BLACK ROCK MINING (BKT)

INITIATION: Strategic Alliance with POSCO provides strong customer validation

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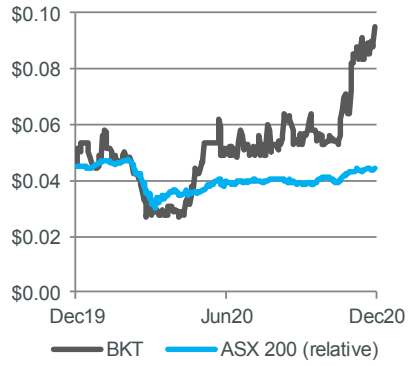
We say	Price	Target	Strategic Target
SPEC BUY	0.095	0.25	0.35

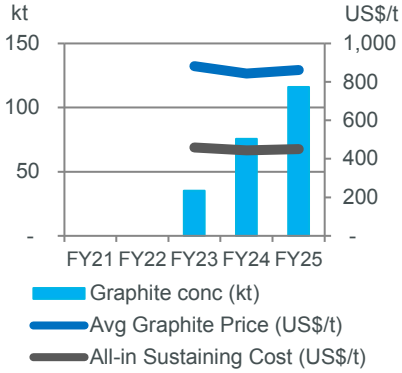
Black Rock is graphite developer, focused on its 100%-owned Mahenge graphite project in Tanzania. While there is no shortage of graphite deposits in the world, developing graphite mines is very challenging and there are a number of significant barriers to entry. However, after one of the largest pilot plant programs in the industry, Black Rock has signed a Strategic Alliance with the ~US$20bn POSCO Group, setting BKT apart from its peers. We initiate with a Spec Buy and 25c Target.

SHARE PRICE CHART



Source: IRESS, Blue Ocean Equities

FORECAST PRODUCTION & COSTS



Source: Company, Blue Ocean Equities

COMPANY DATA & RATIOS

Enterprise value	$76m
Diluted market cap*	$88m
Diluted shares*	931m
Free float	100%
12-month price range	$0.026-0.098
GICS sector	Metals & Mining

Board/Management holds ~7%. POSCO to hold 15%. *Diluted for ~90m options

IMPLIED RETURN

Implied potential return	~160%

STRATEGIC ALLIANCE WITH POSCO

Black Rock has entered a Strategic Alliance with POSCO. Today POSCO has agreed a term sheet to invest US$7.5m to take a 15% stake in BKT at 8.2c/share, a 23% premium to the 30-day VWAP prior to the agreed standstill date. A prepayment agreement is also being negotiated for POSCO to invest a further US$10-20m to secure 20-40ktpa of -195 flake graphite for the life of mine of Module 1 (see p13).

WHY DID POSCO CHOOSE MAHENGE?

Given the large number of graphite deposits in the world, our immediate question was "Why did POSCO choose Mahenge?". We believe the answer lies in the projects large scale, low strip and more importantly, its ability to produce higher purity graphite concentrates than most peers (up to 99%) via simple flotation, as well as its proven suitability for use as a LIB anode pre-cursor.

INITIATE WITH SPEC BUY, 25C PRICE TARGET

We initiate on Black Rock with a Spec Buy rating and 25c Price Target, an implied potential return of ~160%. Our Price Target is based on DCF for Mahenge using current graphite conc prices, which equate to a net average price of ~US$900/t for the company's graphite products. We then apply a 50% discount for risk and potential dilution. Our 35c Strategic Target assumes a higher net average price of ~US$1,100/t.

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INVESTMENT THESIS

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 many experts agree that graphite is likely to remain a preferred anode material for at least the next ~8-10 years.

While EVs represent a relatively small 11% proportion of graphite demand at present, graphite is one of the largest volume active materials in LIBs and demand is expected to increase substantially over the next few years as EVs move towards mainstream adoption. Some forecasters predict graphite demand could grow from ~600kt today to 3.2mt by 2029 (see p15).

In Q3 2020, there have been a number of announcements from governments around the world pushing to secure critical minerals in support of the move towards the electrification of vehicles (the US, Europe, China, etc). Europe announced the largest green stimulus plan in history totalling US$572bn. In Q3 CY20 the global EV market grew at ~65% compared to Q3 CY19.

STOCK SPECIFIC: WHY BLACK ROCK MINING?

Black Rock Mining Limited (Black Rock or the Company) (ASX:BKT) is a ~A$70m graphite developer focused on its flagship 100%-owned Mahenge graphite project in Tanzania. Prior to the deal with POSCO, BKT had $2.1m in cash and no debt. Our investment thesis for Black Rock is:

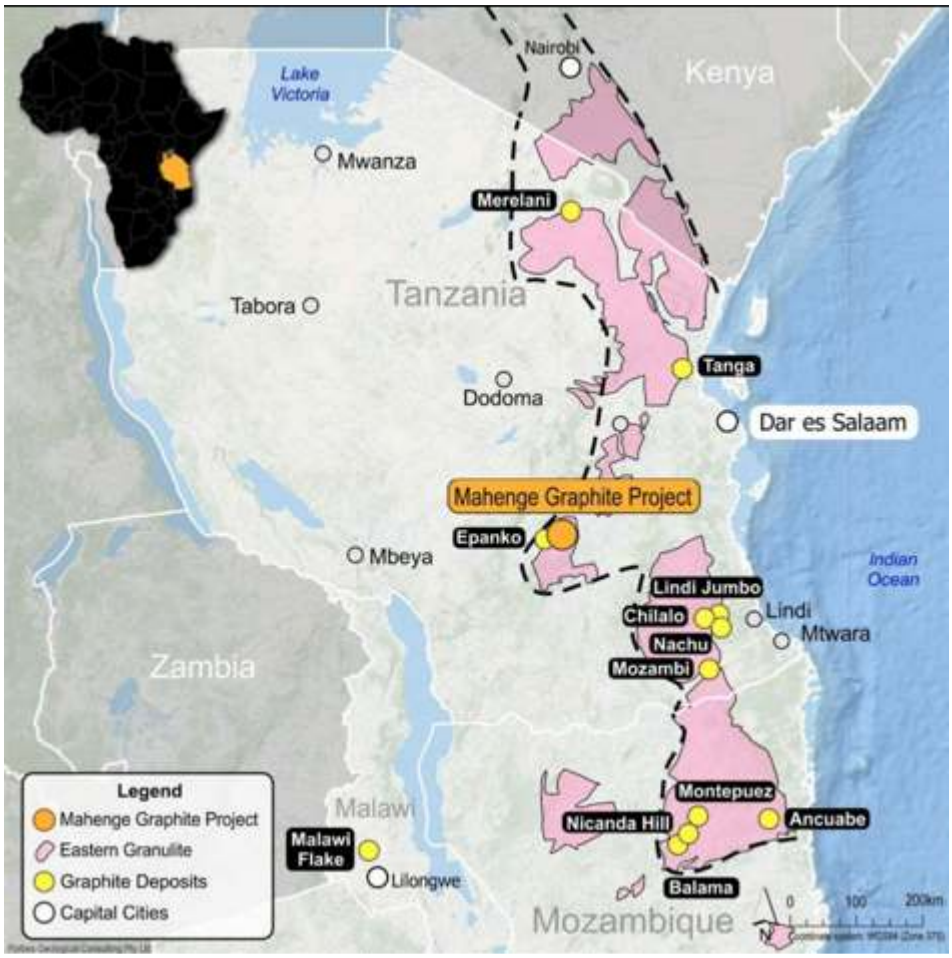
- Tier 1 scale graphite project: Mahenge's 212mt resource makes it the 4th largest graphite resource in the world. The project is also very low strip at 0.8:1 life of mine.
- Large scale testwork: According to BKT, it has undertaken "the largest pilot plant run of any graphite development project globally". BKT has tested 108t of material at independent pilot plants, giving the Company (and its customers) a much higher degree of confidence in the quality of concentrates Mahenge should be able to produce.
- Higher purity concentrates: Mahenge's combination of low of deleterious impurities and favourable metallurgy allow it to produce very high purity concentrates (up to 99%) from simple low-cost conventional flotation. Very few of BKT's peers are able to produce such high-grade concentrates *at scale*, and at a *commercially attractive costs* (see p10).
- Strategic Alliance & Offtake with POSCO: Mahenge's combination of scale, low-strip and ability to produce high-purity, low-deleterious graphite conc has culminated in a Strategic Alliance with the US$20bn POSCO Group, a large scale anode producer for LIBs (see p13).
- Catalyst Rich: BKT has a number of key de-risking milestones due near-term, including:
    - Completion of POSCO Phase 1 investment of US$7.5m at 8.2c to take a 15% stake in BKT (due to close by 15 Jane 2021)
    - Finalisation of the Fiscal Terms with the Tanzania Govt (due near-term)
    - Completion of Phase 2 investment with POSCO to invest a further US$10-20m to secure 20-40ktpa/85ktpa of -195 graphite conc (due to close 31 March 2021)
    - Additional binding offtake agreements
    - Securing Project Debt and remaining equity
- Quality Board & Management Team: Black Rock is chaired by Richard Crookes, a Geologist by training with >30 years mining industry experience. The CEO, John de Vries is a mining engineer with >35 years experience including operational roles at BHP Nickel West and St Barbara where he was GM of Technical Services. Bios are available on p23.

