



BlackEarth
Minerals NL

ASX:BEM
ACN: 610168191

**Africa Down Under
September 2019**



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Cautionary Statement: The Exploration Targets reported herein are not JORC compliant Mineral Resources. The potential quantity and grade of the Exploration Targets are conceptual in nature, there has been insufficient exploration to determine a Mineral Resource and there is no certainty that further exploration work will result in the determination of a Mineral Resource.

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COMPETENT PERSON'S STATEMENT

- The information contained in this report that relates to Exploration Results and Mineral Resources has been compiled by Ms Annick Manfrino, a member of The Australian Institute of Geoscientists. Ms Manfrino is the Principal of Sigma Blue and Manager Geology of Black Earth Minerals. Ms Manfrino has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that she 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." Ms Manfrino consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.
- The information in this report that relates to the Exploration Target for the Maniry Graphite Project is extracted from the report entitled "Exploration Target Update" dated 14 August 2018 and is available to view on the Company's website www.blackearthminerals.com.au. 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 and 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 Person's findings are presented have not been materially modified from the original market announcement.
- The information in this report that relates to the Maiden Resource Estimation for Razafy at the Maniry Graphite Project is extracted from the report entitled "Update – Maiden Resource Estimation for Razafy at the Maniry Graphite Project" dated 14 August 2018 and is available to view on the Company's website (www.blackearthminerals.com.au). 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 and 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 Person's findings are presented have not been materially modified from the original market announcement.
- The information in this report that relates to the Maiden Resource Estimation for Haja at the Maniry Graphite Project is extracted from the report entitled "Update – Maiden Resource Estimation for Haja at the Maniry Graphite Project" dated 27 December 2018 and is available to view on the Company's website (www.blackearthminerals.com.au). 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 and 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 Person's findings are presented have not been materially modified from the original market announcement.
- The information in this document that relates to metallurgical test work results is based on information compiled and reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears

BEM – CORPORATE SNAPSHOT

BlackEarth Minerals (ASX:BEM) is a minerals development company led by a team of mining experts that have identified growing trends in graphite demand.

CAPITAL STRUCTURE	
ASX Code	BEM
Fully Paid Shares	113m
Share Price (2/09/2019)	\$0.06
Market Cap (@ \$0.07)	\$6.8m
Cash (30/06/19)	\$1.36m*

BOARD OF DIRECTORS & MANAGEMENT			
Phil Hearse	Non-Executive Chairman	Tracy Harris	Financial Controller
Tom Revy	Managing Director	Annick Manfrino	Manager – Geology & Competent Person, Geology
George Bauk	Non-Executive Director	Jean Luc Marquetoux	Country Manager – Madagascar
Simon Storm	Company Secretary & CFO	Eileen Hao	GM - China

