

QUARTERLY ACTIVITIES REPORT - 30 SEPTEMBER 2021

COMPANY DETAILS

ABN: 94 647 135 108

PRINCIPAL AND REGISTERED OFFICE

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ASX CODE: LEL

SECURITIES ON ISSUE

80,010,000 shares comprising:

- 45,000,000 listed shares;
- 34,860,000 unlisted (escrowed to 19 May 2024) shares; and
- 150,000 unlisted (escrowed to 10 May 2023) shares

10,000,000 Executive Options
(\$0.30, 18 March 2024)

4,000,000 Broker Options
(\$0.30, 4 May 2024)

BOARD OF DIRECTORS

William Johnson (Executive Chairman)

Farooq Khan (Executive Director)

Peter Smith (Executive Director)

COMPANY SECRETARY

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25 October 2021



ASX : LEL

HIGHLIGHTS

Solaroz Lithium Project (Argentina)

- Lithium Energy's flagship Solaroz Project (LEL:90%) comprises 12,000 hectares of highly prospective lithium mineral tenements located strategically within the Salar de Olaroz Basin in South America's "Lithium Triangle" in north-west Argentina, directly adjacent to or principally surrounded by world class lithium projects in production/development held by Orocobre Limited (ASX/TSX:ORE) and Lithium Americas Corporation (TSX/NYSE:LAC).
- Lithium Energy has established an Exploration Target for Solaroz and is awaiting environmental approvals to undertake an extensive work programme of geophysical surveys and exploration drilling.
- Environmental Impact Assessment (EIA) approvals are expected shortly following public consultation meetings held in late July (with no substantive community or landowner objections raised) and submission of all outstanding technical information to stakeholders in August/September 2021.
- A range of geophysical testing equipment has been imported into Argentina and has been configured/tested for deployment – Lithium Energy is preparing to mobilise into the field upon receipt of environmental approvals.

Burke Graphite Project (Queensland, Australia)

- The Burke Graphite Project (LEL:100%) is located in North Central Queensland and contains one of the highest grade graphite deposits globally (with a JORC Inferred Mineral Resource of 6.3Mt @ 16.0% TGC for 1Mt of contained graphite, which includes higher grade material of 2.3Mt @ 20.6% TGC for 0.464Mt of contained graphite) and presents the opportunity for Lithium Energy to participate in the anticipated growth in demand for graphite and related products (including graphene) with respect to the production of Lithium-ion batteries where graphite is the largest single component by weight.
- Previous test-work has confirmed the Burke Deposit is well suited for Graphene production via Electrochemical Exfoliation (ECE), due to its high grade nature and chemical composition - Lithium Energy is planning to undertake further test-work to optimise the Graphene production process for lithium-ion battery use.
- Lithium Energy has entered into a Research Agreement with CSIRO to undertake spheronisation and purification of Burke natural graphite particles for potential use in Lithium-ion batteries and electrochemical optimisation testwork, with 50% co-funding under the CSIRO Kick Start Program.
- North Queensland's Townsville Energy Chemicals Hub is emerging as an important precinct for the production of critical materials for battery technologies in Australia – Lithium Energy is investigating the establishment of a dedicated, environmentally sustainable manufacturing facility at or near such hub to purify and spheronise graphite sourced from the high-grade Burke Deposit for use as anode material in Lithium-ion batteries.

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 Graphite Project in Queensland. The Solaroz Lithium Project (LEL:90%) comprises 12,000 hectares of highly prospective lithium mineral tenements located strategically within the Salar de Olaroz Basin in South America's "Lithium Triangle" in north-west Argentina. The Solaroz Lithium Project is directly adjacent to or principally surrounded by mineral tenements being developed into production by Orocobre Limited (ASX/TSX:ORE) and Lithium Americas Corporation (TSX/NYSE:LAC). The Burke Graphite Project (LEL:100%) contains a high grade graphite deposit and presents an opportunity to participate in the anticipated growth in demand for graphite and graphite related products. LEL was spun out of Strike Resources Limited (ASX:SRK) via a \$9 million IPO; Strike remains a major (43%) shareholder of the Company.

www.lithiumenergy.com.au

LITHIUM ENERGY LIMITED

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PROJECTS

SOLARAZ LITHIUM BRINE PROJECT (ARGENTINA)

(90%)

Activities During the Quarter

In late July 2021, as part of the Environmental Impact Assessment (EIA) approvals process required for exploration to commence at Solaroz, two positive public consultation meetings were held between Lithium Energy's local representatives, various agencies of UGAMP (Unidad de Gestión Ambiental Provincial Minera, or 'Unit of Environmental Management'), underlying landowners and first nations representatives.

UGAMP has representatives of different provincial agencies (eg. Environmental Management Agency, Environmental Policy Department, Water Resources, Industry and Commerce, Public Health) as well as non-government stakeholders (ie. National University of Jujuy, the Centre of Geologists, municipal authorities and indigenous communities) and along with the Mining Secretary, is responsible for the final approval of Mining EIAs.

There were no substantive community or landowner objections raised at the consultation meetings to the proposed exploration works. All outstanding technical information relating to the project have been delivered to UGAMP by Lithium Energy's local representatives.

The Company expects that approval to commence exploration will be issued shortly and Lithium Energy is therefore preparing to mobilise to site, in anticipation of the approvals being received.

In this regard, Lithium Energy has imported into Argentina a range of geophysical testing equipment that will form an important part of the geophysical testing programme to both support the previously published Exploration Target and to optimise, through the creation of a 3D geological model, the location of drill holes that will seek to underpin the next phase of exploration at Solaroz. The equipment has been configured and tested for deployment and will be mobilised into the field upon receipt of environmental approvals.

Exploration Work Planned to Validate Exploration Target

Lithium Energy proposes to test the proposition that the aquifer which supplies the lithium-rich brine being extracted by Orocobre extends under the Company's Solaroz tenements. This will be tested by geophysical work and drilling with a view to fast tracking production of lithium carbonate dependent upon these works being successfully concluded.

Upon the grant of the required environmental approvals, an extensive work programme will be conducted, aimed at locating potentially lithium bearing brines of economic interest and obtaining preliminary information related to the hydrogeological and geochemical characteristics of the brine rich aquifer that comprises the Olaroz Salar underneath the Solaroz tenements, including:

- Geophysical surveys to define the basin basement morphology and thickness of the hydrogeological units that have the potential to contain brines of economic interest; and
- an exploration drilling campaign based on the results from previous work, to assess the distribution and geochemistry of the brine and to obtain data related to basic physical parameters of the different hydrogeological units.

Lithium Energy will also undertake an assessment of relevant mine economic criteria to assist in developing a pathway to the completion of feasibility study(s), including the delineation of a maiden Mineral Resource.

Project Background

The Solaroz Project comprises 8 mineral tenements totalling approximately 12,000 hectares, located approximately 230 kilometres north-west of the provincial capital city of Jujuy within South America's 'Lithium Triangle' in North-West Argentina in the Salar de Olaroz basin (**Olaroz Salar**).