COMPANY OVERVIEW

Black Rock (ASX:BKT) is a ~A$70m market cap graphite developer focused on its flagship 100%-owned Mahenge graphite project in Tanzania. The company has $2.1m in cash and no debt.

Black Rock has entered a Strategic Alliance with POSCO. POSCO has agreed a term sheet to invest US$7.5m to take a 15% stake in BKT at 8.2c/share, a 23% premium to the 30-day VWAP prior to the agreed standstill date. A prepayment agreement is also being negotiated for POSCO to invest a further US$10-20m to secure 20-40ktpa of -195 flake graphite for the life of mine of Module 1 of Mahenge. More detail is provided on p13.

Location of the Mahenge graphite project in Tanzania



Source: Company

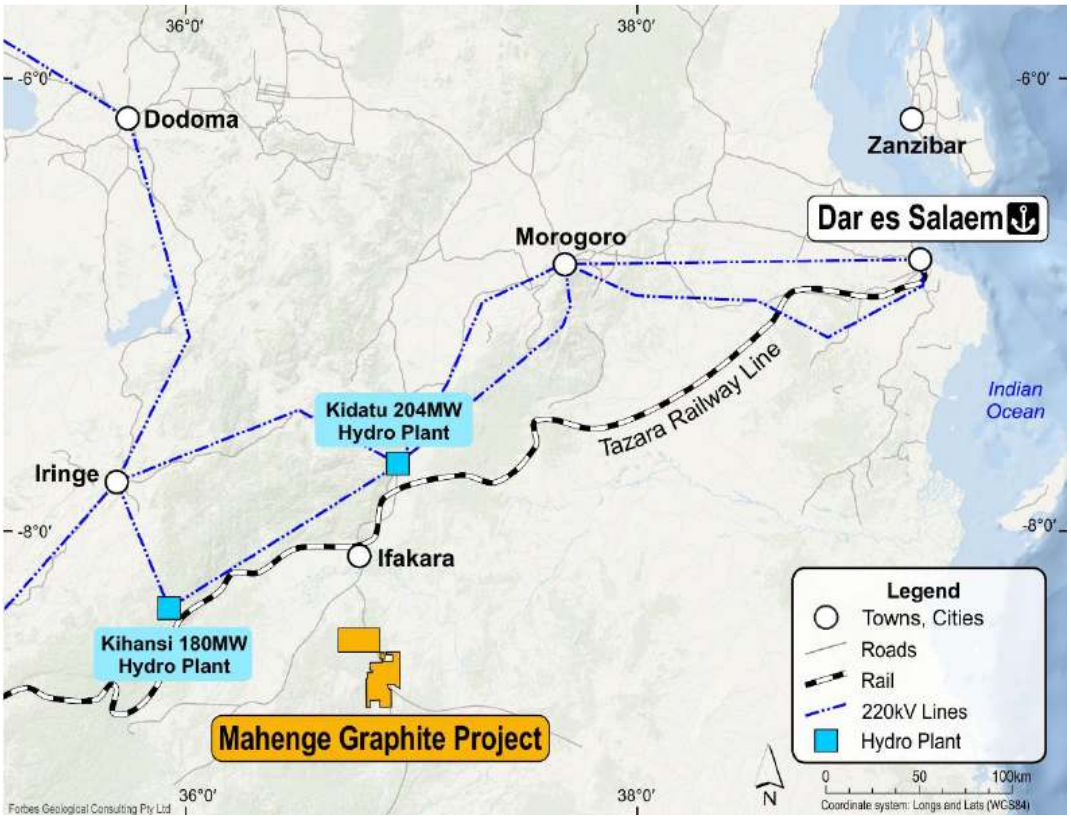
A BRIEF HISTORY OF BLACK ROCK MINING

Black Rock was listed on the ASX in December 2003 as Mokuti Mining Limited (MOK), a gold explorer focused on the Menzies gold project in WA. The Company then changed its name to Green Rock Energy (GRK) after acquiring geothermal energy licences adjacent to Olympic Dam in South Australia. Green Rock acquired the Mahenge graphite project in Tanzania in July 2014 and the company's name was changed to Black Rock Mining Limited in March 2015.

THE MAHENGE GRAPHITE PROJECT

The 100%-owned Mahenge graphite project is located in south-eastern Tanzania, ~250km north of the border with Mozambique, ~300km southwest of Tanzania's largest city, Dar es Salaam.

Location of the Mahenge graphite project in Tanzania



Source: Company

WHAT DIFFERENTIATES MAHENGE?

There is no shortage of graphite deposits in the world and most graphite developers will tell you that *their* deposit is unique and has superior qualities to peers. The problem is, each company has a different take on what end users want, making it very difficult for investors to navigate the space.

On top of this, *very* few graphite developers can provide evidence of customer demand for their graphite products in the form of binding offtake agreements. In our view, Black Rock's Strategic Alliance and offtake with POSCO (outlined on p13) represents strong customer validation from a very credible blue chip player. We believe the key features which differentiate Mahenge are:

- Ability to produce high-purity concentrates: Mahenge's combination of low deleterious impurities and favourable metallurgy allow it to produce very high purity concentrates (up to 99%) from simple low-cost conventional flotation (more detail on p10).
- Tier 1 Scale: Mahenge's 212mt resource is the 4th largest graphite resource in the world
- Good Grade: Mahenge is good grade at 8% but its not the highest grade graphite project in the world. However, the devil can be in the detail and some higher grade graphite projects may have deleterious impurities which could materially impact pricing (see p17-18)
- Very Low Strip: Mahenge has a very low life of mine strip of 0.8:1.

