

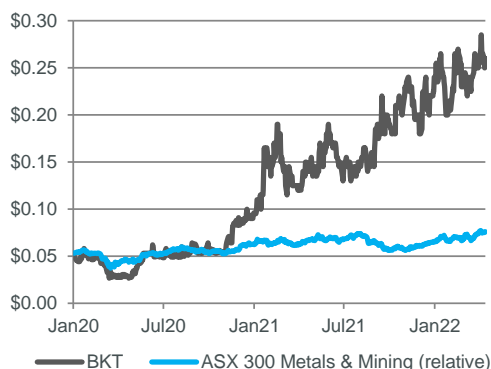
BLACK ROCK MINING LIMITED (BKT)

UPDATE: KNOW YOUR SUPPLY CHAIN!

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Date 19 April 2022

BUY **Share Price** **Target Price**
\$0.26 \$0.63

SHARE PRICE CHART



COMPANY DATA & RATIOS

Stock Details

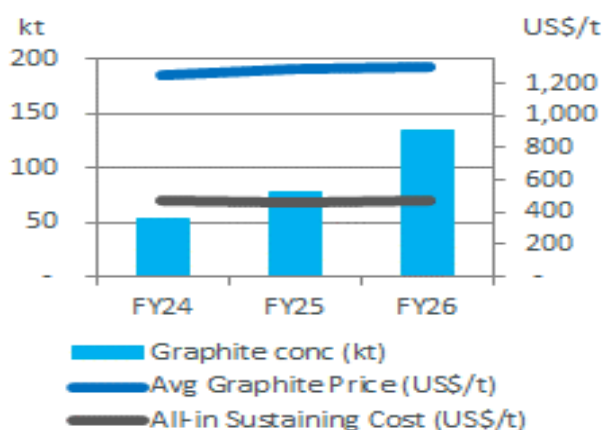
Share Price	0.26
Target Price	0.63
Implied Return	142%
Enterprise Value	235.6
Diluted MCap	243.6
Diluted Shares	937.0
Free Float	0.83
Avg Daily Value	0.39

Shareholders:

Copulos Group	15%
POSCO	14%
Top 20	50%

GICS Sector **Materials**

PRODUCTION AND COST PROFILE



EXCEPTIONAL & DERISKED GRAPHITE PROJECT

Black Rock is developing the Mahenge graphite project in Tanzania. This is one of the largest, highest quality and lowest-cost new sources of graphite supply available globally, which can feed into the rapidly rising demand for graphite anodes in Lithium-Ion Batteries. BKT has conducted the most significant pilot scale program in the industry in order to qualify its products with a range of potential buyers. As a result, POSCO entered into offtake and pre-payment agreements to support development. From a regulatory perspective, BKT has been the front runner in securing a Framework Agreement with the Tanzanian Government. Mahenge has access to key infrastructure and the Dar es Salaam port (One of Africa's largest and most active container ports) for export. Negotiations to secure Project finance with African and International banks are progressing well. FID is expected in the next few months and production by Q4 CY23. In addition, the management team has been scaled up to support its financing and development.

SOARING GRAPHITE DEMAND FOR EV BATTERIES

Graphite demand growth is largely driven by rapidly rising production of EVs. The batteries for each EV typically contain 50-100kg of graphite anodes, regardless of battery chemistry. The mix of natural and synthetic graphite (historically 40/60) is shifting towards natural graphite (Tesla/Panasonic at 50/50). Current demand for high purity fines to medium flake graphite for anodes is around 400kt pa and is forecast to rise 650% to around 3.0mt pa by 2030. Multiple new producers will be required to fill the gap. The requirements to qualify graphite into EV supply chains represent a major barrier to entry for new suppliers and provide BKT with a window to establish itself as a leading producer. With supply/demand deficits expected in CY22, we believe graphite prices have material risk to the upside!

ALLIANCE WITH KOREAN GIANT POSCO

In 2020 POSCO took a 15% stake in BKT for US\$ 7.5m to form a mutually beneficial Strategic Alliance. After perhaps the most extensive product testing programs in the industry, POSCO executed a term sheet for 100% offtake of Mahenge's fine flake graphite (about 30-40% of the production from Stage 1) and will provide a US\$10m prepayment facility. The investment in BKT was viewed by POSCO as a key step to secure adequate graphite supply for its fully Integrated Lithium-Ion Battery supply chain. POSCO is targeting a 20% market share of the global Lithium Battery market by 2030.

UPGRADED PRICE TARGET \$0.63

Blue Ocean Equities initiated coverage on BKT in December 2020 (Price Target of \$0.25, see [BKT Initiation](#)). Our Investment Thesis remains fundamentally unchanged and is further supported by BKT's significantly improved risk profile and favourable industry dynamics. We believe Mahenge ticks all the boxes for a successful development and based on its updated risk profile, we have increased our target price to \$0.63 per share, reflecting an implied return of 142%.

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INVESTMENT THESIS: FUNDAMENTALLY UNCHANGED

MACRO: A STRONG OUTLOOK FOR GRAPHITE

One of the key growth markets for graphite is anodes for Lithium-Ion Batteries (LIBs) in Electric Vehicles (EVs). Around 90% of the EVs today use graphite in the anode and it is expected to remain the preferred anode material for the foreseeable future.

Graphite is one of the largest volume active materials in LIBs and demand is expected to increase substantially as EV adoption increases. In addition, the share of natural graphite in LIBs is increasing (historically circa 40% natural, 60% synthetic) with Tesla/Panasonic already using 50% natural and new batteries (i.e. the 4680 model) targeting 55-60% natural graphite. Industry forecasters predict substantial growth in graphite demand for LIBs and other industrial applications. The growth in demand combined with low inventory levels and relatively inelastic supply is expected to result in supply/demand deficits from 2022 and to further impact prices.