Figure 1: Lithium Projects Located in 'Lithium Triangle'

The highly prospective nature of the Solaroz Project is highlighted by its close proximity to two world class Lithium brine projects, being the current production assets of Orocobre Limited (ASX/TSX:ORE) (**Orocobre**) and the advanced lithium brine development project held by Lithium Americas Corporation (TSX/NYSE:LAC) (**Lithium Americas**).

The Solaroz Project is directly adjacent to or principally surrounded by tenements held by Orocobre and Lithium Americas in the Olaroz Salar (refer Figure 2). Orocobre currently has a market capitalisation of approximately A\$5.75 Billion.¹ Orocobre's Olaroz lithium brine operations at the Olaroz Salar (under a joint venture with Tokyo Stock Exchange listed Toyota Tsusho Corporation (TYO:8015)) has been extracting lithium brine and producing lithium carbonate since 2015 and Orocobre is targeting production of 25,000 tonnes per year of primary grade lithium carbonate by 2024.²

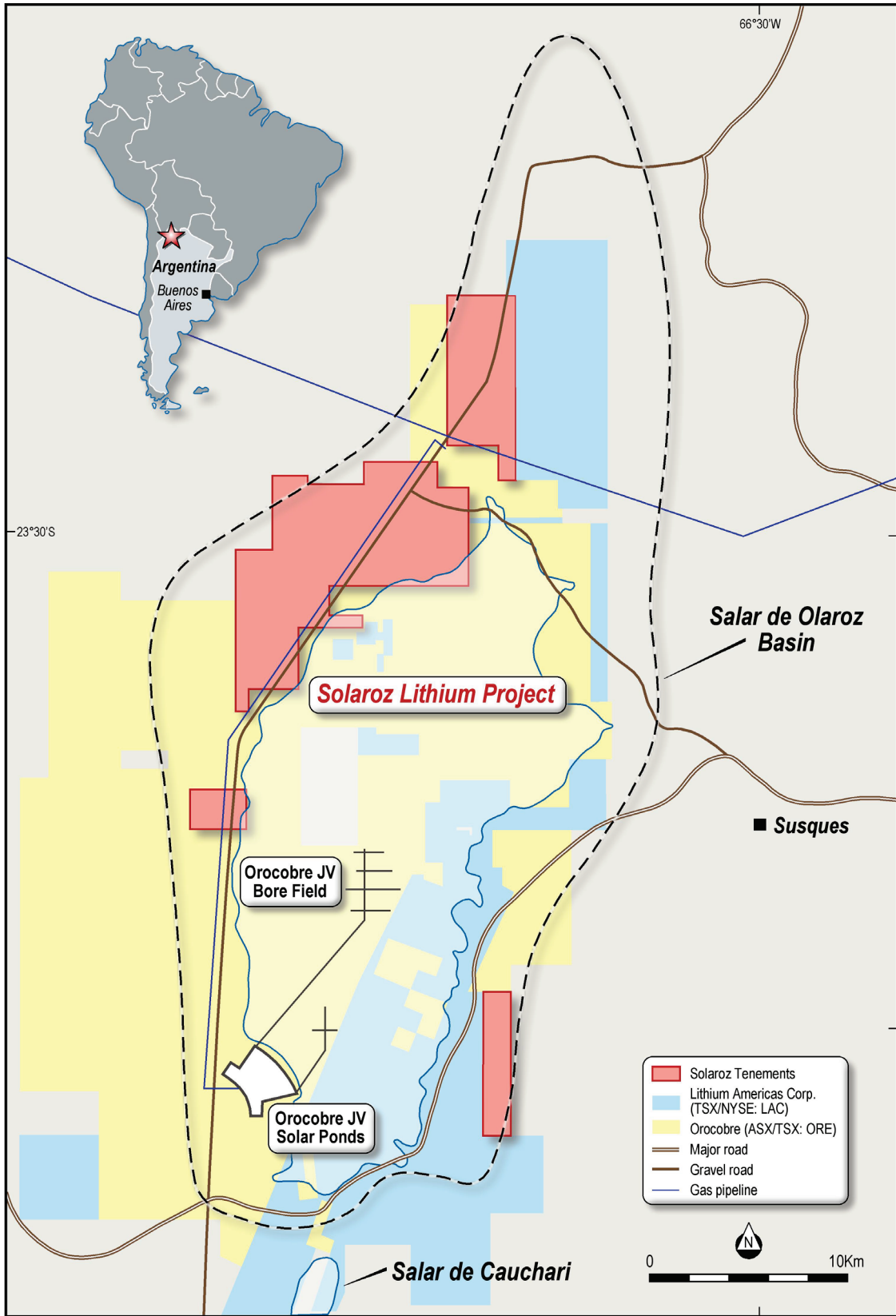
Lithium Americas' Cauchari-Olaroz project is located in the Olaroz Salar and neighbouring Salar de Cauchari adjacent to Orocobre's Olaroz Lithium Facility and is targeting production of 40,000 tonnes per year of lithium carbonate, commencing mid-2022. Lithium Americas has a market capitalisation of approximately US\$3 Billion and has so far committed over ~US\$500 Million of capital works to the development of its Cauchari-Olaroz project.³

The location of Lithium Energy's Solaroz tenements is outlined in Figure 2.

1 Orocobre has recently merged with Galaxy Resources Limited (former ASX:GXY) via a scheme of arrangement - refer Orocobre's ASX Announcement dated 25 August 2021: Orocobre Announces FY21 Results and Implementation of Merger with Galaxy Resources

2 Refer Orocobre's 2021 Annual Report released on 25 August 2021

3 Refer Lithium America's Second Quarter 2021 Results released on 5 August 2021



**Solarz Lithium Project, Argentina
Solarz Tenements Location Plan**



www.lithiumenergy.com.au

Figure 2: Solarz Project Tenement Locations

Lithium Energy's interpretation of the Olaroz Salar basin architecture is that the aquifer which supplies the lithium-rich brine being extracted by Orocobre and forming the lithium mineralisation upon which the Lithium Americas project is based, is contained in a Deep Sand Unit of the Olaroz Salar which extends to the north and west under the Talus Alluvial Wedge and the Solaroz tenements (refer Figure 3).