*Subsequent event: BEM raised \$1.68M – announced ASX 22 August 2019

MANIRY GRAPHITE PROJECT MADAGASCAR

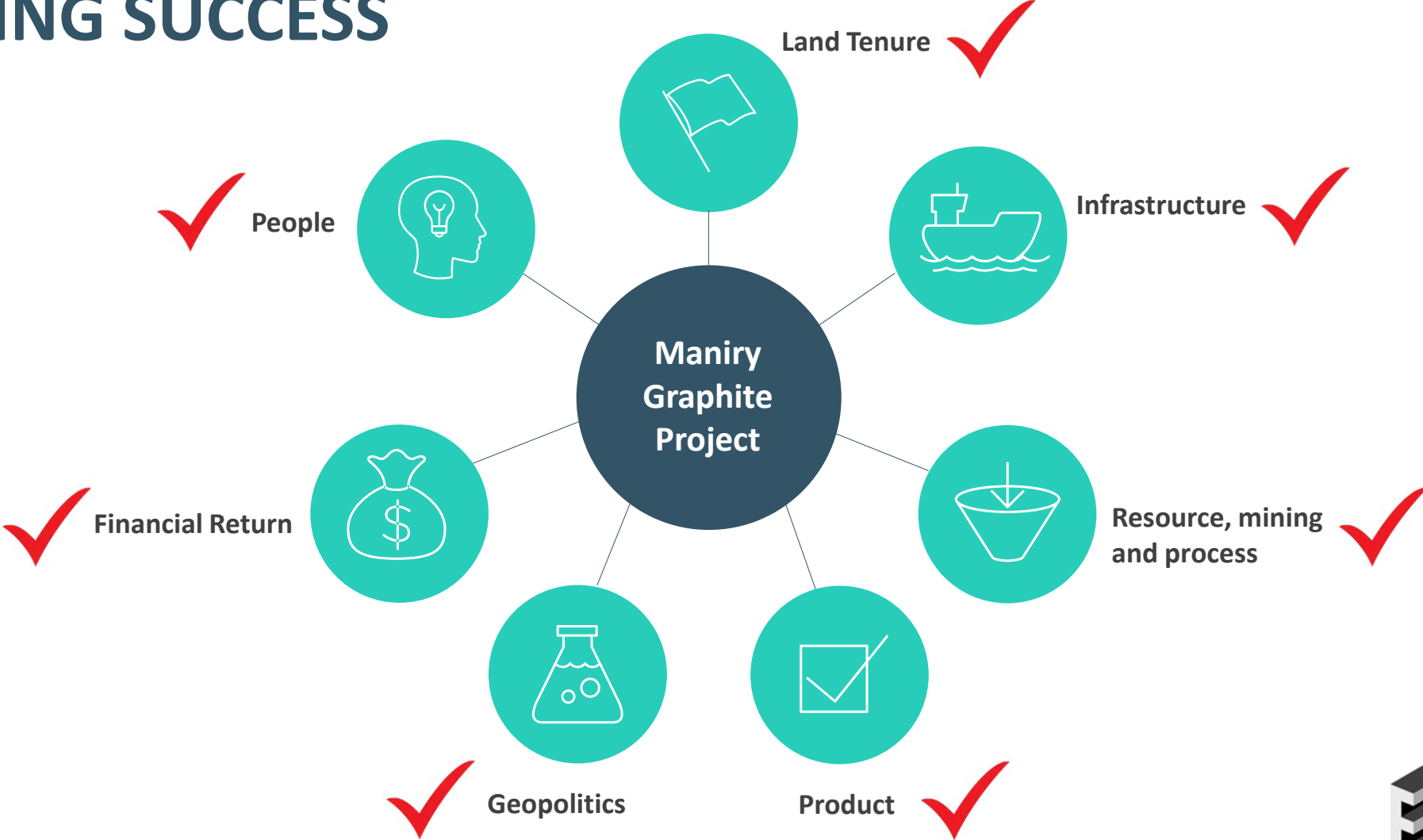


BEM'S FINANCIAL YEAR REPORT CARD

- Indicated & Inferred Resource announced **(August 2018)**
- Exploration Target released **(August 2018)**
- Scoping Study completed **(January 2019)**
- BEM Progressing to Full Feasibility **(January 2019)**
- High Grade Graphite Discovery at Maniry Project **(February 2019)**
- High grade Hits at Ianapera Graphite Project **(March 2019)**
- Appointment of Strategic Offtake Advisors **(May 2019)**
- Test Results produce High Value Expandable Graphite Specs **(June 2019)**
- Subsequent events:**
- Positive spherical graphite results **(August 2019)**
- Positive graphite purification results **(September 2019)**
- Off-take discussions **(On-going)**



7 FACTORS FOR MINING SUCCESS



PROJECT FINANCIAL RETURN*

Project Life	10 Years
NPV @ 10% pre-tax	US\$ 103M
IRR pre-tax	42%
Project CAPEX Stage 1	US\$ 41M (500ktpa ore)
Project CAPEX Stage 2	US\$ 29M (1Mtpa ore)
Payback for Stages 1 & 2	3.7 years (Stage 1 - Only 2.7 years)
Annual graphite production	Av 30ktpa (Stage 1 – Years 1-3) Av 60ktpa (Stage 2 – Years 4+)

Focus during Feasibility Study:

Maximising basket price and feed grade

E.g. an increase in feed grade from 6.3% to 7.3%TGC results in a project NPV of US\$152M and an IRR of 55%

