

# **SARYTOGAN** G R A P H I T E

# OPPORTUNITY IN KAZAKHSTAN

**GIANT** 

NOVEMBER 2022 IMARC CONFERENCE INVESTOR PRESENTATION



# Sustainable Competitive Advantage





Giant and exceptionally high-grade Inferred Mineral Resource of 209 Mt @ 28.5% TGC.



Kazakhstan is an established mining jurisdiction ideally located between the largest battery manufacturers in Europe and China.



Established in-country team able to rapidly execute work programs.

## FY23 Work Programs:





High grade sample from the Sarytogan Graphite Project

# **Corporate Overview**



Capital Structure	
Shares on Issue (Undiluted)	132.5M
Escrowed Shares (until July 2024)	53%
Major Shareholder Dr Waldemar Mueller	39%
Options (25c expiry 30/11/2024)	42.8M
Performance Shares and Perf. Rights	20M
Market Capitalisation – Undiluted at 25c	\$33.1M
Cash – 30 September 2022	\$6.1M













## Stephen Penrose Non-Executive Chairman, LLB, J.D.,

Lawyer and Managing Partner of Tottle Partners, specialising in corporate and commercial litigation.

## Sean Gregory Managing Director, B.Sc.(Hons), MBA

Geologist and Mining Executive with more than 20 years' experience in minerals exploration, development and mining in iron ore, lithium, cobalt, nickel, and gold in Western Australia and abroad.

## Dr. Waldemar Mueller Technical Director, PhD, M.AusIMM

Geologist with more than 40 years' experience in exploration and valuation of mineral resources. He has held leadership positions German, Canadian and Australian companies working on projects in Brazil, Kyrgyzstan, Georgia & Kazakhstan.

## Brendan Borg Non-Executive Director, B.Sc., MSc, M.AusIMM

Geologist, Hydrogeologist and Environmental Scientist specialising in the battery materials sector with more than 20 years' experience in exploration development and mining.

## lan Hobson Company Secretary, B.Bus, FCA, Grad. Dip. (Cor. Gov.)

Fellow Chartered Accounted and Chartered Secretary with more than 30 years' experience in the areas of corporate finance, governance, corporate accounting, company secretarial and restructuring advice.

# **Environment Social Governance**





Our future products will enable the decarbonisation of energy and transportation. We are committed to the highest standards in Environment Social Governance.



Environment

Natural graphite has a 10x lower CO<sub>2</sub> footprint than synthetic graphite 1% of annual geological expenses paid to rehabilitation fund



50% local employment commitment 50% local content commitment 1% of annual exploration expenses for staff tuition 1% of future revenue on R&D Regional social economic development contributions



ASX's corporate governance principles and recommendations are adopted where applicable and reported against on our website



# Kazakhstan – Mining on the One Belt, One Road





Mining in Kazakhstan

- Similar semi-arid land area to West. Aust.
- Mining code based on West. Aust.
- 40% of global uranium supply<sup>1</sup>
- 12<sup>th</sup> in global mining value<sup>1</sup>
- 13<sup>th</sup> largest oil producer<sup>1</sup>

Corporate income tax: 20%; mineral royalty: 3.5%; other taxes: 1.5%

Geopolitical alternative to China who dominates graphite mining (64%) and anode manufacture (89%)<sup>2</sup>.

# **Regional Infrastructure Advantages**



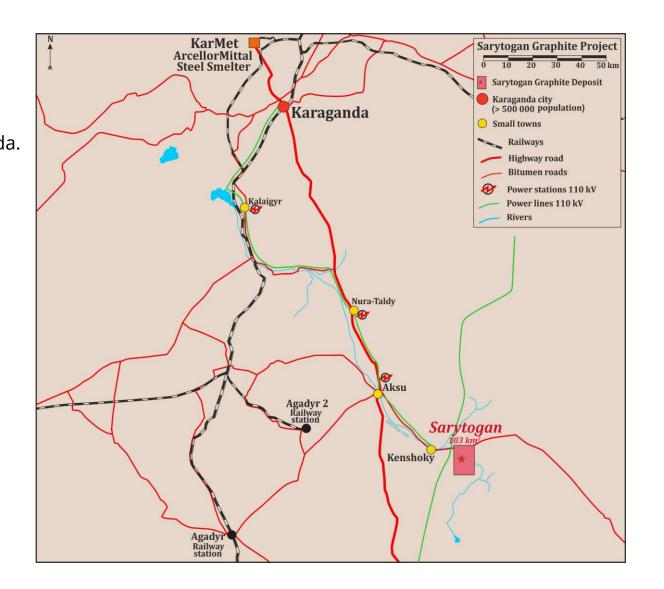
170km by highway to the large industrial city of Karaganda.

6km from bitumen road to project.

68km from nearest railway station.

2km from high-voltage power lines.

Sufficient water supply available.