STOCK SPECIFIC: WHY BLACK ROCK MINING?

Black Rock Mining Limited (Black Rock or the Company) (ASX:BKT) is an advanced ~A\$240m graphite developer focused on its flagship 84%-owned Mahenge graphite project in Tanzania. BKT has \$8m in cash and no debt. Our investment thesis for Black Rock is:

- **Tier 1 scale, low technical risk, low-cost graphite project:** Mahenge's hosts the 2nd largest JORC compliant graphite reserve globally (71mt) and the 4th largest graphite resource (213mt). The project has a very low strip at 0.8:1 life of mine. BKT initially tested 110t of material at independent pilot plants and in December 2021 completed a 500t qualification campaign, representing the largest global graphite qualification campaign, to provide customers and financiers with high confidence in BKT's ability to consistently supply qualified product over Mahenge's mine life. The combination of low deleterious impurities and favourable metallurgy allow BKT to produce high total graphite content (TGC) concentrates (up to 99%) from simple low-cost conventional flotation. This provides BKT with a significant cost advantage and optionality to produce higher TGC concentrates (higher price).
- **Strategic Alliance & Offtake with POSCO:** The comprehensive product testing and qualification process has demonstrated BKT's ability to produce high-purity, low-deleterious graphite concentrate across its two initial deposits and over the mine life, culminating in a Strategic Alliance with POSCO Group - a major milestone for BKT (refer pg. 5).
- **Materially De-risked, Nearly Development Ready:** In addition to its low technical risk, low capital intensity, low cost structure, favourable location, scalable production to match demand growth (with potential to fund from cashflows to minimise dilution), offtakes and strong ESG focus, BKT has secured Tanzanian Government support for development. Key development building blocks are in place with a credible project finance process underway.
- **Catalyst Rich:** BKT's key near term milestones include: documentation of long form offtake agreements, new offtakes (Stages 1 & 2), outcomes of project finance process and FID.
- **Quality Board & Management Team:** Black Rock is chaired by Richard Crookes, an experienced Geologist with +30 years' mining industry experience, and led by John de Vries, an experienced mining engineer with +35 years' experience including operational roles at BHP Nickel West and St Barbara. Over the last months, the Management team has expanded in scale and skills to support the transition towards development (refer pg. 17).

KEY MILESTONES AND UPDATES

Black Rock (ASX:BKT) is a ~A\$240m market cap graphite developer focused on its flagship 84% owned (Tanzanian Government 16%) Mahenge graphite project in Tanzania. The company has \$8m in cash and no debt. Blue Ocean Equities initiated coverage on BKT in December 2020 with a Speculative Buy recommendation and a Price Target of \$0.25 (refer [BKT Initiation](#)). Our Investment Thesis remains fundamentally unchanged and following a series of key milestones over the last 15 months and favourable industry dynamics (impacting current and expected graphite prices), we have updated our valuation and price target. Key milestones/updates since December 2020 include:

- Completion of an Industry leading product qualification campaign;
- Alliance with POSCO, including a substantial holding (15%) in BKT and, following product qualification process, an offtake for 100% of Fines (Stage 1) and a US\$10m pre-purchase facility;
- Binding offtake agreements with customers for Large Flake concentrate;
- Reaching key agreements with Tanzanian Government on joint venture structure, SML and exemptions to the Mines Act 2017;
- Commencement of traditional project finance process seeking the lowest cost of capital and minimising dilution to BKT shareholders over the development funding;
- Management team enhanced with key commercial, project development and finance appointments; and
- Material recovery in graphite prices driven by decarbonisation/EV transition and expected supply/demand deficits.

COMPLETION OF INDUSTRY LEADING QUALIFICATION CAMPAIGN

In December 2021, Black Rock successfully completed the operation of a large-scale qualification plant campaign that processed 500 tonnes of bulk graphite to produce concentrate samples aimed at completing customer qualification works at specification with POSCO and potential large flake customers in North America, Asia and Europe.

The plant, located in Shandong province, China, commenced operations in August 2021 with ore parcel samples processed composited from eighteen locations across the entire strike length of the Ulanzi orebody at Mahenge.

This sample strategy was designed to represent the first ten years of the Mahenge Ulanzi pit and is representative of the expected feed profile for the first two planned stages, representing production of 160ktpa.

The Company believes that relative to its peers, it has undertaken the largest processing of graphite ore globally with over 600 tonnes through three pilot plant campaigns as part of an extensive customer qualification works. We believe this work has materially de-risked the project for customers and financiers by:

- providing larger volumes of product to allow existing customers such as POSCO and selected large flake potential customers in North America, Asia and Europe, to complete necessary qualification work required to reach binding offtake agreements;

- demonstrating a “whole of orebody” qualification to provide high confidence with customers and financiers in the Project’s ability to supply a consistent, high-quality commercial product over the life of the deposit;
- minimised flake degradation on the high-margin larger flake products while simultaneously maximising recoveries;
- confirmed indicative plant performance in a commercial setting which showed a ramp-up to steady state operation producing products on specification within a short timeframe;
- identified operational efficiencies with respect to a continuous operating circuit, equipment used and automation; and
- supports discussions with respect to the debt financing process.

We view this comprehensive customer qualification process as the Industry Gold Standard and believe that while Mahenge has outstanding technical qualities, Black Rock’s management team have learnt from key mistakes by industry peers (which were very costly to shareholders).

