

# Black Rock Mining Mahenge Graphite Mine

## Simply Better Graphite: Investor Update

Sydney Mining Club

May 2023



**BLACK ROCK**  
MINING LIMITED

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## Competent Person(s) Statement

The information in this report that relates to estimates of Mineral Resources and Ore Reserves has been extracted from the Company's ASX announcement released on 3 February 2022 titled "BKT Confirms 25% increase in Measured Resources." 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 of Mineral Resources or Ore Reserves in the original market announcement continue to apply and have not materially changed.

## Production Target

The information in this report that relates to a production target, or forecast financial information derived from a production target has been extracted from the Company's ASX announcement released on 10 October 2022 titled "Black Rock Completes FEED and eDFS Update". The Company confirms that all material assumptions underpinning the production target, or forecast financial information derived from the production target, in the original announcement continue to apply and have not materially changed.

## 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 overview: Black Rock at a glance	4
■ Black Rock team	5
■ The outlook for graphite	6
■ A snapshot of the Mahenge graphite mine	10
■ First quartile on the cost curve	11
■ Why Mahenge?	12
■ ESG Focused Ecosystem	13
■ Graphite Playbook	14
■ Development Timetable	17
■ Strong near term news flow	18
■ BKT Ready to Deliver	19
■ Appendix	21

# Black Rock at a glance

## Premium graphite player

### Developing the Mahenge graphite project in Tanzania:

- Tier 1 scale (2<sup>nd</sup> largest reserve globally)
- First quartile on the global cost curve (see slide 11)

### Backed by largest ex-China anode producer POSCO:

- Strategic Alliance: BKT's major shareholder
- LOM offtake partner for fines for Module 1
- Providing US\$10m prepay (payment to come)
- Provides customer validation (after years of testing)

### All key Govt agreements and permits in place

### Debt process well advanced

- Independent Expert reports complete, site visits complete
- Aiming for credit-approved Term Sheets in Q2 CY23

### Substantial upside potential if BKT team can execute:

- Mahenge NPV<sub>10</sub> US\$1.4bn (A\$2.1bn)<sup>1</sup>
- Substantial graphite deficits predicted near-term

<sup>1</sup>Project metrics updated October 2022. NPV post-tax, post deducting Govt 16% free carry.  
Additional project disclosures provided on Slide 11

## Capital structure

ASX ticker	<b>BKT</b>
Share price (3 May 2023)	\$0.13
Shares on issue	986.0 M
Options and performance rights	58.9 M
Market capitalisation (undiluted) (@\$0.13c)	A\$128 M
Cash (31 Mar 2023)	A\$7.6 M
Debt (31 Mar 2023)	Nil

## Major shareholders

POSCO Group	13%
Copulos Group	12%



# Black Rock team

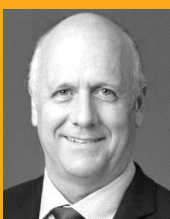
## Board of Directors



**Richard Crookes**, Non-exec 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. Previous 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.



**John de Vries**, MD & 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, Orica Mining Services and Western Mining Corp.



**Ian Murray**, Non-exec 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.

## Management



**Stuart McIntyre**, GM Corporate Development: Mining analyst with over 15 years experience. Previous roles include sell-side mining analyst for Royal Bank of Canada and Blue Ocean Equities and associate at Cutfield Freeman, a mining-focused corporate finance boutique in London. Stuart has degrees in Civil Engineering and Commerce from the University of Sydney and a diploma of corporate finance from the London Business School.



**Daniel Pantany**, GM Engineering & Technical: Civil Engineer with over 22 years experience in mining project development in Africa and Australia across a broad range of project delivery roles including EPCM, EP, and lump sum EPC contracts. His most recent position was with CPC Engineering including secondment as Project Engineering Manager for Syrah's Balama project. BKT's Study Manager for Mahenge since 2018.



**Paul Sims**, CFO: A highly credentialled finance resources executive with over 25 years of executive experience in the resources industry, spanning both commercial and financial roles at BHP, Western Mining Corp, Minara Resources and Karara Mining. Mr Sims has extensive experience in debt finance, project management and cost control. He has a Bachelor of Business degree from Curtin University and is a Fellow of CPA Australia.



**Greg Wheeler**, CCO: An experienced finance and commercial manager who started his career within PwC and spent 10 years with ship manufacturer Austal, where he was responsible for managing the Finance, Accounting, IT and HR functions of the global business. Mr Wheeler then joined global trading and shipping player Wellard during a period of strong growth, including public listing and was responsible for financial systems and processes.



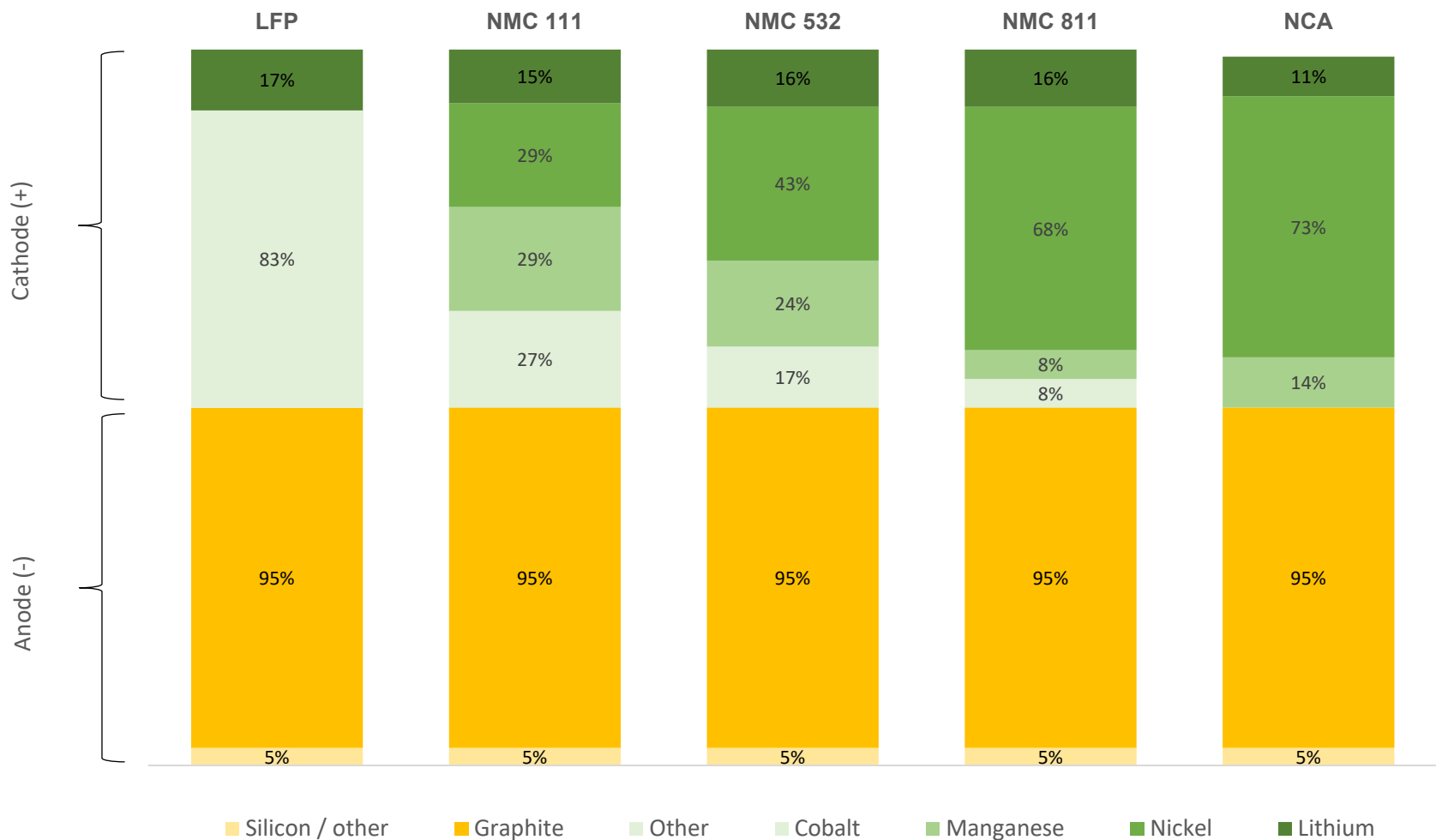
**Rae Wyatt**, GM People, Culture & Sustainability: Experienced HR professional with 15 years experience in the resources industry, specialising in project development and stakeholder engagement with communities. Ms Wyatt has most recently held senior roles at Clean TeQ (Sunrise Metals), Gold Road and Macmahons. She has a degree in commerce from Curtin University in HR and Industrial Relations and is a graduate of AICD.

