



BLACKEARTH

Specialising in Critical Commodities

**"A clear pathway
to cash flow"**

**AFRICA
DOWNUNDER**

September 2021
Perth, Western Australia



ASX:BEM



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Some of the information contained in this presentation has been derived from previously released information to the ASX refer: 30/1/19 "Progressing to Full Feasibility", 17/1/20 "Fast Tracking the Maniry Graphite Project", 29/4/20 "Quarterly Activities Report – 31 March 2020", 31/7/20 "Quarterly Activities Report – 30 June 2020"

COMPETENT PERSONS STATEMENT

The information in this document that relates to Exploration Results, Exploration Targets and Mineral Resources is based on information compiled by Ms. Annick Manfrino, Principal of Sigma Blue and Manager Geology of Black Earth Minerals a Competent Person who is a member of the Australasian Institute of Mining and Metallurgy and a consultant to the Company. Ms. Manfrino has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken 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 of the information in this document in the form and context in which it appears.

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.

I. EXECUTIVE SUMMARY

VISION: TO BECOME A MATERIAL, VERTICALLY INTEGRATED GLOBAL GRAPHITE BUSINESS

Maniry Graphite Project

- *Proven location*
- *Quality Resource & large Exploration Target*
- *Product tested and samples qualified by tier 1 users*
- *Plan to complete the DFS by Q2 2022*
- *Plant commissioning planned in CY 2023*

Stage 1 Downstream

- *Expandable graphite at 2000-3000tpa*
- *Potential significant uplift in revenue / profit*
- *Priority to formalise JV with Metachem*
- *Binding offtake with Tier 1 European buyer in place*
- *Plan to commission plant by mid-2022*

Graphite Market Conditions

- *End-users becoming increasingly concerned about security of supply*
- *Decline in coarse graphite flake supply has seen prices rise*
- *Increasing EV demand combined with growing ESG thematic provide strong tailwinds*



CORPORATE SNAPSHOT



CAPITAL STRUCTURE

Fully Paid Ordinary Shares	215m
Share Price (31 August 2021)	\$0.135
Market Cap (undiluted)	\$29.0m
Cash (30 June 2021)	\$6.56m
Enterprise Value (undiluted)	\$22.4m

SHARE PRICE ASX:BEM



SHARE PRICE PERFORMANCE (31/8/21)

1 Month **+28%** 1 Year **221%**

BOARD OF DIRECTORS & MANAGEMENT

George Bauk
Non-Executive Chairman

- ▶ Over 30 years' experience in the resources industry including 14 years' experience as a listed resources company director
- ▶ Has held global operational and corporate roles with WMC Resources and Western Metals, and most recently was MD of Northern Minerals
- ▶ Strong background in strategic management, business planning, building teams, finance and capital/debt raising, and experience with a variety of commodities in particular industrial minerals

Tom Revy
Managing Director

- ▶ Qualified metallurgist with extensive experience in project development, EPCM services
- ▶ More than 30 years' experience within the resources industry (including 5 years in graphite)
- ▶ Held senior operational and corporate positions at GRD Minproc, WorleyParsons, Ferrum Crescent and Empire Resources

David Round
Finance Director

- ▶ Extensive M&A, Business Development and Corporate Advisory experience
- ▶ Was recently CFO and Head of Sales of an Australian listed Graphite production company with mine in Madagascar – over 5 years commercial experience and international sales networks within the graphite industry



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Spec. buy

Current Price \$0.12

Target Price \$0.27

Code: BEM
Sector: Materials

* All figures in AUD unless stated otherwise

Shares on Issue (M):	215
- fully diluted (M)	241
Market Cap (\$M):	26
- fully diluted (\$M)	29
Net cash (\$M Jun 2021)	7
Enterprise value (\$M):	19
52 wk High/Low (ps):	\$0.21 \$0.04
12m av. daily vol. (Mshs):	2.38

Tuesday, 17 August 2021

BlackEarth Minerals Ltd (BEM)

Flake race

John Macdonald

Quick Read

Under-appreciated natural graphite play on the development starting blocks.

Main points

Maniry FS: BlackEarth Minerals (BEM) is planning to develop the Maniry natural graphite project in Madagascar. The Company has outlined a starting 10 year resource and lined up a series of arrangements with downstream participants. Subject to final approval and completion of a feasibility study, engineering designs and costings are expected by April 2022; on track for Maniry commissioning in mid 2023.