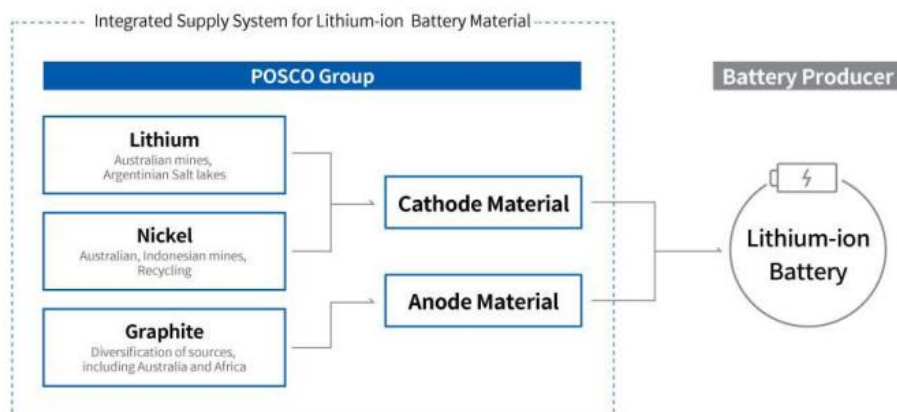
POSCO ALLIANCE – VALIDATION OF MAHENGE’S PRODUCT QUALITY

In February 2021, POSCO entered into a US\$ 7.5m equity subscription agreement for a 15% shareholding in Black Rock. In December 2021, following completion of Black Rock’s qualification campaign, POSCO signed an offtake agreement for 100% of Mahenge’s Fines and agreed to a US\$ 10m pre-payment facility (repayable via delivery of product once in production).

We believe that the strategic importance of this agreement is a key milestone for Black Rock due to POSCO’s current position in the Asian (ex-China) supply chain and strategic objectives in the LIB market.

POSCO Group is a leading Korean group with revenues of US\$62.7Bn in 2021. It is well known for its steel operations (the most competitive steelmaker in the world, 12 years in a row according to World Steel Dynamics), although it also operates construction, materials, infrastructure, agribusiness, LIBs and hydrogen businesses. Faced with the megatrends of low-carbon and green technologies, POSCO Group has made the strategic decision to become a leading company in LIB materials. It now has the world’s only integrated supply system for LIBs, jointly with POSCO Chemicals, and has focused on securing commodities from selected projects in different countries for its anode material, cathode material and LIB plants in South Korea.

Summary of POSCO’s Integrated Lithium-ion Battery Supply Chain

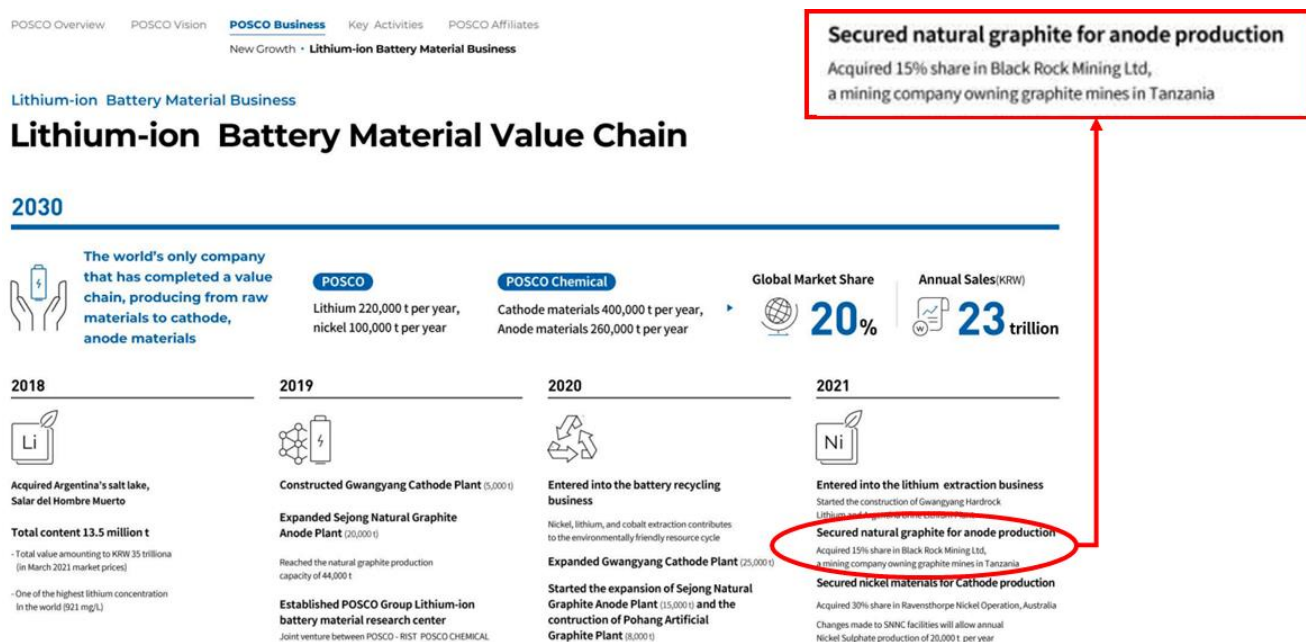


Source: POSCO Group, 2021 corporate presentation

By 2030, POSCO seeks to have a 20% share of the LIB global market (representing annual revenue of US\$ 25Bn to POSCO) supported by its fully integrated supply chain, which sources key LIB inputs globally as illustrated below:

- Lithium from Australia (Pilgangoora) and Argentina (Salar del Hombre Muerto);
- Natural Graphite from Tanzania (Black Rock's Mahenge) and potentially from one other mine in Australia; and
- Nickel from Australia (Ravensthorpe), Indonesia and South Korea (recycled).