# Graphite in batteries

There is more graphite in Li-ion batteries by volume than any other material, regardless of battery chemistry.

Li-ion batteries typically contain ~7-10x more graphite than lithium

Graphite is the dominant anode material, regardless of battery chemistry

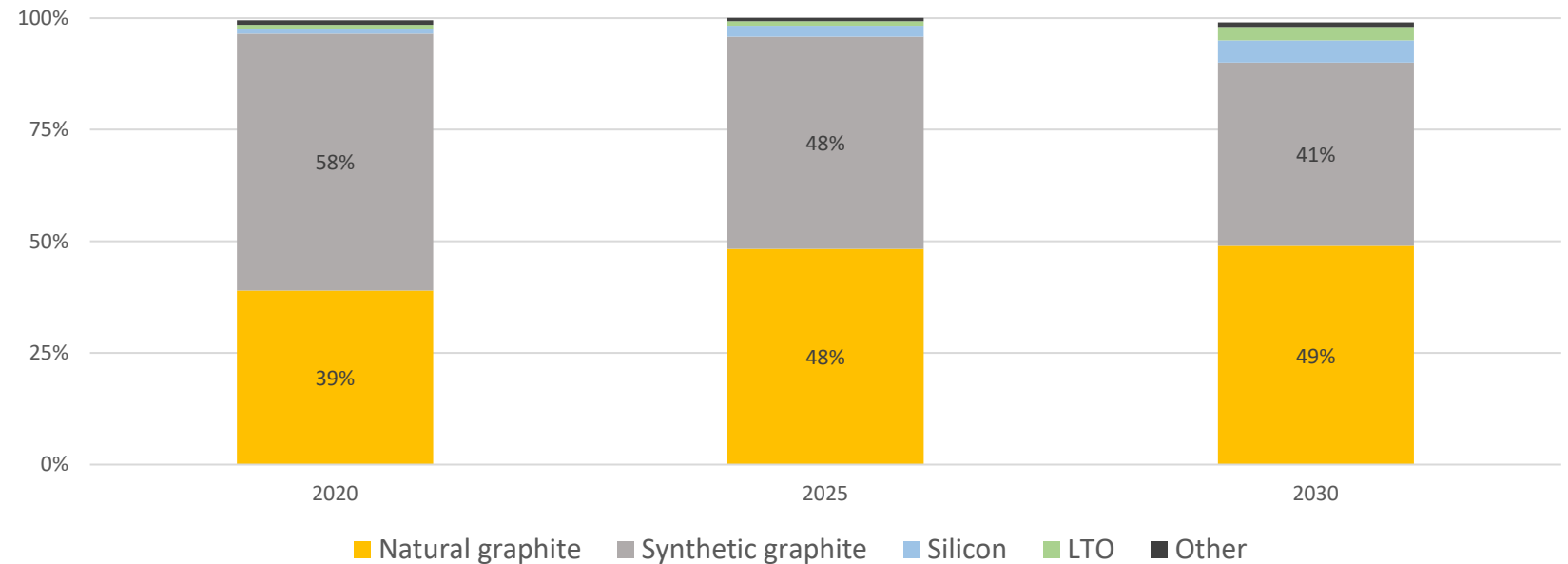




# Natural graphite increasing in batteries

The use of natural graphite in batteries has been growing and is expected to surpass synthetic graphite in 2025.

Growing importance of natural graphite in batteries



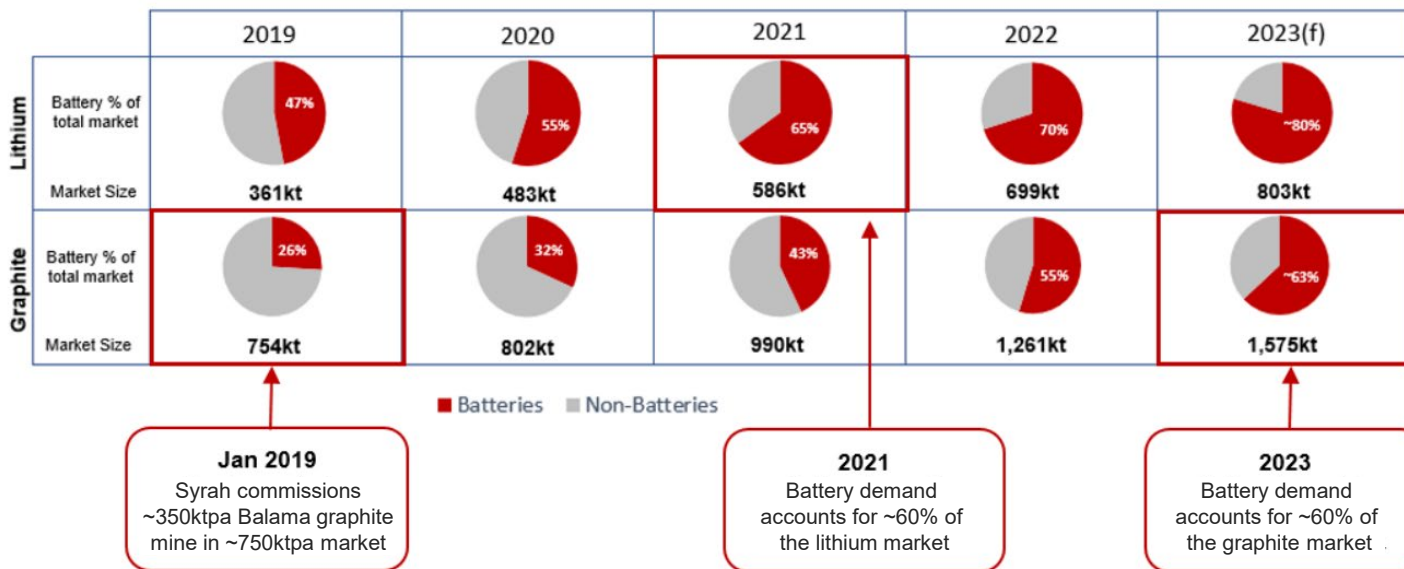
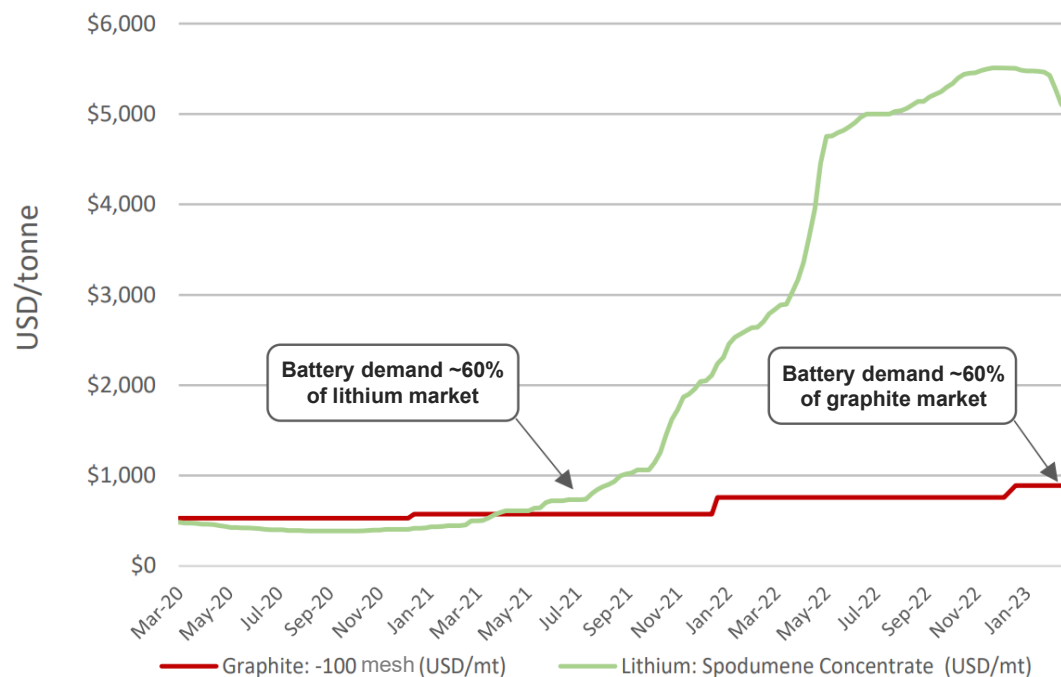
Demand for LIBs	kt	kt	kt
Synthetic graphite:	179	625	1,438
Natural graphite	182	1,079	2,805