II. MANIRY GRAPHITE PROJECT

MADAGASCAR

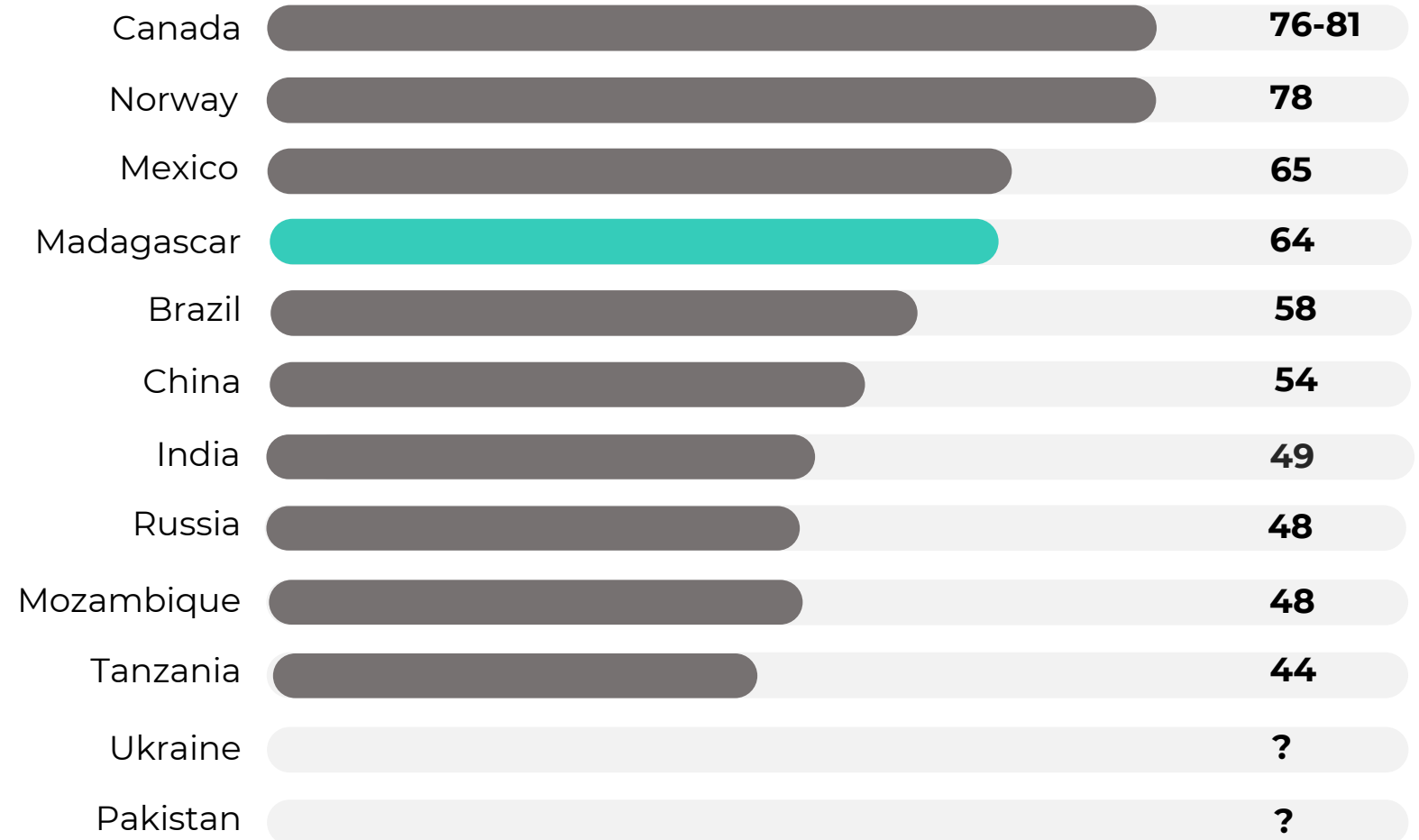


MADAGASCAR GEOPOLITICS

MADAGASCAR KEY POINTS

- ▶ *+100 years graphite production history*
- ▶ *Largest supplier of graphite into China*
- ▶ *Second largest supplier of graphite into India*
- ▶ *Top 5 supplier of graphite into the USA*

INVESTMENT RISK INDEX FOR GRAPHITE PRODUCING COUNTRIES¹



1. Source: World Risk Report 2020

MANIRY AREA

SIGNIFICANT EXPANSION POTENTIAL

- ▶ *Project Area (Maniry); >40 yrs mine life*
- ▶ *Granted 40-year Mining Lease over the Razafy Resource*
- ▶ *Maniry tenements stretch over 20km²*
- ▶ *35 large outcropping graphitic areas cover the Maniry tenements*
- ▶ *Only ~10% has been extensively explored*

MANIRY PROJECT MINERAL RESOURCES¹

Classification	Tonnage (Mt)	Total Graphitic Carbon (%TGC)	Contained (kt)
Indicated	8.0	7.20%	577.6
Inferred	12.2	6.05%	738.7
TOTAL	20.2	6.51%	1,316.3