POSCO and POSCO Chemicals' Integrated LIB Materials Value Chain

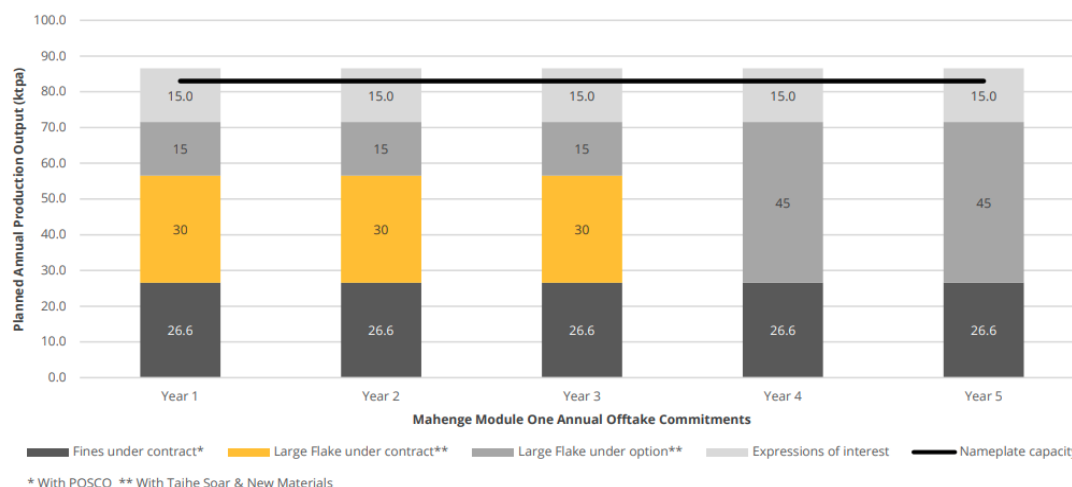


Source: POSCO Group, 2021 corporate presentation

ADDITIONAL OFFTAKE AGREEMENTS – LARGE FLAKE

In addition to POSCO's offtake (material suitable for anode LIBs), Black Rock has secured binding offtake agreements with two major trading groups for its Large Flake product. This type of product has historically commanded materially higher prices due to its relative scarcity and high value end use for applications including flame retardants, refractories and aviation.

BKT's Offtakes – Stage One



Source: Black Rock

Taihe Soar (Taihe Soar (Dalian) Supply Chain Management) is a trading house based in the port city of Dalian (North-East China) and New Materials (Qingdao Yinuoxin New Material Co., Ltd) is a trading company located in the port city of Qingdao (North-East China).

URBIX PARTNERSHIP – OPTION TO ACCESS WESTERN LIB SUPPLY CHAIN

In addition to its existing offtakes, Black Rock has entered into a memorandum of understanding with Urbix, a US based Clean Tech and Advanced Materials company, to establish a “whole of supply chain” collaboration to drive commercial advantages to Black Rock’s and its customers.

Urbix specializes in all aspects of the graphite value chain, including supplying graphite ore, refined graphite powders, graphene, other advanced graphite products and advanced energy storage cell designs and materials. It uses proprietary methods for the environmentally conscious purification of various graphite products. Its approach seeks to differentiate from outdated graphite refinement methods such as those that have caused near irreversible environmental damage in China. Urbix has developed proprietary low-temperature, non-oxidative purification technique, that avoid the use of Hydrofluoric Acid and the huge energy consumption often required to achieve the same purities. These patented refinement techniques simultaneously lower production cost while minimizing impact on the surrounding environment.

We believe that this partnership has interesting potential to further embed Mahenge’s products within the growing battery grade market.

TANZANIA MINING INDUSTRY BACK – BLACK ROCK LEADS THE PACK

After the legal overhaul of Tanzania’s mining laws which commenced in 2017, driven by President John Magfuli seeking to increase State revenue from natural resources and to ban the export of unprocessed ores, mine development in Tanzania stalled as existing mining leases were reviewed and new ones halted. The high-profile saga with Acacia Mining culminated in Barrick Gold’s acquisition of Acacia Mining in October 2019 together with a US\$300m agreement to settle with the Tanzanian Government the outstanding tax dispute. President John Magfuli passed away in March 2021 and the then Vice President, Samia Suluhu Hassan was sworn President.

In December 2021, the President of Tanzania, Samia Suluhu Hassan, attended in person to the signing of a Framework Agreement with Black Rock at a ceremony held in Dar es Salaam. Under the Agreement the following structure was settled with the Tanzanian Government:

- A Joint Venture Company, Faru Graphite Corporation (Faru), has been established to develop the Mahenge Graphite Mine. The Tanzanian Government will own a 16% undiluted free-carried interest shareholding in Faru, with 84% owned by Black Rock;
- A Special Mining Licence (SML) will be granted to unify existing Mining Licences ML 611/2019 and ML 612/2019 and a part of Prospecting Licence PL 13752/2019;
- Existing approved Environmental Permits and Resettlement Action Plans granted to ML's 611 and 612 will be grandfathered to the SML; and
- An exemption will be issued to Black Rock from the provisions of the Mines Act 2017 requiring SML developers to issue 5% of stock to local interests and listing of 30% of stock on the Dar es Salaam Stock Exchange.

The signing of the Framework Agreement is a key de-risking milestone for Black Rock as it removes any material risk to develop Mahenge from a Tanzanian permitting perspective. It also provides significant benefits to Black Rock as the exemption to some provisions of the Mines Act 2017 reduces complexity for the development capital raising.

We believe that the new government led by President Samia Suluhu Hassan is seeking a return to normality for Tanzania's mining industry and is incentivised to support and expedite new mine developments. The return of BHP to Africa, via its \$100m investment in Kabanga Nickel (hosts the world's largest development ready nickel project in NW Tanzania) points to the growing confidence of future stability on the regulatory and fiscal regime within Tanzania's mining industry.