ENHANCED DFS

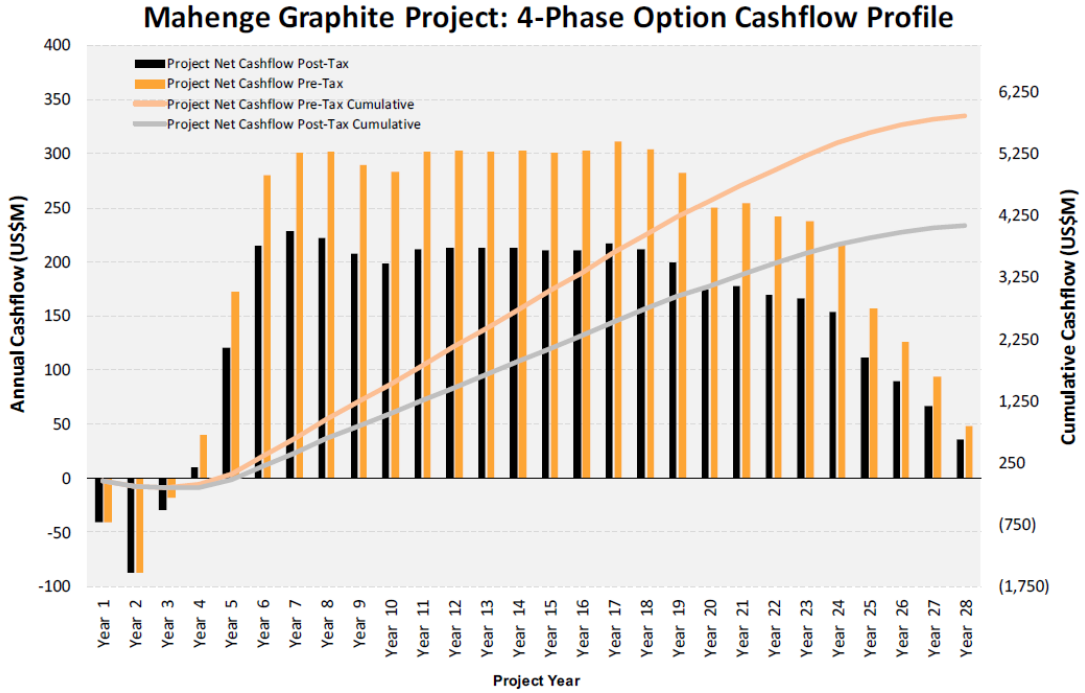
On 25 July 2019, Black Rock released an Enhanced DFS for the Mahenge graphite project as summarised in the table below. Mahenge will be built in a modular fashion, in 4x 85ktpa modules. Initial capex for Module 1 is estimated at US$116m. Subsequent expansions are expected to be funded from free cash flow.

Enhanced DFS for the Mahenge graphite mine

MAHENGE DEFINITIVE FEASIBILITY STUDY FINANCIAL METRICS		
Metric	**Oct 2018 DFS**	**Jul 2019 Enhanced DFS**
Post-tax, unlevered NPV_{10}	US$895m	US$1.16bn
Post-tax, unlevered IRR	42.80%	44.80%
Forecast Capex for Module 1*** (85,000 tonnes per year; includes 10% contingency)	US$115M (excludes HV Power Connection Provision)	US$116M (excludes HV Power Connection Provision)
Forecast Capex for Module 2 ***# (85,000 tonnes per year; includes 10% contingency)	US$69.5M	US$69.5M
Forecast Capex for Module 3***# (85,000 tonnes per year; includes 10% contingency)	US$84.2M	US$85.3M
Forecast Capex for Module 4 ***# (85,000 tonnes per year; includes 10% contingency)	n/a	US$67.1M
Forecast Total Project Capex	US$268.7	US$337.4
Life of Mine C1 Costs, FOB Dar	US$401/t	US$397/t
Life of Mine All in Sustaining Costs, FOB Dar*	US$473/t	US$494/t
Concentrate basket FOB Dar es Salaam**	US$1,301/t	US$1,301/t
Life of Mine	32 years	26 years
Average steady state production rate	250,000 tonnes per year	340,000 tonnes per year
Total Life of Mine Concentrate production	6.6 Mt	7.4 Mt
Ore reserves	70 Mt @ 8.5% TGC****	70 Mt @ 8.5% TGC****
Reserve life	23 years	16 years
Resources	212 Mt @ 7.8% TGC****	212 Mt @ 7.8% TGC****

* AISC includes all post start up capex including module 2&3 expansion
** Basket is LOM average price for 97.5% LOI sized concentrate packed in 1 tonne bulka bags
*** Forecast capex has been classified as a Class 3 estimate with accuracy of ±10% as defined by AACE
**** Total Graphitic Carbon by Loss on Ignition
# Forecast to be funded from internal cash flow

Source: Company. Includes 16% pre-carry to Tanzania Govt



Source: Company

RESERVE / RESOURCE

According to the Company, Mahenge has the fourth largest JORC compliant graphite resource in the world based on contained graphite. The reserve and resource for Mahenge is outlined below:

JORC Compliant Mineral Resource and Ore Reserve Estimate***			
Ore Reserves	Tonnes (Mt)	Grade (% TGC)	Contained Graphite (Mt)
- Proven	0	0.0	0.0
- Probable	69.6	8.5	6.0
Total Ore Reserves	**69.6**	**8.5**	**6.0**
Mineral Resources			
- Measured	25.5	8.6	2.2
- Indicated	88.1	7.9	6.9
Total M&I	**113.6**	**8.1**	**9.1**
- Inferred	98.3	7.6	7.4
Total M, I&I	**211.9**	**7.8**	**16.6**

Source: Company

***Released to ASX on 8 August 2017 Optimised PFS

The resource at Mahenge comprises 3 deposits, Ulanzi, Cascade and Epanko:

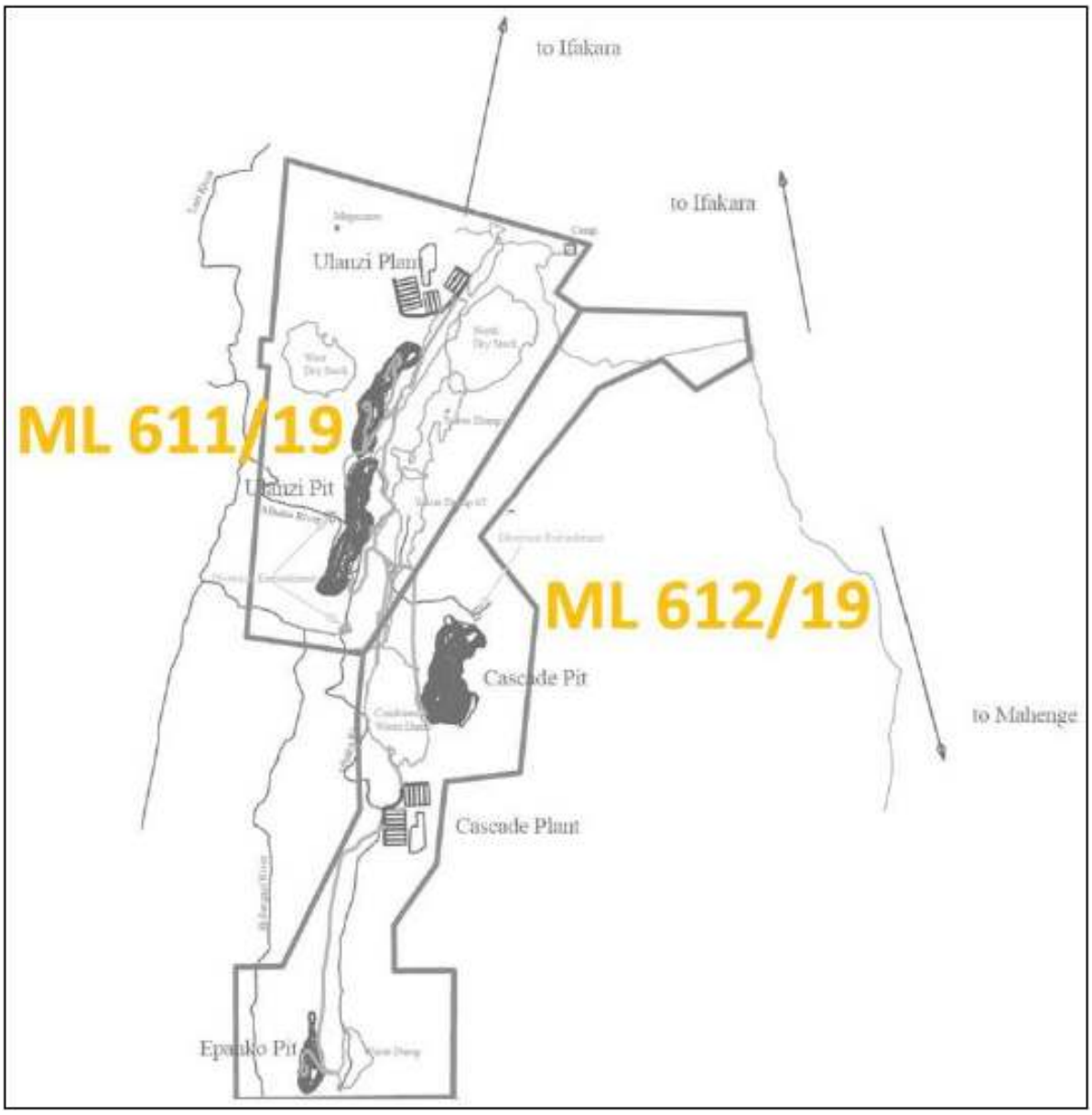
Mahenge graphite resource split over 3 deposits