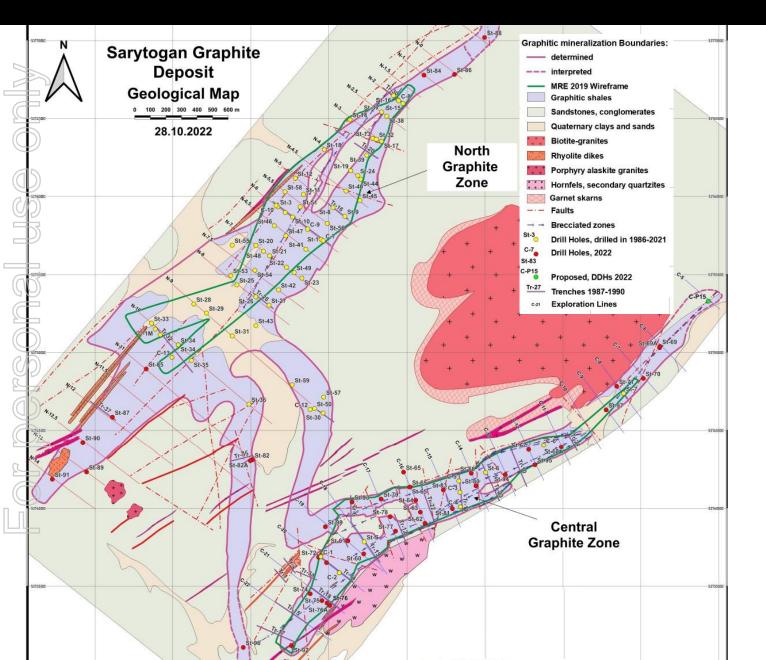
# High-Grade Graphite from Surface = Mining Economic Advantage





# **Drilling and Mineral Resource**





### JORC Inferred Graphite Mineral Resource<sup>1</sup> TGC Cut-Off 15%

Zone	Tonnes (Mt)	TGC (%)	Contained Graphite (Mt)	
North	159	28.8%	46	
Central	49	27.5%	14	
Total	209	28.5%	60	

Graphitic shales enriched by contact metamorphism from intrusion of granitic dome 2022 4,000m HQ<sub>3</sub> diamond drilling almost complete Drilling up to 1km from existing Mineral Resource Mineral Resource upgrade on track for Q1 2023

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# Graphite Market Overview

"Our cells should be called Nickel-**Graphite**, because primarily the cathode is nickel, and the anode side is **graphite** with silicon oxide"

- Elon Musk, CEO Tesla Motors

# **Electric Vehicle Batteries**



## Graphite is the major raw material in all EV battery types

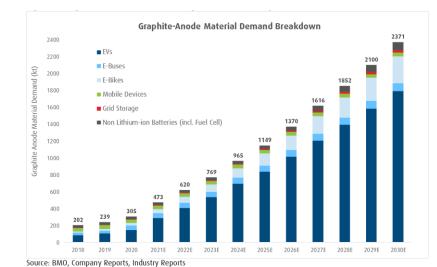
		Cobalt, 27%	Cobalt, 17%	Cobalt, 8% Manganese, 8%	Cobalt, 14%
dthode	0.1 0.201	Managanaga 2000	Manganese, 24%		
	Other, 83%	Manganese, 29%	Nickol 4204	Nickel, 68%	Nickel, 73%
U		Nickel, 29%	Nickel, 43%		
	Lithium, 17%	Lithium, 15%	Lithium, 16%	Lithium, 16%	Lithium, 11%
	LFP	NMC111	NMC532	NMC811	NCA
Anode	Graphite, 95%	Graphite, 95%	Graphite, 95%	Graphite, 95%	Graphite, 95%
	Silicon/other, -5%	Silicon/other, -5%	Silicon/other, -5%	Silicon/other, -5%	Silicon/other, -5%

# China and Europe lead rapid growth in the EV Market



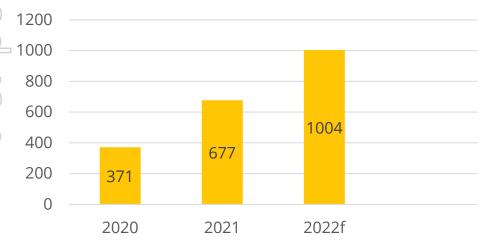
## EV's are driving growth in battery demand

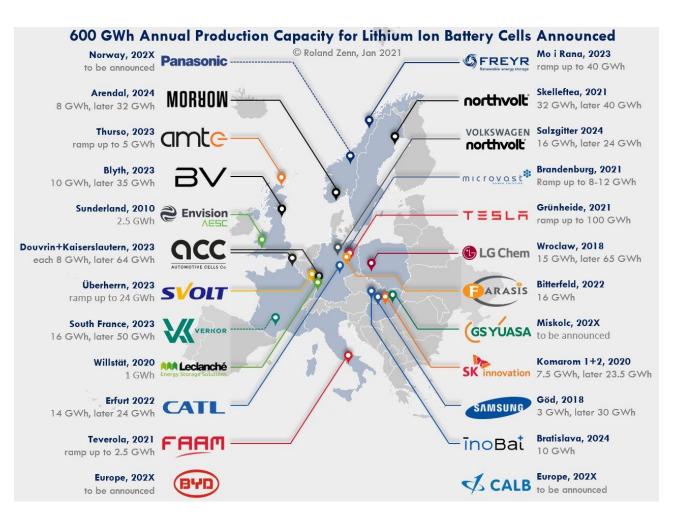
[SODA]