EXPLORATION TARGET²

Maniry Project : 260 – 380Mt at 6-8% TGC

Razafy NW

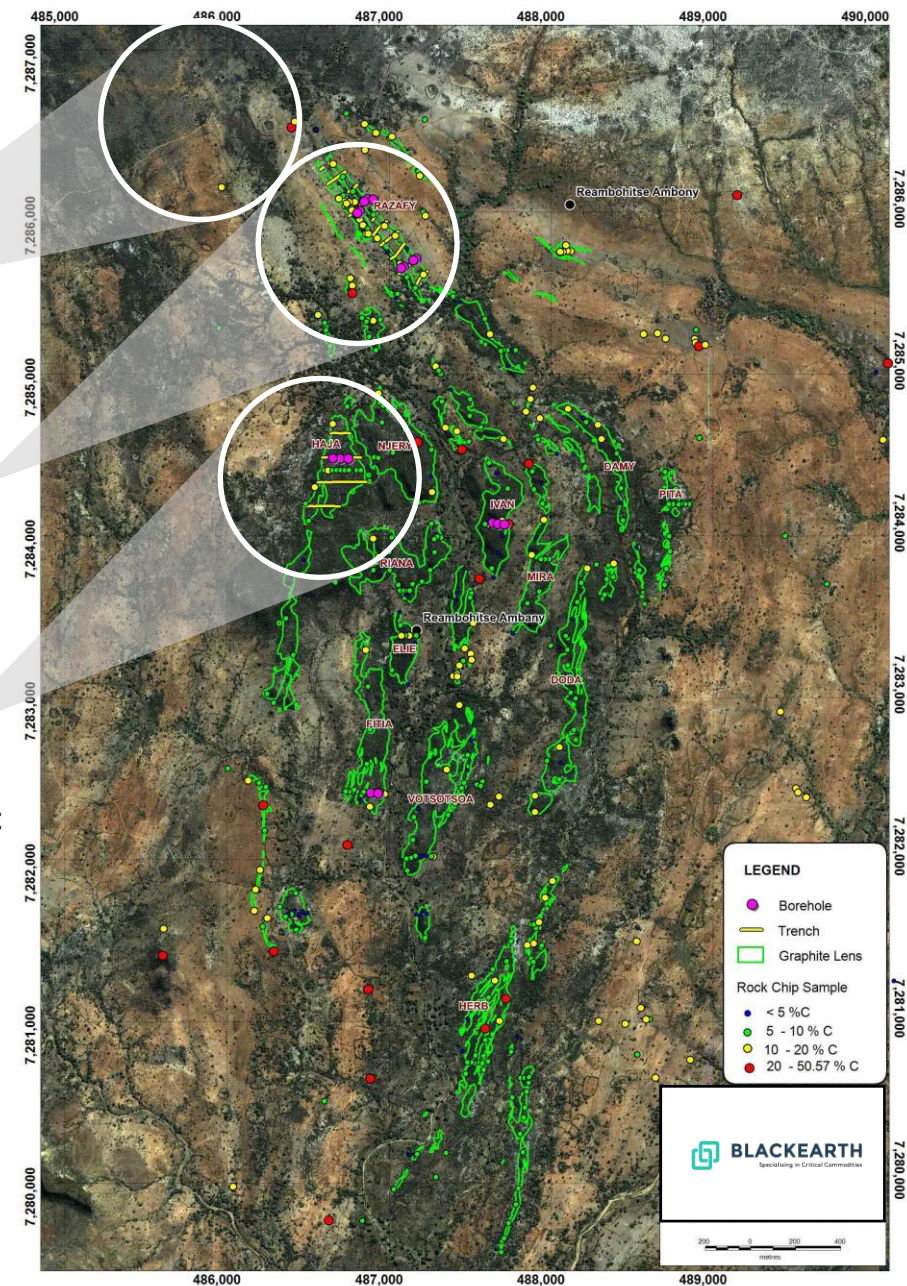
Recent drilling program completed

Razafy

Indicated and Inferred Resource
11.2Mt @ 7.1% TGC

Haja

Inferred Resource
9Mt @ 5.79% TGC



1. Reported in accordance with the 2012 Australasian code for reporting of exploration results, Mineral Resources and Ore Reserves ("the JORC Code 2012"). See ASX Announcements dated 14 August 2018 and 27 December 2018

2. 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. See ASX announcement date 14 August 2018

MANIRY HIGHLIGHTS



- *Flagship Maniry graphite project in Southern Madagascar – Plan to complete DFS in Q2 2022*

