

# Black Rock Mining Mahenge Graphite Mine

## Investor Update

Battery Minerals Conference

2 June 2021



**BLACK ROCK**  
MINING LIMITED



# Important notices

This presentation has been prepared by Black Rock Mining Limited (**Black Rock** or the **Company**).

The release, publication or distribution of this presentation in certain jurisdictions may be restricted by law and therefore persons in such jurisdictions into which this presentation is released, published or distributed should inform themselves about and observe such restrictions.

This presentation is for informational purposes only and does not constitute an offer to sell, or solicitation to purchase, any securities. Such Offer can be made only through proper subscription documentation and only to investors meeting strict suitability requirements. Any failure to comply with these restrictions may constitute a violation of applicable securities laws. In providing this presentation Black Rock has not considered the financial position or needs of the recipient. Persons needing advice should consult their stockbroker, bank manager, solicitor, attorney, accountant or other independent financial and legal advisors.

## Competent Person(s) Statement

The information in this report that relates to Exploration Results and Mineral Resource Statements is based on information compiled by John de Vries, who is a member of the AusIMM. He is an employee of Black Rock. John de Vries has sufficient 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 2004 and 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

The information that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Aidan Patel (Consultant with Patel Consulting Pty Ltd). Mr Barnes and Mr Patel are members of the Australian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Barnes, Mr Patel and Mr de Vries consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The Ore Reserves have been compiled by Black Rock, under the direction of Mr John de Vries, who is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr de Vries is a full-time employee of Black Rock and holds performance rights in the company as part of his total remuneration package. Mr de Vries has sufficient experience in Ore Reserve estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves".

## Forward Looking Statements

Various statements in this presentation constitute statements relating to intentions, future acts and events. Such statements are generally classified as "forward looking statements" and involve known and unknown risks, uncertainties and other important factors that could cause those future acts, events and circumstances to differ materially from what is presented or implicitly portrayed herein. Words such as "anticipates", "expects", "intends", "plans", "believes", "seeks", "estimates" and similar expressions are intended to identify forward-looking statements. Black Rock cautions shareholders and prospective shareholders not to place undue reliance on these forward looking statements, which reflect the view of Black Rock only as of the date of this presentation. The forward looking statements made in this presentation relate only to events as of the date on which the statements are made.



# Black Rock and the Mahenge Graphite Mine

## Table of Contents

■ Corporate: Black Rock at a glance	4
■ Snapshot of the Mahenge Graphite Mine	6
■ Graphite Use	7
■ Graphite Market Dynamics	8
■ Why Black Rock ?	9
■ Graphite Playbook	11
■ Foundation	12
■ Near-term catalysts	13
■ Operating Drivers	14
■ Market Entry Model	15
■ POSCO Strategic Alliance	16
■ Sensible Price Discovery	17
■ Financing Mahenge	18
■ Investment Highlights	19

# Black Rock at a glance

## Premium graphite player

- Australian-listed company (ASX: **BKT**)
- 100% owner of Mahenge Graphite Mine
- Located in Tanzania
- Mineral Resource of 212Mt at 7.8% TGC<sup>1</sup>
- Ore Reserve of 70Mt at 8.5% TGC<sup>1</sup>
- Long-life mine producing high-purity, coarse distribution graphite concentrate
- Qualified path to market through established Strategic partnerships
- Outstanding forecast economics
- Construction-ready subject to financing and confirmation of Tanzanian Government Free Carried Interest Agreement

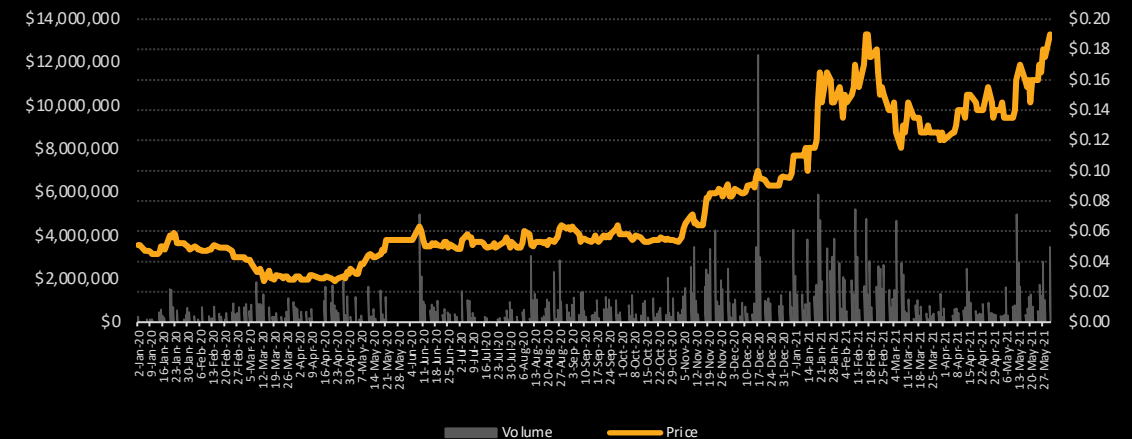
<sup>1</sup> For further detail on Mineral Resource and Ore Reserve estimates refer to Appendix slides.