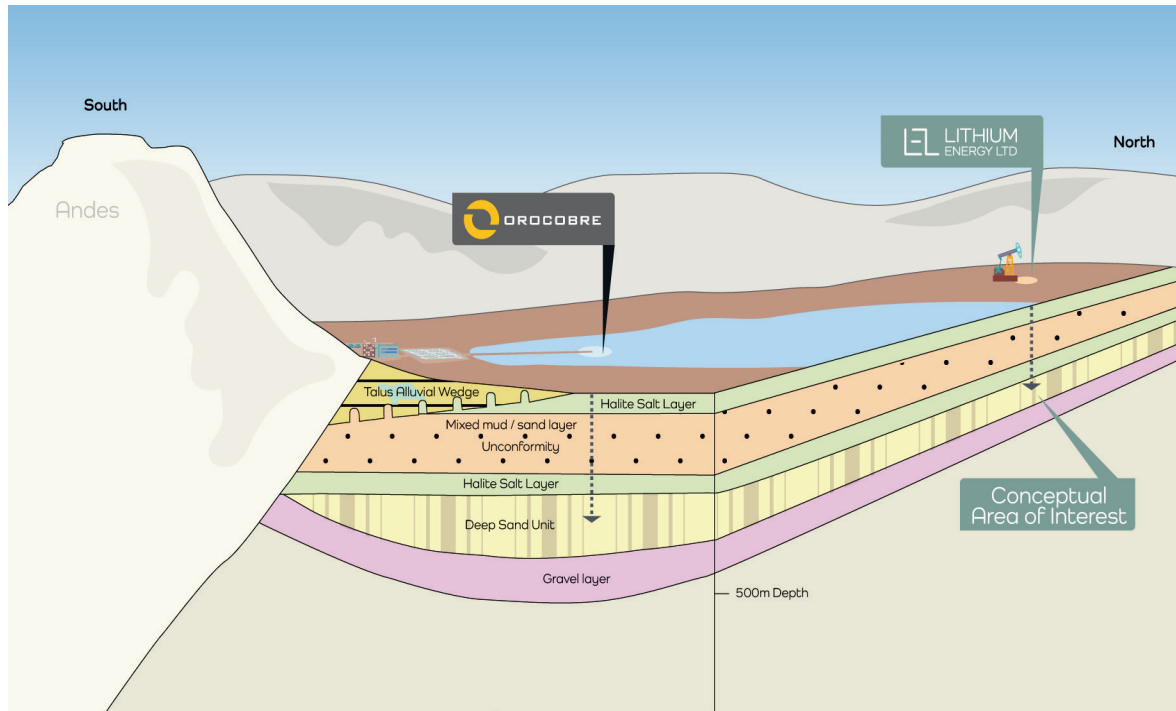


Figure 3: Solaroz Geological Exploration Concept

The presence of the Deep Sand Unit in the Olaroz Salar has been confirmed by exploration works undertaken by Orocobre and Lithium Americas. The Company notes that the Rosario Fan Delta at the northern end of the Olaroz Salar and over which the Solaroz Payo 1 and Payo 2 tenements are situated (refer also Figure 4), contains the interpreted paleo channel through which brines are interpreted to have likely flowed from the north into the Deep Sand Unit within both the Olaroz Salar and neighbouring Salar de Cauchari to the south.

Lithium Energy's interpretation of the Deep Sand Unit and paleo channel is conceptual in nature, there has been insufficient exploration to estimate a JORC Mineral Resource in respect of the same and it is uncertain if further exploration will result in the estimation of a JORC Mineral Resource.

Exploration Target

Lithium Energy has established a conceptual Exploration Target for the Solaroz Project of⁴:

1.5 to 8.7 million tonnes (Mt) of contained Lithium Carbonate Equivalent (LCE)
based on a range of lithium concentrations of between circa **500 mg/L Lithium (Li)** and **700 mg/L Li**

The Exploration Target's potential quantity and grade is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource, and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Lithium Energy notes its Exploration Target for the Solaroz Project in the context of Orocobre's JORC Code (2004 Edition) compliant Measured and Indicated Mineral Resource within the Olaroz Salar.⁵

4 Refer LEL ASX Announcement dated 8 June 2021: Substantial Lithium Exploration Target Identified at the Solaroz Project in Argentina

5 Refer Orocobre's ASX/TSX Announcement dated 1 April 2011: Increased and Upgraded Resource at Olaroz Lithium-Potash Project

The Exploration Target demonstrates the potential world-class scale of the Solaroz Project and has been arrived at after a detailed examination of extensive geological data that exists in relation to the brine rich lithium aquifer that comprises the Olaroz Salar, including a review of historical exploration in the Olaroz Salar and a detailed review of reported results from geophysical surveys undertaken by Orocobre and Lithium Americas, including a number of Gravity and Audio-frequency Magnetotellurics (**AMT**) surveys conducted by Orocobre, some of which were undertaken over or closely adjacent to Lithium Energy's Solaroz tenements.

Geological modelling undertaken by Lithium Energy indicates the potential for a lithium-brine hosting Deep Sand Unit to occur beneath surficial material at depths from 200 - 400m over a large proportion of the Solaroz tenements.

Based upon Lithium Energy's assessment, the Exploration Target has an upper case estimate of approximately **8.7Mt of Contained Lithium Carbonate (LCE)** at approximate concentrations of **700mg/L Li** and a lower case estimate of approximately **1.5Mt of LCE** at an approximate concentration of **500mg/L Li**.

The Exploration Target is based on the interpretation that the alluvial deposits upon which the Solaroz tenements are located (at the North-West corner of the Olaroz Salar) have been deposited relatively recently and lie directly above the productive Deep Sand Unit of the lithium rich aquifer from which Orocobre is extracting its brine.

Further details of the Exploration Target are outlined in the following table:

Brine Area (km ²)	Exploration Targets					
	Thickness of Deep Sand Unit (m)	Lithium (mg/L)	Average Specific Yield (Sy) (%)	Brine Volume (million m ³)	Contained Lithium (Mt)	Contained LCE (Mt)
Upper Assumption Estimate						
78	150	700	20	2334	1.6	8.70
Lower Assumption Estimate						
78	75	500	10	584	0.3	1.5

Notes:

- (1) The Exploration Target's potential quantity and grade is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.
- (2) Brine Volume ranges are approximations derived from an interpretation of open file geological and geophysical data.
- (3) Porosity are approximations based upon open file information contained within Houston et al (13 May 2011), Orocobre (23 October 2014) and Lithium Americas (30 September 2020).
- (4) Lithium grade ranges have been approximated from a review of open file information (Houston et al (13 May 2011), Orocobre (23 October 2014)).
- (5) Percentage values have been rounded (to the nearest 1,000 unit) in relevant calculations.
- (6) A conversion factor of 5.323 has been adopted to convert elemental Li to Li₂CO₃ ((LCE).

For further details in relation to the Exploration Target, refer to Lithium Energy's ASX Announcement dated 8 June 2021: Substantial Lithium Exploration Target Identified at the Solaroz Project in Argentina.

ASX Announcements

Lithium Energy's ASX Announcements on the Solaraz Project released during the quarter and to the date of this report are as follows:

- 24 September 2021: Mobilisation to Site with Approvals Pending for Solaroz
- 9 August 2021: Geophysical Equipment Arrives as Lithium Energy Gears up for Exploration on Solaroz Project
- 5 August 2021: Approval Process for Solaroz Exploration Nearing Completion