- Natural graphite is less energy intensive to produce, much less expensive and provides greater energy density than synthetic graphite
- Tesla/Panasonic already uses 50/50 natural graphite/synthetic graphite and the “in-development” 4680 battery is expected to comprise 55-60% natural graphite / 40-45% synthetic graphite

# Battery demand for graphite at a tipping point?

Battery demand for graphite expected to hit ~60% in 2023

Could battery demand start to drive graphite pricing from 2023?

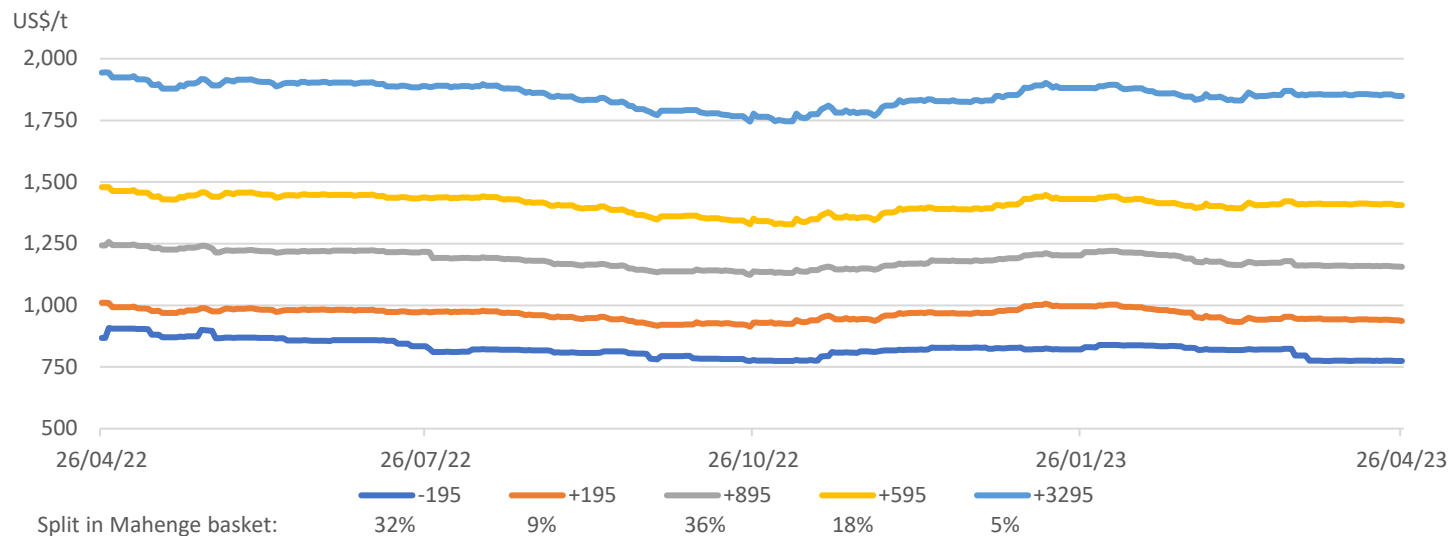




# Robust graphite prices

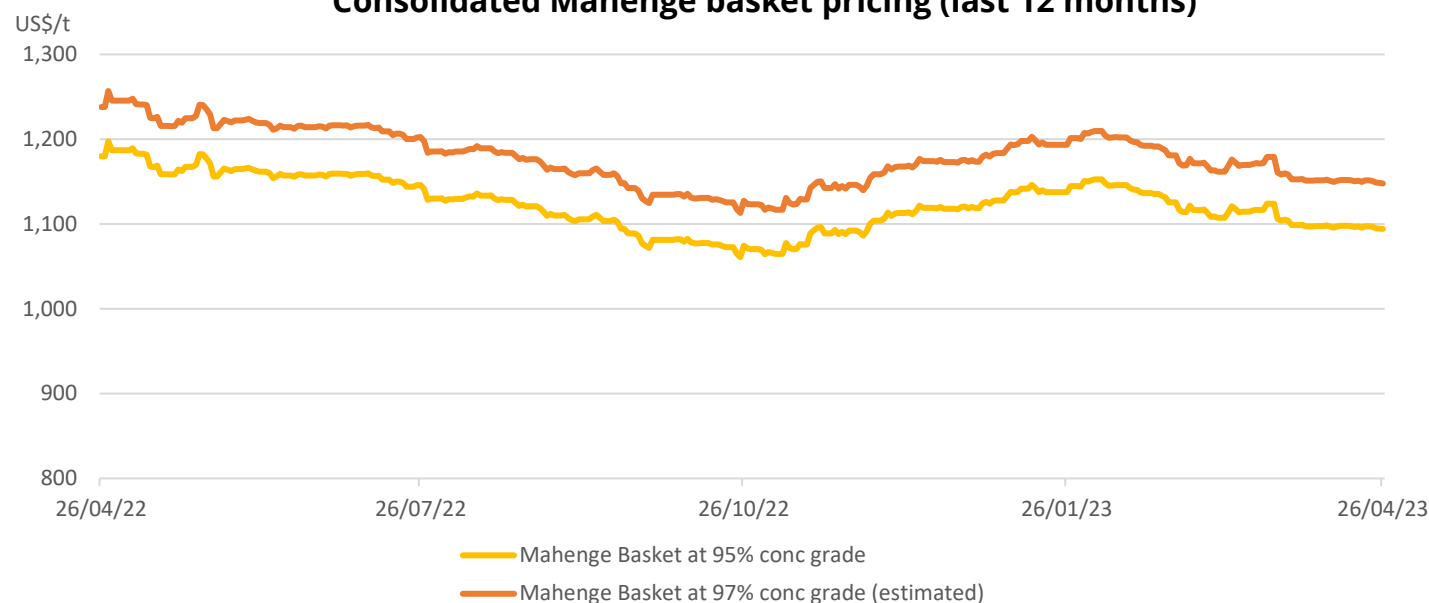
Current graphite prices support healthy potential margins at Mahenge given forecast AISC of US\$518/t

Graphite pricing by Mahenge product (last 12 months)