*Refer ASX Releases 30 January 2019

BEM'S KEY GRAPHITE MARKETS



BATTERIES – Forecasted for a high growth future, as demand for electric vehicles and energy storage is set to continually increase



EXPANDABLES – Fire retardant building materials which includes expandable graphite is forecasted to reach approximately \$400m by 2026; other areas include graphite foils and specialised gaskets



REFRACTORIES – Graphite is a mainstay component used in crucibles/refractories, steel production and lubricants

LARGE FLAKE GRAPHITE PRODUCT

Final Concentrate Size and Grade Distribution

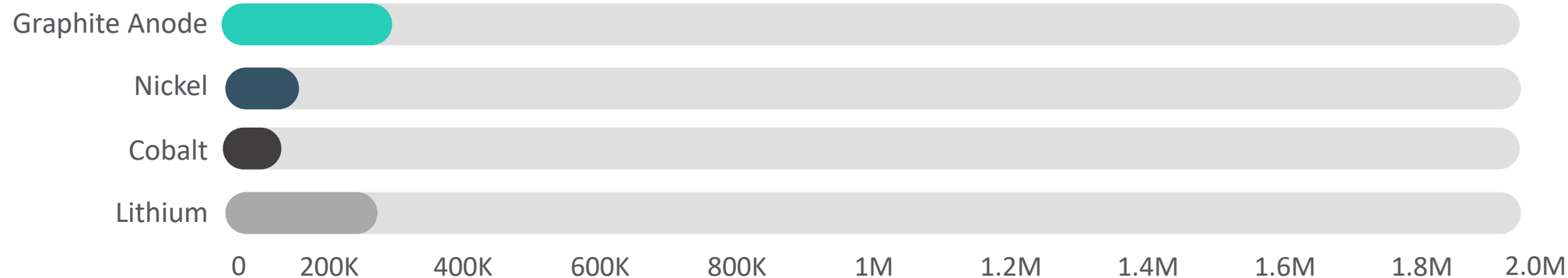
Flake Size	(microns)	Mesh	Master Composite	
			Mass (%)	TGC (%)
Super Jumbo	>500	38	2.8	95.8
Jumbo	300 - 500	50 - 38	17.3	96.1
Large	180 - 300	80 - 50	29.8	95.6
Medium	150 - 180	100 - 80	9.1	95.0
Small	75 - 150	200 - 100	23.6	96.8
Fine	<75	-100	17.4	96.1