Prospect	Category	Tonnes (Mt)	Grade (% TGC)	Contained Graphite (Mt)
Ulanzi	Measured	13.3	8.9	1.2
	Indicated	49.7	8.2	4.1
	Inferred	50.2	8.1	4.1
	Sub-total	**113.3**	**8.2**	**9.3**
Cascade	Measured	12.1	8.3	1.0
	Indicated	20.8	8.3	1.7
	Inferred	27.3	7.9	2.2
	Sub-total	**60.2**	**8.1**	**4.9**
Epanko	Measured	-	-	-
	Indicated	17.6	6.4	1.1
	Inferred	20.8	5.9	1.2
	Sub-total	**38.4**	**6.1**	**2.3**
Combined	Measured	25.5	8.6	2.2
	Indicated	88.1	7.9	6.9
	Inferred	98.3	7.6	7.4
	Total	**211.9**	**7.8**	**16.6**

Source: Company

All three of these deposits are covered by two granted Mining Licences as set out below:

Granted Mining Licences cover all 3 graphite deposits



Source: Company

MINING

The Enhanced DFS for Mahenge envisions open pit mining via a owner-operator conventional drill & black, truck & shovel operation.

Mining commences at the Ulanzi deposit initially and begins at the Cascade deposit in Year 2. In the early periods, widely available 20t rear tipper trucks will be matched to 45t class excavators for site establishment.

After Year 1, once sufficient workspace is established, and pit development has matured, the mining fleet will be upgraded to a larger 50t articulated dump trucks and 90t excavators to increase mine productivity and achieve economies of scale.

The strip ratio for Mahenge is very low at ~0.8:1 life of mine.

METALLURGY: EXTENSIVE LARGE SCALE TESTWORK

Given the importance of product quality on product pricing (see p17-18) and the challenges of securing large scale ex-China offtake agreements for graphite mines, Black Rock has undertaken extensive large scale testing on Mahenge. According to the Company, it has undertaken **"the largest pilot plant run of any graphite development project globally"**. Black Rock has undertaken two major pilot plant runs through external independent pilot plants totalling 108t of material:

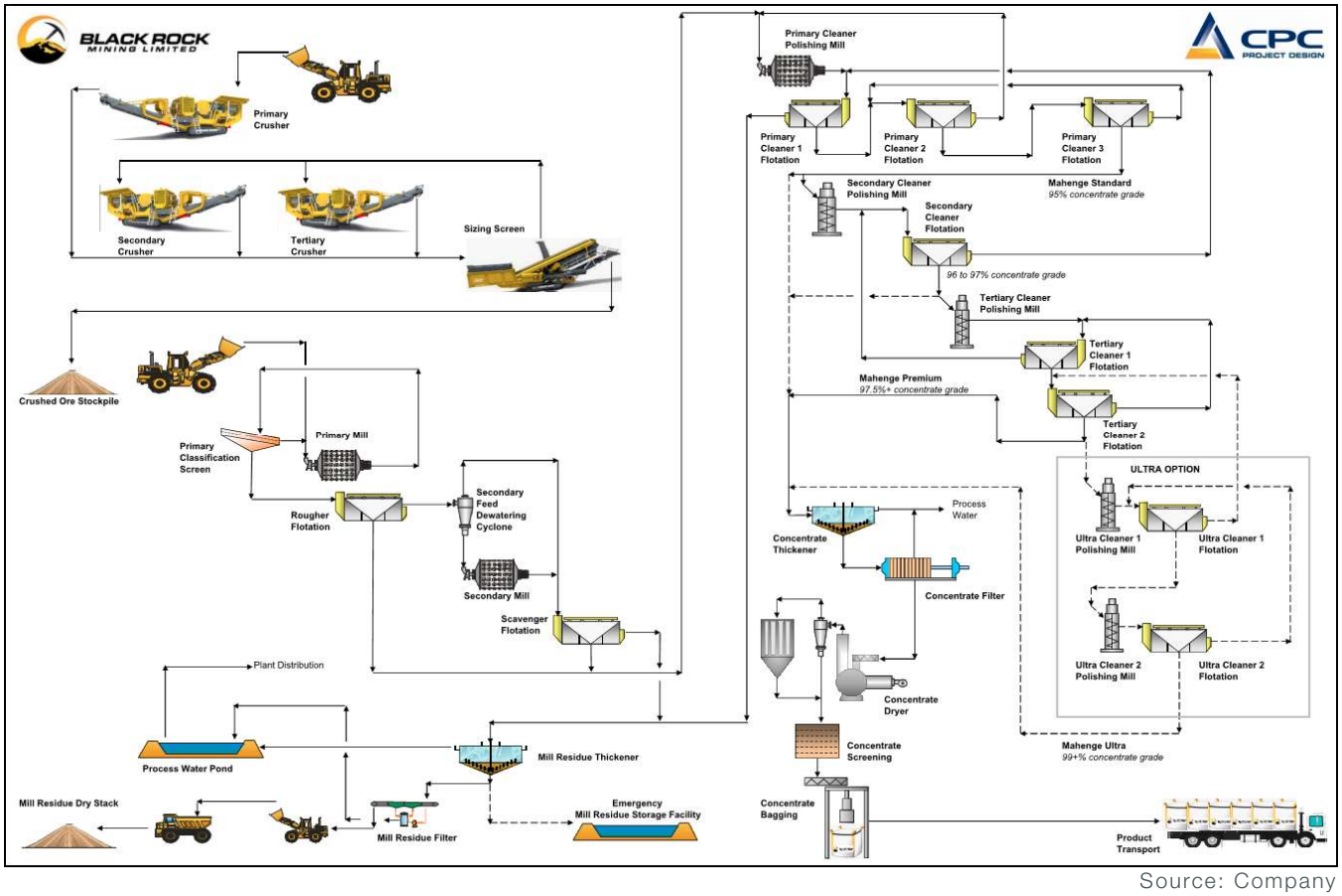
- 90t at SGS Lakefield in Canada
- 18t at Yantai Jinyuan in China

The large volume of testwork undertaken has established that Mahenge can product much higher purity graphite concentrates than many of its peers using conventional flotation only. The large volume of testwork also gives Black Rock (and its potential customers) a much higher degree of confidence in the quality of concentrates Mahenge should be able to produce.

PROCESSING

The Mahenge process plant will be constructed in 4 modular stages of 1mtpa with average head grades of 8.1% TGC and average recovery of 92.9%. The process flowsheet for each module is summarised below, comprising crushing and a series of circuits for rod milling, rougher flotation, ball mill polishing and cleaner flotation. Each product stream is then dewatered, dried, classified using screens and bagged.