## Capital structure

ASX ticker	<b>BKT</b>
Share price (1 June 2021)	\$0.18
Shares on issue	842.2 M
Options and performance rights	92.4 M
Market capitalisation (undiluted) (@\$0.19c)	A\$160.0 M
Cash (31 March 2021)	A\$1.9 M
Debt (31 March 2021)	Nil

## Major shareholders

Copulos Group	19.0 %
POSCO Group	15.0 %



# The leaders to deliver

Proven mine  
development, project  
finance and African  
operating experience

## Board

### John de Vries, Managing Director and CEO

- Mining Engineer with over 35 years' experience in mine development and operations; professional experience spans Africa, the Pacific, the Former Soviet Union, North and South America and Australia
- Previously General Manager Technical Services with St Barbara, integral in the 2014 turnaround; earlier operational management roles at BHP Nickel West and Orica Mining Services

### Richard Crookes, Non-Executive Chairman

- Geologist with over 30 years' executive experience in the resources and finance industries; raised capital and financed a number of projects globally, including across Africa
- Prior roles include Investment Director at Mining PE Fund EMR Capital, Executive Director in Macquarie's Metals & Energy Capital and Chief Geologist / Mining Manager at Ernest Henry Mining

### Ian Murray, Non-Executive Director

- Finance Executive with over 20 years' corporate experience in the publicly listed resources sector; led highly successful project developments, major acquisitions, company restructures and stock exchange listings
- Previous roles include CEO of Gold Road Resources, CEO and CFO of DRDGold Ltd, Director of Rand Refinery Ltd and GoldMoney.com, and senior positions at KPMG, PwC and Bioclones

### Gabriel Chiappini, Non-Executive Director & Company Secretary

- Chartered Accountant with over 20 years' experience in the commercial sector; assisted a number of companies to list on the ASX and involved with total equity and debt raised of over A\$400M
- Over the last 15 years has held positions of Director, Company Secretary and Chief Financial Officer in both public and private companies with operations in Australia, the UK and the US

## Executive management

### Raymond Hekima, Vice President – Corporate (Tanzania)

- Qualifications in Environmental Sciences and Management with over 13 years' experience in the government and corporate sectors, including significant specific permitting expertise
- Responsible for overall business and operations in Tanzania and key relationships and interactions with national government, local government, NGO's and community relations



# A snapshot of the Mahenge Graphite Mine

Simple open pit mine development with outstanding forecast returns

**US\$1.2B**

Post-tax, ungeared, real NPV<sub>10</sub>

**45%**

Post-tax, ungeared, real IRR

**83ktpa**

Phase 1 output (1Mtpa ROM)

**US\$116M**

Phase 1 development capex

**350ktpa**

Phase 4 output (4Mtpa ROM)

**95 – 99%+ TGC purity**  
**59% +80 mesh, 41% -80**  
Concentrate product

**US\$1,301/t**

Basket graphite price (net FOB)

**US\$494/t**

LOM All-In-Sustaining-Cost

**26 years**

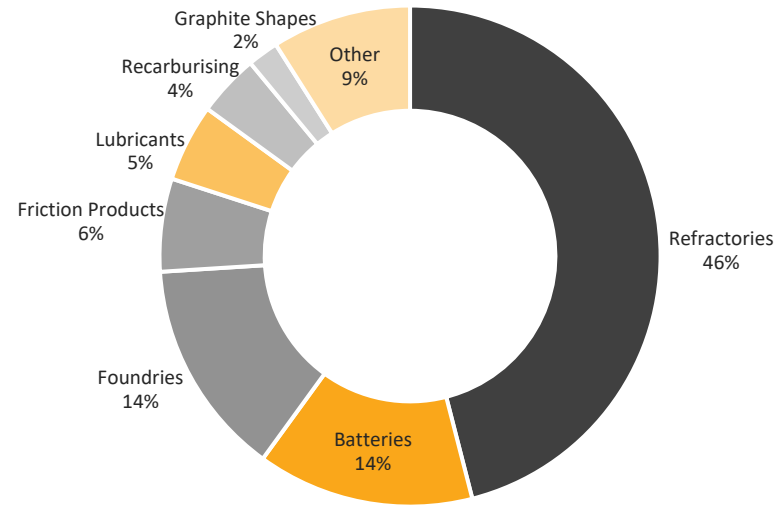
Initial operating life

Following release of the Enhanced Definitive Feasibility Study (DFS) on the Mahenge Graphite Project in July 2019 (see Black Rock ASX release dated 25 July 2019, *Mahenge Enhanced DFS with Executive Summary*), Black Rock confirms that it is not aware of any new data or information that materially affects the results of the Enhanced DFS. All material assumptions and technical parameters, including in the estimation of Mineral Resources or Ore Reserves, underpinning the estimates in the Enhanced DFS continue to apply and have not materially changed. The estimated Ore Reserves and Mineral Resources underpinning the production and financial forecasts in the Enhanced DFS were prepared by Competent Persons in accordance with the requirements in Appendix 5A (JORC Code).



# Graphite Uses<sup>1</sup>

Black Rock has a diversified product mix with 60% exposure to the high margin large flake market



