Tuesday, 23 May 2023 ASX Code : LEL

Excellent Metallurgical Testwork Results at Burke Graphite Project Pave Way for Commencement of PFS

SUMMARY

- BGRIMM test work has confirmed excellent metallurgical testwork results where standard floatation processes effectively upgrade Burke Graphite to battery grade material, with graphite concentrate grades achieved at >96% Total Graphitic Carbon (TGC).
- Overall graphite recoveries by BGRIMM by closed loop testing also confirm excellent recovery rates of >85%.
- With the excellent met-results confirmed and the high grade Burke Deposit of 9.1Mt at 14.4% TGC, the Company will now progress with a Pre-Feasibility Study (PFS) to produce battery anode material.
- Wave International (Wave) in conjunction with the Measured Group have been appointed to conduct a PFS for the development of a vertically integrated Purified Spherical Graphite (PSG) manufacturing facility in Queensland, utilising Burke Graphite as feedstock.
- The PFS will build upon the excellent results to date from the extensive metallurgical test work programme being conducted by the Beijing General Institute of Mining and Metallurgy (BGRIMM).
- Key design criteria metrics have now been developed to support the planned PFS.

Lithium Energy Limited (ASX:LEL) (**Lithium Energy** or the **Company**) is pleased to confirm excellent metallurgical testwork results from the Burke Graphite Project which provides the impetus to immediately progress towards a Pre-Feasibility Study (**PFS**) for the Project.

The Company has appointed Wave International Pty Ltd (**Wave**) and the Measured Group to conduct the PFS, which will identify the requirements, operational outcomes and commercial parameters for a vertically integrated Purified Spherical Graphite (**PSG**) (a battery anode precursor material) manufacturing facility in Queensland utilising graphite from the Burke Deposit as feedstock.

Wave International is a well known and highly qualified engineering consulting service provider with extensive experience in graphite concentration and battery anode material plant design.

The PFS work will be undertaken by Wave in conjunction with the Measured Group, who will conduct the mine and pit design components of the PFS.

The award of the PFS coincides with the completion of the flowsheet definition stage of the metallurgical testwork programme being undertaken by the Beijing General Institute of Mining and Metallurgy (**BGRIMM**) in China.[1]

The completed BGRIMM testwork (to date) has defined the concentrator process flowsheet requirements that will be required to produce a +95% TGC graphite flake concentrate, which will be suitable as feedstock for a proposed PSG plant. The key metrics in relation to reagents, flotation and regrind residence times and recovery have now been determined and will be used as inputs to the concentrator process design in the PFS.

The key outputs of grade (>96% TGC) and recovery (>85%) were achieved using standard flotation and regrind milling technology, which is typical of the graphite processing industry.

The bulk (flake graphite) concentrate required as feed material for the PSG testwork programme will be produced (at the BGRIMM in-house Pilot Plant) using the process metrics defined by the flowsheet definition testwork. This bulk concentrate will be provided to other specialist consultants to conduct further PSG testwork required to support the PSG Plant portion of the PFS.

Executive Chairman, William Johnson*:*

> *We are very pleased to have secured the engineering services of Wave International and the Measured Group to undertake our Burke Graphite PFS. We are confident that this PFS will demonstrate that Burke can deliver a successful, vertically integrated and environmentally sustainable business manufacturing high value battery anode material right here in Australia.*
>
> *Decarbonisation and the EV revolution are driving the demand for natural graphite as a key battery anode material. The Burke Graphite Project is very well positioned to take advantage of this expected massive growth in demand for battery anode material, given the exceptionally high grade of the Burke Deposit, its metallurgical characteristics and favourable location in North-West Queensland. We are excited to be taking this next step in the advancement of Burke and to be playing an important role in supporting the decarbonisation of the world.*

About Wave International

Wave International is a consulting firm specialising in battery and technology metals, with over 20 years experience in the sector. Wave's operations span Australian, Canada, Europe, Mongolia and Africa. In particular, Wave has a track record in developing projects in central and far north Queensland.