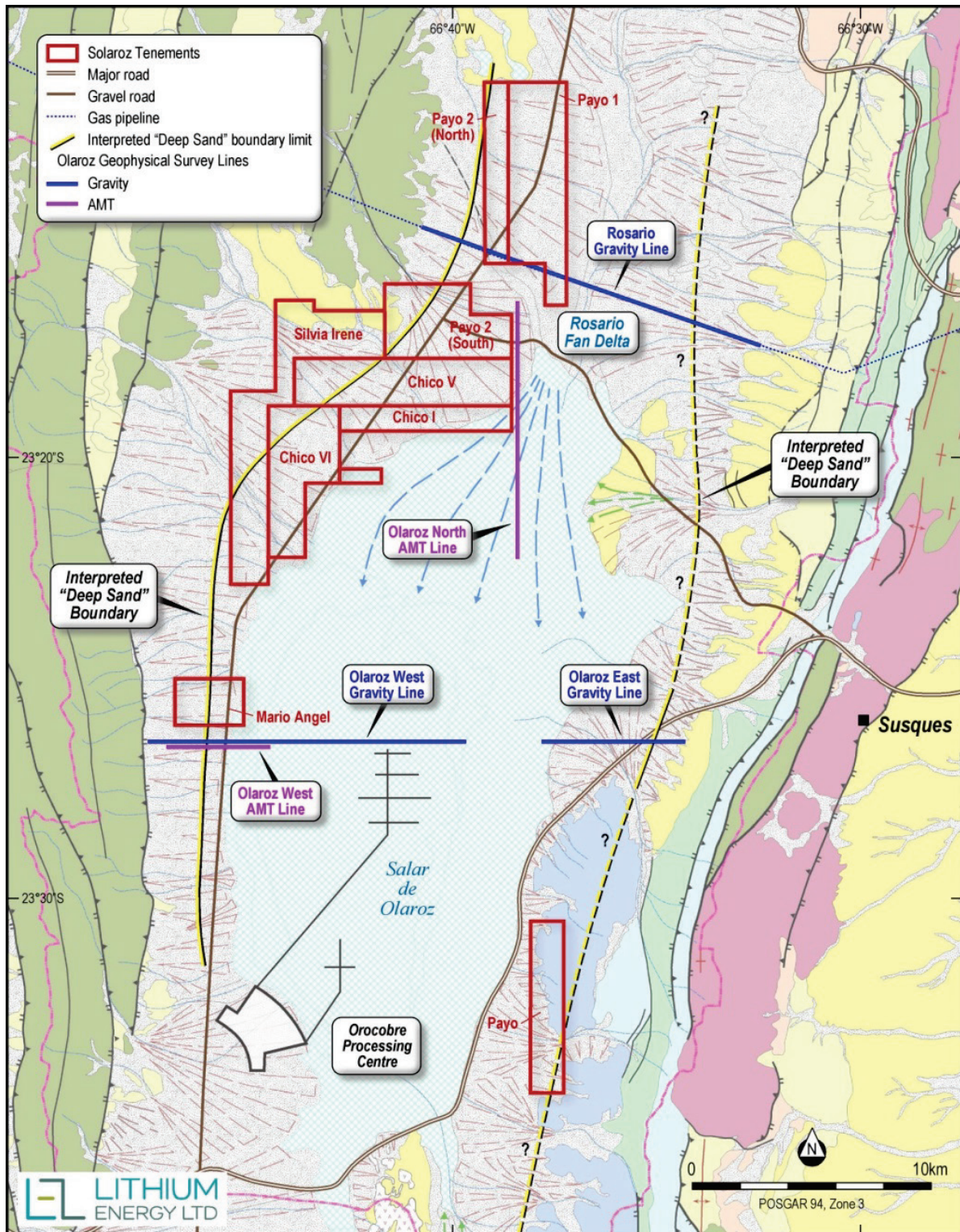


Figure 4: Geology of the Olaroz Salar with Location of the Solaroz Tenements and Location of Geophysical Surveys undertaken by Orocobre⁶

6 Source: Salfity Geological Consultants - www.salfitygeologicalconsultant.com

BURKE GRAPHITE PROJECT (QUEENSLAND, AUSTRALIA)

(100%)

Activities During the Quarter

Australia's national science agency CSIRO were engaged by the Company during the quarter to undertake spheronisation and purification of Burke natural graphite particles for potential use in Lithium-ion batteries and electrochemical optimisation testwork, with 50% co-funding received from the CSIRO Kick Start Program.

Lithium Energy is investigating the establishment of a dedicated, environmentally sustainable manufacturing facility to purify and spheronise graphite sourced from the high-grade Burke Deposit for use as anode material in Lithium-ion batteries.

Further details are outlined below.

Project Background

The Burke Project comprises two granted Exploration Permits for Minerals (EPM) totalling approximately 26 square kilometres located in the Cloncurry region in North Central Queensland, where there is access to well-developed transport infrastructure to an airport at Mt Isa (~122km) and a port in Townsville (~783km) (refer Figure 5).

The Burke EPM 25443 tenement is located 125km north of Cloncurry in an established graphite mining province adjacent to the Mt Dromedary Graphite Project held by Novonix Limited (ASX: NVX).