**SMALL FLAKE (FINES)**

Lithium-Ion Batteries

Paint & Coatings

Lubricants

Pencils



**LARGE FLAKE**

Flame Retardants

Refractories

Aviation

Lithium-Ion Batteries



**JUMBO FLAKE**

Flame Retardants

Gaskets & Seals

Expandable Graphite

Fuel Cells

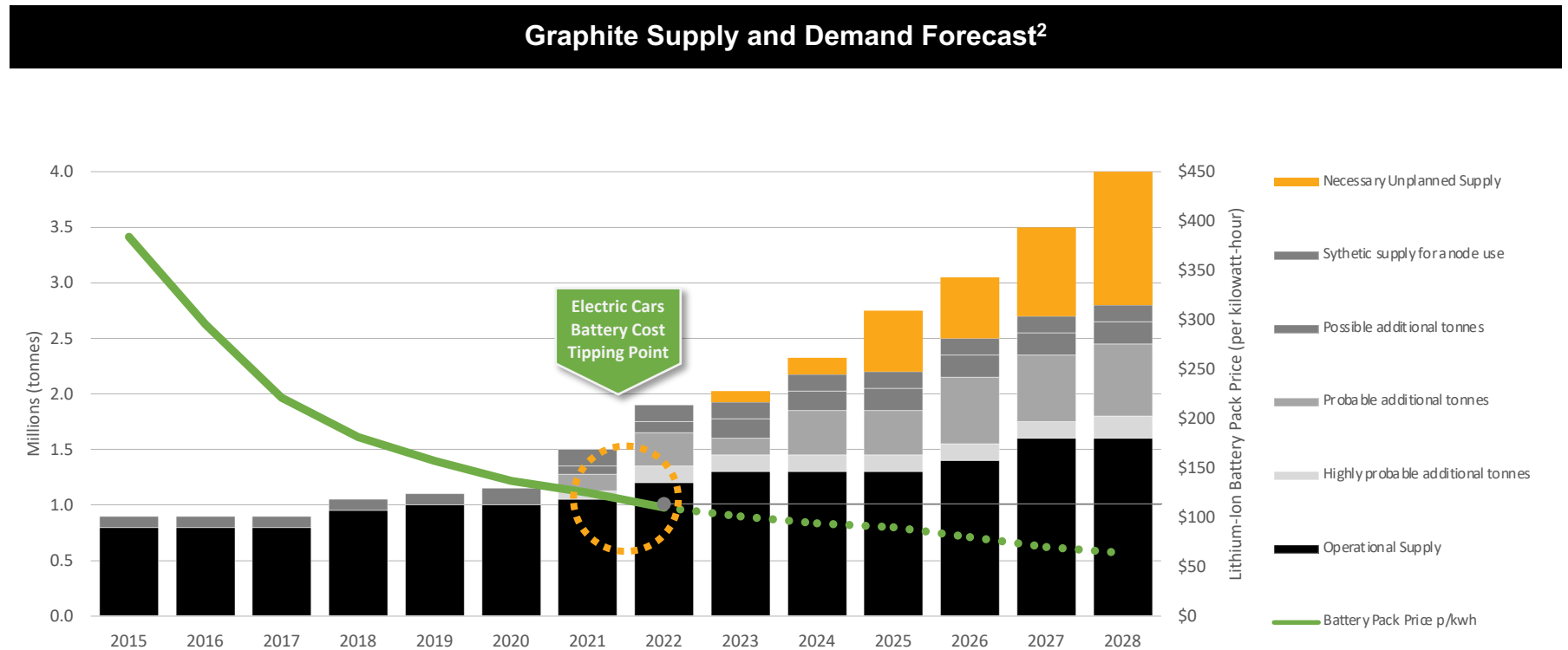


<sup>1</sup> Global natural graphite consumption in 2018 by application (RoSkill 2019)

# Graphite market dynamics

EV-driven intensification of graphite demand to have profound impact

- Electrification of transport to accelerate graphite demand
  - EV battery pack price per kwh has dropped from US\$295 in 2016 to US\$137 in 2020; projected to fall to US\$94 by 2024 and US\$62 by 2030<sup>1</sup>
  - Sub US\$100 delivers electric vehicles at cost parity with gasoline cars
- Global graphite demand forecast to exceed supply by 2023

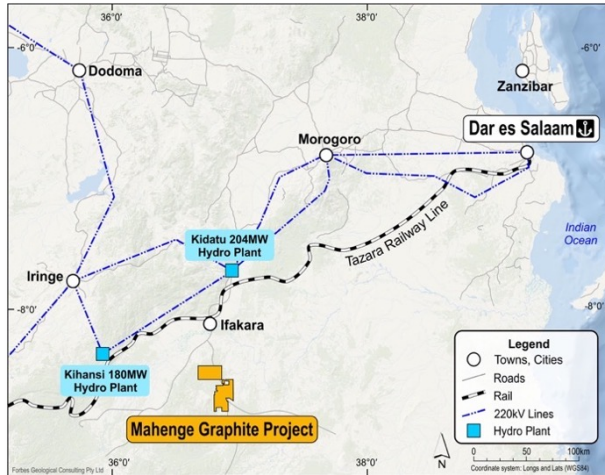


<sup>1</sup> Bloomberg NEF  
<sup>2</sup> Benchmark Mineral Intelligence Q4 2018  
<sup>3</sup> Bloomberg NEF Forecast to 2030



# Why Black Rock ?

## Unique competitive advantages driven by Geology and Geography



### GEOLOGY

- ★ Mahenge's 212mt resource makes it the 4th largest graphite resource in the world
- ★ Low deleterious impurities and favourable metallurgy means that Mahenge is able to produce up to 99% TGC concentrate purity, solely with conventional flotation processing

### GEOGRAPHY

- ★ Access to key infrastructure, Grid Power, Rail, Airstrip, Water and Tailings disposal (dry stack)
- ★ Logistics advantages with processing through Dar es Salaam high volume container port

### Low Technical Risk

- ★ Substantial pilot plant operations of 110 tonnes
- ★ Direct access to rail, grid power, water allows for sustained lower cost operation
- ★ Production underwritten by strategic partnership with POSCO and off-take agreements

