

27 February 2023

## BULK GRAPHITE CONCENTRATE MANUFACTURE COMMENCES

Sarytogan Graphite Limited (ASX: SGA, "the Company" or "Sarytogan") is pleased to report that bulk graphite concentrate manufacture has commenced at the UVR-FIA GmbH laboratory (UVR-FIA) in Germany using a 240kg sample sourced from the Company's 100% owned Sarytogan Graphite project.

### Highlights

- Following the breakthrough **99.87%** graphite purity<sup>1</sup> achieved last year, the next step towards battery anode material is to make Uncoated Spheroidized Graphite (USpG).
- The planned USpG optimisation tests require a minimum of 5 kg of flotation concentrate, more than the bench scale tests have delivered so far.
- A 240kg bulk sample has been delivered to the UVR-FIA laboratory for up to 4x 60kg batches, each anticipated to produce 27kg of graphite concentrate.
- The bulk graphite concentrate manufacture is scheduled to be run in Q2. Spheroidization is planned in Q3 to enable battery anode performance tests in Q4 2023.
- Any optimisation of product pricing due to positive results of the testwork may substantially enhance the economics of the planned Pre-Feasibility Study.



Figure 1 – UVR-FIA bulk grinding (LHS) and flotation (RHS) laboratory in Germany

<sup>1</sup> Refer ASX:SGA Announcement 6 December 2022 "Breakthrough 99.87% Graphite Purity"

Sarytogan Managing Director, Sean Gregory commented:

*“Further to our breakthrough metallurgical purity result of 99.87%<sup>1</sup> we are now manufacturing bulk graphite concentrate to take the next step towards battery anode material in the form of Uncoated Spheroidized Graphite (USpG). By manufacturing more graphite concentrate than our immediate needs, we are getting ahead of the sample demands which are anticipated to continue to grow. The program will be an important input to our planned Pre-Feasibility Study”.*

## Sarytogan Product Development

Graphite from the Sarytogan project presents as a premium micro-crystalline graphite which is well suited to a future-facing battery anode product strategy.

The exceptionally high-grade **209Mt @ 28.5%** Total Graphitic Carbon (TGC) Inferred Mineral Resource<sup>2</sup> gives the future mining economics a significant head start. The first processing step is to concentrate the graphite using grinding and flotation to a graphite purity of around **84% TGC<sup>1</sup>**. This was first developed by Australian Laboratory Independent Metallurgical Operations Pty Ltd (IMO) and has since been replicated by German graphite experts Pro-Graphite GmbH (Pro-Graphite). The graphite concentrate was then purified by Pro-Graphite achieving the breakthrough graphite purity of **99.70% TGC** using either alkaline roasting or chemical purification independently. Combining both purification methods in series achieved **99.87% TGC<sup>1</sup>**.

Achieving these purity levels using industry standard methods has substantially increased the Company's confidence in its product strategy of cracking into the high-value battery anode market looks achievable. A readily traded product known as Uncoated Spheroidized Graphite (USpG, Figure 2) is tracked by commodity price forecasters as trading around US\$3,000/t, a significant value-added premium on flake graphite products that trade between US\$600/t and US\$1,200/t (Benchmark Mineral Intelligence, September 2022). The spheroidization improves battery performance with low irreversible capacity loss and long service life. Due to the low tap density, high charging is achievable delivering higher energy density.

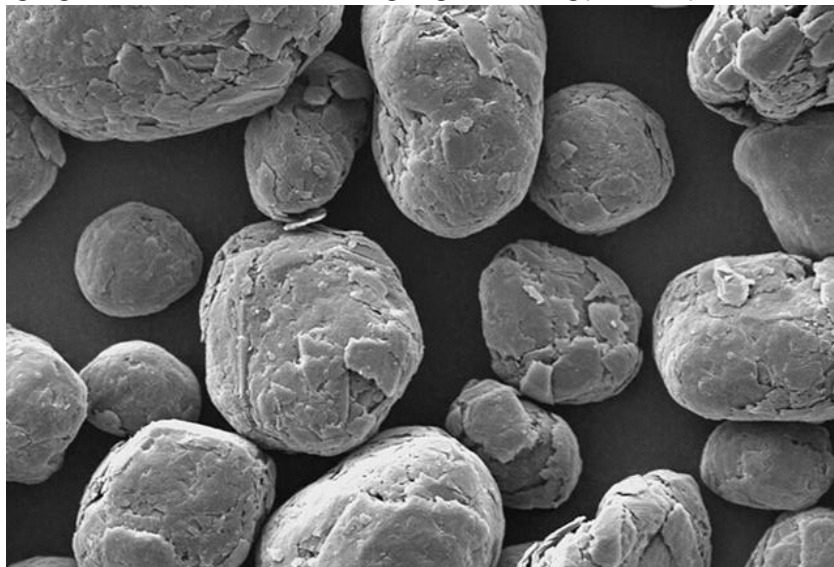


Figure 2 - Example of USpG Spheroidized Graphite (not from the Sarytogan Graphite Deposit)

