

MARKET ANNOUNCEMENT

Burke Graphite Shows Excellent Lithium-Ion Battery Anode Potential

SUMMARY

- CSIRO anode test work confirms Burke Graphite has excellent Li Ion battery potential. This project was made possible through the CSIRO Kick-Start programme.
- Unoptimised purification results of 99.94% Total Graphitic Carbon (**TGC**) achieved, which closely compares to typical industry requirements of +99.95% TGC for anode material. Further optimisation and purification test work will seek higher purity levels to exceed industry standards.
- Spheronisation of the unpurified graphite flake achieved a d_{50} (median particle size) of 15 microns with a Tap density of 0.92 g/cm^3 , which compares favourably with Tap densities of $>0.92 \text{ g/cm}^3$ for anode ready material with the same d_{50} .
- Unoptimised battery cells achieved reversible capacities of 344 – 356 mAh/g, consistent with commercial baseline for anode material of $>350 \text{ mAh/g}$.
- The unoptimised results are highly encouraging as they were achieved without any final purification or coating material applied to the spheronised material, which is normally required to improve anode capacity.
- Reverse Circulation (RC) and Diamond drilling to commence at the Burke Tenement shortly, to increase current JORC Mineral Resource to an Indicated category.
- Upgrading of Burke Deposit to Indicated status to occur as a precursor to commencement of economic studies on the creation of a potential anode manufacturing facility based in Queensland utilising Burke Graphite.
- Maiden initial drilling programme at highly prospective Corella Tenement to follow on after completion of Burke drilling.

Lithium Energy Limited (ASX:LEL) (**Lithium Energy** or the **Company**) is pleased to announce the results of anode testwork recently conducted by the Commonwealth Scientific and Industrial Research Organisation (**CSIRO**) and provide an update on further development of its 100% owned Burke Graphite Project. This project was made possible through the CSIRO Kick-Start, an initiative that provides funding and support for innovative Australian start-ups and small businesses to access CSIRO's research expertise and capabilities to help grow and develop their business.



Executive Chairman, William Johnson:

The current round of test work conducted by CSIRO is highly encouraging as it establishes the potential of graphite from Burke to be refined into a high value anode material suitable for use in Lithium-ion batteries. With the imminent commencement of drilling at the Burke tenement and subsequently at the Corella tenement, Lithium Energy is rapidly accelerating the development of the highly attractive graphite side of its battery minerals business.

Li ion Battery Anode Material from the Burke Graphite Deposit

CSIRO has undertaken characterisation, purification and spheronisation testwork on natural Burke Graphite to determine its suitability for use as a battery anode material. This work was partially funded under CSIRO's (research related) Kick Start Programme.

In-depth characterisation of Burke Graphite concentrate (produced from previous drill core samples taken from the Burke Tenement (EPM 25443) using laboratory flotation) was firstly conducted by CSIRO to determine the concentration of various impurity elements, via XRF, as well as using an automated mineralogy analyser to determine the mineralogy of the residual impurities within the natural graphite concentrate (> 95 % TGC).

The four major impurities in the Burke Graphite concentrate identified were micas, feldspars, clay minerals and silica, which are typical of graphite deposits.

CSIRO then conducted several different purification techniques and processes on the Burke Graphite concentrate to remove these impurities, with preliminary results achieving a purity of 99.94 % TGC, which closely compares to typical industry requirements of +99.95% TGC for anode material.

Spheronising test work was conducted on unpurified Burke Graphite in a bench scale NARA NHS-0 Hybridiser, successfully producing spheronised graphite particles with a d_{50}^1 of between 15 – 17 μm and a Tap density of 0.92 g/cm^3 , which is equivalent to the typical industry benchmark for Tap Density of anode ready material for this size distribution.

This unpurified spheronised material was then used for the preparation of natural graphite anodes for electrochemical testing. These electrodes showed electrochemical capacity of 344 - 356 mAh/g at 0.1C² cycle rate, which compares with the typical commercial electrode baseline results of >350 mAh/g .

These preliminary results achieved by the CSIRO testwork are consider highly encouraging as they closely approach or meet the relevant industry benchmarks typically required for lithium-ion battery anode material. Furthermore, the Company considers these results particularly positive given that the electrochemical testing of natural graphite anodes was made from spheronised Burke Graphite without the benefit of final purification or any coating material being applied, both of which would typically improve cell performance even further.

Based on these excellent preliminary results, the Company is planning further anode development testwork, with the objective of producing samples of purified spherical graphite (**PSG**) material which meet or exceed relevant industry performance benchmarks, for prospective customers to evaluate for use as anode material in lithium-ion batteries.

1 d_{50} means the median particle size

2 0.1C means that the cycling rate for the discharge was 10 hours (ie. 1C = 1hour, 0.1C = 10 hours)

Burke Graphite Deposit Development

A ~2,000 metre RC and ~600 metre Diamond drilling programme is planned to commence in late November 2022 at the Burke Tenement.

A principal objective of this drilling programme is to increase the confidence level of the current JORC Inferred Mineral Resource of the Burke Deposit to an Indicated category. The Burke Deposit currently has a 6.3Mt JORC Inferred Mineral Resource Grade of 16% Total Graphitic Carbon, within which there is a higher-grade component of 2.3Mt @ 20.6% TGC.³:

The drilling programme will also be used to obtain additional bulk samples of graphite which are required for the further anode development testwork as well as for flowsheet optimisation metallurgical test work.

Results from the drilling programme, together with the further metallurgical and anode optimisation testwork, will be used to support an engineering study to determine the economics and production capacities for an anode manufacturing facility based in Queensland producing high value PSG material from the Burke Graphite Project, for use in lithium-ion batteries.

Corella Graphite Prospect Development

Following on from the completion of the drilling programme at the Burke Tenement, the Company proposes an initial drilling programme at the Corella Tenement (EPM 25696) of ~2,000 metres of RC and ~200 metres of Diamond drilling.

This programme has been designed to test the extent of graphite mineralisation with the objective of delineating a maiden JORC Inferred Mineral Resource at Corella.

The delineation of a maiden JORC compliant mineral resource at Corella will build upon a previous surface sampling programme that indicated multiple occurrences of high grade graphite of up to 14.8% TGC together with a ground Electro Magnetic (**EM**) survey that identified the potential for significant graphite mineralisation.⁴

Subject to the Queensland wet season and drill rig availability, the Corella drilling programme is expected to be completed in Q1 of 2023.

The Burke Graphite Deposit

The Burke Tenement (EPM 25443) is located in the Cloncurry region of North Central Queensland, adjacent to the Mt Dromedary graphite deposit held by Novonix Limited (ASX: NVX).

The Burke Tenement contains a defined Inferred Mineral Resource of graphite as follows:

- **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

3 Refer Strike Resources Limited (ASX:SRK) ASX Market Announcement dated 13 November 2017: Maiden Mineral Resource Estimate Confirms Burke Project as One of the World's Highest-Grade Natural Graphite Deposits

4 Refer Strike Resources Limited (ASX:SRK) ASX Market Announcement dated 26 June 2018: Burke Graphite Project – New Target Area Identified from Ground Electro-Magnetic Surveys

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

AUTHORISED FOR RELEASE - FOR FURTHER INFORMATION:

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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 Graphite Project in Queensland. The Solaroz Lithium Project (LEL:90%) comprises 12,000 hectares of highly prospective lithium mineral concessions 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 concessions being developed into production by Allkem Limited (ASX/TSX:AKE) 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.

JORC CODE COMPETENT PERSON'S STATEMENTS

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. Dr Scogings and Mr Louw are both former 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 the Australasian 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. 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).

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.