PROJECT DEBT RAISING PROCESS UNDERWAY

Following the key milestones with the Tanzanian Government and product qualification, Black Rock and its debt advisors have commenced Mahenge's project finance process. This process is well underway with the selection of independent market, technical and ESG consultants for banks and strong interest from African and International Project Finance Banks to participate in the process. We believe that, while in the past graphite projects have not been strongly supported by senior debt providers, the combination of high-quality, low-cost and scalable nature of the project with key de-risking initiatives by Black Rock (including extensive test work), offtakes and Tanzanian Agreement would be supportive of debt finance within the 50-55% range. In addition, Mahenge is expected to be a greener source of new graphite due to its technical attributes (low strip ratio, low deleterious elements and metallurgical characteristics requiring simple processing to obtain with high grade concentrates with relatively low energy inputs), low transport footprint and access to low-carbon, hydroelectric power. Black Rock has engaged Digbee ESG to provide ESG certification and compliance with Equator Principles for the Project finance process as well as external stakeholders going into development.

The conclusion of the debt raising process is expected to be a major milestone for Black Rock. In addition to securing a large proportion of development capital at a relatively low cost of capital, ***we view the culmination of an extensive market, technical and ESG due diligence process by banks, who by nature are highly conservative and tend to focus on risks and potential downsides, as important validation for equity investors of Mahenge's industry leading risk profile.***

ENHANCED MANAGEMENT TEAM

Over the last year, Black Rock has added scale and capabilities to its management team. The addition of the following members to the management team adds significantly to the team's skill set and has prepared Black Rock to complete a major development financing, contract finalisation and construction:

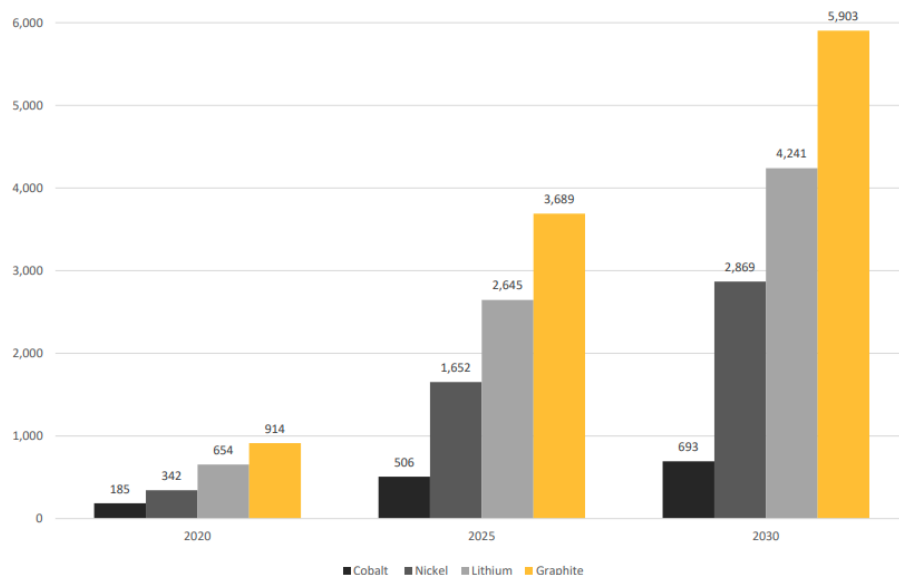
- **Daniel Patany, GM Engineering & Technical** – extensive experience with large African based mining projects from concept to execution, commissioning and ramp up, including Syrah's Balama, and CPC Engineering's DFS Manager for Mahenge since 2018 – ***joined June 2018***
- **Steuart McIntyre, GM Corporate Development** – experienced mining analyst with extensive capital markets experience within EV thematic and deep graphite industry knowledge having previously covered Black Rock – ***joined October 2021***
- **Paul Sims, Chief Financial Officer** – highly credentialed finance and project development resources executive with previous roles at BHP, WMC Resources, Minara Resources and Karara Mining – ***joined February 2022***
- **Greg Wheeler, Chief Commercial Officer** – extensive commercial experience in marketing, logistics and commercial negotiations with previous roles at PwC, Austal and Wellard Holdings Group – ***joined March 2022***

GRAPHITE PRICE RECOVERY, RISK TO THE UPSIDE

The magnitude of the global technology shift towards EVs is potentially unprecedented and remains at a relatively early stage. We note that Benchmark Mineral Economics, a leading industry forecaster and source of pricing benchmarks for EV commodities, recently indicated that since January 2020, ***Benchmark's lithium prices have increased by over 700%, nickel by 250%, cobalt and manganese by 100% and graphite by over 25%.*** At present, there is not enough of these raw materials in the pipeline to take the majority of EV makers beyond 2030. Benchmark notes that while +\$500bn has flowed into building the 285 EV battery Gigafactory's around the world (from 3 plants in 2015) – and \$150bn last year alone – critical mineral mines and mid-stream processing plants have not seen anywhere like this type of investment.

This synchronised transition to EVs across countries and OEMs is expected to drive significant demand for battery materials and particularly for graphite as this material is required in significant quantities, irrespective of battery chemistry.

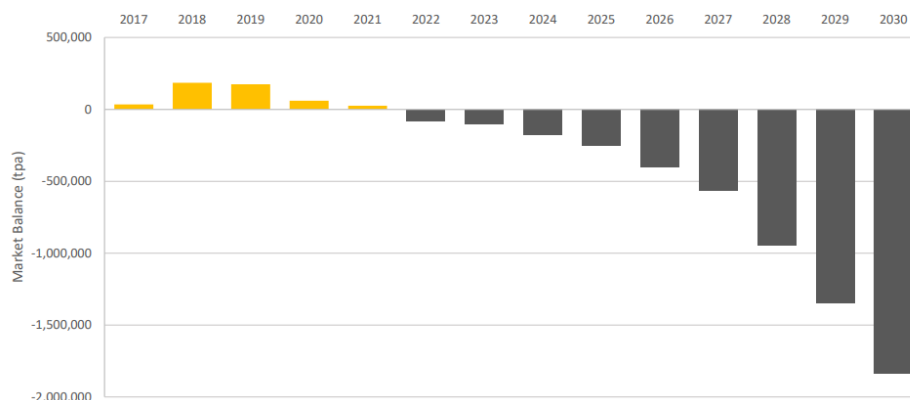
Battery Raw Material Demand Growth (kt)



Source: Black Rock, Benchmark Mineral Intelligence

The combination of increased demand with minimum new supply of appropriate quality for this market is expected to result in structural deficits commencing this year and accelerating through the balance of the decade.