<sup>2</sup> Refer Prospectus 23/2/22, ASX:SGA 14/7/22 for details on the Mineral Resource Estimate

All of the test work on graphite from the Sarytogan project to date has been undertaken on a bench scale beginning with sample masses of 0.5-1kg. At this scale, there is insufficient graphite concentrate for multiple rounds of purification or for the physical process of spheroidizing the graphite. One round of spheroidization optimisation requires approximately 5kg of graphite concentrate.

## Bulk Test Work Program

UVR-FIA have been contracted to manufacture the bulk graphite concentrate. UVR-FIA is a German laboratory specialising in the research, development, and small-scale production in the field of mechanical process engineering and preparation of mineral resources. The work will be conducted in their impressive 1,600m<sup>2</sup> technical centre, 20m in height. (Figure 1).

240kg of Sarytogan Graphite has been delivered to UVR-FIA. UVR-FIA will homogenise the graphite and split into 4 equal portions of 60kg. This has been identified as the most economical scale to manufacture the required graphite concentrate. Approximately 27kg of graphite concentrate is expected from each batch. Initially one batch will be run, which will be more than sufficient for further chemical purification and physical spheroidization. Three subsequent batches may be called to meet ongoing growth in sample demands.

The bulk flotation program will run through quarter 2, 2023 to then feed into the spheroidization program in quarter 3, 2023 ahead of battery performance tests in quarter 4 2023.

## Study Strategy

Demand for natural graphite is forecast to rapidly increase by 650% by 2035 (Benchmark Mineral Intelligence infographic "How many new mines do we need?"). There are insufficient new mines in the development pipeline to meet this demand. Sarytogan is well positioned to meet this demand with its sheer scale and battery anode product strategy. To turn this vision into reality, the Sarytogan Graphite Project needs to progress through the necessary studies to demonstrate technical and economic feasibility.

For Sarytogan to publish any economic evaluation of the Sarytogan Graphite Project on the ASX, two key inputs are required. Firstly, the existing **209Mt @ 28.5%** TGC<sup>2</sup> Inferred Mineral Resource Estimate must be upgraded to the Indicated classification signifying a higher level of confidence. This work remains on track for completion in March 2023. Secondly, to claim the high-value revenue stream of USpG, the Company will need to complete the manufacture of graphite concentrate and USpG described above. This creates a finish-to-finish dependency to complete the above programs before a study can be published.

The studies can however commence now. Sarytogan intends to use the available time to progress a Pre-Feasibility Study (PFS) on the project. This will not be at the cost of the important discipline associated with the traditional studies framework as the PFS will include initial internal conceptual studies and important trade off studies.

A tender process is underway to appoint an appropriately experienced and qualified engineering firm to deliver the PFS.

With a cash balance of A\$5.0M reported in the last quarterly report, the Company is well funded for the 2023 work program ahead.



This announcement is authorised by:

Sean Gregory

Managing Director

## About Sarytogan

The Sarytogan Graphite Deposit is located in the Karaganda region of Central Kazakhstan. It is 190km by highway from the industrial city of Karaganda, the 4<sup>th</sup> largest city in Kazakhstan (Figure 3).