### High Margin

- ★ AISC margin of 63.1%
- ★ Mine can produce three grades of product which provides the capacity to switch to higher quality product to achieve pricing premiums
- ★ Mahenge has a very low life of mine strip of 0.8:1

### Low Capex

- ★ Lowest peak capital expenditure per annual tonne of production of any development stage global graphite project
- ★ Modular operating model

### Superior Economics

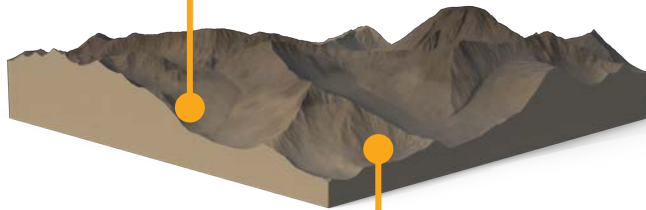
- ★ NPV<sub>10</sub> of US\$1.16Bn
- ★ IRR 44.8%
- ★ 63.1% Margin

# Why Black Rock ?

## A new greener source of Graphite

### Mahenge Graphite Deposit

- High-grade Graphite
- Low deleterious elements
- Low strip ratio



### Diversity

- Meaningful increase in supply chain diversity



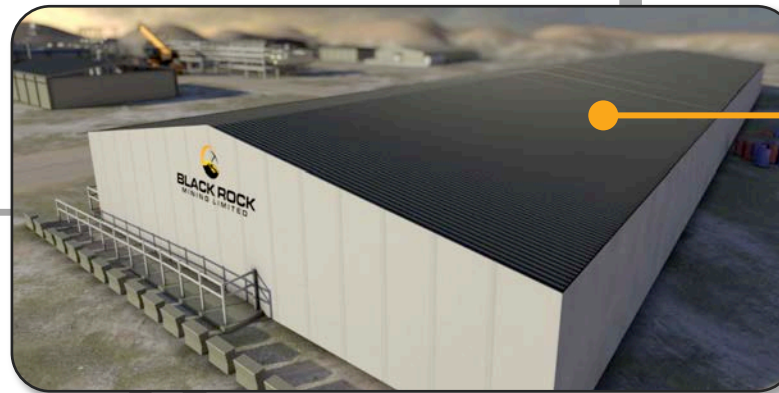
### Dry Tailings

- Dry stack tailing
- Do not compete with local communities for water



### Hydro Electric Power

- Low carbon power supply, and transport footprint
- Reduced community vehicle interaction