Wave and its key personnel have extensive global experience in the feasibility, design, commissioning and operation of natural graphite projects. Wave is an industry leader and promotor of downstream graphite industries globally, and are key consultants for the development of multiple significant global battery anode material projects. Wave brings a deep understanding of the anode market and end user requirements, and downstream process technology, which will be leveraged to determine the optimal economic outcome for the Burke Graphite PFS.

About Measured Group

The Measured Group specialise in mining studies and mine development including resource and reserve evaluations and advanced 3D geological modelling. The Measured Group team includes specialist technicians and consultants, mining and geotechnical engineers, geologists, resource professionals and data scientists.

1 Refer also LEL ASX Announcement dated 16 March 2023: Burke Graphite Metallurgical Testwork Programme Commences in China

Burke Graphite Project Background

The Burke Graphite Project comprises EPM 25443 (the **Burke Tenement**) and EPM 25696 (the **Corella Tenement**) being 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 1).

The Burke Tenement is located 125km north of Cloncurry adjacent to the Mt Dromedary Graphite Project held by Novonix Limited (ASX: NVX). The Corella Tenement is located 40km west of Cloncurry near the Flinders Highway that links Mt Isa to Townsville.

The Lansdown Eco-Industrial Precinct near Townsville in North Queensland is emerging as an important location for the production of critical materials for battery technologies in Australia.