Mahenge Process Flow Sheet



Source: Company

COMPETATIVE ADVANTAGE: LEADING PRODUCT PURITY

One of the key differentiating advantages Mahenge has over many of its peers is its favourable metallurgy, lack of deleterious elements and ability to produce a much higher purity concentrate. This is because Mahenge has no overprint mineralisation.

Mahenge is able to produce up to 99% TGC concentrate purity, solely with conventional flotation processing and at *scale* and at *commercial attractive costs*. *Very* few of BKT's peers are currently able to achieve this.

The Company is also able to achieve these industry leading concentrate grades *without* excessive polishing steps... which means it is able to maintain its larger flake, higher value products.

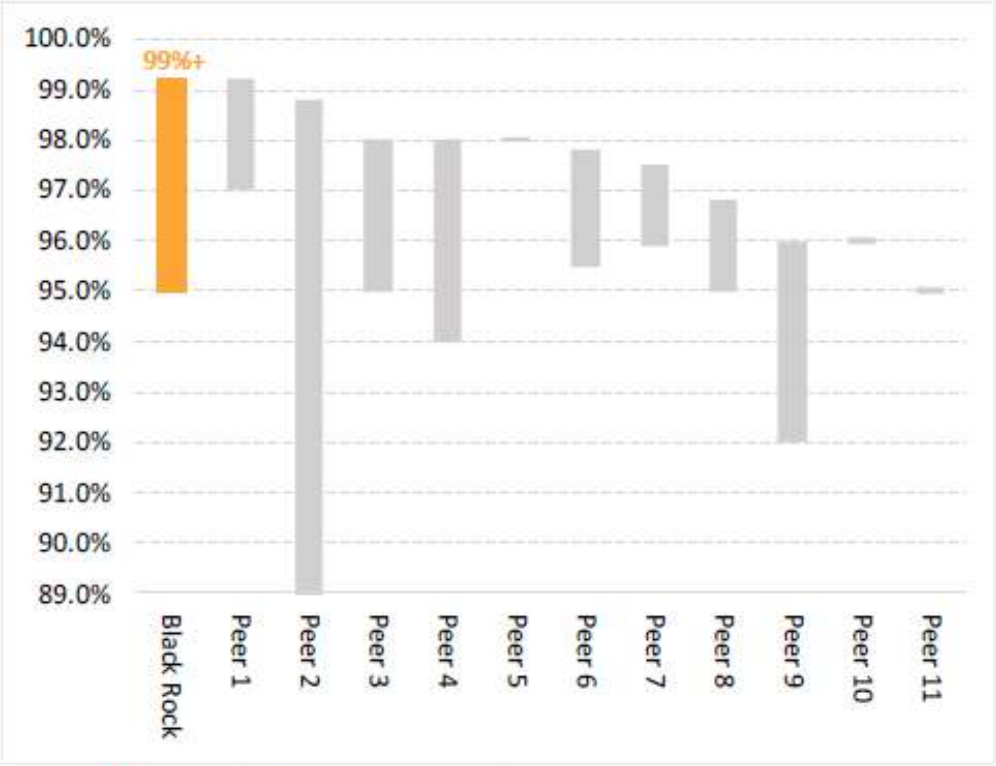
Some of BKT's peers are able to produce high-grade concentrates, but not at commercial scale and not without a large number of steps, which breaks up any large flakes, essentially destroying the higher value graphite products.

Why are higher grade concentrates so desirable?

Higher grade concentrates have a much higher value-in-use because they tend to lead to higher yields and they require significantly less cost for the next stages of purification.

Put simply, higher grade concentrates lead to material savings downstream for BKT's customers, helping them produce lower cost batteries.

Mahenge: Superior Product Purity: i.e. Higher Grade Concentrates = Higher Value-in-Use



Source: Publicly available company data, October 2019

Source: Company

INFRASTRUCTURE

Mahenge is fortunate to be located ~60km south of the town of Ifakara which provides access to key infrastructure:

- **Grid Power**: Grid power is currently available from Ifakara from the Kidatu Hydroelectric Scheme. The project will use contract diesel gensets in the early years and transition to lower cost grid power later in the mine life. The move to grid power has the potential to reduce power costs materially from ~US26c/kwh to US7c/kwh.
- **Rail**: The project is located ~70km from the nearest train line , the Tanzania Zambia Railway Authority (TAZARA) line, located at Ifakara, which runs to Dar es Salaam, Tanzania's principal port.
- **Airstrip**: The Company is not planning to build a dedicated airstrip for the project. There are existing airstrips at Ifakara and Mbunga.
- **Water:** For most of the year, raw water will be sourced from the nearby waterways which will be dammed to form the raw water pond. In times of low rainfall, the raw water source pumps (borefield pumps) will be used to supply raw water to site via an overland pipeline.
- **Tailings Disposal**: Dry stack tailings management: eliminates dam failure risk, neutral water balance (i.e. no net draw), reduced footprint.

PERMITTING & APPROVALS

Black Rock is well advanced with respect to permitting its Mahenge graphite project, as set out below.

- **Environmental Approvals**: Environmental Approvals for the Mahenge graphite project were received in September 2018.
- **Mining Licence**: The two Mining Licences for Mahenge were granted in February 2019
- **Export Licence**: On 15 September 2020, the Tanzanian Govt confirmed graphite concentrates >65% can be exported, replacing the 2019 guidelines which restricted the export of concentrates.
- **Resettlement Action Plan (RAP)**: In May 2020, BKT announced that the Resettlement Action Plan (RAP) field activities at Mahenge had been completed and resettlement and compensation has been agreed with > 98% of the Project Affected Persons. During the Sept Q 2020, BKT's RAP submission to the Office of the Chief Government Valuer has been accepted and approved. According to BKT it now has "clear title to the project area".

The Mahenge graphite project has the potential to provide significant economic and social benefits to Tanzania including:

- 970 full-time jobs principally located at Mahenge;
- US$3.6bn contribution to the Tanzanian economy over 26 year mine life (based on eDFS prices); and
- Significant new opportunities for Tanzanian businesses including ports, rail and power supply

The key outstanding catalyst remains finalising the Fiscal Agreement with the Tanzania Govt, including finalising the mechanics of the Govt's 16% free carried interest. A draft framework agreement was received in July 2020 and the company expects to receive final agreement near term.

OFFTAKE PARTNERS

Black Rock's cornerstone offtake partner is POSCO, which has indicated interest in 40ktpa / 85ktpa of sub 100 mesh concentrate in Module 1 (47% of initial production) for use in the manufacture of battery anode feedstock for POSCO's LIB business. Product volumes and pricing will be finalised with POSCO as part of the company's Phase 2 investment in BKT (see p13). We believe it is likely POSCO will also be interested in offtake from the subsequent modular expansions of Mahenge.

The remaining ~45ktpa of graphite concentrates from Module 1, comprising +100 mesh concentrates plus any uncommitted fines will be made available to Black Rock's existing portfolio of potential customers under the volume provisions of the existing Price and Volume Framework Agreements. It is expected this agreement will support continued large flake market development in the high growth fire retardant and foils markets in Europe and the USA.

Black Rock has also signed offtake agreements with 5 Chinese customers as outlined in the table below. These offtake agreements can be terminated by either party with 60 days written notice.

Offtake Agreements with Chinese customers

	Year 1	Year 2	Year 3
Heilongjiang Bohao	20,000	50,000	90,000
Qingdao Fujin(1)	10,000	15,000	15,000
Taihe Soar	20,000	55,000	100,000
Qingdao Yujinxi	20,000	20,000	20,000
Yantai Jinyuan	15,000	30,000	30,000
TOTAL	**85,000**	**170,000**	**255,000**

*(1) pricing to be finalised * as per ASX announcement 08 May 2019*

Source: Company

STRATEGIC ALLIANCE WITH POSCO

On 9 June 2020, Black Rock announced it had signed a Strategic Alliance and Development MOU with the POSCO Group (POSCO). POSCO is a US$20bn diversified Korean steel-making company and one of the world's largest producers of anode feedstock and a major participant in the global lithium ion battery industry.