Source: RefWin, Asian Metals, ICC Sino, Black Rock Mining

Consolidated Mahenge basket pricing (last 12 months)



Source: RefWin, Asian Metals, ICC Sino, Black Rock Mining

**BKT sensitivity: 10% increase in basket price = 20% increase in unlevered NPV**

# A snapshot of the Mahenge Graphite Project

Simple open pit mine development with outstanding forecast returns<sup>1</sup>

**US\$1.4B**

NPV<sub>10 nom</sub> post tax, post 16% FC

**36%**

Post-tax, ungeared IRR

**89ktpa**

Module 1 production\* (1Mtpa)

**US\$182M**

Module 1 development capex\*\*

**347ktpa**

Steady production (4 x 1Mtpa)

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

**US\$1,709/t**

Basket graphite price\*\*\*

**US\$518/t**

All-In-Sustaining-Cost\*

**26 years**

Initial operating life

<sup>1</sup>See Black Rock ASX release dated 10 October 2022, Black Rock completes FEED and eDFS Update. All technical parameters, including in the estimation of Mineral Resources or Ore Reserves, underpinning the estimates continue to apply and have not materially changed. The estimated Ore Reserves and Mineral Resources underpinning the production and financial forecasts were prepared by Competent Persons in accordance with the requirements in Appendix 5A (JORC Code).

\*Average over first 10 years. \*\*Forecast Capex has been classified as a Class 3 estimate with accuracy of ±10% as defined by AACE International. Excludes US\$33m to bring the power line forward for grid power from year 1. Black Rock is exploring options to fund the power line externally.

\*\*\*Expert Consensus based on the average forecast from Benchmark Mineral Intelligence, Fastmarkets and Wood Mackenzie over the first 10 years. See Appendix.

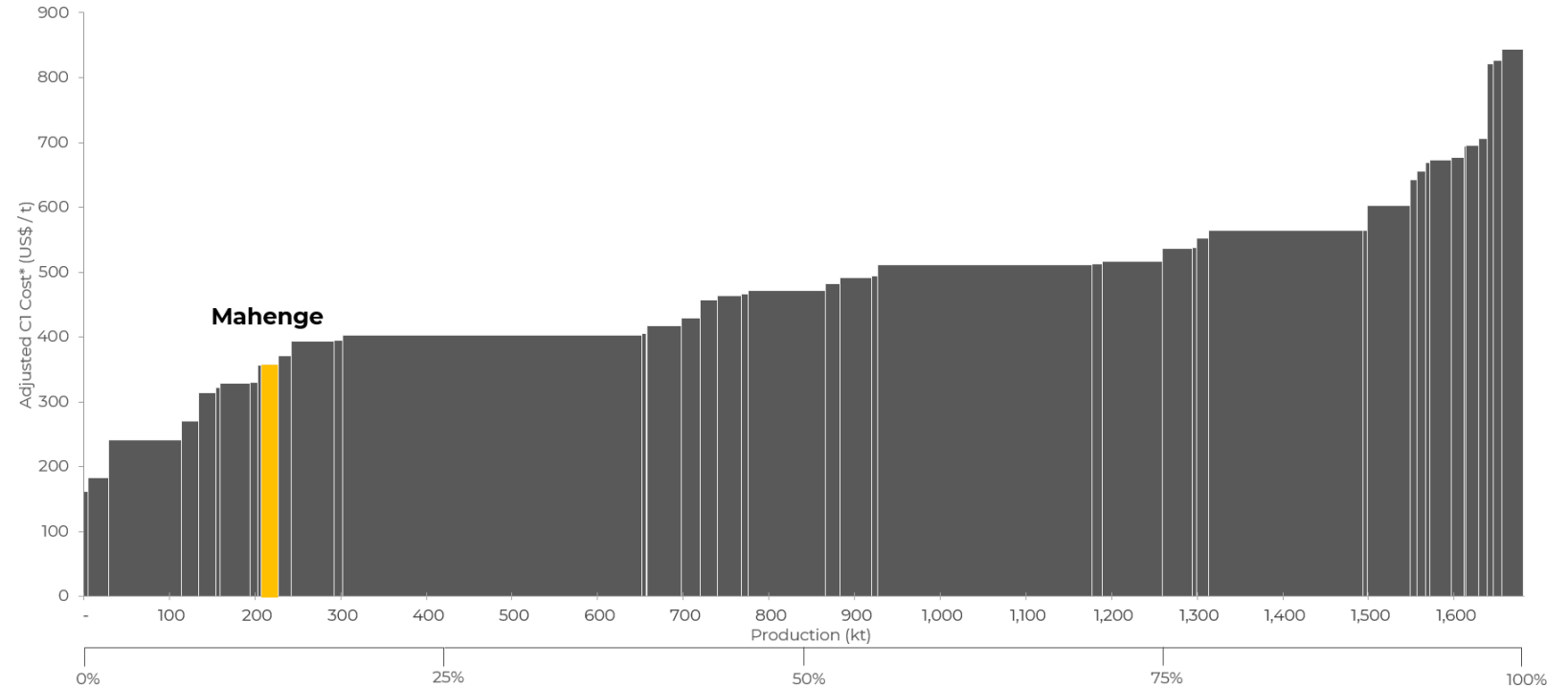


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# First quartile on the global cost curve

First quartile assets are higher margin and more robust through the cycle

2024 Adjusted C1 Cost Curve\*



Sources: Benchmark Mineral Intelligence Flake Graphite Report Q2 CY22, Black Rock Mining, Company Data

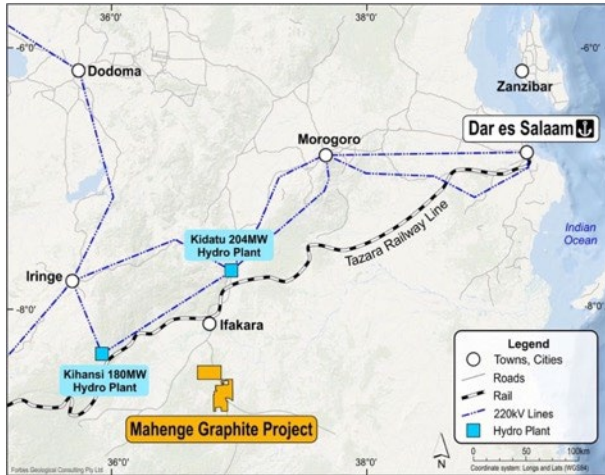
C1 Cash Costs are defined as Cash Costs excluding royalties and sustaining capex.

\*C1 Costs adjusted for flake size distribution: Based on forecast pricing for 94-95% in 2024, Mahenge's average price is forecast to be US\$107/t above the peer average due to a higher proportion of large flake. Mahenge's Adjusted C1 Costs of US\$359/t are based on C1 Costs of US\$466/t less the US\$107/t for above average revenue compared to the peer group.

Ignores the benefit of Mahenge's higher purity concentrates of up to 98% which could potentially improve BKT's relative position by up to ~US\$40-60/t per 1% above 95% pricing.