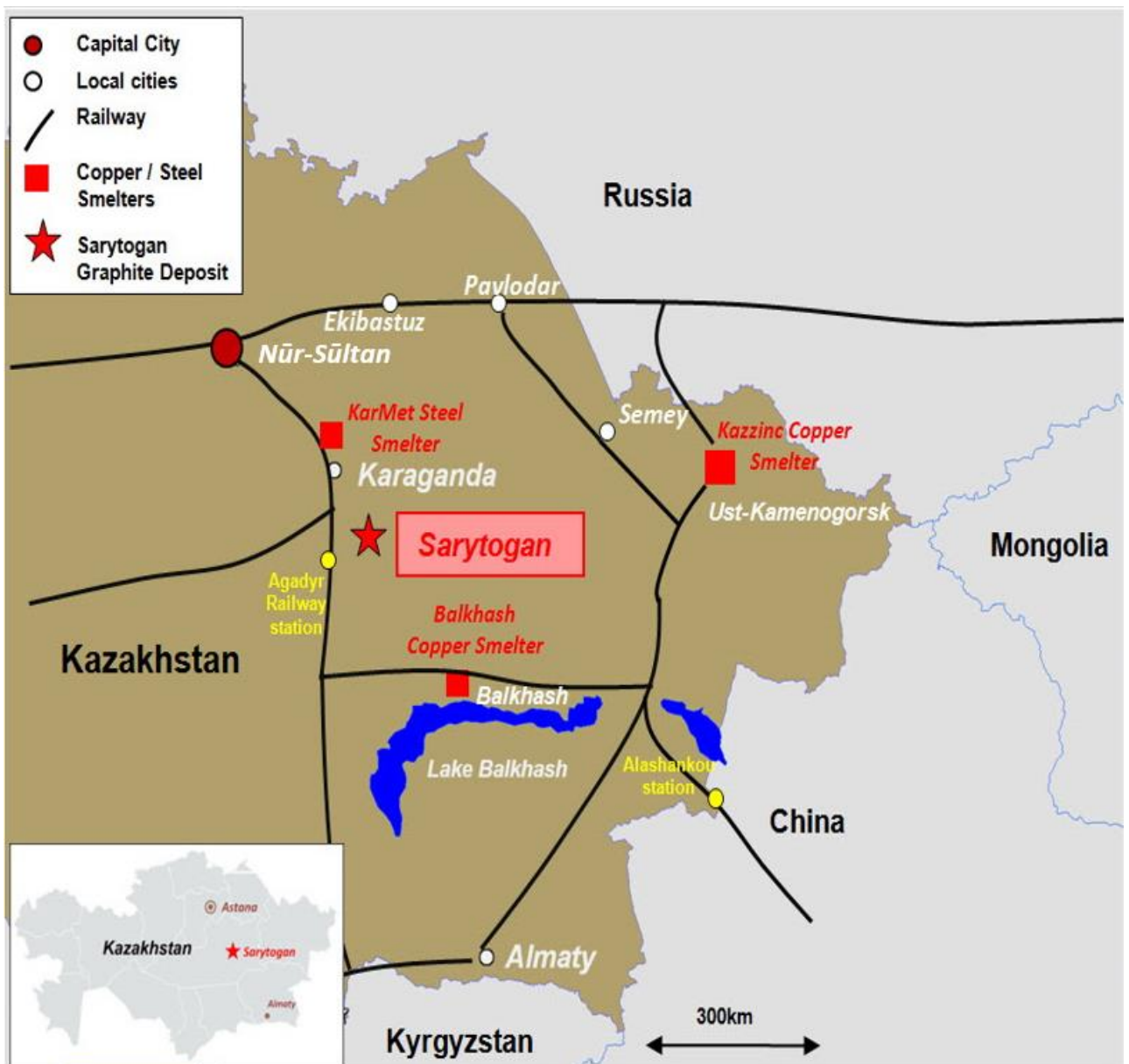


Figure 3 - Sarytogan Graphite Deposit location

## Previous Exploration

The Sarytogan Graphite Deposit was first explored during the Soviet era in the 1980s with sampling by trenching and diamond drilling. Sarytogan's 100% owned subsidiary Ushtogan LLP resumed exploration in 2018. An Inferred Mineral Resource of **209Mt @ 28.5% TGC for 60Mt contained graphite** was estimated by CSA Global in 2019 (Table 1). Sarytogan has upgraded the mineralisation to 99.87% purity by flotation, alkali roasting, and chemical purification (refer ASX Announcement 6 December 2022) and is pursuing a strategy to supply high-quality anode material for the rapidly growing electric vehicle battery market.

*Table 1 - Sarytogan Graphite Deposit Inferred Mineral Resource (cut-off grade of 15%). Refer to Prospectus dated 23 February 2022, published on the ASX 14 July 2022, for full details of the Mineral Resource Estimate.*

Zone	JORC Classification	In-Situ Tonnage (Mt)	Total Graphitic Carbon (TGC %)	Contained Graphite (Mt)
North	Inferred	159	28.8	46
Central	Inferred	49	27.5	14
<b>Total</b>	<b>Inferred</b>	<b>209</b>	<b>28.5</b>	<b>60</b>

## Compliance Statement

The information in this report that relates to JORC estimates of Mineral Resources and 2021 Exploration Results was first reported in the Prospectus dated 23 February 2022 and published on ASX on 14 July 2022. The information relating to 2022 Exploration Results was first reported in ASX Announcements dated 15 August 2022, 19 September 2022, 12 October 2022, 8 November, 6 December 2022 and 16 January 2023. These reports are available at [www.asx.com.au](http://www.asx.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

For personal use only