The key terms of the Strategic Alliance include:

- Phase 1: **POSCO to subscribe up to US$7.5m for shares in BKT** at 8.2c to take a 15% stake to fund early works, completion of engineering and design and provision of all-weather site access.
    - The 8.2c placement price represents a 23% premium to the 30 day VWAP prior to the agreed share price standstill agreement
    - POSCO has a right to nominate a director on the board of Black Rock (provided it maintains an equity stake in BKT above 10%)
    - Agreement is expected to be finalised on or before 15 January 2021.
    - More detail is provided in BKT's announcement on 17 December 2020

- Phase 2: **POSCO to make an additional investment of US$10-20m** under a prepayment agreement to secure 20-40ktpa of 85ktpa of -195 graphite conc produced under Module 1 for the life of mine
    - The US$10-20m in pre-payment proceeds will be used as development funding
    - The parties have agreed to employ reasonable endeavours to execute the offtake prepayment agreement by 31 March 2021

MAHENGE QUALIFIES AS LIB ANODE PRE-CURSOR

On 11 November 2020, POSCO confirmed Mahenge graphite concentrate met the battery grade requirements as Lithium-Ion Battery anode pre-cursor.

This involved battery cell testing and was achieved through:

- Laboratory/small scale production of Spherical Purified Graphite (SPG) from Mahenge graphite to POSCO anode pre-cursor specification
- Extended battery performance testing demonstrating that anode made from Mahenge graphite meets POSCO reference standards

Black Rock and POSCO are considering options for a larger scale commercial qualification process to validate concentrate performance in industrial facilities suitable for the contemplated contracted outsourcing of SPG manufacturing and purification. Funding for concentrate supply would be from any inbound investment POSCO may elect to make.

GRAPHITE MARKETS

While graphite is a key input in lithium ion batteries (LIB), it has not received the same attention as lithium, cobalt, nickel and rare earths largely because the graphite market is more opaque and complex. The graphite market includes both natural graphite and synthetic graphite.

China dominates the graphite market producing ~65% of supply, however as lithium ion supply chains develop and several countries look to compete with China to ensure security of supply, we believe there exists a significant potential opportunity for ex-China graphite mining companies.

Graphite is used in many applications, not just LIBs as it has a number of very useful qualities. Graphite is an allotrope of carbon which has a low density, is an excellent conductor of heat and electricity and is chemically inert and acid resistant. It is an opaque, grey/black substance with an oily feel which makes it useful as a lubricant. Graphite occurs in three forms: Flake, lump/vein and amorphous.

GRAPHITE END USES

Graphite has a wide range of end uses in steel markets, refractories, LIB anodes, expandable graphite markets, fire retardants, lubricants, composites, pencils, etc.

At present, the dominant end use for graphite is in steel markets, which comprises ~60% of current demand. Both natural and synthetic graphite are used in the production of steel as UHF electrodes in electric arc furnaces.

While graphite demand for use in anodes for LIBs is still a relatively modest percentage of total demand, the accelerating mainstream adoption of electric vehicles is expected to be a key growth market which is expected to materially increase over the next few years (see next page).

GRAPHITE USE IN ANODES FOR LITHIUM ION BATTERIES

Graphite is used in around 90% of all LIBs today and while technology is constantly evolving, most of the research we have read suggests graphite is likely to remain the dominant choice for LIBs for at least ~8-10 years and probably longer. One of the key potential new anode technologies is graphite-silicon composites, however to date the severe swelling of silicon during charge and discharge (up to 300%) remains a key obstacle to mainstream adoption.

At present, the graphite used in LIB anodes typically comprises a blend of:

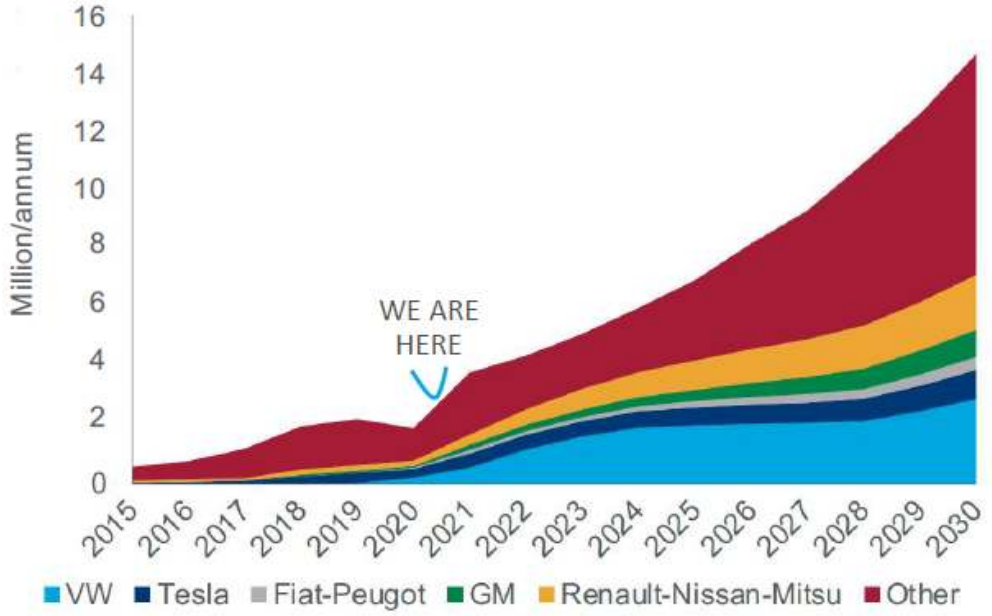
- **50-60% synthetic graphite** – synthetic graphite typically performs better during charging and discharging, increasing the life of the battery
- **40-50% natural graphite** – natural graphite is typically more cost effective and has a higher energy density

Most battery manufacturers seek to optimise the blend of synthetic and natural graphite in their LIB anodes to achieve the desired combination of battery characteristics.

STRONG GRAPHITE DEMAND EXPECTED

While there are a wide range of forecasts out there, there is a strong consensus view that graphite demand is expected to accelerate materially over the next decade, largely driven by the growing demand for anodes in LIBs in EVs. The chart below provides a typical forecast of the potential growth:

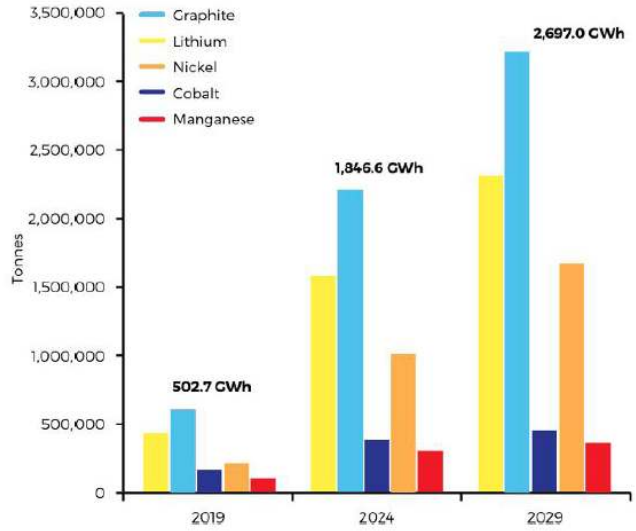
EV sales set to grow by 700% by 2030



SOURCE: WOOD MACKENZIE "ENERGY TRANSITION OUTLOOK H1 2020", SEPTEMBER 2020.