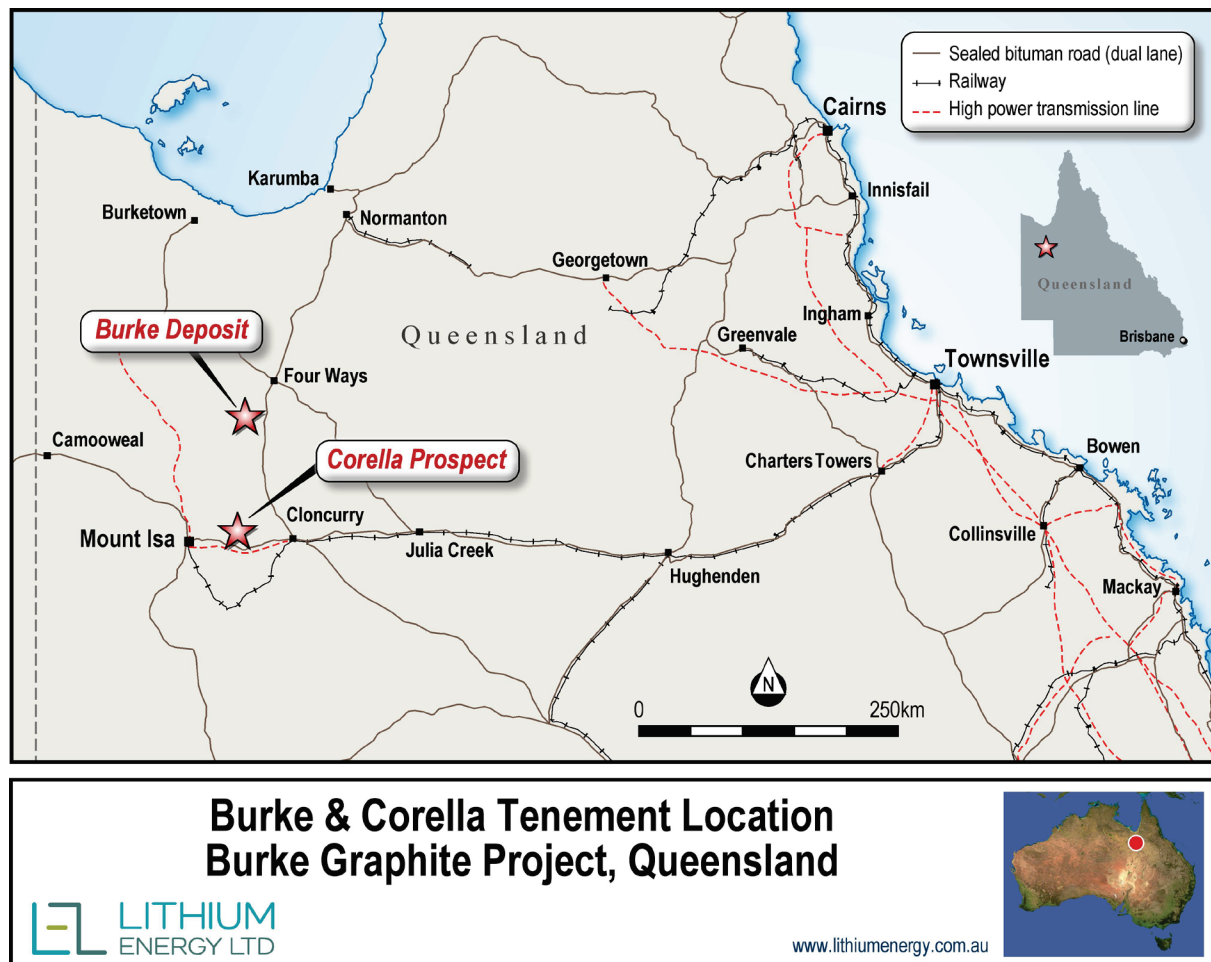


Figure 5: Burke Graphite Project Tenement Locations in North Central Queensland

Burke Deposit

A Mineral Resource Estimate (MRE) for the Burke tenement has defined a maiden Inferred Mineral Resource of:

- **6.3 million tonnes @ 16.0% TGC** (with a TGC cut-off grade of 5%) for **1,000,000 tonnes** of contained graphite;
- Within the mineralisation envelope there is included higher grade material of **2.3 million tonnes @ 20.6% TGC** (with a TGC cut-off grade of 18%) for **464,000 tonnes** of contained graphite which will be investigated further

Mineral Resource Category	Weathering State	Mt	TGC (%)	Contained Graphite (Mt)	Density (t/m)
Inferred Mineral Resource	Oxide	0.5	14.0	0.1	2.5
	Fresh	5.8	16.2	0.9	2.4
	Total Oxide + Fresh	6.3	16.0	1.0	2.4

Note: The Mineral Resource was estimated within constraining wireframe solids defined above a nominal 5% TGC cut-off. The Mineral Resource is reported from all blocks within these wireframe solids. Differences may occur due to rounding.

Refer Grade Tonnage Data in Table 2 of CSA Global Pty Ltd's Burke Graphite Project MRE Technical Summary dated 9 November 2017 (attached as Annexure A of Strike's ASX Announcement dated 13 November 2017: Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest Grade Natural Graphite Deposits

The Burke Deposit is one of the highest-grade graphite deposits globally:

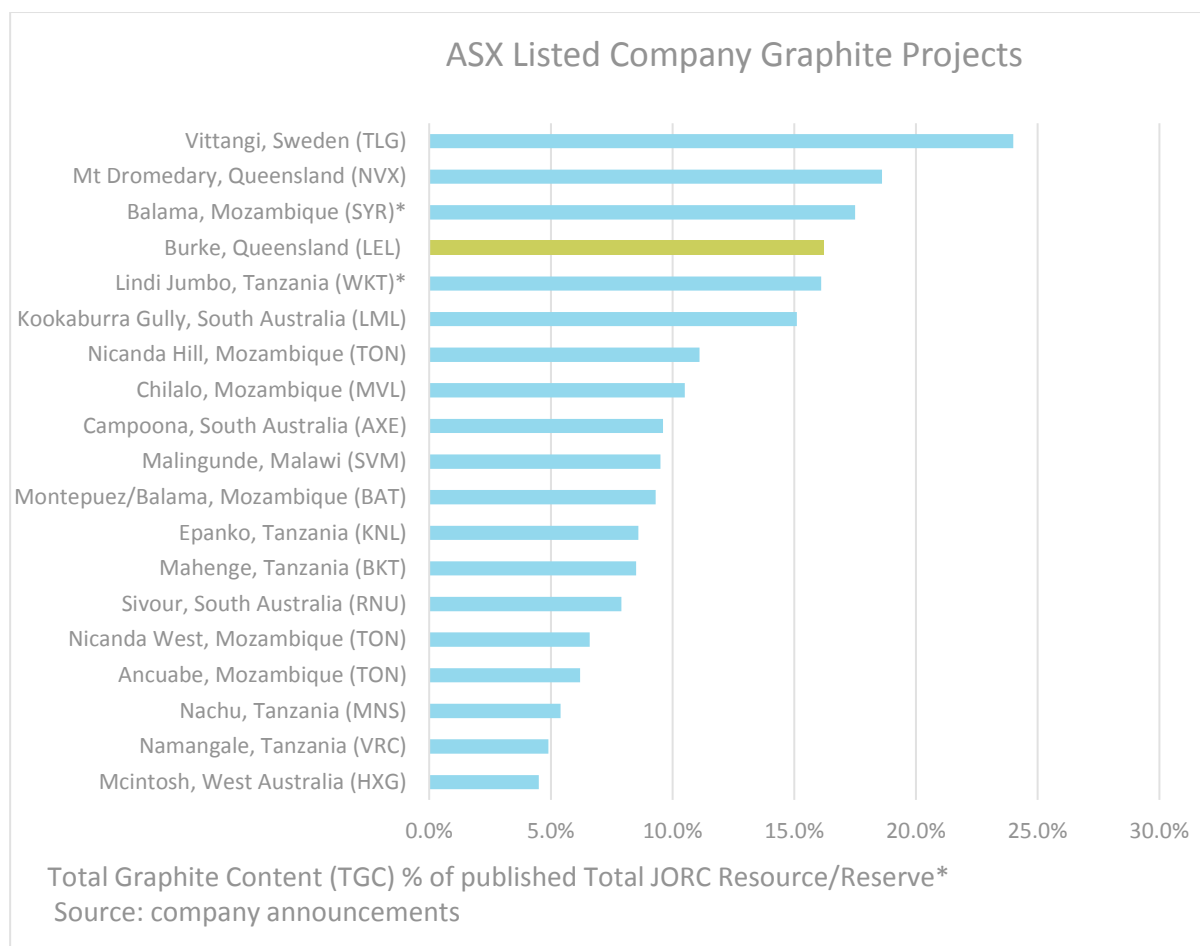


Figure 6: Total Graphite Content (TGC) of Graphite Projects Held by ASX Listed Companies
(Source: ASX announcements)

The Burke Deposit presents the opportunity for Lithium Energy to participate in the anticipated growth in demand for graphite and graphite related products particularly with respect to the production of Lithium-ion batteries where graphite is the largest single component by weight.

In addition to the high-grade nature of the deposit, the Burke Deposit:

- Comprises natural graphite that has been demonstrated to be able to be processed by standard flotation technology to international bench mark product categories. The flotation tests previously conducted by IMO have confirmed that a concentrate of purity **in excess of 95% and up to 99% TGC** can be produced using a standard flotation process.
- Contains graphite from which Graphene Nano Platelets (**GNP**) have been successfully extracted direct from the Burke Deposit via Electrochemical Exfoliation (**ECE**). The ECE process is relatively low cost and environmentally friendly compared to other processes, yet it can produce very high purity Graphene products. The ECE process is however not applicable to the vast majority of worldwide graphite deposits as it requires a TGC of over 20% and accordingly the Burke Deposit has potentially significant processing advantages over other graphite deposits.
- Is located in the relatively safe and mining friendly jurisdiction of Queensland, Australia with well-developed transport infrastructure and logistics nearby.
- Is favourably located relative to the North Queensland Townsville Energy Chemicals Hub, which is emerging as an important precinct for the production of critical materials for battery technologies in Australia.
- Is potentially amenable to low cost open-pit mining.