Structural Deficits in Natural Graphite Expected from 2022

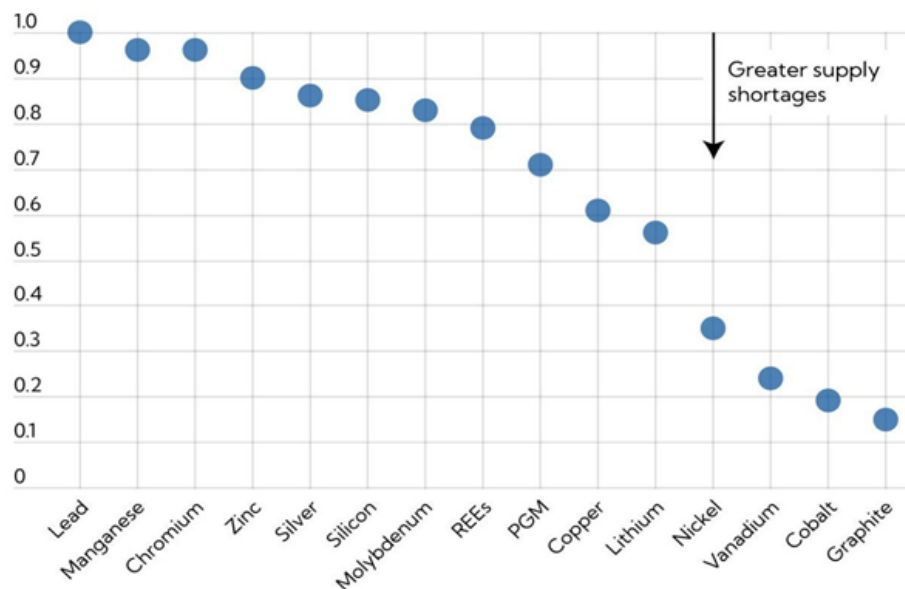


Source: Black Rock, Benchmark Mineral Intelligence

As observed with lithium recently, once availability of supply (particularly ex-China) becomes an issue at any price (although we note that anode quality graphite could have a natural price cap at around the significantly higher price of synthetic graphite) for the feasibility or long-term viability of new LIB mega factories, a potential rush to lock up existing qualified supply sources may be observed and price increases to incentivise additional supply could be expected. We believe that Black Rock is in prime position to benefit from current industry dynamics.

Our thesis around tightening supply/demand dynamics for LIB quality graphite and price trajectory also correlates with observations made by several industry observers. By way of example, a recent analysis by the International Energy Agency points to current graphite production rates as the most inadequate, within all critical minerals, to satisfy future demand under a net-zero scenario.

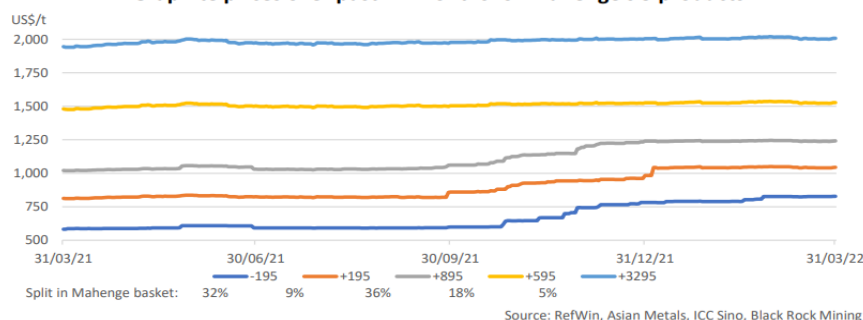
Supply/Demand ratio for critical metals under a Net Zero scenario



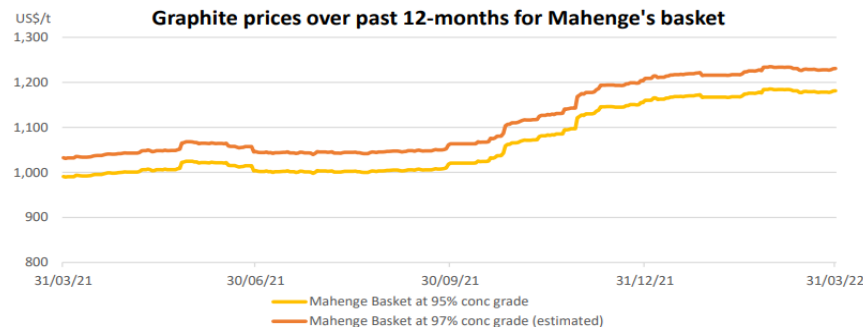
Source: IEA, US Geological Survey 2021 and IMF

In terms of spot prices for Mahenge's different products, prices for Large and Jumbo Flake concentrates have been relatively stable with most of the recent increase observed on Fines (EV anode material). However, we note that inventories for Large Flake graphite in China are currently at its lowest (near zero) which indicates that higher prices are also to be expected.

Graphite prices over past 12-months for Mahenge's 5 products



Graphite prices over past 12-months for Mahenge's basket



Source: Black Rock

RECAP ON INVESTMENT PROPOSITION

This section provides an update of key valuation assumptions for Black Rock.