50%

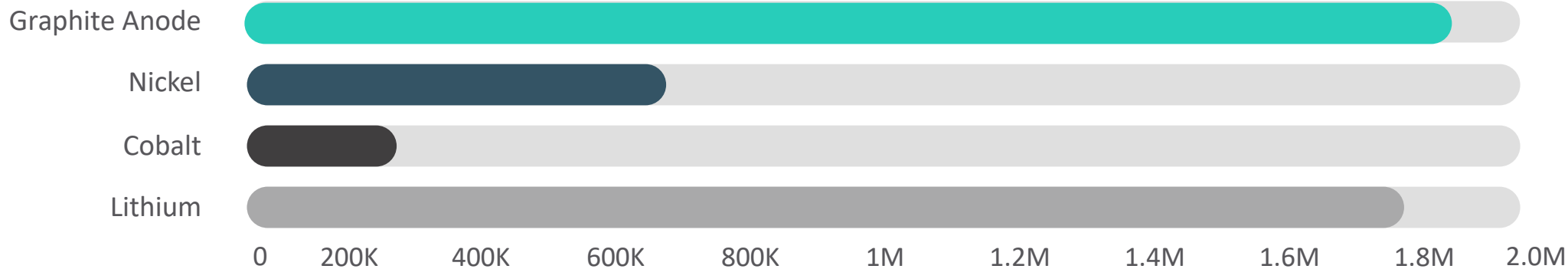
High value product

BATTERIES - RAW MATERIAL REVOLUTION

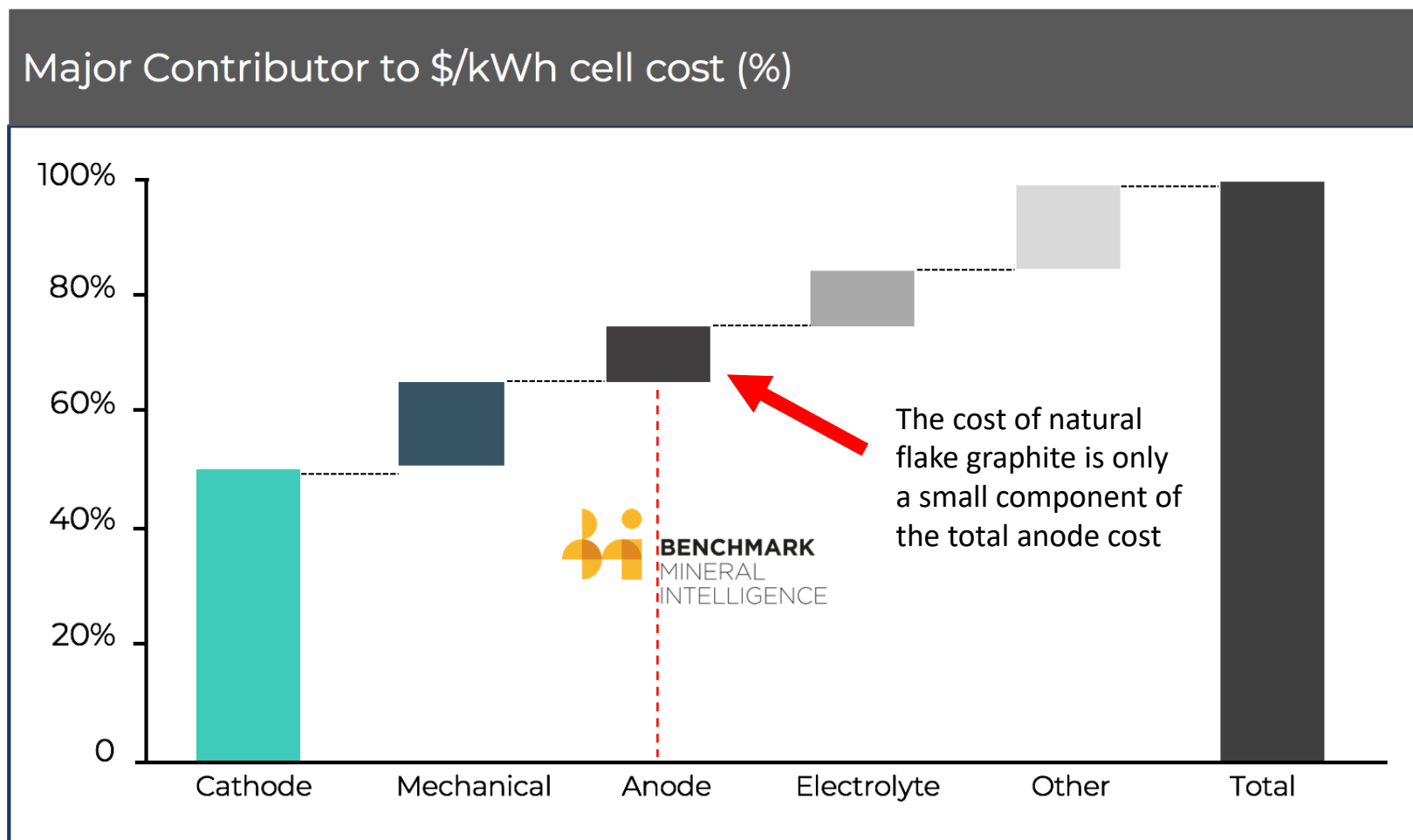
75 GWh 2016



1,859 GWh 2028



BATTERIES HOW SIGNIFICANT IS THE COST OF GRAPHITE?