The slide below suggests that graphite demand for anodes in LIBs could potentially grow from 600kt today to 3.2mt by 2029. It also highlights, that by volume, graphite is the largest volume active material in a lithium ion battery.

Graphite is the largest volume active material in Li-ion battery



- EV demand and legislative pressure on internal combustion engines creating huge new demand for battery materials on top of rebounding industrial demand
- There is ~10x graphite than lithium in a Li-ion battery
- **~3.2 million tonnes graphite anode required by 2029, up from ~600 thousand tonnes today**

SOURCE: BENCHMARK MINERAL INTELLIGENCE, LITHIUM ION BATTERY MEGAFACTORY ASSESSMENT, AUGUST 2020
NOTE: ANODE MEANS ACTIVE COATED GRAPHITE. APPROXIMATELY 1,000 TONNES ANODE IS REQUIRED PER 1GWH OF LI-ION BATTERY CAPACITY.

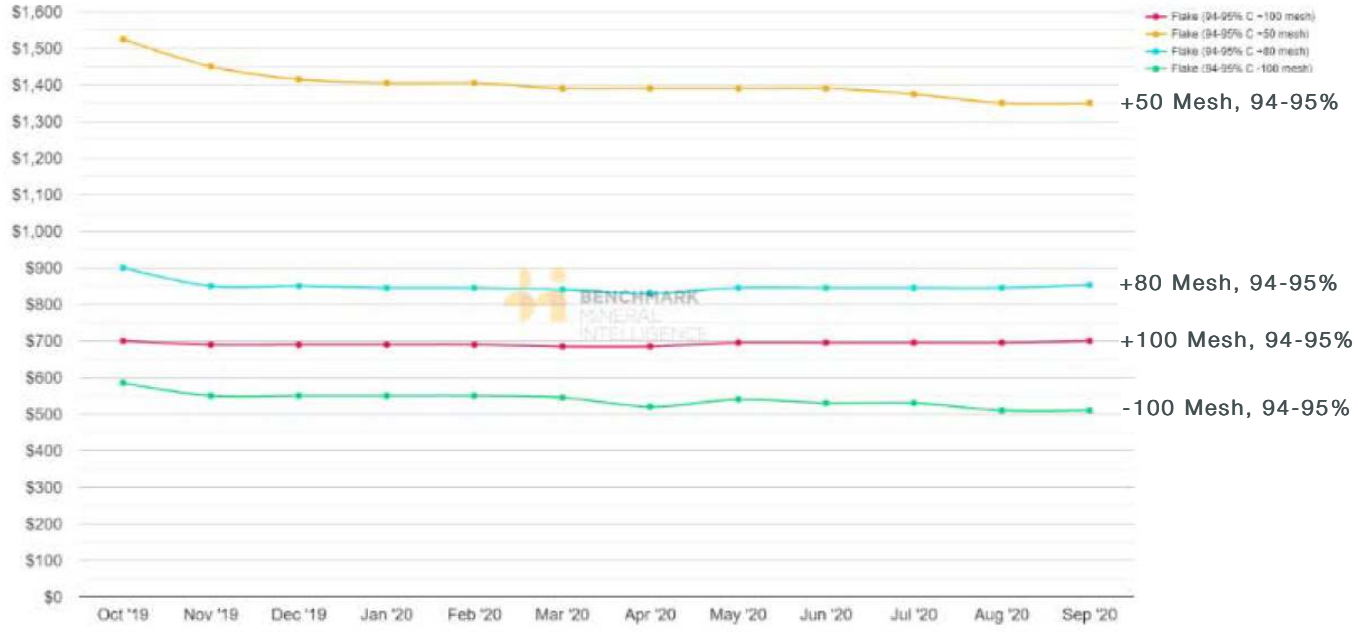
Source: Talga Resources AGM Presentation, 12 November 2020

GRAPHITE PRICES

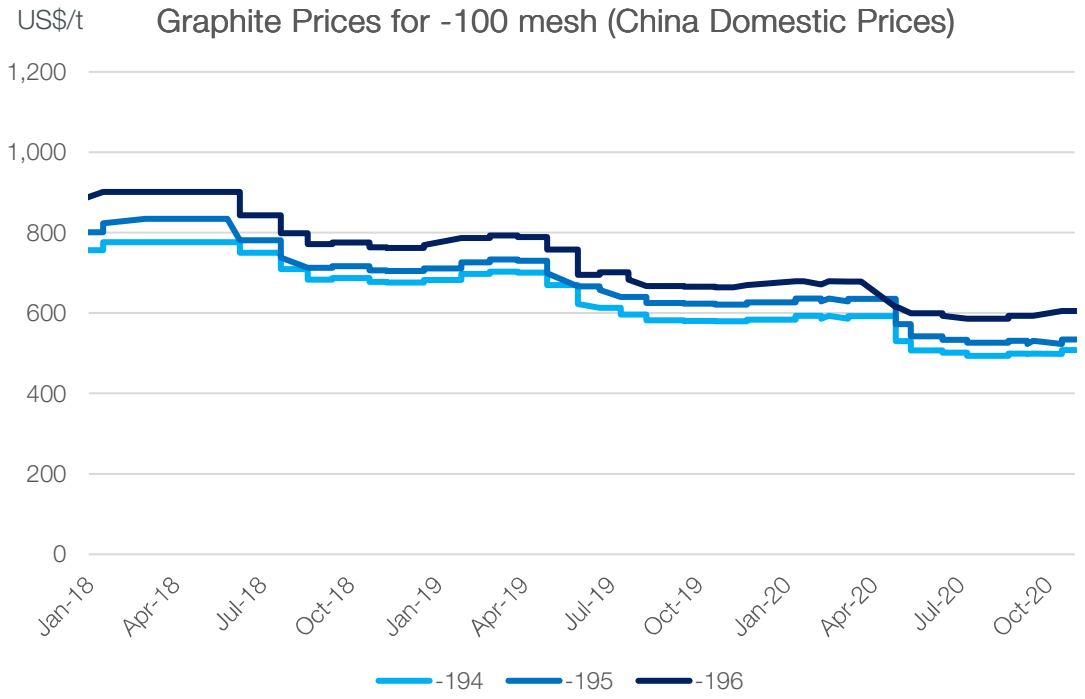
There are a range of industry source for graphite prices, however the market is dominated by China and remains opaque and complex. While the data varies between the various sources, there are several key takeaways which are consistent:

- Graphite prices for most products are close to their 10-year lows
- Larger flake products attract a very large premium to finer products (see chart below)
- Higher purity products (i.e. higher conc grade) attract a premium (see 2nd chart below)

Flake Graphite Prices in US$/t between Oct 2019 – September 2020



Source: Walkabout Resources Nov 2011; Benchmark Minerals Intelligence



Source: Industry Sources (available on request)

WHAT MAKES A GOOD GRAPHITE MINE?

While there are a large number of graphite deposits in the world, relatively few of them successfully make the transition into production, particularly outside China. We have been following a number of ASX-listed graphite players for several years and over time many of them have simply given up, changed strategy and in several cases bought a gold project!

Graphite is an opaque and complex market and **while we have undertaken considerable research over a number of years and spoken with a number of experts, we don't pretend to have all the answers**. However, starting from the most obvious, a good graphite mine should have:

- Strong margins through the cycle and ideally 1st quartile margins – i.e. It should still make money when 75% of competing mines are break-even or loss making. This requires:
    - Low costs relative to peers: Like all good mining projects, this requires low strip, large scale, low cost power, good grade, recoveries, low cost logistics, etc
    - Strong average sale price: In our view, when it comes to graphite mining, having a strong average sale price for your suite of graphite products is crucial and is driven by product quality

Unlike most mining projects, in graphite mining, grade is *not* necessarily the most important consideration. There are of number of nuances that make assessing graphite mines very difficult, with the primary challenges being assessing product quality, suitability for a given end use and ultimately product pricing. In the absence of strong customer validation from a credible third party like POSCO, it is *very* difficult for investors to determine product quality and pricing.