Potential Value Adding Processing Facility

Lithium Energy believes that:

- The high-grade nature of the Burke Deposit, its location in Queensland (including relative to the North Queensland Townsville Energy Chemicals Hub) and the prior test work indicating its suitability for use in lithium-ion batteries, affords the Company a highly advantageous position to expand the scope of its proposed graphite operations from that of a pure graphite miner.
- There are significant advantages in creating an in-country vertically integrated operation that will encompass a mine, a concentrator and a downstream processing operation to produce Purified Spherical Graphite (**PSG**) for sale to lithium-ion battery anode manufacturers.

Accordingly, Lithium Energy is undertaking investigations into the establishment of a dedicated, environmentally sustainable manufacturing facility at or near the North Queensland Townsville Energy Chemicals Hub to purify and spheronise graphite sourced from the high-grade Burke Deposit for use as anode material in lithium-ion batteries.

By investing in a manufacturing facility to undertake the purification and spheronisation required to produce battery-grade anode material, Lithium Energy will potentially tap into significantly greater market with a higher value-added sale price than just the production of unpurified graphite concentrate.

Lithium Energy will adopt best practice manufacturing technologies for the concentration and refinement of its graphite using environmentally sustainable manufacturing processes compared with highly toxic chemical processes currently used in China. The Company will seek to be one of a limited number manufacturers of PSG outside of China in circumstances where PSG is currently a near Chinese monopoly product.

Lithium Energy plans to advance with a number of studies to confirm the commercial viability of establishing a Purified Spherical Graphite manufacturing operation, using its very high-grade Burke Graphite as a feedstock material.

As these studies advance, Lithium Energy envisages a potential pathway to production encompassing:

- Appointment of lead engineering company(ies) to assist with project studies;
- Finalisation of facility location;
- Completion of current CSIRO test work and the engagement with regional Government agencies which may provide financial and technical support for such an initiative;
- Finalisation of process flow sheet upon completion of test work and selection of underlying processing methodology;
- Upgrading current JORC Mineral Resource to an Ore Reserve status;
- Conversion of the Burke tenement to a Mining Lease;
- Construction of Pilot Plant;
- Initial Production from Burke Deposit to Pilot Plant;
- Finalisation of Plant Design based upon Pilot Plant data;
- Finalisation of Processing Plant Design;
- Completion of all required studies and permitting; and
- Receipt of Project Finance and Final Investment Decision.

Demand For Purified Spherical Graphite (PSG)

The demand for PSG for use in lithium-ion batteries is expected to increase ten-fold over the next decade, as the world rapidly moves towards the electrification of mobility and renewable grid storage.

Graphite is a critical component of today's lithium-ion batteries – in fact, there is typically ten times by weight more graphite in a lithium-ion battery than lithium. Most of the world's supply of battery grade purified graphite for use as anode material in Electric Vehicle (**EV**) batteries is sourced from China. The technology currently used in China for purification uses highly toxic chemicals which are dangerous to handle and environmentally damaging.

Battery manufacturers are therefore increasingly seeking alternative sources for graphite. Australia is well positioned to meet this demand, with strong technical capabilities together with a range of Government funded initiatives such as the Future Battery Industries Cooperative Research Centre (CRC) which actively support the value enhancement of local critical minerals, including graphite.

Research Grant to Co Fund (with CSIRO) Further Lithium-Ion Testwork

Lithium Energy has entered into a new Research Agreement with CSIRO (September 2021) to undertake further work, including attempting spheroidisation and purification of Burke natural graphite particles and electrochemical testwork. This spheroidisation of the natural graphite flakes will, through a mechanical process, shape the graphite into 'potato-like' structures with the objective of easier processing of Burke natural graphite flakes into electrode materials to reduce capacity losses and enhance cell efficiency.

This work comprises a key component required to demonstrate to potential graphite purchasers the benefits of the natural flake graphite within the Burke Deposit.

The research project is made possible by CSIRO Kick-Start, an initiative that provides funding and support for innovative Australian small businesses to access CSIRO's research expertise and capabilities to help grow and develop their business. 50% of the project cost will be co-funded by CSIRO through the Kick-Start Program.

Potential Offtake Partners

The Burke Project has previously been introduced to a number of major Chinese and Japanese Lithium-ion battery manufacturers and graphite companies.

These parties expressed keen interest in the Burke Deposit and its proposed development. Based upon the positive reception and strong interest in the Burke Project, and with the benefit of the further test work, Lithium Energy will pursue discussions with these previous parties (and other interested parties) with a view to eventually forming binding commercial off-take and development agreements.

Lithium Energy notes that China itself is the world's largest producer and consumer of graphite. However, average graphite grades in China are typically much lower than that of the Burke Deposit and increasing environmental concerns in China are causing companies to look outside of China for stable supplies of high quality graphite concentrate.

Graphene from the Burke Deposit

The exceptionally high-grade nature of the Burke Deposit and its chemical composition lends itself to efficient Graphene production technology, which is not available for a majority of lower grade graphite deposits.

Graphene usage in lithium-ion batteries is an emerging technology, where Graphene is used as an additive in the compound mix of the Cathode electrode terminal to effectively make the terminal more conductive. Graphene enhanced batteries allow for increased electrical density, more rapid recharge times, less weight, as well as having the ability to hold the charge longer which improves the battery's lifespan.

Graphene is technically defined as a single atom layer of crystalline carbon in a two dimensional 'honeycomb' type structure, but the term "Graphene" is often extended to include material made up of multiple stacked single layers of (single layer) Graphene. Material comprising up to 10 layers of Graphene is sometimes referred to as "Few Layer Graphene" (**FLG**), whereas material with between 10–150 layers of Graphene is known as "Graphene Nano Platelet" (**GNP**).

The Burke Deposit contains graphite from which GNP have been successfully extracted via ECE.

The ECE process is relatively low cost and environmentally friendly compared to other processes, yet it can produce very high purity Graphene products. The ECE process is however not applicable to the vast majority of worldwide graphite deposits as it requires a TGC of over 20% and accordingly, the Burke Deposit has potentially significant Graphene processing advantages over other graphite deposits.

In 2017⁷, a test was successfully undertaken on a sample of Burke graphite diamond drill hole core through ECE by Independent Metallurgical Operations Pty Ltd (**IMO**), to produce pure GNP material from raw Burke graphite.

In ECE, a lump of graphite is inserted as an anode in a chemical solution and then an electric current is passed through the solution, using the graphite as an anode. Layers of Graphene then "peel off" and can be collected through a relatively simple process.

In order to capitalise on the commercial opportunities for using Graphene produced from the Burke Deposit in lithium-ion batteries, Lithium Energy is planning to undertake further test-work to optimise the production ECE process for producing high quality GNP, FLG and/or single layers of Graphene in commercial quantities.

