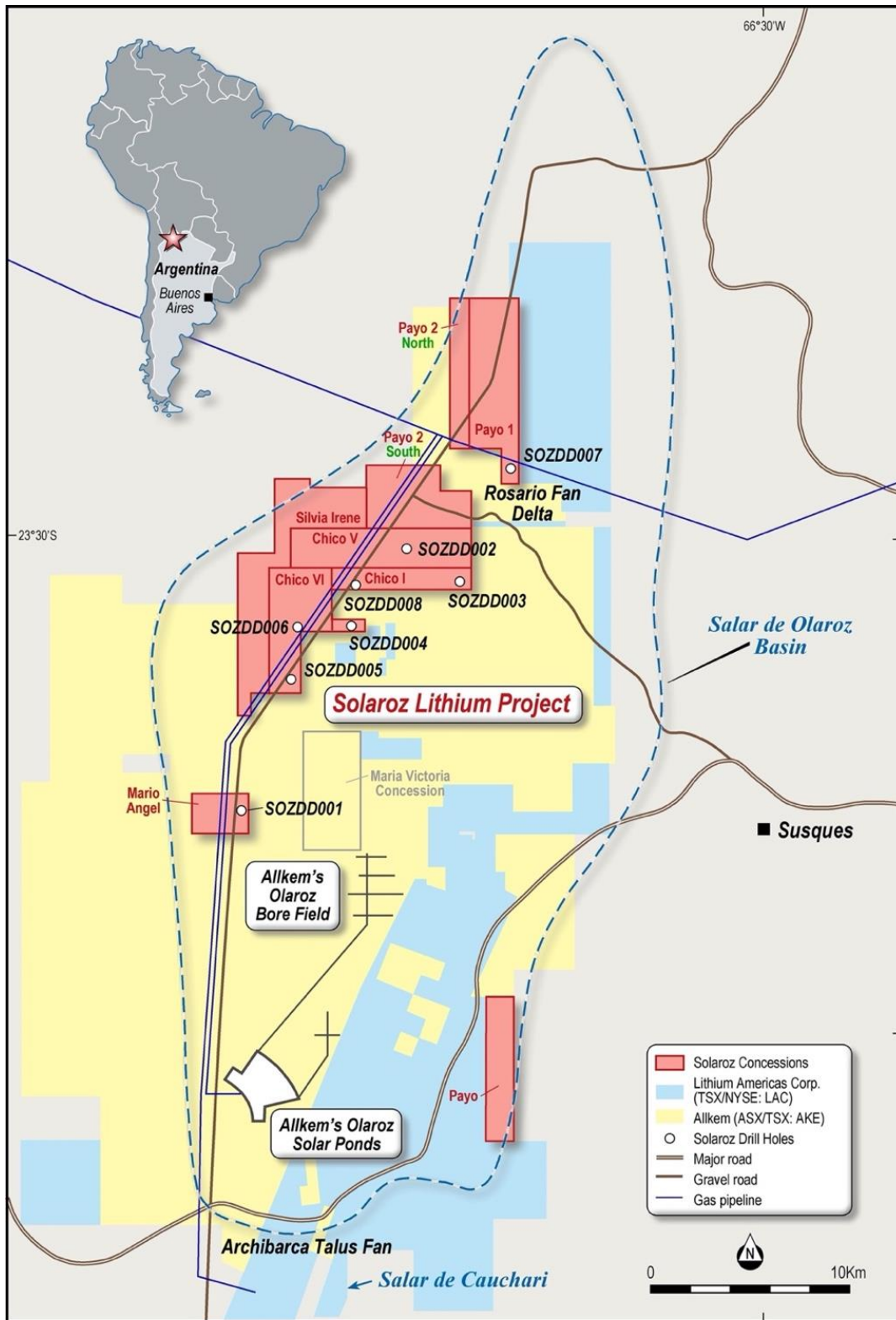
Multiple Approaches from Parties regarding Strategic Partnership to Develop Solaroz

Lithium Energy confirms that it has been approached by a number of significant parties active in the EV battery sector that have expressed an interest in a strategic partnership or investment opportunity to participate in the development of Solaroz. This interest confirms the Company's view that the Solaroz Lithium Brine Project is highly strategic, particularly given its size and location directly adjacent to two major producing lithium projects, being Allkem's Olaroz Lithium Facility (in a joint venture with Toyota Tsusho Corporation) in the Olaroz Salar and Lithium Americas' Olaroz-Cauchari Project (in a joint venture with Ganfeng Lithium) on the neighbouring Salar de Cauchari.

Given the positive results from the Study to date and the multiple approaches by significant market participants, Lithium Energy is currently in discussions with parties to invite a Strategic Partner (or partners) to participate in the further development of Solaroz, as has been the case with its neighbours on the Olaroz Salar - Allkem and Lithium Americas.

Negotiations with these parties are progressing and if such negotiations proceed to formal documentation or agreements, these will be disclosed to the market in due course.

4 Refer LEL ASX Announcement dated 29 August 2023: Lithium Mineralisation encountered in Northern Solaroz Concession



Solaroz Lithium Project, Argentina
Solaroz Concessions Location Plan

www.lithiumenergy.com.au

Figure 2: Solaroz Drill Hole Locations within Solaroz Concessions in Oloroz Salar (Adjacent to Allkem and Lithium Americas 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".

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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 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 Americas Corporation (TSX/NYSE:LAC). 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.