KEY VALUATION INPUTS

Our financial model for Black Rock continues to reconcile well with Black Rock's eDFS (and more recent Company announcements) for Mahenge and we have continued to adopt most of the company's assumptions. However, we have update Mahengue's graphite basket price, Fx, discount rate and development timeline. We also maintain a number of conservative assumptions in respect of expansions and concentrate, as summarised below:

Key parameter	eDFS	Blue Ocean	Commentary
3 Modular Expansions	In years 1,2,3	In years 2,4,6	We assume a slower expansion
Graphite Concentrate TGC	97.5%	96.0%	Given the large volume of test work, we are confident BKT should be able to produce a 97-99% concentrate. However, we have been conservative on our forecasts and acknowledge Mahenge's graphite has favourable metallurgical properties (the marginal cost to produce a higher concentrate could be significantly lower compared to the higher price point).
Net Avg Graphite Price	~US\$1,301/t	~US\$1,200/t around first production, US\$1,360/t average	We have increased the average net realised price from our Initiation Report to reflect spot prices. We are bullish on medium term graphite prices, however we have reflected a relatively conservative price deck in line with management expectations, as base case. We highlight there could be risk to the upside, particularly for the Fines product (POSCO's offtake) if no material supply becomes available in the medium term as well as for Large Flake given the low level of stockpiles in China at present.
Discount rate	10% nominal	12% nominal	We have used a weighted average cost of capital to estimate the discount rate.

Key parameter	eDFS	Blue Ocean	Commentary									
			We believe that debt of 50-60% of Mahenge’s development funding requirement is feasible and have adopted the mid-point of 55%. For an emerging project in Sub-Saharan Africa, we estimate that cost of debt could be in the order of 10% pa. Taking into account Tanzania’s sovereign risk, we have adopted a cost of equity of 18%. Under Tanzania’s 30% corporate tax rate, the resultant WACC is approximately 12%									
Fx: AUD/USD	0.70	<table><tr><th>FY2</th><th>FY2</th><th>+FY2</th></tr><tr><th>2</th><th>3</th><th>4</th></tr><tr><td>0.74</td><td>0.76</td><td>0.78</td></tr></table>	FY2	FY2	+FY2	2	3	4	0.74	0.76	0.78	We have updated the AUD/USD exchange rate to reflect Bloomberg’s Consensus
FY2	FY2	+FY2										
2	3	4										
0.74	0.76	0.78										
NPV post-tax	US\$1,160m or A\$1,547m	US\$643m or A\$858m	There is substantial upside potential given BKT’s current Market cap is ~A\$220m.									
IRR post-tax	44.8%	46.5%										

Source: Black Rock, Blue Ocean Equities

GRAPHITE PRICES

The table below summarises recent graphite prices as presented by Black Rock, based on several industry sources. The gross average price for Mahenge's products is provided in the box. The net FOB price for BKT is estimated to be approximately US\$100/t lower due to selling fees, shipping charges and initial product discounts.

Current Graphite Concentrate Prices

Flake Size	-195	+195	+895	+595	+3292	
Graphite Prices (US\$/t)						
95% concentrate	825	1100	1250	1510	2000	
96% concentrate	865	1135	1295	1580	2095	
97% concentrate	895	1170	1345	1660	2195	
98% concentrate	925	1210	1400	1745	2310	
Mahenge Product Split	32%	9%	36%	18%	5%	Average Price
95% concentrate	264	99	450	272	100	1,185
96% concentrate	277	102	466	284	105	1,234
97% concentrate	286	105	484	299	110	1,284
98% concentrate	296	109	504	314	116	1,339

Source: Black Rock, Blue Ocean estimates

NPV SENSITIVITIES

The table below illustrates key sensitivities to Mahenge's NPV, based on our assumptions, under a range of graphite prices and discount rates.

NPV (US\$m)		Graphite Price (US\$/t)				
		900	1,100	1,300	1,500	1,700
Discount	6%	927	1,196	1,464	1,733	2,002
Rate	8%	712	924	1,137	1,350	1,562
(Nominal)	10%	550	721	891	1,062	1,232
	12%	428	566	704	843	981

Post Tax IRR (%)		Graphite Price (US\$/t)				
		900	1,100	1,300	1,500	1,700
	35%		40%	44%	48%	52%

Source: Blue Ocean Equities

PRICE TARGET & RATING

While developing a new graphite mine into production entails a series of technical and commercial risks, the expected reward for BKT shareholders is considered to be potentially very attractive based on current prices, industry dynamics and validation provided by the strategic relationship with POSCO.

We regard Black Rock as a relatively de-risked developer as it nears FID and development with significant potential reward to investors following construction. We view the ongoing project finance process as a major de-risking event for equity investors and reiterate our Buy recommendation with a 63c revised price target, representing an implied potential return of ~142%.

Our 63c Price Target is based on:

- A DCF for the Mahenge graphite project at a net average realised graphite price of ~US\$1,361/t, based on:
 - Recent spot graphite prices and industry trends
 - Capex and opex as most recently updated by BKT
 - BKT free carries the Tanzanian Government's 16% interest (repaid to BKT once production commences before dividends are paid)
 - Assuming sales of 100% of Mahenge's production
 - At a concentrate purity of 96%, even though the company's large scale test work has demonstrated it can produce conc purity of 98% at scale (and up to 99%).
- We then apply a 30% discount to our NPV to account for development risks ahead, as well as potential future dilution

KEY RISKS

Black Rock is exposed to all the normal risks associated with the development of an advanced mining project, including, metallurgy, permitting, funding, construction risks and normal project ramp up and commissioning risks.

As this stage, one of the key risks to our valuation is the documentation of Tanzanian Framework Agreement, long form offtake agreements and completion of project financing prior to construction.

Assuming Black Rock can successfully secure funding and make the transition into production, its revenues will be derived from the sale of graphite products. Fluctuations in the prices of graphite as well as the Australian dollar could impact the Company's reported cash flow (in A\$), profitability and share price.

As Black Rock's Mahenge Graphite project is based in Tanzania, an investment in Black Rock also carries Tanzanian sovereign risk. Following the recent sector-specific legislative changes, we expect Tanzania to return to operating as a relatively stable and safe jurisdiction compared to most other jurisdictions in Africa, but a higher risk jurisdiction compared to Australia and other Western jurisdictions.