STUDY OUTCOMES¹

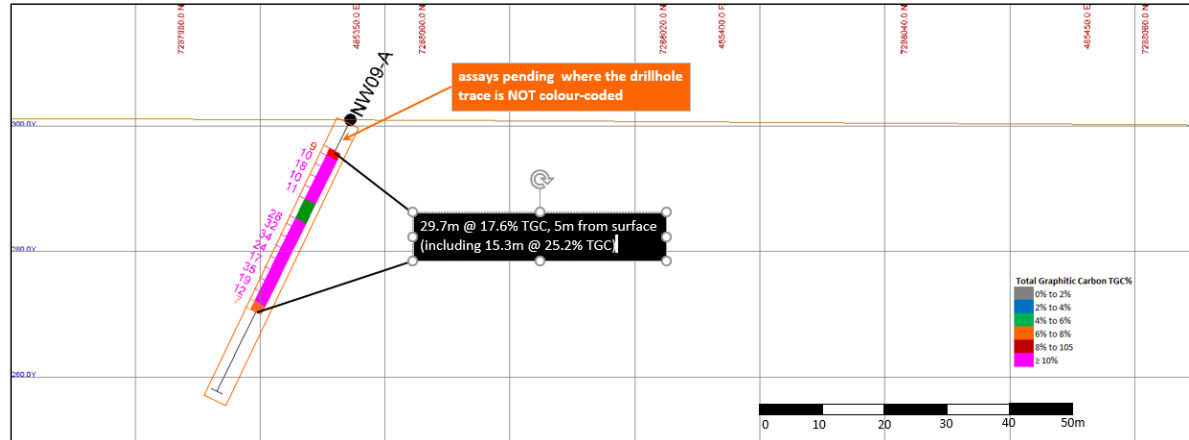
Project Life	10+ Years
NPV₁₀ (pre-tax)	US\$103m
IRR (pre-tax)	42%
Project Capex Stage 1	US\$41m (500ktpa ore)
Project Capex Stage 2	US\$29m (1Mtpa ore)
Annual Graphite Production	Av 30ktpa (Stage 1 – years 1-3) Av 60ktpa (Stage 2 – years 4+)
Total LOM EBITDA	US\$209.7m
Operating Cost FOB (Port of Ehoala)	US\$593/t
Payback Period (Stage 1)	2.7 years

ENHANCEMENT ACTIVITIES

- *Current Razafy NW drilling program*
- *Identifying higher grade material at Razafy NW*
 - *Higher grade concentrate – pilot program*
 - *Including expandable graphite project*
- *Part of the current DFS – lowering CAPEX*
- *Improving graphite recovery – pilot program*
- *Identifying higher grade material at Razafy NW*
- *Seeking competitive pricing as part of the DFS*
- *Outcomes of higher feed grade and improved recoveries*

1. Refer ASX Announcement dated 30 January 2019

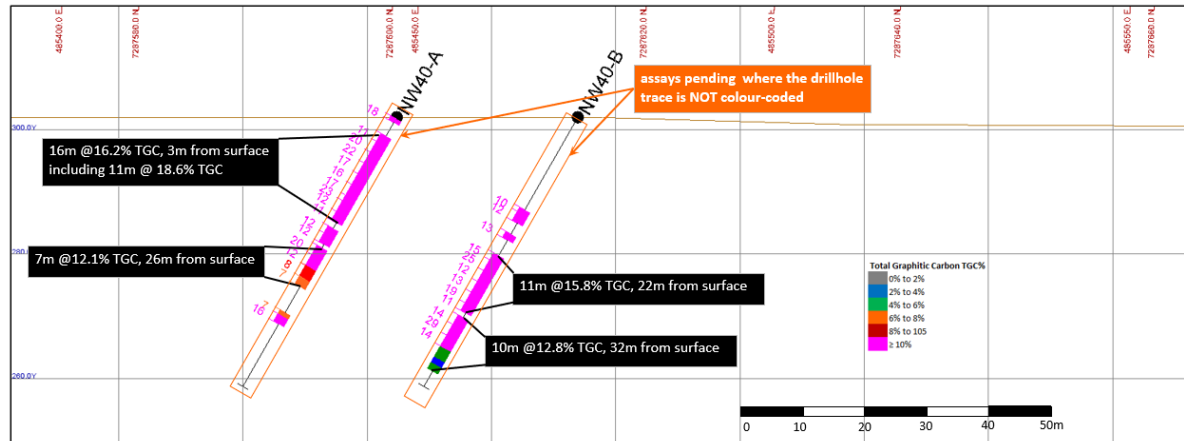
MANIRY RAZAFY NW DRILL HOLE HIGHLIGHTS



Cross section based on drill hole NW09-A; some assays still pending

- Best intersections include:
 - 29.7m at 17.6% TGC (from 5m)
 - 16.1m at 16.2% TGC (from 3m)
 - 10.7m at 15.8% TGC (from 22m)
 - 5.1m at 18.9% TGC (from 22m)