Source: Benchmark Mineral Intelligence

BATTERIES BEM COMPLIES WITH OFF-TAKERS SPECS

Maniry Project Meets Spherical Graphite Market Specifications

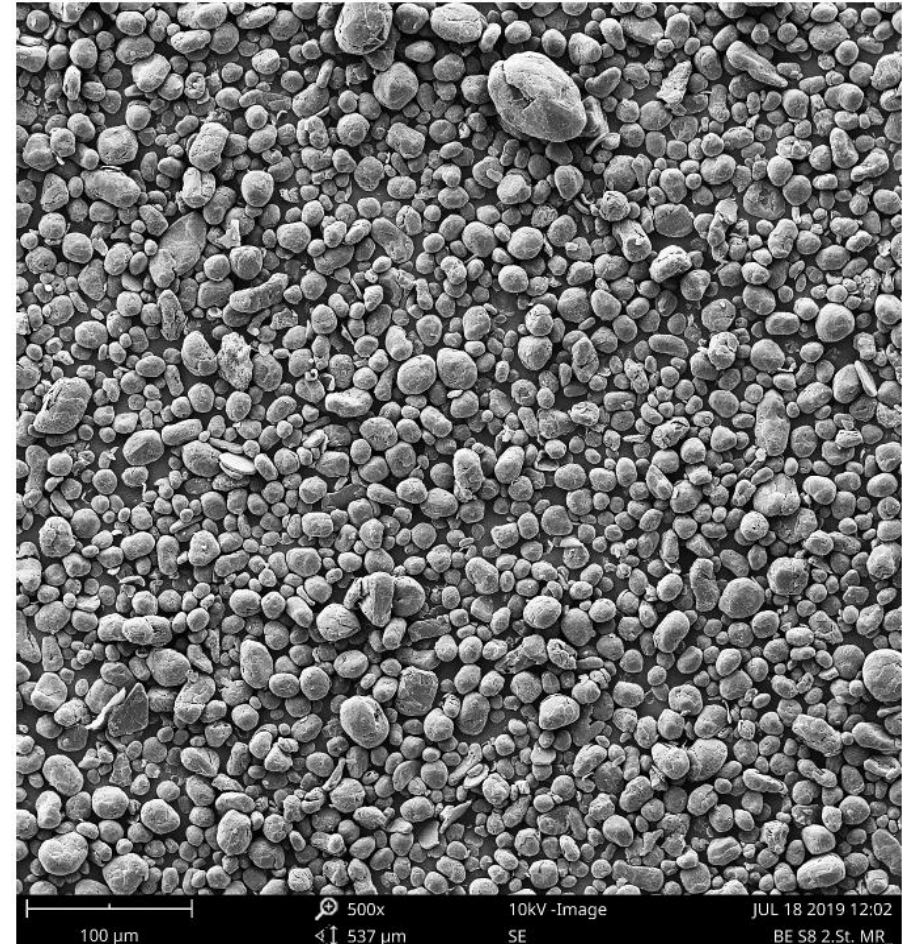
ASX Release 12 August 2019

- Spherical graphite from the Maniry project has met specification consistent with those required by lithium-ion anode material manufacturers
- Spherical graphite production yields of up to 52% achieved vs industry average 40%
- Positive feedback received from spherical graphite producers and anode material manufacturers in China

Maniry Project Meets Anode Market Purification Specifications

ASX Release 4 Sept 2019

- BlackEarth's Madagascan Maniry Project delivers high purity graphite anode material
- Initial test results achieved 99.97% exceeding the specifications needed for marketable battery grade graphite (99.95 wt.-% final carbon content)
- Potential off-takers request concentrate samples for confirmatory inhouse test work



EXPANDABLE GRAPHITE BEM RESULTS

- Based on the preliminary tests undertaken, the largest expansion volume achieved was 400 cm³/g which exceeded the industry benchmark rate of 250 cm³/g. The report states that “even larger expansion volumes should be possible”, from further systematic tests to determine optimal processing conditions
- Key attributes towards producing an attractive expandable product including moisture, portion of volatile matter, loss on ignition (LOI), carbon content and ash content were all deemed positive
- The lack of hard minerals in the concentrate indicate a relatively easy purification of the flake graphite for the production of graphite foil, lubricants, etc
- The absence or very low content of CaCO₃ is an indication that the BEM flake graphite is suitable for the application in the refractory industry and for many other applications
- The report also stated that “The flake graphite flotation concentrate is well suited for the preparation of expandable graphite. We could not find any restriction which would limit the application of this kind of flake graphite”.