# Why Mahenge?

## Unique competitive advantages driven by Geology and Geography



### GEOLOGY

- ★ Mahenge's 213mt resource makes it the 4th largest graphite resource in the world<sup>1</sup>
- ★ 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 610 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<sup>1</sup>

- ★ AISC margin of 61%
- ★ Mine has capacity to produce high purity products to achieve pricing premiums
- ★ Mahenge has a very low life of mine strip of 0.8:1

### Low Capex<sup>1</sup>

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

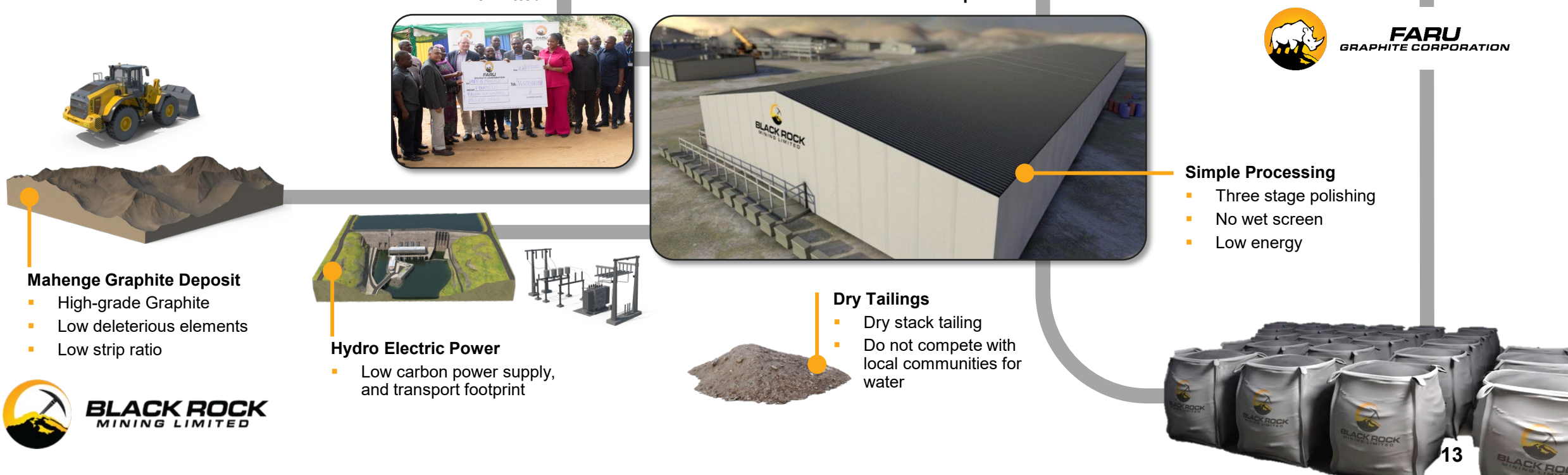
### Superior Economics<sup>1</sup>

- ★ NPV<sub>10</sub> of US\$1.376Bn
- ★ IRR 36%
- ★ 61% AISC Margin



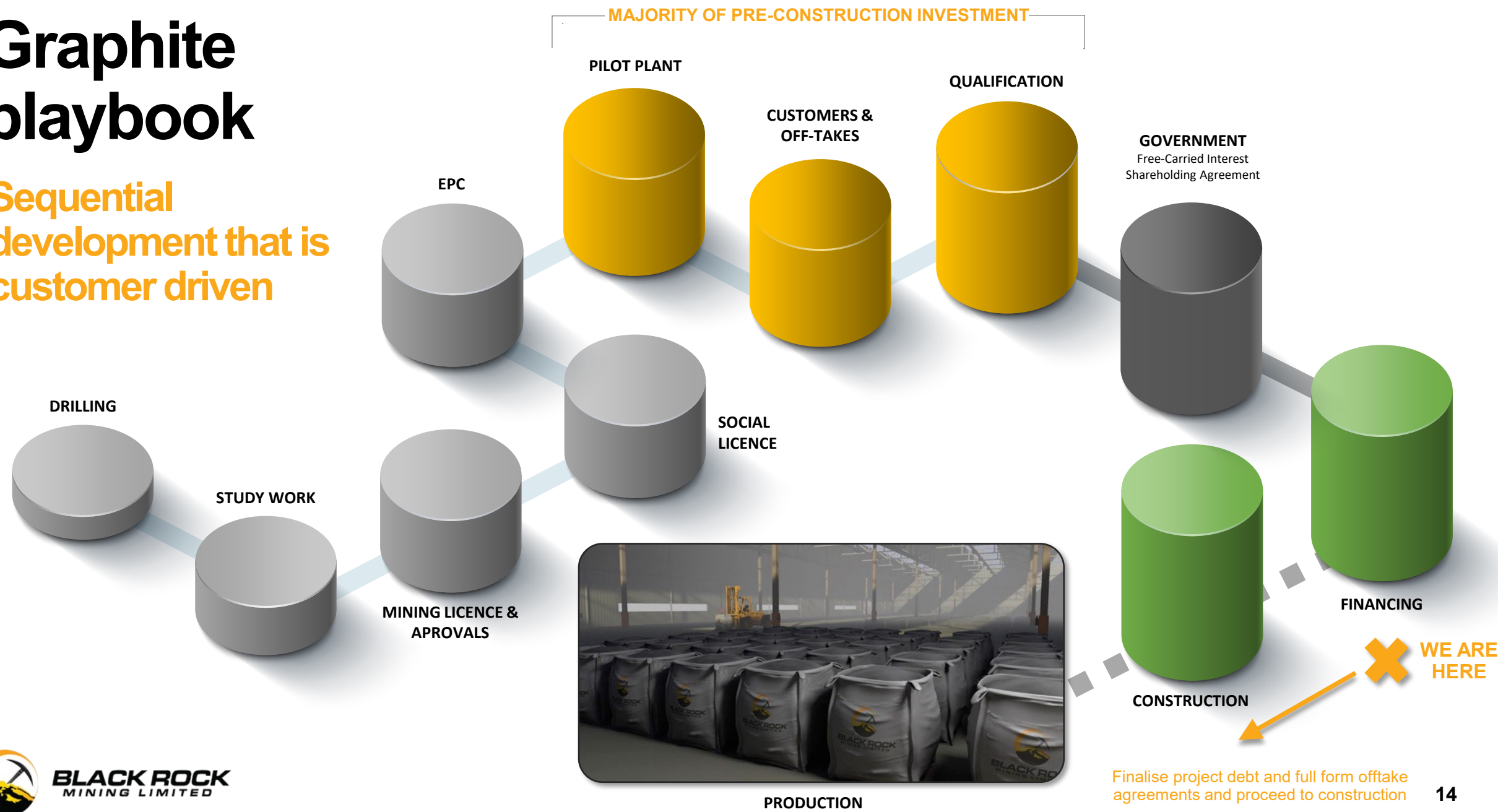
# ESG focused ecosystem

A new greener source of graphite with best practice whole of supply chain strategy



# Graphite playbook

Sequential  
development that is  
customer driven





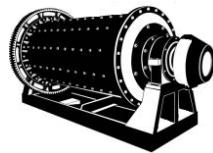
# Development timetable

**Aiming to have debt finance in place for Module 1 in the next few months.**

**Early works expected to commence near term**

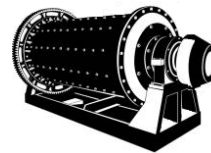
- Debt process well advanced, aiming for Term Sheets in Q2 CY23
- Black Rock is targeting up to 50% debt via traditional project finance
- Construction period 20 months<sup>1</sup>
- Targeting first production from Module 1 in early CY25

**Module 1**  
1mtpa



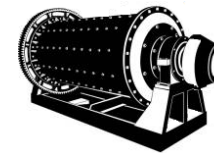
**Capex US\$182m<sup>1</sup>**  
**Production 89ktpa+**

**Module 2**  
1mtpa



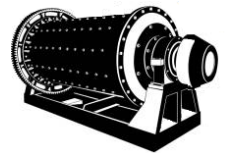
**Capex US\$107m<sup>1</sup>**  
**Production 85ktpa+**

**Module 3**  
1mtpa



**Capex US\$117m<sup>1</sup>**  
**Production 85ktpa+**

**Module 4**  
1mtpa



**Capex US\$104m<sup>1</sup>**  
**Production 85ktpa+**

# Strong near term news flow

Black Rock is well advanced on a number of important de-risking milestones, expected over the next few months

Black Rock sees a number of potential de-risking milestones due near term:

- Potential POSCO milestones:
  - Signing full-form offtake agreement
  - Signing full-form prepay agreement for US\$10m
  - Potential for POSCO to take up it's right to a BKT board seat<sup>1</sup>
- Potential debt financing milestones:
  - Aiming for credit-approved Term Sheets in Q2 CY23
  - Mandate debt lead arrangers
- Other potential financing milestones:
  - Sell LOM rights to fines for Module 2<sup>2</sup> (and potentially Modules 3 & 4)
  - Bring in a partner at the project level as a less dilutive option<sup>3</sup>
  - Also assessing several other potential options with a focus on minimising dilution and maximising value per share

<sup>1</sup>POSCO has a right to appoint a BKT director if it maintains an equity stake in Black Rock of >10% (currently 12.8%)

<sup>2</sup>Exclusivity period for Conditional Framework Agreement with Urbix on fines for Module 2 expired in early Feb 2023

<sup>3</sup>Interest received from industry participants, OEMs, mining companies, mining private equity funds and sovereign wealth funds. Macquarie mandated to run process

# BKT ready to deliver

The significant Tier 1 scale Mahenge graphite mine into an undersupplied and growing market





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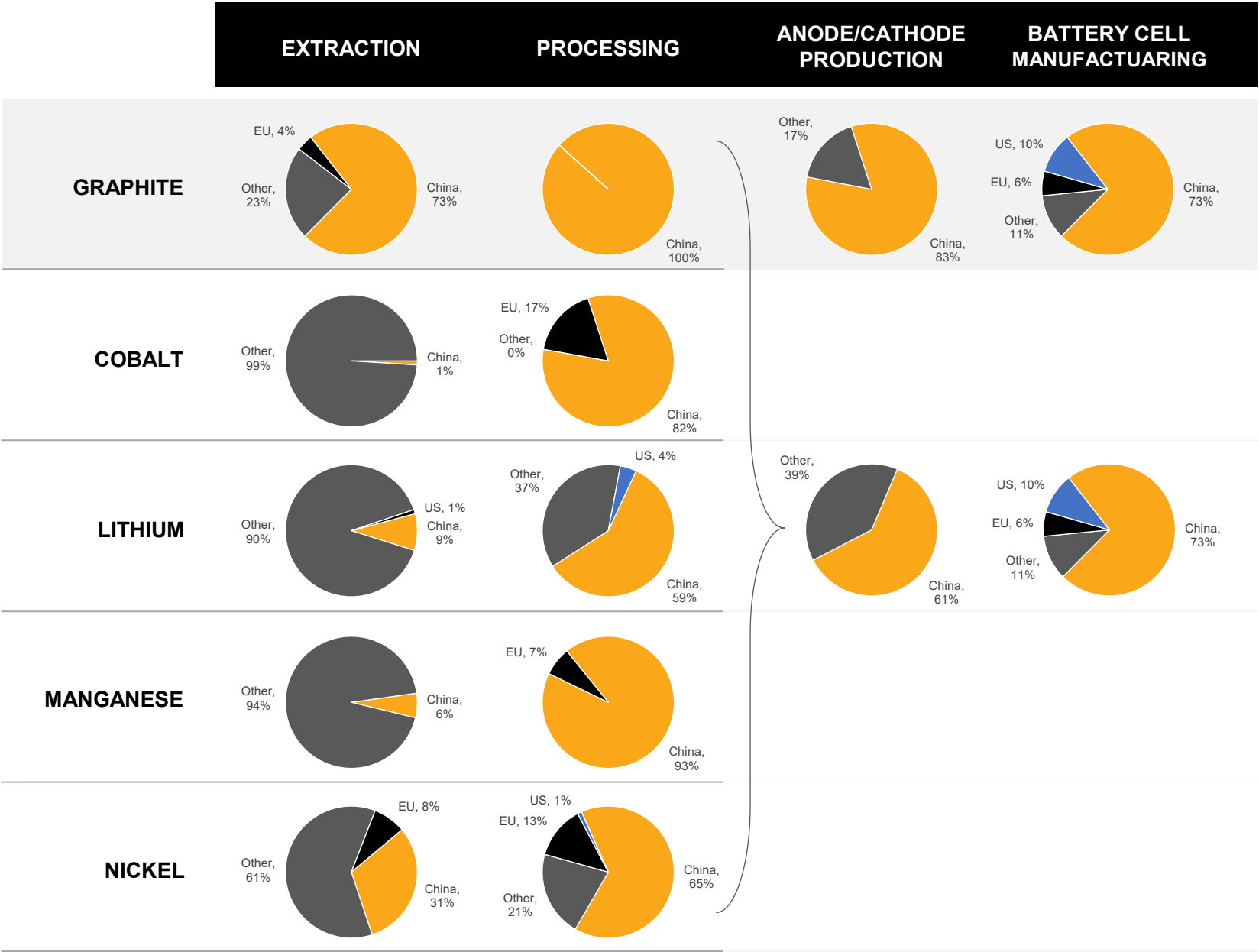
# Appendix



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# Li-ion battery raw materials supply chain by country

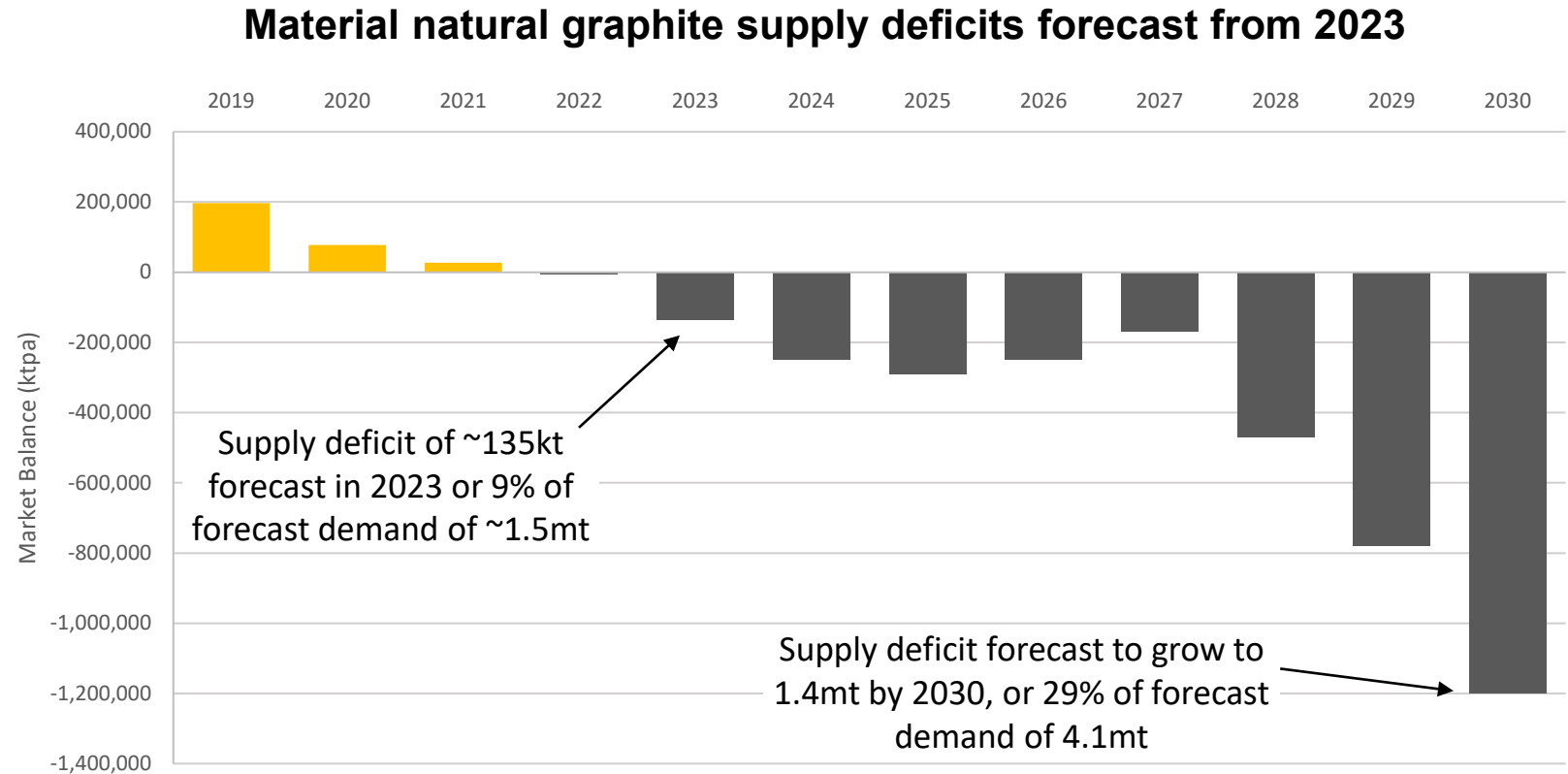
Graphite supply chain for batteries is more dependant on China than any other material