MODEL SUMMARY: FINANCIALS & VALUATION



Black Rock Mining Limited

Code: BKT

Stock Details

Recommendation:	BUY		
Target Price	\$0.63	Share Price	\$0.26
NAV	\$0.63	52 Week High	\$0.29
Implied Return	142%	52 Week Low	\$0.13

Enterprise Value	\$236m
Diluted MCap	\$244m
Diluted Shares	937m
Free Float	83%
Avg Daily Value	\$0.39m

Macro Assumptions	FY21	FY22E	FY23E	FY24E	FY25E
Graphite Price, net (US\$/t conc)	1,010	1,100	1,200	1,250	1,287
Exchange Rate (A\$/US\$)	0.74	0.74	0.76	0.78	0.78

Profit & Loss (A\$m)	FY21	FY22E	FY23E	FY24E	FY25E
Revenue	-	-	-	85	130
Operating Costs	-	-	-	(32)	(46)
Operating Profit	-	-	-	53	84
Corporate & Other	(3)	(3)	(4)	(5)	(5)
Exploration Expense	-	-	-	-	(0)
EBITDA	(3)	(3)	(4)	48	79
D&A	(0)	(0)	(0)	(4)	(6)
EBIT	(3)	(3)	(4)	44	73
Net Interest Expense	0	-	-	(8)	(8)
Pre-Tax Profit	(3)	(3)	(4)	36	64
Tax Expense	-	-	-	(11)	(19)
Minorities	-	-	-	-	-
Underlying Profit	(3)	(3)	(4)	25	45
Significant Items (post-tax)	(0)	-	-	-	-
Reported Profit	(3)	(3)	(4)	25	45

Cash Flow (A\$m)	FY21	FY22E	FY23E	FY24E	FY25E
Operating Cashflow	(2)	(3)	(4)	48	79
Tax	-	-	-	(11)	(19)
Net Interest	0	-	-	(8)	(8)
Net Operating Cash Flow	(2)	(3)	(4)	30	51
Exploration	(1)	(4)	(1)	(1)	(0)
Capex	-	-	(122)	(31)	(68)
Acquisitions / Disposals	-	-	-	-	-
Other	-	-	-	-	-
Net Investing Cash Flow	(1)	(4)	(123)	(32)	(69)
Equity Issue	14	4	65	4	1
Borrowing / Repayments	-	-	88	24	13
Dividends	-	-	-	-	-
Other	-	-	27	-	-
Net Financing Cash Flow	14	4	180	28	14
Change in Cash Position	11	(4)	53	26	(4)
FX Adjustments	-	-	-	-	-
Cash Balance	11	7	60	86	82

Balance Sheet (A\$m)	FY21	FY22E	FY23E	FY24E	FY25E
Cash	11	7	60	86	82
Other Current Assets	0	0	0	0	0
PP&E	0	0	122	153	221
Exploration & Development	22	27	28	25	19
Other Non Current Assets	-	-	-	-	-
Total Assets	34	34	210	264	322
Debt	-	-	88	112	125
Other Liabilities	0	0	0	0	0
Net Assets	33	34	121	151	197

Ratio Analysis		FY21	FY22E	FY23E	FY24E	FY25E
Diluted Shares	m	629	629	716	851	872
EPS - Diluted	Ac	(0.5)	(0.4)	0.4	3.3	4.9
P/E	x	n.m.	n.m.	63.5x	8.0x	5.3x
CFPS - Diluted	Ac	(0.3)	(0.3)	(0.3)	2.4	4.2
P/CF	x	n.m.	n.m.	n.m.	10.7x	6.2x
FCF - Diluted	Ac	(0.4)	(0.5)	(17.5)	0.8	(1.0)
P/FCF	x	n.m.	n.m.	n.m.	34.3x	n.m.



Dividends	Ac	-	-	-	-	-
Dividend yield	%	-	-	-	-	-
Payout Ratio	%	-	-	-	-	-
Franking	%	-	-	-	-	-

Enterprise Value	A\$m	232	236	272	270	287
EV/EBITDA	x	(72.6x)	(78.7x)	(69.6x)	5.6x	3.7x
ROE	%	(10%)	(9%)	(3%)	17%	23%
ROA	%	(10%)	(9%)	(2%)	10%	14%
Net Debt or (Cash)	A\$m	(11)	(7)	28	26	43
Gearing (ND/(ND+E))	%	(51%)	(28%)	19%	15%	18%
Gearing (ND/E)	%	(34%)	(22%)	23%	17%	22%

Reserves & Resources

	Tonnes	Grade	Contained
Resource	mt	% TGC	kt
Measured	31.8	8.6	2.7
Indicated	84.6	7.8	6.6
Inferred	96.7	7.4	7.2
Total	213.1	7.8	16.6

Reserve	mt	% TGC	kt
Probable	70.5	8.5	6.0
Total	70.5	8.5	6.0

Earnings Sensitivity		FY24E	FY25E	FY24E	FY25E
		A\$m	A\$m	%	%
Graphite Price	US\$/t conc  +10%	6	9	23%	19%
FX Translation	A\$/US\$  -10%	3	5	14%	12%

Valuation	Discount	Stake	A\$m	A\$/sh
Mahenge (unrisked)	-	84%	858	0.92
Mahenge (risk-adjusted)	30%	84%	601	0.64
Exploration / Other projects			10	0.01
Corporate & Other			(36)	(0.04)
Debt			-	-
Cash			8.0	0.01
Cash from option strikes			7.5	0.01
Risk adjusted NAV			590	0.63

Source: Company data, Blue Ocean Equities

BOARD & MANAGEMENT

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 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.



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.



Steuart 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. Steuart 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.



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.



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The Analyst of this report does not own shares in Black Rock.