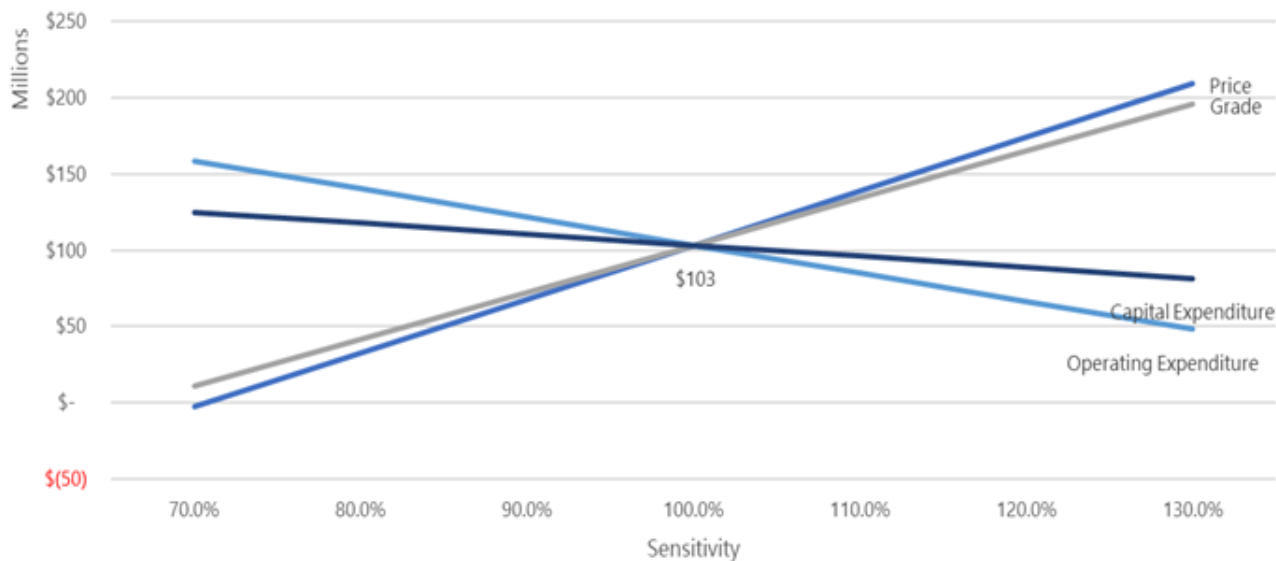
- The Razafly Northwest zone remains highly prospective to the north, south, east and at depth and will be subject to further exploration



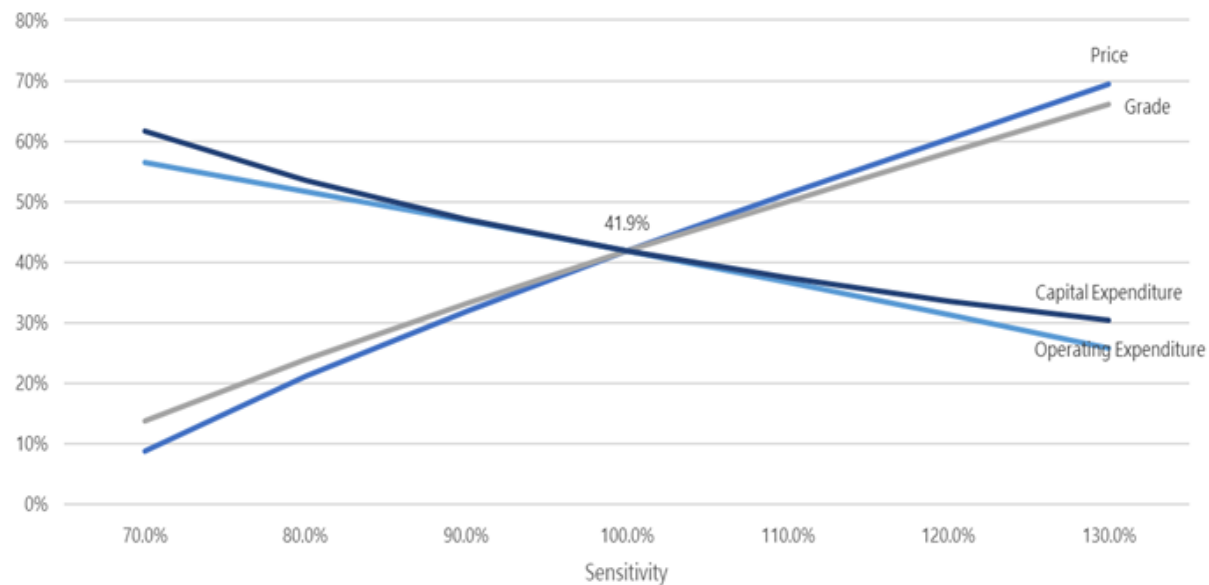
Cross section based on drill holes NW40-A & NW40-B; some assays still pending

- Resource model being prepared to be finalised as soon as possible after final results are received.

MANIRY SENSITIVITIES



— Price — Grade — Operating Expenditure — Capital Expenditure



— Price — Grade — Operating Expenditure — Capital Expenditure

		NPV	IRR
<i>Avg Feed Grade</i>	<i>6.2%</i>	<i>USD103M</i>	<i>42%</i>
	<i>7.2%</i>	<i>USD152M</i>	<i>55%</i>
	<i>8.2%</i>	<i>USD201M</i>	<i>68%</i>
	<i>9.2%</i>	<i>USD250M</i>	<i>81%</i>
	<i>10.2%</i>	<i>USD299M</i>	<i>94%</i>

Data derived from sensitivity graphs released to ASX 30 Jan 2019

BEM DOWNSTREAM SPECS



Graphite from BlackEarth's Maniry project meets the specifications required for applications in the expandables, refractory and lithium-ion battery industries.



- NGS (Germany) achieved results of 400 cm³/g which exceeded the industry benchmark rate of 250 cm³/g. (Refer ASX: BEM Announcement 13/6/19)
- Positive test results and quality approval from Yichang Xincheng Graphite – the largest expandable graphite producer in the world.