# Strong outlook for natural graphite

## Benchmark forecasting material natural graphite supply deficit in 2023



### Strong demand driven by:

- Strong uptake of electric vehicles and for decarbonisation
- Natural graphite expected to exceed synthetic graphite in batteries by 2025 (vs. historic split of 60/40 SG/NG)
- Another strong demand segment is graphite foils (requires large flake graphite)

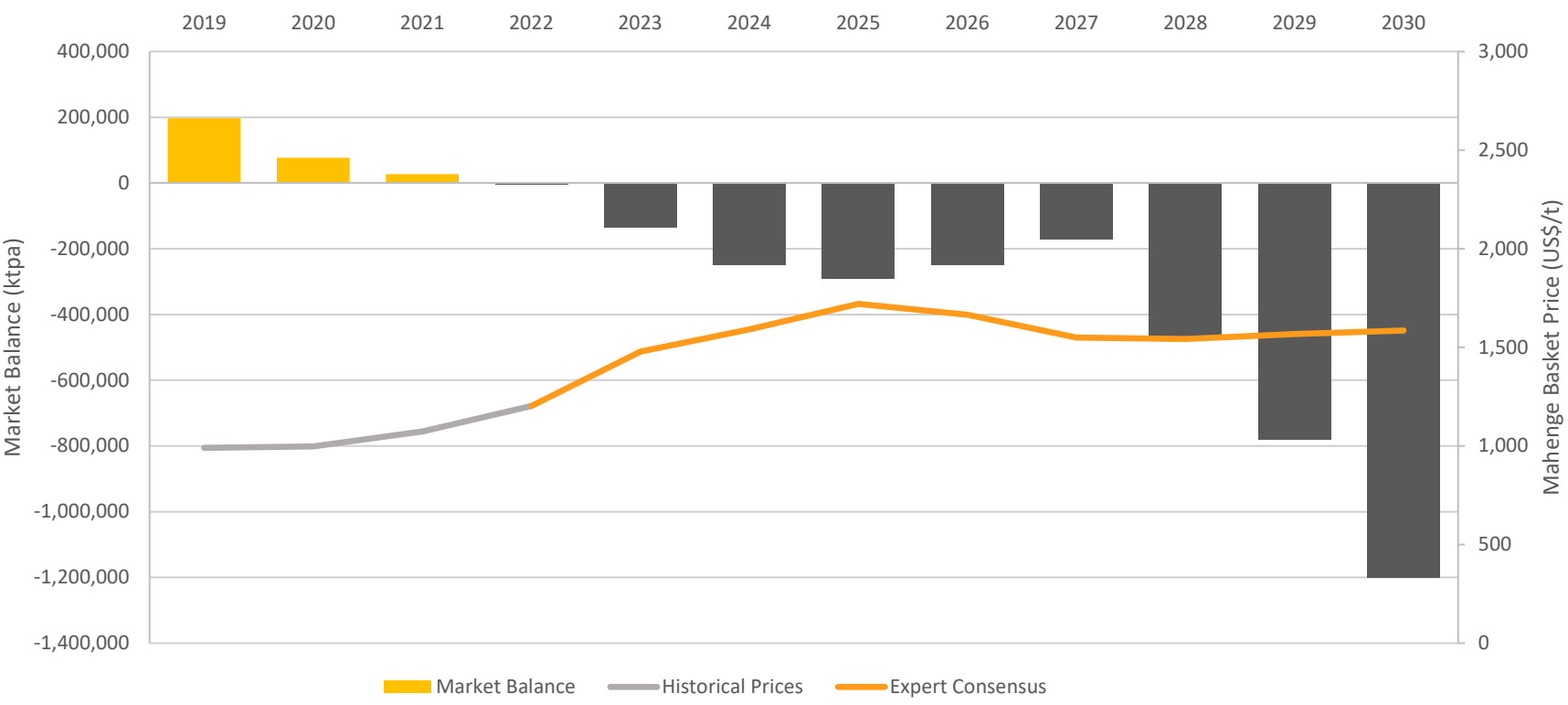
### Constrained supply due to:

- Qualification requirement can add several years to development of mines
- Project debt tends to be more difficult for graphite developers due to inability to hedge graphite and dominance of China in downstream processing of graphite

# Material natural graphite supply deficits forecast from 2023

Strong outlook for natural graphite

Expert Consensus pricing appears conservative given the magnitude of the forecast supply deficits