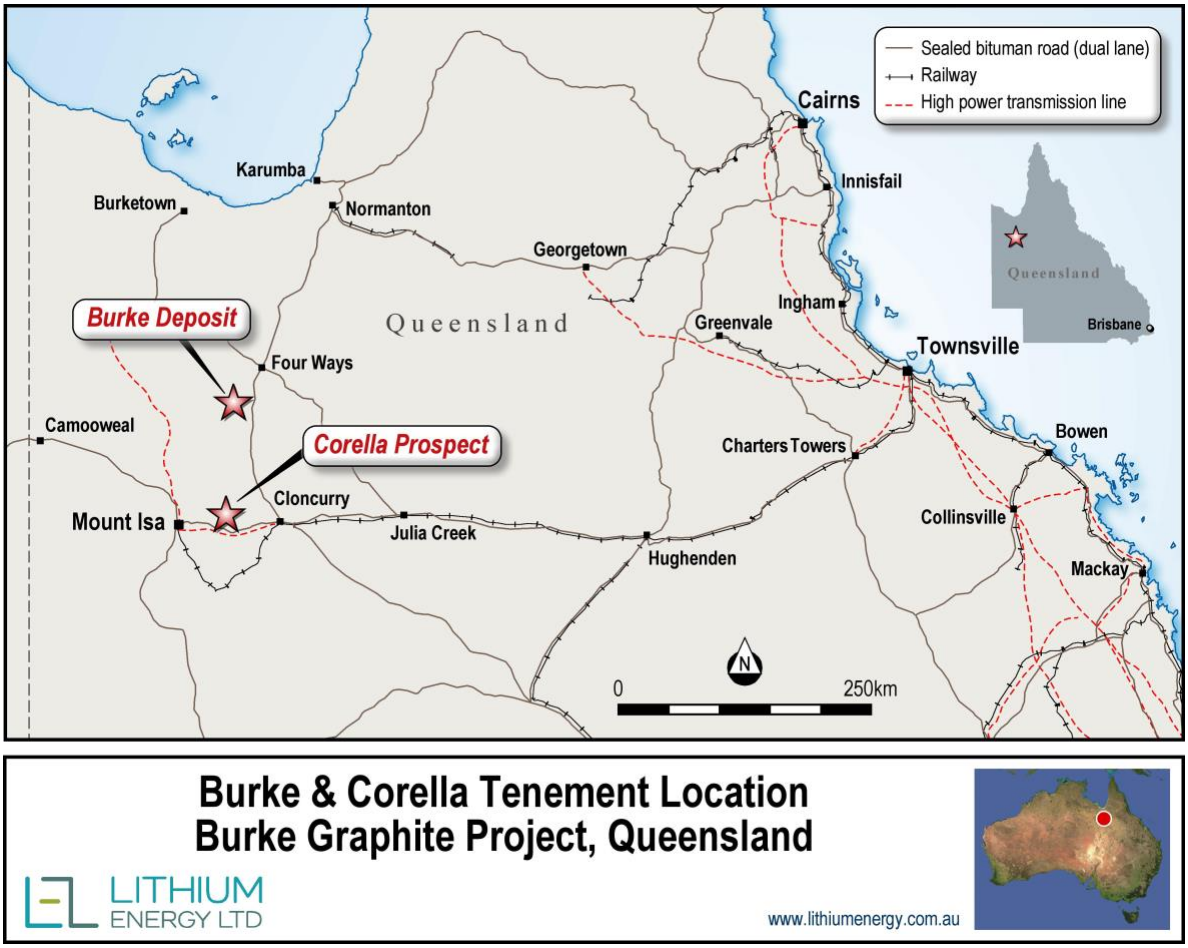

Figure 1: Burke Graphite Project Tenement Locations in North Central Queensland

Burke Graphite Deposit

- **Total Mineral Resource** of **9.1Mt at 14.4% Total Graphitic Carbon (TGC)** for a total of **1.3Mt contained graphite** (at a 5% TGC cut-off grade), comprising:
  - **Indicated Mineral Resource** of **4.5Mt at 14.7% TGC** for **670kt of contained graphite**; and
  - **Inferred Mineral Resource** of **4.5Mt at 14.2% TGC** for **640kt of contained graphite**.
- Within the mineralisation envelope there is included a higher grade **Total Mineral Resource** of **7.1Mt at 16.2% TGC** for **1.1Mt of contained graphite** (at a 10% TGC cut-off grade).[2]

Table 1 : Mineral Resource Estimate for Burke Tenement (the Burke Deposit)

Mineral Resource Category	Weathering State	Resource (Mt)	Total Graphitic Carbon (TGC) (%)	Contained Graphite (kt)
Indicated Mineral Resource	Weathered	0.2	12.5	30
	Primary	4.3	14.8	640
	Sub-total	**4.5**	**14.7**	**670**
Inferred Mineral Resource	Weathered	0.1	8.1	10
	Primary	4.4	14.4	630
	Sub-total	**4.5**	**14.2**	**640**
Total Indicated and Inferred Mineral Resource	Weathered	0.3	11.1	40
	Primary	8.7	14.6	1,270
	Total	**9.1**	**14.4**	**1,310**

Notes:

- *Mineral Resource estimates are constrained by the mineralisation solids and reported above a cut-off grade of 5% TGC; Mineral Resources reported on a dry in-situ basis; Totals may differ due to rounding.*
- *Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results.*
- *For further details, refer to LEL ASX Announcement dated 5 April 2023 entitled "Burke Graphite Mineral Resource Upgrade Delivers Significant Increases in Size and Confidence".*

AUTHORISED FOR RELEASE - FOR FURTHER INFORMATION:

William Johnson
Executive Chairman
T | (08) 9214 9737
E | chair@lithiumenergy.com.au

Peter Smith
Executive Director
T | (08) 9214 9737
E | cosec@lithiumenergy.com.au

ABOUT LITHIUM ENERGY LIMITED (ASX:LEL)

Lithium Energy Limited is an ASX listed battery minerals company which is developing its flagship Solaroz Lithium Brine Project in Argentina and the Burke 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.

2 Refer Mineral Resource estimates at different %TGC cut-off grades reported in Table 2 of LEL ASX Announcement dated 5 April 2023: Burke Graphite Mineral Resource Upgrade Delivers Significant Increases in Size and Confidence

JORC CODE (2012) COMPETENT PERSON STATEMENTS

(a) The information in this document that relates to Mineral Resources in relation to the Burke Tenement (EPM 25443) within the Burke Graphite Project is extracted from the following ASX market announcement made by Lithium Energy dated:

- 5 April 2023 entitled "Burke Graphite Mineral Resource Upgrade Delivers Significant Increases in Size and Confidence".

The information in the original announcement is based on, and fairly represents, information and supporting documentation prepared and compiled by Mr Shaun Searle, who is a Member of the Australasian Institute of Geoscientists (**AIG**). Mr Searle is an employee of Ashmore Advisory Pty Ltd, an independent consultant to Lithium Energy Limited. Mr Searle 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 the Reporting of Exploration Results, Mineral Resources and Ore Reserves' (**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 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.