⁷ Refer Strike Resources Limited (ASX:SRK) ASX Announcement dated 16 October 2017: Test-work confirms the potential suitability of Burke graphite for Lithium-ion battery usage and Graphene production

ASX Announcements

Lithium Energy's ASX Announcements on the Burke Project released during the quarter and to the date of this report are as follows:

- 20 October 2021: Lithium Energy to Pursue Downstream Graphite Processing Opportunity at Emerging Townsville Battery Hub
- 27 September 2021: High Grade Burke Graphite to be Optimised for Lithium Battery Application
- 9 July 2021: Graphene from Burke Graphite Project Opens Up Significant Lithium-Ion Battery Opportunity

CORPORATE

Securities on Issue

Class of Security	Quoted on ASX	Unlisted	Total
Fully paid ordinary shares	45,000,000	35,010,000	80,010,000
Executive Options (\$0.30, 18 March 2024) ⁸	-	10,000,000	10,000,000
Broker Options (\$0.30, 4 May 2024) ⁹	-	4,000,000	4,000,000

Restricted Securities

Class of Security	Number	Escrow Period
Fully paid ordinary shares	34,860,000	19 May 2024 (24 months from date of Quotation)
Fully paid ordinary shares	150,000	10 May 2023 (12 months from date of issue)
Total fully paid ordinary shares	35,010,000	
Executive Options (\$0.30, 18 March 2024)	10,000,000	19 May 2024 (24 months from Quotation)
Broker Options (\$0.30, 4 May 2024)	4,000,000	19 May 2024 24 months from Quotation

8 Refer Section 16.3 (Rights Attaching to Executive Options) of the Company's Prospectus (dated 30 March 2021) for terms and conditions of the Executive Options

9 Refer Section 16.2 (Rights Attaching to Broker's Options) of the Company's Prospectus (dated 30 March 2021) for terms and conditions of the Broker Options

Summary of Expenditure Incurred¹⁰

A summary of expenditure incurred by Lithium Energy during the quarter, in relation to cash flows from operating and investing activities reported in the accompanying Appendix 5B Cash Flow Report is as follows:

For Quarter ending 30 September 2021	Expenditure Incurred / Cash Outflows		
	Operating	Investing	Total
		\$'000	
Exploration and evaluation expenditure	-	67	67
Personnel expenses	167	-	167
Occupancy expenses	-	-	-
Corporate expenses	83	-	83
Administration expenses	20	-	20
Total Expenditure	270	67	337

There were no mining production and development activities during the quarter.

Reconciliation of Expenditure to Utilisation of Funds Statement in Prospectus¹¹

	Proposed Utilisation of Funds Disclosed in Prospectus) ¹²	Actual Expenditure (Cash Outflows) to 30 September 2021	Variance
		\$'000	
Exploration and Evaluation Expenditure	5,235	145	5,090
Cash Consideration Payments to Solaroz Owner	1,750	-	1,750
Expenses of the IPO	765	829	(64)
Balance: Corporate Overheads/Working Capital	1,250	434	816
Total	9,000	1,408	7,592

The Utilisation of Funds disclosed in Lithium Energy's Prospectus is an aggregate estimate over a 2 year period (as at the date of the Prospectus – 30 March 2021). The reported Actual Expenditure is based on cumulative cash outflows from 14 January 2021 to 30 September 2021 and as reported in the Company's Appendix 5B Cash Flow Reports for the quarters ending 30 June and 31 September 2021.

The proposed exploration expenditure programme (and allocation across Lithium Energy's projects) (as outlined in the Prospectus) will be refined according to the results of the programmes as they are undertaken/develop, to meet working capital allocation priorities, and potentially for new project generation. All exploration expenditure is subject to change, as they are of necessity highly dependent on results achieved.

Payments to Related Parties¹³

During the quarter, Lithium Energy paid a total of \$160k in respect of Directors' remuneration, comprising salaries, PAYG remittances to the ATO and statutory employer superannuation contributions. This is disclosed in Item 6 of the accompanying Appendix 5B Cash Flow Report.

¹⁰ Per ASX Listing Rule 5.3.1

¹¹ Per ASX Listing Rule 5.3.4

¹² Refer Section 6.1 (Utilisation of Funds) of the Company's Prospectus (dated 30 March 2021)

¹³ Per ASX Listing Rule 5.3.5

LIST OF MINERAL TENEMENTS

Lithium Energy has interests in the following mineral tenements as at the end of the quarter and currently:

Solaroz Lithium Brine Project (Argentina) (90%)

Tenement Name	Area (Ha)	Province	File No
Mario Ángel	543	Jujuy	1707-S-2011
Payo	990	Jujuy	1514-M-2010
Payo I	1,973	Jujuy	1516-M-2010
Payo 2	2,193	Jujuy	1515-M-2010
Chico I	835	Jujuy	1229-M-2009
Chico V	1,800	Jujuy	1312-M-2009
Chico VI	1,400	Jujuy	1313-M-2009
Silvia Irene	2,465	Jujuy	1706-S-2011

The above tenements are (currently being processed before the Administrative Mining Court of the Province of Jujuy, Argentina.

Burke Graphite Project (Queensland, Australia) (100%)

Tenement No.	Grant Date	Expiry Date	Area (blocks)	Area (km ²)
Burke EPM 25443	4/9/2014	3/9/2024	2 sub-blocks	~6.58
Corella EPM 25696	2/4/2015	1/4/2025	6 sub-blocks	~19.74

JORC MINERAL RESOURCES

Burke Graphite Project (Queensland, Australia) (100%)

The Burke Deposit (on the Burke EPM 25443 tenement) has a JORC Code (2012 Edition) compliant Mineral Resource:

Mineral Resource Category	Weathering State	Mt	TGC (%)	Contained Graphite (Mt)	Density (t/m)
Inferred Mineral Resource	Oxide	0.5	14.0	0.1	2.5
	Fresh	5.8	16.2	0.9	2.4
	Total Oxide + Fresh	6.3	16.0	1.0	2.4

Note: The Mineral Resource was estimated within constraining wireframe solids defined above a nominal 5% TGC cut-off. The Mineral Resource is reported from all blocks within these wireframe solids. Differences may occur due to rounding.

Refer Grade Tonnage Data in Table 2 of CSA Global Pty Ltd's Burke Graphite Project MRE Technical Summary dated 9 November 2017 (attached as Annexure A of Strike's ASX Announcement dated 13 November 2017: Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest Grade Natural Graphite Deposits).

JORC CODE COMPETENT PERSON'S STATEMENTS

JORC Code (2012) Competent Person Statement – Solaroz Lithium Project (Argentina)

The information in this document that relates to Exploration Targets and Exploration Results in relation to the Solaroz Lithium Project is extracted from the following ASX market announcements made by Lithium Energy dated:

- 8 June 2021 entitled "Substantial Lithium Exploration Target Identified at the Solaroz Project in Argentina"
- 26 May 2021 entitled "Geophysical Data Supports Highly Encouraging Exploration Potential for Solaroz"

The information in the original announcements is based on, and fairly represents, information and supporting documentation prepared and compiled by Mr Peter Smith (BSc (Geophysics) (Sydney) AIG ASEG). Mr Smith is a Member of the Australian Institute of Geoscientists (**AIG**) and a Director of the Company. Mr Smith has the requisite experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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 announcements (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 announcements (referred to above).