### Simple Processing

- Three stage polishing
- No wet screen
- Low energy

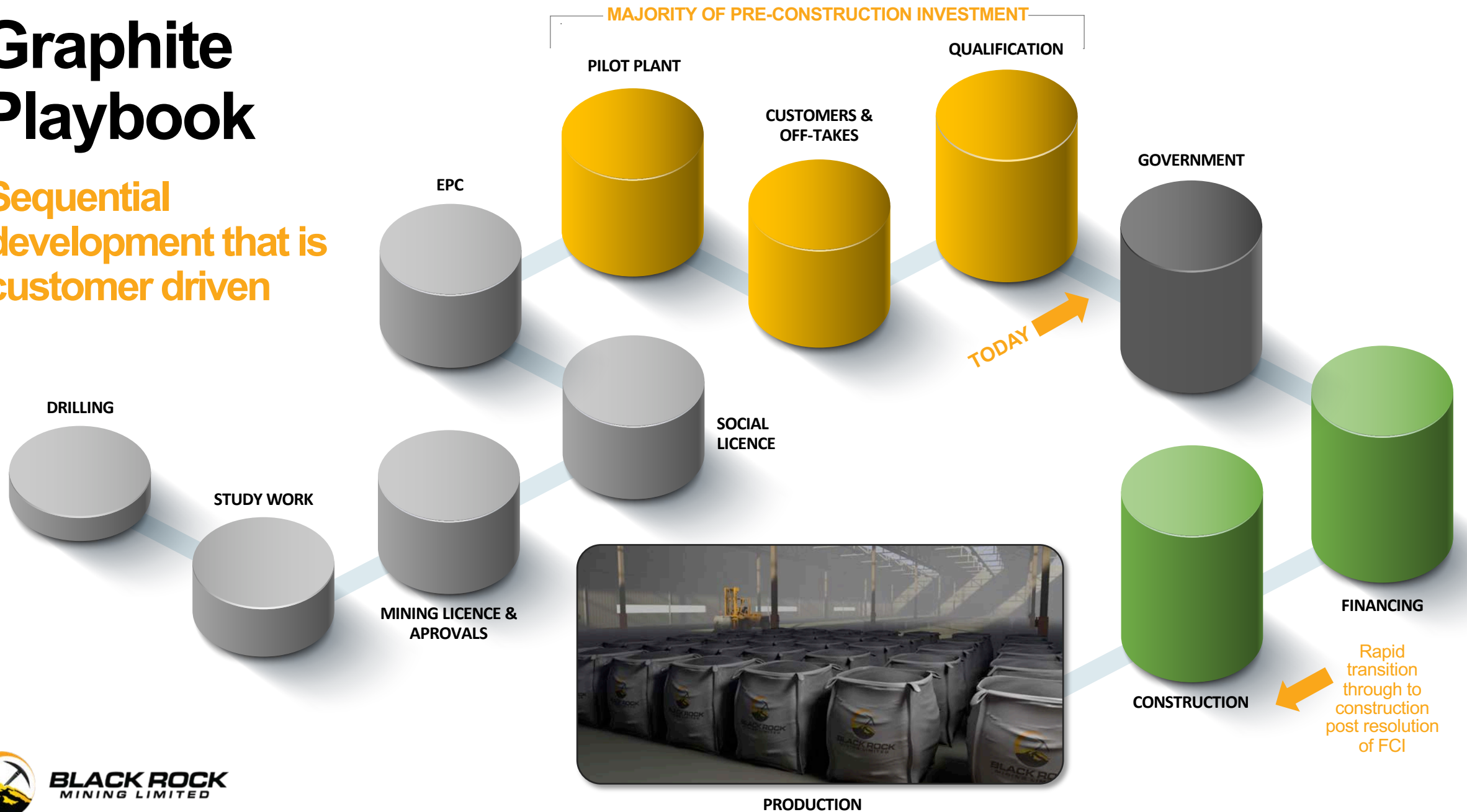
### Customer Markets

- Higher grade concentrate reduces manufacturing and energy consumption



# Graphite Playbook

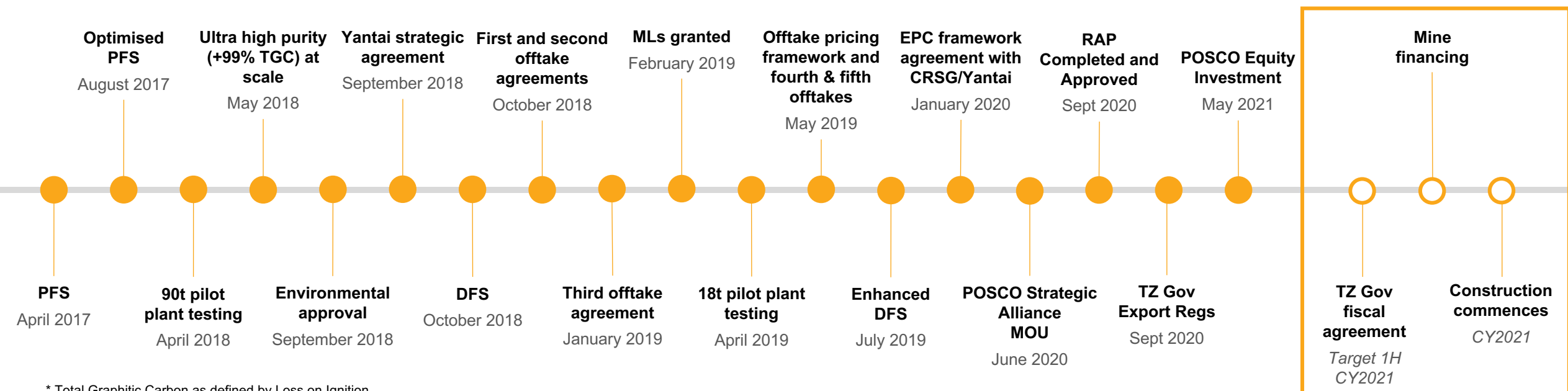
Sequential development that is customer driven



# The Foundation

A sector-leading approach to managing project and market risks

- Largest pilot plant operations of any graphite development project globally
- Highest TGC\* purity achieved at commercial scale through simple flotation
- Diverse portfolio of credible offtake partners
- Detailed offtake pricing framework agreed
- Right-sized market entry profile and modularised scalability
- Enhanced DFS level of project definition
- Sector-first EPC framework agreement with SOE China Railway Seventh
- Environmental approval, MLs granted, and Resettlement Action Plan



\* Total Graphitic Carbon as defined by Loss on Ignition

# Near-term catalysts

Focus on runway to construction

- Continued focus on customer markets and supply chain
- Sure up contracts
- In country works
- Mine optimisation