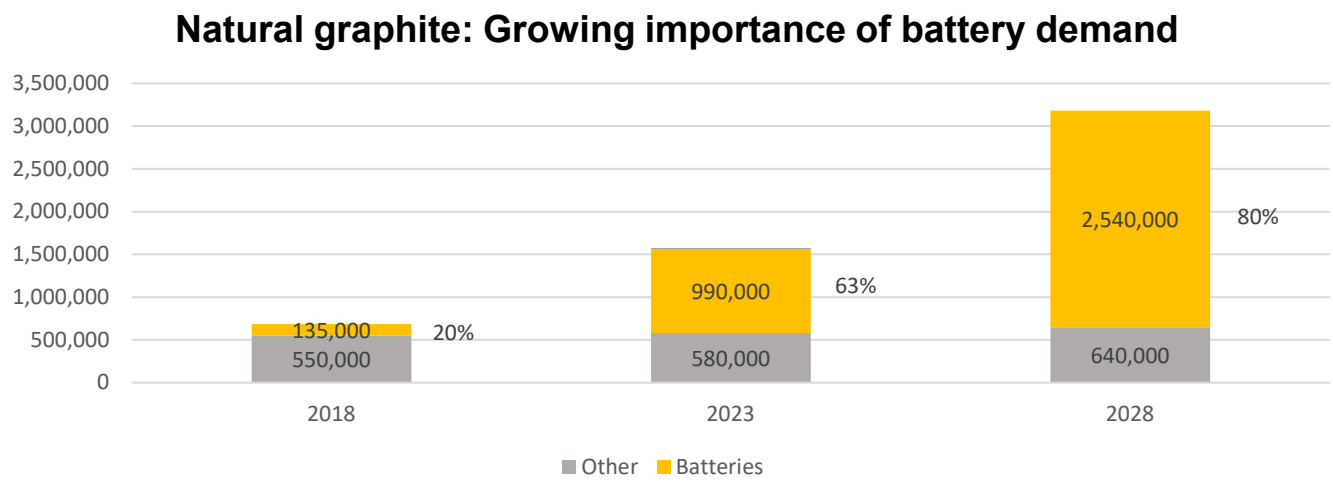
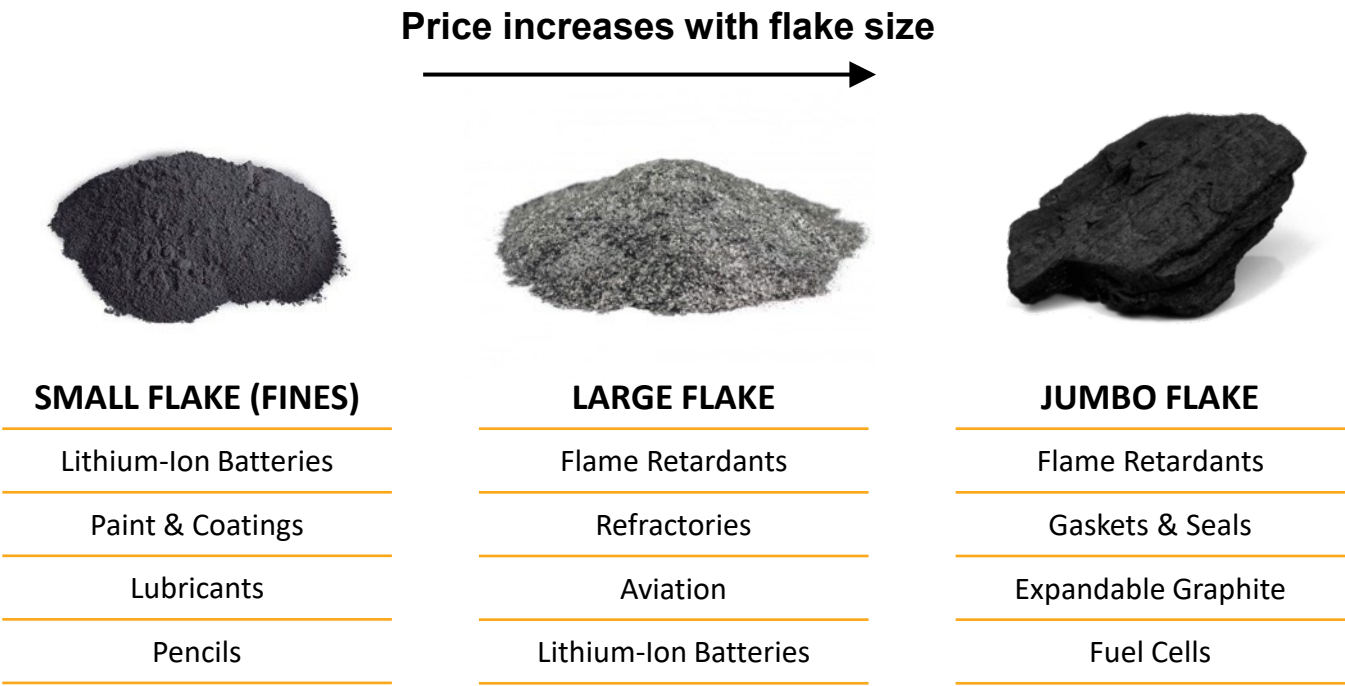
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Expert Consensus - 97% conc grade	US\$/t	1,203*	1,479	1,592	1,721	1,665	1,550	1,542	1,568	1,585	1,611	1,643	1,643
Year on year change	%		23%	8%	8%	-3%	-7%	-1%	2%	1%	2%	2%	0%

Sources: Public releases, Benchmark Mineral Intelligence, Black Rock Mining, Asian Metals, ICC Sino, RefWin

Note: Expert Consensus comprises average graphite forecast prices provided by Benchmark Mineral Intelligence, Fastmarkets and Wood Mackenzie. Historic prices for 97% conc have been estimated. \*Estimate based on ~12month average prices to end Sept 2022

# Graphite uses

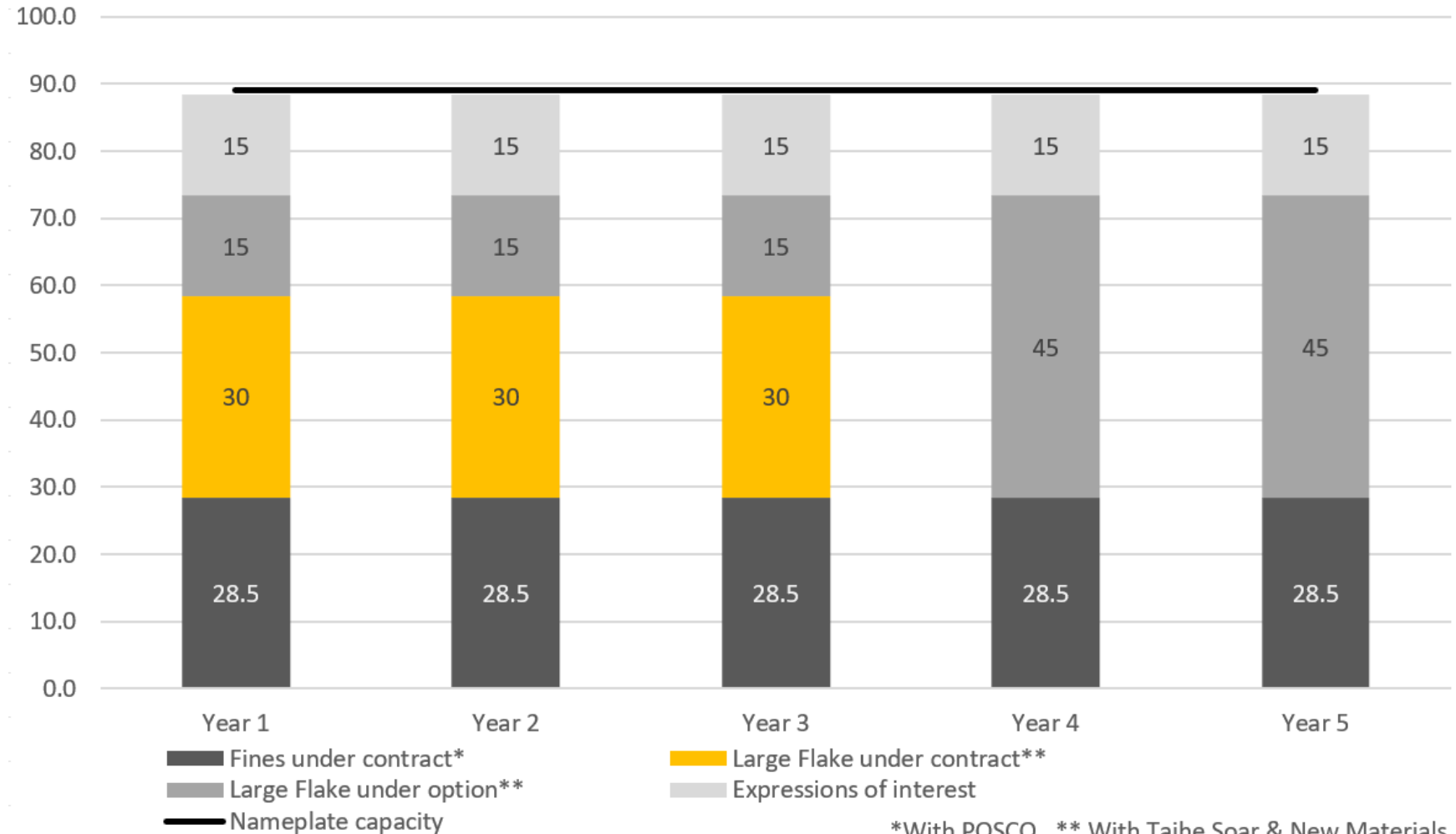
Black Rock has a diversified product mix with 60% exposure to the high margin large flake market



# Offtake agreements

Over 80% of Mahenge's Module 1 production is under binding offtake or option

Mahenge Offtake for Module 1 (89ktpa)



\*With POSCO. \*\* With Taihe Soar & New Materials