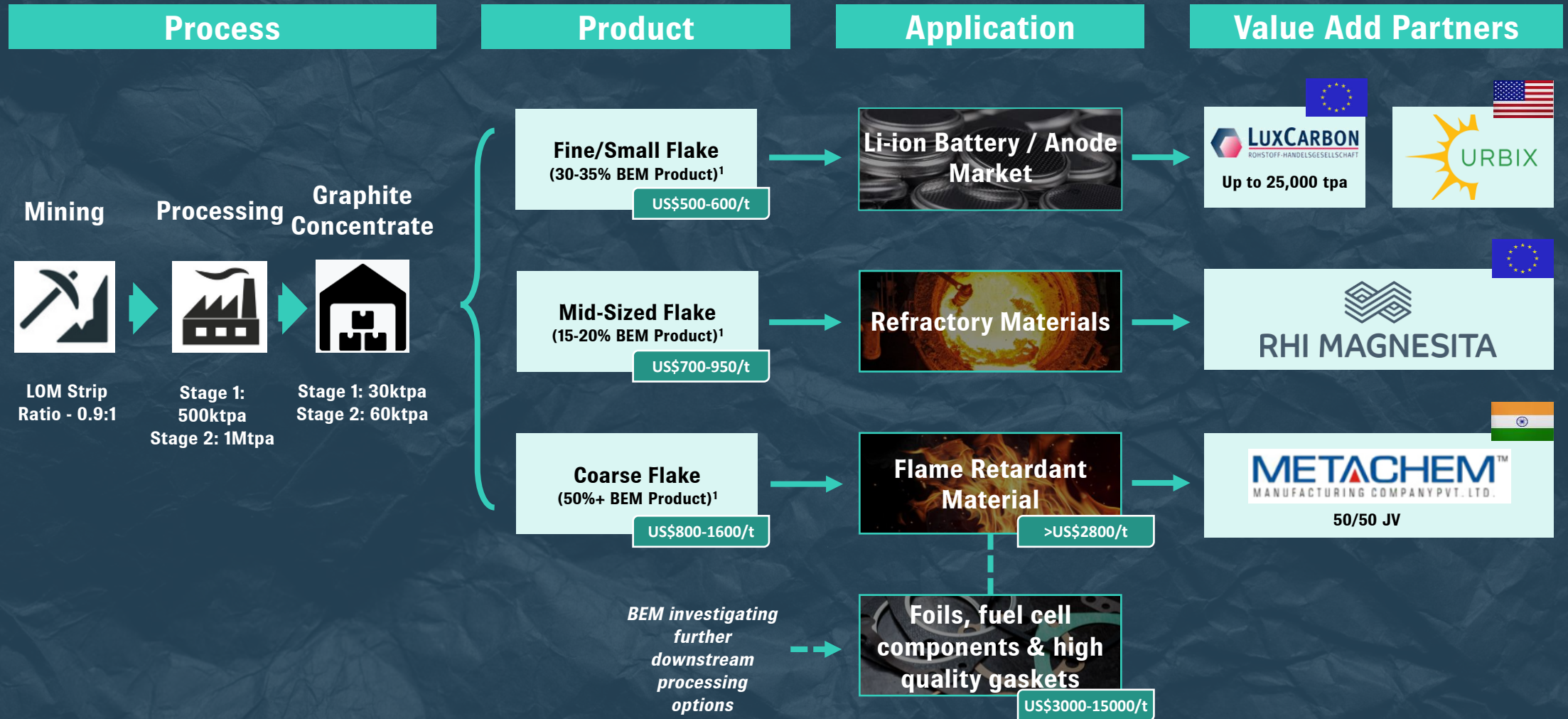


- Following successful testing, BlackEarth entered binding MOU with the world's largest refractory group, RHI Magnesita ("RHIM"), the leading global supplier of high-grade refractory products, systems and solutions, and a large consumer of natural flake graphite for various refractory products and materials.



- Spherical graphite from Maniry meets specifications required by lithium-ion anode material manufacturers.
- Spherical graphite production yields of up to 52% achieved vs industry average 40%.
- Positive feedback received from tier-1 spherical graphite producers and anode material manufacturers.
- Urbix Inc JV announcement to produce CSPG

MANIRY GRAPHITE PROJECT



III. EXPANDABLE GRAPHITE STRATEGY

EXPANDABLE GRAPHITE STRATEGY

Low risk / CAPEX entry into the downstream market, providing shareholders with a higher revenue stream and Company cash flow expeditiously

Coarse Flake Maniry Graphite



Sample # 5
 $\text{KMnO}_4 + \text{H}_2\text{SO}_4 + \text{ZnSO}_4 + 7 \text{H}_2\text{O}$
> 500 µm