Large scale qualification

Transition off-takes to binding term sheets

Front end load marketing

Tanzanian Government FCI

Update engineering – DFS

Transition to gross max price contracts

Front end load RAP implementation

# Operating Drivers

## Key lessons learned that drive project value



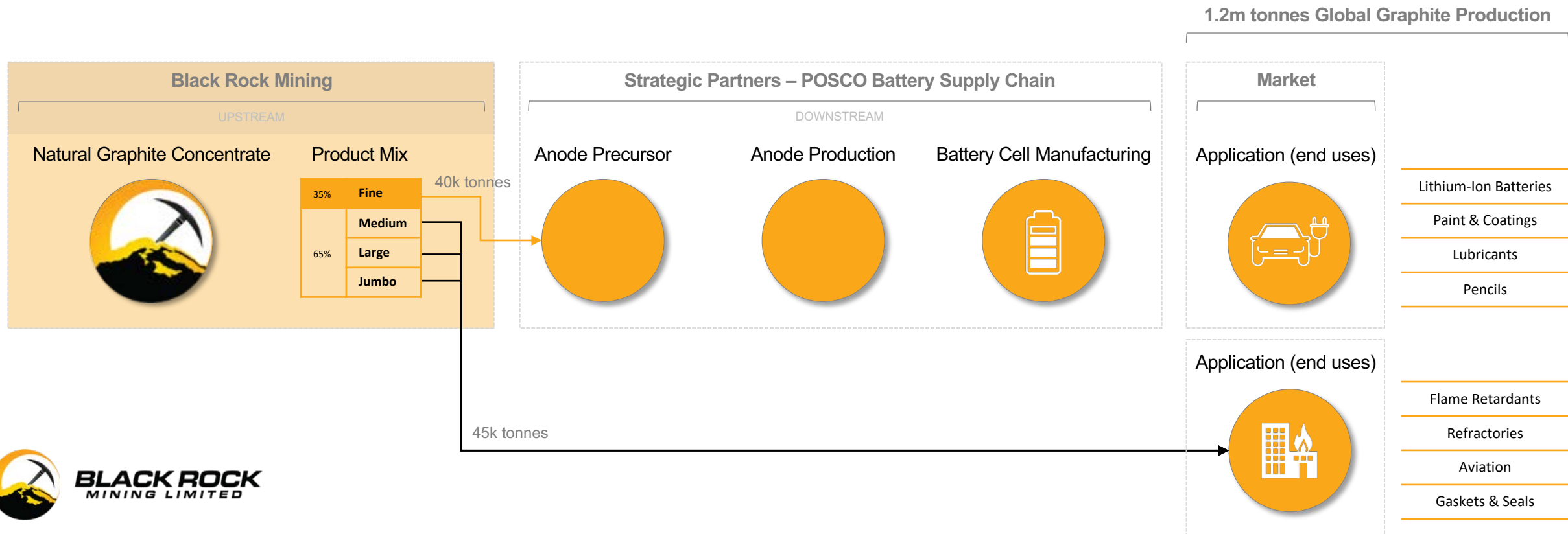
- Graphite is a customer driven market

Geology drives basket price	Margin curve drives project value	Graphite is not Base Metals	ESG applies to whole of value chain
<ul style="list-style-type: none"> <li>★ Enough flake to add value</li> <li>★ Enough fines to attract cornerstone investor</li> <li>★ There are no co-product credits, only deleterious elements</li> </ul>	<ul style="list-style-type: none"> <li>★ Semi-bulk logistics can account for up to 40% of cost</li> <li>★ Cost is a function of strip ratio grade and process complexity</li> <li>★ Scale matters but should not exceed capacity of market to absorb product</li> </ul>	<ul style="list-style-type: none"> <li>★ Customers need large volumes of material to qualify</li> <li>★ Pilot plant results are different to lab</li> <li>★ Bulk samples need to reflect mining plan</li> </ul>	<ul style="list-style-type: none"> <li>★ Increasingly important differentiator</li> <li>★ Clean natural flake has advantages</li> <li>★ Chain of custody is important</li> </ul>
MAHENGE			
<ul style="list-style-type: none"> <li>★ 70% Flake</li> <li>★ 30% Fines</li> <li>★ \$1300/t @ 97.5%</li> </ul>	<ul style="list-style-type: none"> <li>★ Rail to port</li> <li>★ Hydro power on grid</li> <li>★ Crawl / walk / run / sprint strategy</li> </ul>	<ul style="list-style-type: none"> <li>★ 2 pilot plants for 110 tonne</li> <li>★ POSCO as cornerstone</li> <li>★ Targeting mix of Chinese and Western customers</li> </ul>	<ul style="list-style-type: none"> <li>★ Dry stack</li> <li>★ Green power</li> <li>★ No acid interference</li> </ul>

# Market Entry Model

Credible and Qualified path to customer markets

- Sensible Module 1 entry size (~85ktpa): limited enough to allow product market integration but significant enough to deliver meaningful returns
- Coarse distribution of Mahenge enables an effective dual project:
  - Approx. 60% coarse flake (+80 mesh; +180 microns) for premium large flake markets of limited competition and demanding product
  - Approx. 40% medium and fine flake (-80 mesh; -180 microns) for traditional graphite markets and EV battery usage
- Module 1 output represents less than 7% of global production



# POSCO Strategic Alliance

- The partnership with POSCO validates the credibility of Black Rock's Mahenge Graphite deposit. **It's real.**
- POSCO has a clear view on EV/Battery demand with a significant growth ambition of 20% global share of the battery materials sector
- This is aligned to Black Rock's modular growth strategy
- The deal will enable the ability to secure a best-in-class financing package



THE KOREA ECONOMIC DAILY GLOBAL EDITION

Battery materials

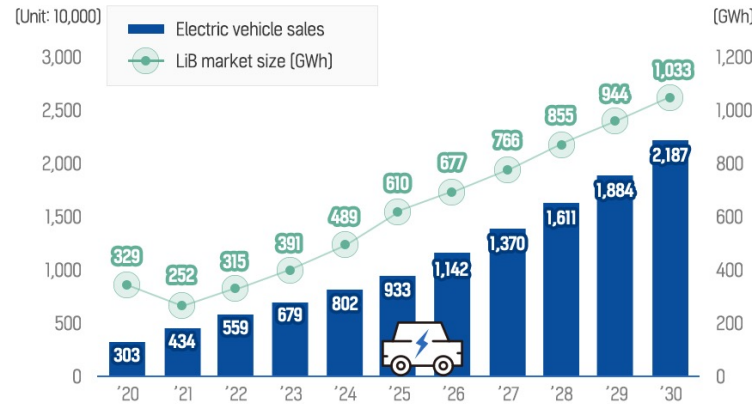
### POSCO Chem eyes No.1 spot in battery materials sector

Jae-kwang Ahn and Man-su Choe | Dec 15, 2020 (GMT+09:00)

"Over the next 10 years, we are determined to claim the global No. 1 spot in the battery materials sector," said Min Kyungzoon, the chief executive of POSCO Chemical, in an interview with The Korea Economic Daily on Dec. 14.

Out of the 1 trillion won, 690 billion won will be spend in expanding facilities, including Posco Chemical's Gwangyang plant. Around 160 billion won will spend in securing raw materials such as graphite and lithium.