GEOPOLITICS MADAGASCAR

- Over 100 years of graphite mining and international exports
- Full end-user acceptance as a source of quality graphite (China, India, USA, etc)
- Pro-mining jurisdiction with resource majors present (Rio Tinto, Scherritt, Total)
- Attractive fiscal regime with an attractive growth outlook (corporate tax rate 20%, mining royalty 2%);
- Mine ownership to 100%; no Government free carried interest
- Major global trading partners (export sales): China, US, France, Germany, Japan, Netherlands, UAE



CAPEX (2006) US\$5.5B (Above)

Source: Sumitomocorp.com



CAPEX (2009) US\$1B (Above)

Source: bara-ihorombe-madagascar.blogspot.com

GEOPOLITICS MADAGASCAR

MADAGASCAR

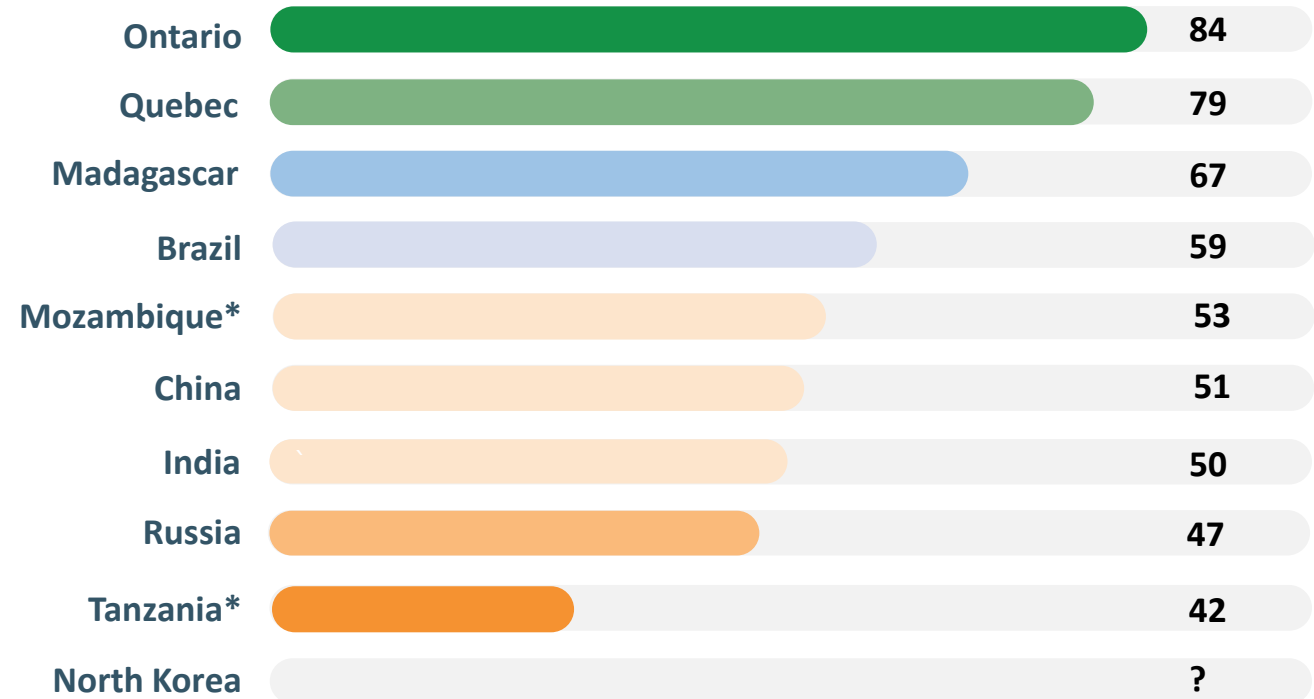
RISK SCORE = 67

“Low to Moderate Risk”

FACT:

Over 90% of graphite is produced from countries and regions considered “riskier” than Madagascar