Battery Anode Production is accelerating to meet demand







# Battery Anode Product Strategy Driven By Prices



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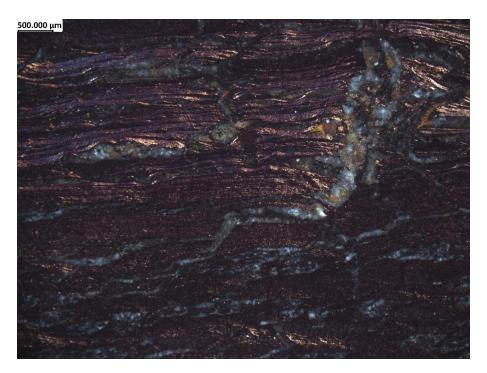


Traditional Uses				В	attery Anoo	des		
Product	Coarse	Medium	Fine			Uncoat	ed Spheric	al (USpG)
Size (µm)	< 180	< 150	< 75	< 75	< 75	20	15	10
TC (%)	94	94	94	90	80	99.95	99.95	99.95
SGA								
					<b>v</b> -			

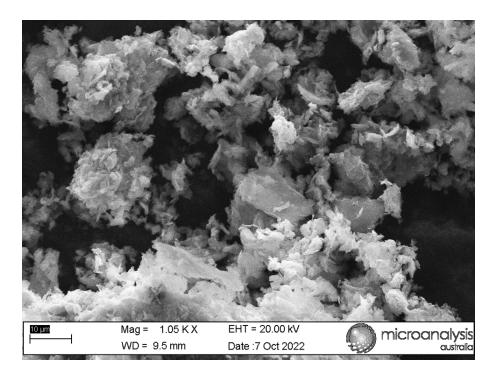
- Traditional industrial uses requires coarse flake graphite (e.g. refractory uses, brake linings, lubricants etc)
- Li-ion batteries will drive natural graphite demand from 1Mt to 4Mtpa by 2030<sup>1</sup>
- Li-ion batteries require ultra-fine highpurity spherical graphite
- Sarytogan has met specification for fine graphite and is targeting future battery anode material

# Premium Micro-Crystalline Sizing for Battery Anodes









## After Grinding and Flotation

Coarse ribbons of graphite in a matrix of micro-crystalline graphite amenable to fine grinding for mineral liberation and premium sizing

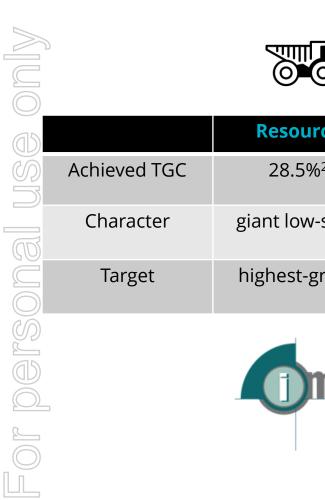
Thin section photomicrograph of St-11-44 (21\_1310\_44) in reflected light (XPL, 2.5x objective). 4.5 mm golden graphite ribbons defining foliation fabric as ribbons parallel to quartz folia.

Scanning Electron Microscope (SEM) image of Sarytogan Graphite after grinding flotation, caustic roasting and leaching with weak sulphuric acid. Ultra-fine micro-crystalline graphite from 2-12 µm evident.

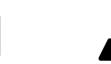
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# Metallurgical Pathway to Battery Anodes

















	Resource	Flotation	Roasting	Purification	Spheroidization	Anode Material
Achieved TGC	28.5% <sup>2</sup>	81.3% <sup>1</sup>	92.1% <sup>1</sup> to 98.6% <sup>2</sup>	underway	2023	2023
Character	giant low-strip	micro-crystalline	caustic low-temp	chemical or thermal	milling	growth market
Target	highest-grade	optimise	optimise	>99%	d50 10-20 µm	99.95%







Material interim progress made to date

Optimisation test work underway in Australia and Germany



Milestone	Sep 22	<b>Dec 22</b>	Mar 23	Jun 23
Resource drilling and monthly results	$\checkmark$			
Mineral Resource upgrade				
Flotation tests and sighter roasting test	$\checkmark$			
Roasting optimisation and purification tests				
Scoping study				



# CONTACT

# Sean Gregory

## **Managing Director**

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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 and 12 October 2022. These reports are available at 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.