Prospects for Global Supply and Demand of Electric Vehicle and Lithium Battery

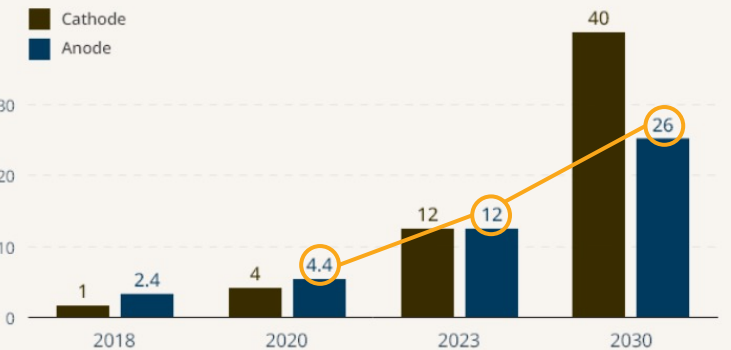


\*Source: Average of outlook from TSR('18-'19), FUJI ('18-'19), SNE Research('20)

▲ Market size of LiB (GWh), Sales of electric vehicle (BEV+PHEV)

POSCO Chemical's production capacity

(Unit: 10,000 tons)



\*Projections for 2023, 2030

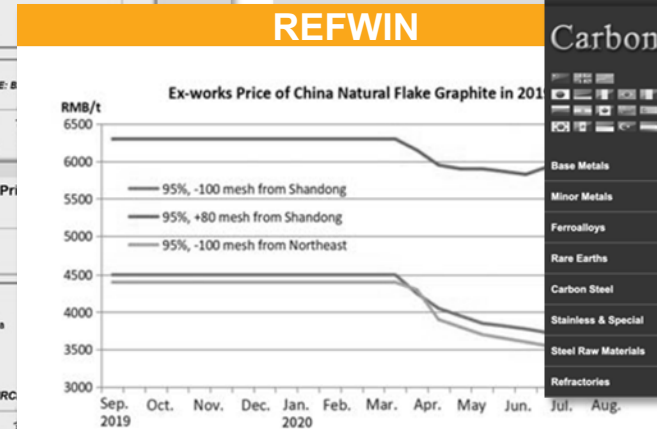
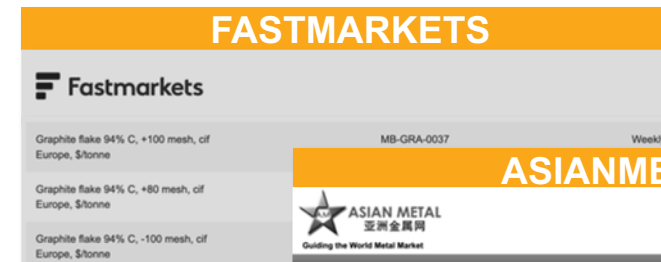
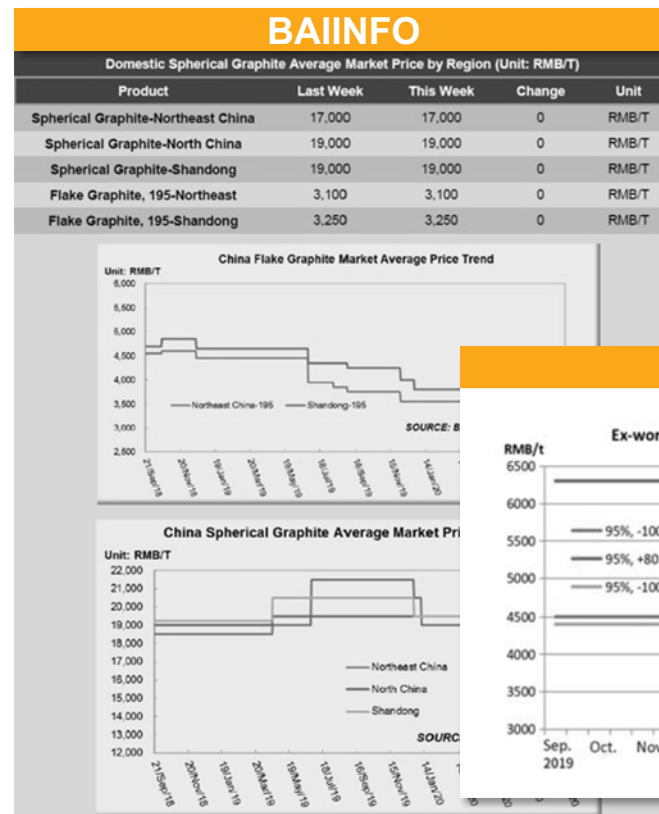
Data: POSCO Chemical



# Sensible price discovery

## Visible sources to index

China share ~85% of global supply. Price benchmark must be China sourced.