> 300 µm

> 180 µm

> 106 µm

> 75 µm

< 75 µm

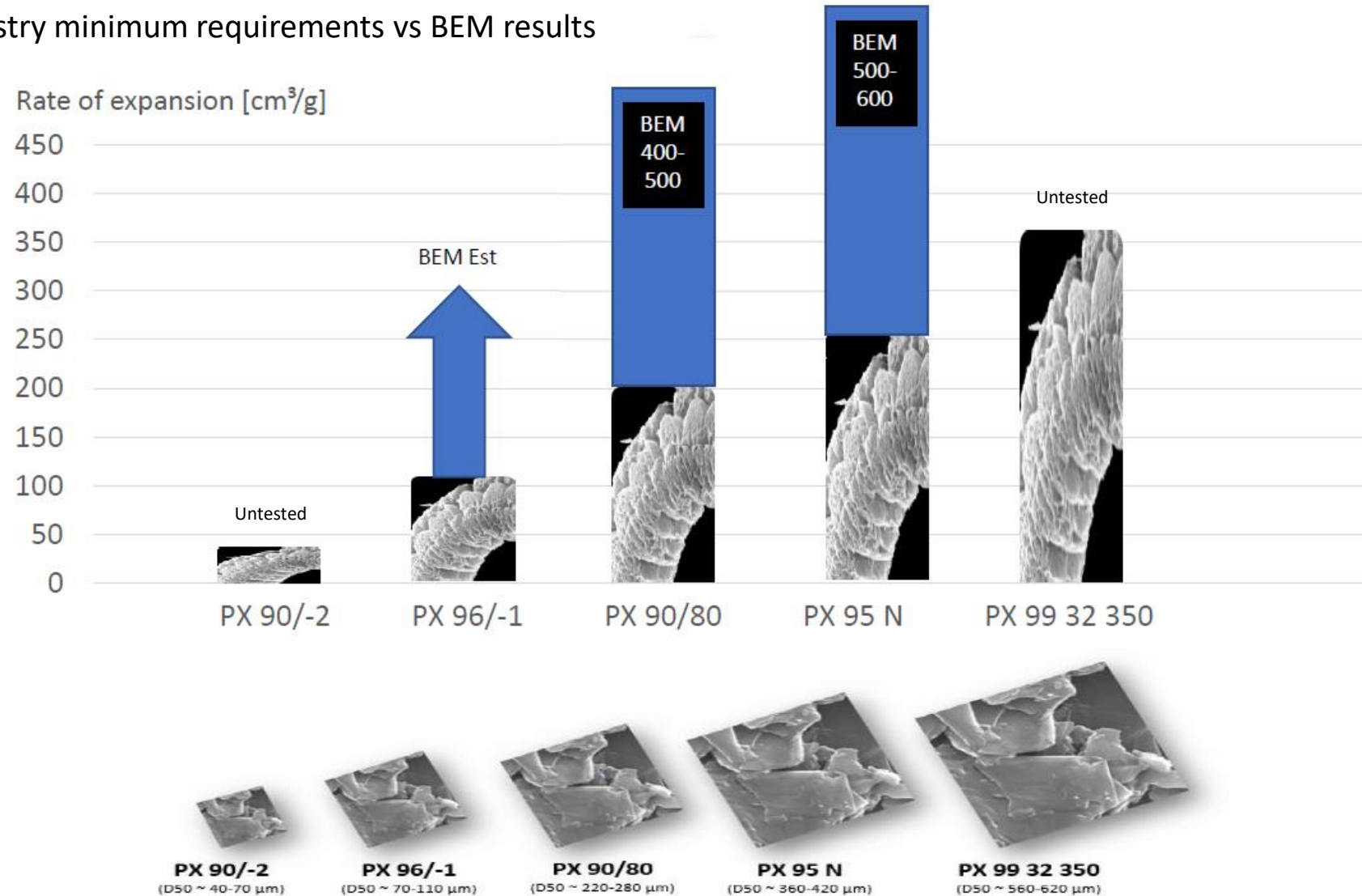
Photos of BEM product from NGS following expandability test work

"The (Maniry) flake graphite flotation concentrate ALS 19212 is well suitable for the preparation of expandable graphite. We could not find any restriction which would limit the application of this kind of flake graphite."