INVESTMENT RISK INDEX

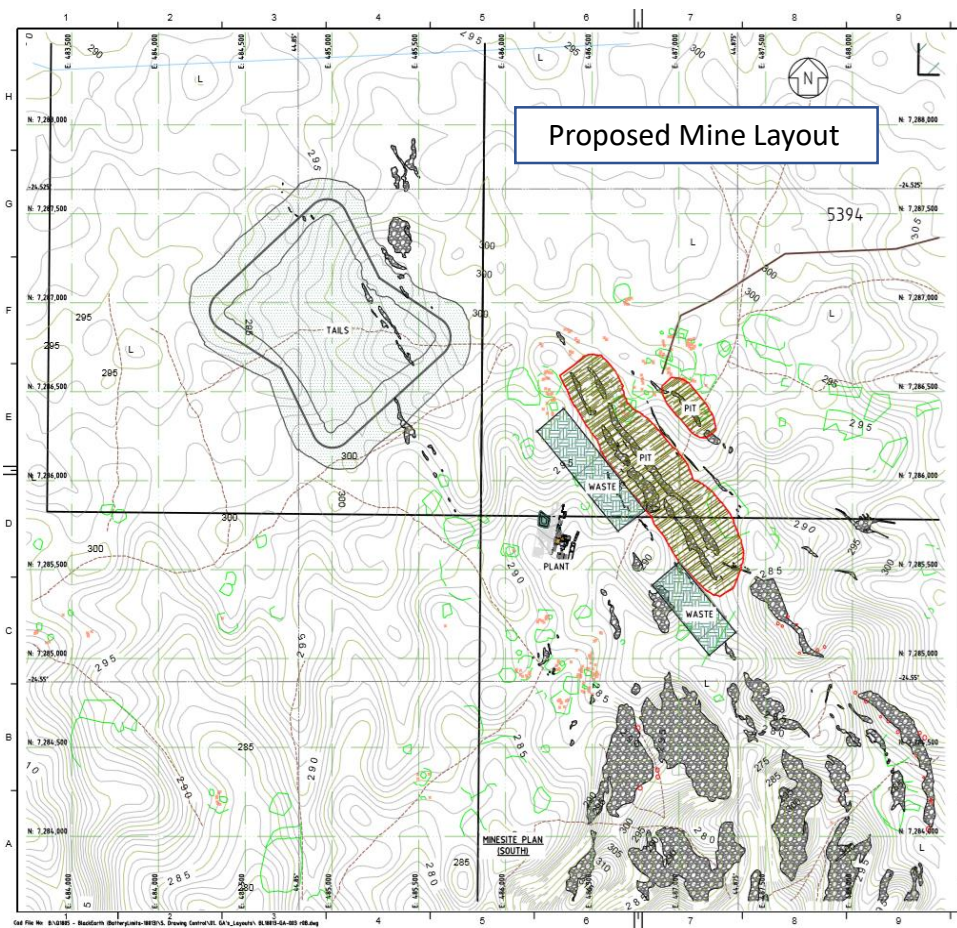


*Exploration Hotspots



Source: 2018 Mining Journal World Risk Report

INVESTMENT CASE TECHNICAL VALUE



- Thorough understanding of geology, mineralogy & metallurgy
- Simple mining and processing to produce high value, high demand, coarse flake product, which is not competing with Chinese production
- Majority of the current resource sits on a 40 year mining lease
- Significant expansion potential at Maniry given BEM's tenement position and declared Exploration Target* (260-380Mt at 6-8%TGC)
- The availability of key infrastructure
- Low capital expenditure requirement
- The current Project study outcomes highlight that the Maniry Project is a robust and financially attractive graphite project by global standards
- BEM has commenced offtake discussions and product test work in both China and Germany, as part of the feasibility study

*Refer to the Disclaimer

MAJOR DEVELOPMENTS & NEWS FLOW

- Completion of Bankable Feasibility Study (12 months)
- Second bulk pilot run at ALS Perth (near completion)
- Product testing (battery and expandable) (3 months)
- Offtake arrangements (2-7 months)
- Project finance (6 months 2019-20)
- Construction – modular EPC (2020-21)
- Commissioning (2021)
- Further exploration successes - ongoing



BLACKEARTH MINERALS NL



Tom Revy

Managing Director

BlackEarth Minerals NL

tom.revy@blackearthminerals.com.au

+ 61 (0) 411 475 376



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