BLACK ROCK DFS PRICE ASSUMPTIONS						
Enhanced DFS segments (Mesh #)	Segment pricing (US\$/t)	Basket weight (%)	Shipping (US\$/t)	Channel & agent (US\$/t)	Contract discounts (US\$/t)	Basket FOB (US\$/t)
+32	1,579	5	1.65	1.97	1.97	73
+50	1,449	18	5.96	6.52	6.52	242
+80	1,444	36	11.89	12.98	12.97	481
+100	1,378	9	3.06	3.19	3.19	118
-100	1,314	32	10.52	10.44	10.44	386
	<b>1,404</b>	<b>100</b>	<b>33.08</b>	<b>35.10</b>	<b>35.10</b>	<b>1,301</b>

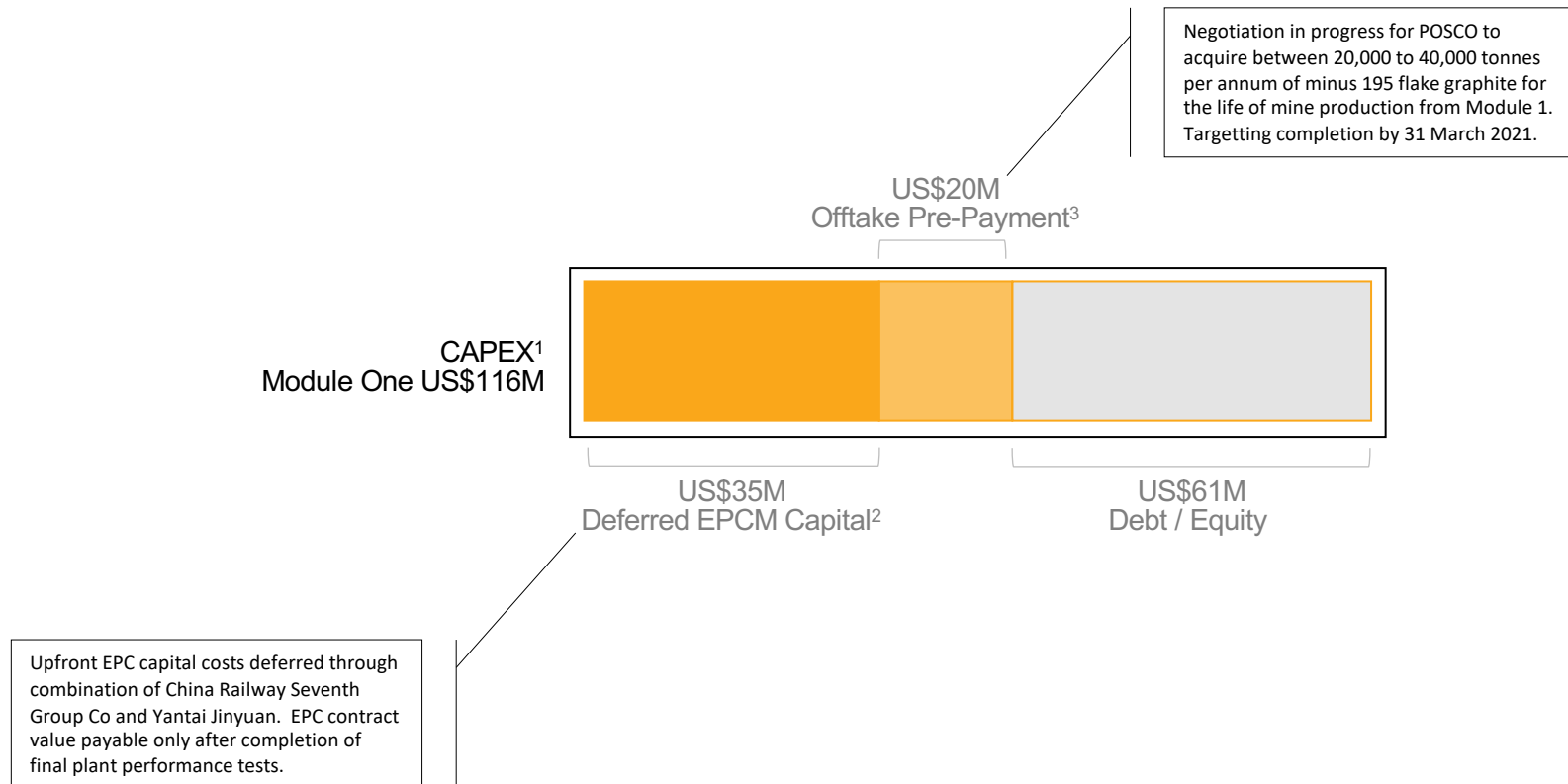
Prices based on average concentrate purity of 98% graphite by LOI



# Financing Mahenge

Risk-adjusted finance process focused on securing the right funding mix

- Targeting a blended project financing model
- Matching risks to participants best placed to manage them
- Key potential finance stakeholders include EPC vendor, offtake counterparties and Tanzanian government
- POSCO/EPCM de-risks the funding package



# Black Rock: The premier graphite exposure

A world-class deposit with a superior development strategy

**01**

Upstream focus with highly economic mine project

**06**

Premier location and logistics options

**02**

Deep evaluation work at real commercial scale

**07**

Fit-for-purpose project execution plan

**03**

Leading product purity and residual chemistry

**08**

Responsibly sourced, sustainable graphite

**04**

Sensible market entry and growth strategy

**09**

Blended, risk-adjusted finance process

**05**

Realistic and transparent graphite price views

**10**

Superior stakeholder engagement



## John de Vries

**Managing Director and CEO**

T: +61 438 356 590

E: [jdv@blackrockmining.com.au](mailto:jdv@blackrockmining.com.au)

A: 45 Ventnor Avenue  
West Perth WA 6005

[www.blackrockmining.com.au](http://www.blackrockmining.com.au)

## Richard Crookes

**Chairman**

T: +61 438 356 590

E: [richard.crookes@blackrockmining.com.au](mailto:richard.crookes@blackrockmining.com.au)

## Elvis Jurcevic

**Investor Relations**

T: +61 408 268 271

E: [ej@blackrockmining.com.au](mailto:ej@blackrockmining.com.au)



**blackrockmining**



**@BlackRockMining**