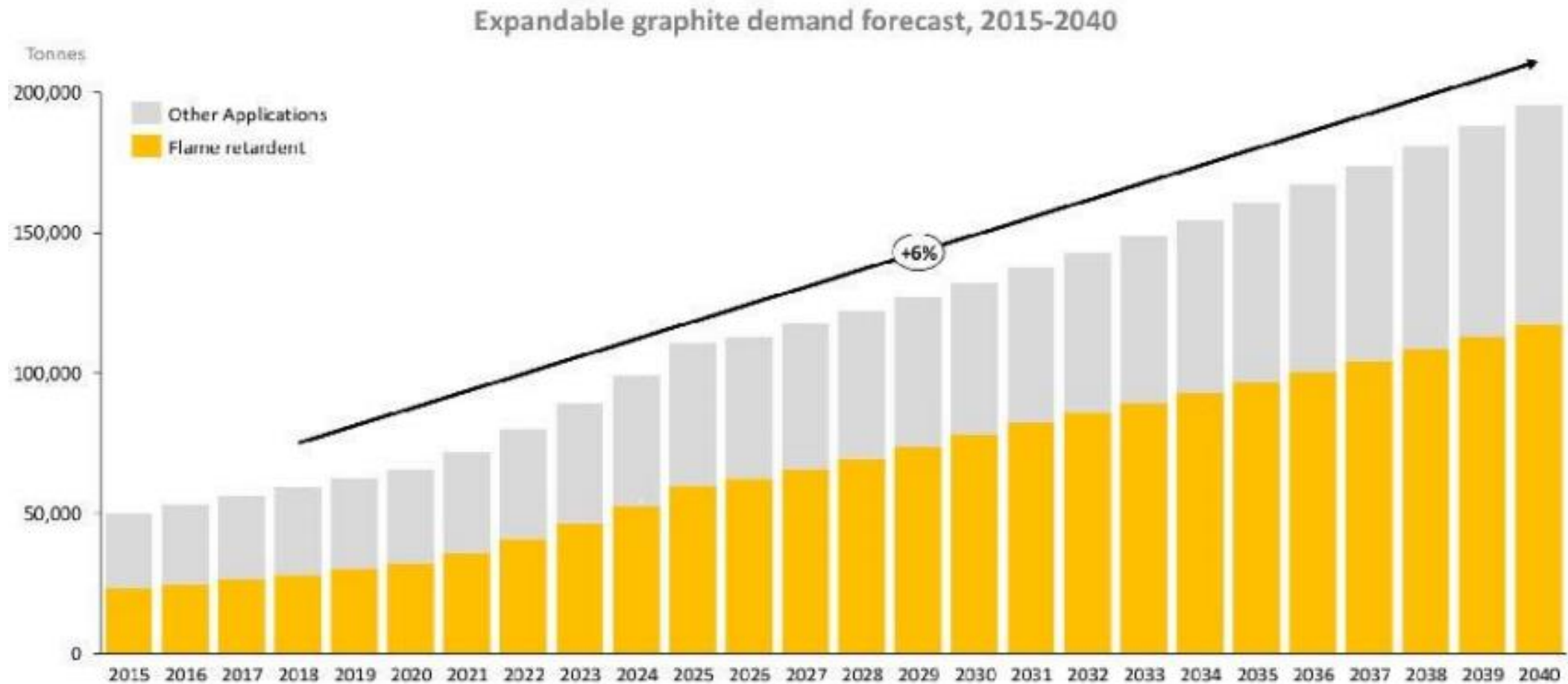
NGS Trading & Consulting GmbH

EXPANDABLE GRAPHITE PRODUCT CHARACTERISTICS

Outline of industry minimum requirements vs BEM results



EXPANDABLE GRAPHITE GROWTH PROJECTIONS



Fire Retardant use as a portion of Expandable Graphite demand and growth – Source:- Benchmark Mineral Intelligence

NEWSFLOW CATALYSTS

NEXT 3-4 MONTHS



- 1 Progressive updates on DFS activities including the appointment of an independent engineering company
- 2 Further exploration results at Razafy NW high grade area
- 3 Expandable graphite plan – conclude JV agreement & undertake engineering and costing (DFS) study
- 4 Upgraded Resource based on recently completed drilling at Razafy Northwest
- 5 Commencement of construction of the Company's JV expandable graphite facility
- 6 Various ESG related activities



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Specialising in Critical Commodities

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APPENDIX 1 COMPANY HISTORY

2018

- *Company IPO*
- *Commence drilling – defined Indicated and Inferred Resource*
- *Defined large Exploration Target*
- *Preliminary & small scale pilot met test work completed*
- *Commencement of Advanced Scoping Study for Maniry*

2019

- *Completed Advanced Scoping Study for Maniry*
- *Coarse product proven suitable for expandable graphite*
- *Fine product returns positive results – spheronised & purified graphite – SPG (pre-cursor to Li-Ion Batteries)*
- *Commencement of Maniry DFS*
- *Trial mining commences at Maniry*
- *Exploration Target defined at Ianapera*

2020

- *Maniry graphite proves suitable for Li-Ion Batteries*
- *Stage 1 Pilot Plant test work completed*
- *Maniry graphite sample qualifies with Tier 1 Anode producer*
- *MOU offtake signed with RHI Magnesita for refractory material*
- *Commencement of Environ & Social (DFS) works at Maniry*
- *High level Ni-Cu-PGE targets identified at Donnelly River (WA)*

2021 - YTD

- *Stage 2 large scale Pilot Plant test work completed*
- *MOU signed with URBIX (US) for collaboration to produce SPG*
- *Collaboration Agreement signed with German based LuxCarbon*
- *Joined European Battery Alliance*
- *MOU for 50/50 JV with Metachem for development of expandable graphite facility in India*
- *Offtake signed with Grafitbergbau for expandable graphite*
- *Surface sampling & VTEM completed at Donnelly River*