JORC Code (2012) Competent Person Statement - Burke Graphite Project Mineral Resources

The Competent Persons named below have been previously engaged by Strike Resources Limited (ASX:SRK) (**Strike**), the former parent company of Lithium Energy Limited (and subsidiaries) that hold the interests in the Burke Graphite Project. Lithium Energy Limited was spun out of Strike into a new ASX listing in May 2021.

(a) The information in this document that relates to Mineral Resources in relation to the Burke Graphite Project is extracted from the following ASX market announcement made by Strike dated:

- 13 November 2017 entitled "Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest-Grade Natural Graphite Deposits".

The information in the original announcement (including the CSA Global MRE Technical Summary in Annexure A) that relates to these Mineral Resources is based on information compiled by Mr Grant Louw under the direction and supervision of Dr Andrew Scogings. Dr Scogings takes overall responsibility for this information. At the time of the Mineral Resource estimation, Dr Scogings and Mr Louw were employees of CSA Global Pty Ltd, who had been engaged by Strike to provide Mineral Resource estimate services. Dr Scogings is a Member of AIG (and at the time of the Mineral Resource estimation, also a member of the Australian Institute of Mining and Metallurgy (**AusIMM**)) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of 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).

(b) The information in this document that relates to metallurgical test work results in relation to the Burke Graphite Project is extracted from the following ASX market announcements made by Strike dated:

- 16 October 2017 entitled "Test-work confirms the potential suitability of Burke graphite for lithium-ion battery usage and Graphene production".
- 13 November 2017 entitled "Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest-Grade Natural Graphite Deposits".

The information in the original announcements that relates to these metallurgical test work matters is based on, and fairly represents, information and supporting documentation prepared by Mr Peter Adamini, BSc (Mineral Science and Chemistry), who is a Member of AusIMM. Mr Adamini is a full-time employee of Independent Metallurgical Operations Pty Ltd, who had been engaged by Strike to provide metallurgical consulting services. Mr Adamini has the requisite experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in 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 announcements (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 announcements (referred to above).

- (c) The information in this document that relates to Exploration Results in relation to the Burke Graphite Project is extracted from the following ASX market announcements released by:
- (i) Lithium Energy dated:
 - 27 September 2021 entitled "High Grade Burke Graphite to be Optimised for Lithium Battery Application"
 - 9 July 2021 entitled "Graphene from Burke Graphite Project Opens Up Significant Lithium-Ion Battery Opportunity".
 - (ii) Strike dated:
 - 21 April 2017 entitled "Jumbo Flake Graphite Confirmed at Burke Graphite Project, Queensland".
 - 13 June 2017 entitled "Extended Intersections of High-Grade Graphite Encountered at Burke Graphite Project".
 - 21 June 2017 entitled "Further High-Grade Intersection Encountered at Burke Graphite Project".
 - 16 October 2017 entitled "Test-work confirms the potential suitability of Burke graphite for lithium-ion battery usage and Graphene production".
 - 13 November 2017 entitled "Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest-Grade Natural Graphite Deposits".
 - 26 June 2018 entitled "Burke Graphite Project – New Target Area Identified from Ground Electro-Magnetic Surveys".

The information in the original announcements is based on, and fairly represents, information and supporting documentation prepared and compiled by Mr Peter Smith (BSc (Geophysics) (Sydney) AIG ASEG). Mr Smith is a Member of AIG, a consultant to Strike and also a Director of the Company (since 18 March 2021). Mr Smith has the requisite experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in 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 announcements (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 announcements (referred to above).

Lithium Energy's ASX Announcements may be viewed and downloaded from the Company's website: www.lithiumenergy.com.au or the ASX website: www.asx.com.au under ASX code "LEL".

Strike's ASX Announcements may be viewed and downloaded from the Company's website: www.strikeresources.com.au or the ASX website: www.asx.com.au under ASX code "SRK".

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.

Appendix 5B

Mining Exploration Entity or Oil and Gas Exploration Entity Quarterly Cash Flow Report

Name of entity

LITHIUM ENERGY LIMITED (ASX:LEL) and its controlled entities

ABN

94 647 135 108

Quarter Ended (current quarter)

30 September 2021

Consolidated statement of cash flows

	Current Quarter Sep-2021 \$A' 000	Year to Date 3 months \$A' 000
1. Cash flows from operating activities		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	-	-
(b) development	-	-
(c) production	-	-
(d) staff costs	(167)	(167)
(e) administration and corporate costs	(103)	(103)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	1	1
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	(5)	(5)
1.9 Net cash from / (used in) operating activities	(274)	(274)
2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	(2)	(2)
(d) exploration & evaluation	(67)	(67)
(e) investments	-	-
(f) other non-current assets	-	-

Consolidated statement of cash flows	Current Quarter Sep-2021 \$A' 000	Year to Date 3 months \$A' 000
2.2 Proceeds from the disposal of:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
- Adjustment on transfer of subsidiary from Strike Resources Limited	-	-
2.6 Net cash from / (used in) investing activities	(69)	(69)
3. Cash flows from financing activities		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	-
3.4 Transaction costs related to issues of equity securities or convertible debt securities	-	-
3.5 Proceeds from borrowings	-	-
3.6 Repayment of borrowings	(5)	(5)
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
3.10 Net cash from / (used in) financing activities	(5)	(5)
4. Net increase / (decrease) in cash and cash equivalents for the period		
4.1 Cash and cash equivalents at beginning of period	7,938	7,938
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(274)	(274)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	(69)	(69)
4.4 Net cash from / (used in) financing activities (item 3.10 above)	(5)	(5)
4.5 Effect of movement in exchange rates on cash held	-	-
4.6 Cash and cash equivalents at end of period	7,590	7,590

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current Quarter \$A' 000	Previous Quarter \$A' 000
5.1 Bank balances	210	238
5.2 Call deposits	7,380	7,700
5.3 Bank overdrafts	-	-
5.4 Other (provide details)	-	-
5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)	7,590	7,938

6. Payments to related parties of the entity and their associates	Current Quarter \$A' 000
6.1 Aggregate amount of payments to related parties and their associates included in item 1	(160)
6.2 Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments

7. Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	Total facility amount at quarter end \$A' 000	Amount drawn at quarter end \$A' 000
7.1 Loan facilities	-	-
7.2 Credit standby arrangements	-	-
7.3 Other (please specify)	-	-
7.4 Total financing facilities	-	-

7.5 Unused financing facilities available at quarter end	-
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Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.

Nil

8. Estimated cash available for future operating activities	\$A' 000
8.1 Net cash from / (used in) operating activities (item 1.9)	(274)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(67)
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(341)
8.4 Cash and cash equivalents at quarter end (item 4.6)	7,590
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	7,590
8.7 Estimated quarters of funding available (item 8.6 divided by item 8.3)	22.26

Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7

8.8 If Item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

N/A

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

N/A

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

N/A

Compliance statement

1. This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
2. This statement gives a true and fair view of the matters disclosed.

Authorised By:



William Johnson
Executive Chairman

25 October 2021

See Chapter 19 of ASX Listing Rules for defined terms

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee"
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's Corporate Governance Principles and Recommendations, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

AUTHORISED FOR RELEASE - FOR FURTHER INFORMATION:

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