What determines product quality and pricing?

Based on our discussions with a number of graphite experts, we believe the quality of graphite products produced by a graphite mine and ultimately the average sale price will be driven by:

1) Absence of deleterious elements – This is probably the most important characteristic of a good graphite mine but also the most difficult aspect for investors to assess. There are a large number of graphite deposits around the world and many of them contain high levels of iron, silica, vanadium, halogens and other impurities which can be difficult to remove.

   The required specifications to qualify for use in anodes for LIBs is surprisingly narrow and the outcome is binary – if there are deleterious elements in your graphite concentrate, they may have a direct negative impact on the performance of the LIB, and thus your concentrate may not be usable in that end use.

   Some impurities can be removed via simple flotation and these tend not to be a problem. However other impurities can be 'interstitial' or occupying the space between flakes and may require the flakes to be broken up to remove this deleterious element – which can have a direct impact on flake size and reducing product pricing.

2) Flake distribution – Larger flakes attract premium pricing. While some mines have a good mix of large flake, if they also have deleterious elements, it may not be possible remove these deleterious elements without destroying the large flakes.

3) Concentrate purity – Higher concentrate purity attracts higher pricing. A mines ability to produce higher purity concentrates (i.e. 97-99%) is driven by a combination of good metallurgy and absence of deleterious elements.

4) **Maximising average sale price** – at a glance this is obvious, but on closer inspection it is probably one of *the* critical drivers of a company's ability to secure funding and make the transition into production. Based on our assessment the logic breaks down like this:
    - In addition to (1), (2) & (3) **a mine should be able to sell 100% of its products**
    - The mechanical nature of mining & processing means all graphite mines (regardless of initial flake distribution) are likely to produce a meaningful % of fines products, i.e. -100 mesh and finer.
    - Thus being able to sell the fines is probably going to be a critical driver of success
        - But China dominates the fines market
        - Selling fines means going head-to-head with China (which is not easy)
        - Unless you have some form of strategic advantage on this front, this challenge may prove to be too difficult for many graphite developers **BKT's strategic advantage on this front is being able to product a higher purity fines product of 97-99%.** Most of the fines produced in China is a 95% product and in the last 3 years a pricing index for 96% conc has emerged.

Assuming BKT can finalise its offtake agreement with POSCO, not only will it have 47% of its product for Module 1 (40kt/85kt) under binding offtake with a credible ex-china blue chip player, it will have also placed the most challenging of its graphite products (we think!).

While BKT's larger flake products potentially attract *much* higher pricing (see p20), these larger flake markets are even more opaque than the fines markets, particularly with respect to the volumes of product in each market which changes hands.

BKT needs to employ a strategic product marketing strategy to maximise its average price by:

- Selling ~47% of its production to POSCO (40kt/85kt of Module 1)
- Selling as much large flake product as possible into each large flake market without impacting prices too much
- Crushing up the balance of its large flake products to sell into the LIB anode market (i.e. to POSCO or another LIB anode customer)

SIGNIFICANT BARRIERS TO ENTRY FOR NEW GRAPHITE MINERS

In addition to the project assessment challenges outlined above, there are a number of significant barriers to entry to bring a new graphite mine into production. These include:

- Project debt is very difficult to secure for graphite mines due to:
    - Large scale ex China offtake agreements are very difficult to secure
        - Chinese customers dominate the market and relatively few western project finance lenders are willing to take Chinese counter-party risk
        - Most ex-China customers are industrial players not familiar with project finance and not willing to sign offtake agreements until they can test large volumes of product and preferably not until the mine is built (this dynamic creates a "chicken and egg" roadblock for project development)
    - Graphite prices are opaque and hedging is not currently possible

- Building a graphite mine with 100% equity is rarely appealing due to the impact of dilution on value per share. Syrah (SYR) built its Balama graphite project in Mozambique using 100% equity, largely due to the challenges around securing offtake agreements and debt.

TANZANIA

Tanzania is a stable east-African country which achieved independence in 1961. It is a presidential constitutional republic, and has held democratic multi-party elections since 1995.

Tanzania has a population of 56 million (2018) and is one of the poorest countries in the world with a nominal GDP in 2019 of US$61bn.

In November 2020, John Magufuli was declared the winner for his second term as president. The national electoral commission announced that Magufuli received 84%.

Source: Company reports

In 2017, Tanzania's president, John Magufuli, imposed new laws on the mining industry, including higher taxes on mineral exports and allowing the government to have a higher stake in some mining operations. These laws have slowed investment into Tanzania's mining sector, however more recently the headwinds do seem to be clearing. The key changes to the Tanzanian Mining Act and implications for Black Rock Mining are set out below:

Proposed Legislative Changes	Commentary for BKT
16% Govt Free Carry	This requirement is included in both BKT's eDFS for Mahenge and our forecasts.
Higher Royalties	For BKT royalties increase from 3.3% to 4.3%. This increase is included in both BKT's and our forecasts for Mahenge.
Requirement to list 50% of asset on the Tanzania Stock exchange (only applies to SMLs)	BKT holds Mining Licences (MLs) for Mahenge not Special Mining Licences (SMLs) so this requirement does not apply. A number of ASX-listed companies with SMLs have told us they expect this requirement for SMLs will be unwound in due course too.
Restrictions on exporting concentrates	On 15 September 2020, the Tanzanian Govt confirmed graphite concentrates >65% can be exported, replacing the 2019 guidelines which restricted the export of concentrates.
Proceeds of the natural resources of Tanzania must remain in the financial system of Tanzania, unless profits are repatriated in accordance with the laws of Tanzania	This requirement was initially a concern for debt repayment and the payment of dividends. However since the legislation changed and number of foreign owned Tanzania-based miners have continued to pay dividends and several have established Project Debt facilities under the new framework (i.e. Strandline (STA) / Nedbank).

Source: Company reports, Blue Ocean Equities

INVESTMENT PROPOSITION

This section provides an overview of our valuation assumptions for Black Rock.

Our financial model for Black Rock reconciles well with the company's eDFS for the Mahenge graphite project and we have adopted most of the company's assumptions. However we have applied an additional layer of conservatism in a number of areas as summarised in the table below:

	eDFS	Blue Ocean	Commentary
3 Modular Expansions	In years 1,2,3	In years 2,4,6	We assume a slower ramp up
Graphite Conc Purity	97.5%	96%	Given the large volume of testwork, we are confident BKT should be able to produce a 97-98% conc, however we would prefer to be conservative and see the company beat our forecasts
Net Avg Graphite Price	~US$1,300/t	~US$900/t	We use current graphite prices (which are close to 10 year lows)
$NPV_{10\ nominal}$ post-tax	US$1,160m or A$1,564m	US$421 or A$568m	We see substantial upside potential given BKT's current Mcap is ~A$70m
IRR post-tax	44.8%	27%	

Source: Company reports, Blue Ocean Equities

GRAPHITE PRICES

The table below summarises recent graphite prices based on serval industry sources. The gross average price for Mahenge's products is provided in the box. The net average price quote in the valuation table above deducts ~US$100/t for shipping, marketing and any product discounts.

Current Graphite Concentrate Prices

Flake Size	-100	+100	+80	+50	+32
Graphite Prices (US$/t)					
95% concentrate	**530**	**660**	**900**	**1,430**	**1,880**
96% concentrate	**605**	730	990	1,570	2,070
97% concentrate	670	800	1,090	1,730	2,270
98% concentrate	730	880	1,200	1,900	2,500

Mahenge Product Split	32%	9%	36%	18%	5%	Average Price
95% concentrate	170	59	324	257	94	904
96% concentrate	195	66	356	283	104	1,004
97% concentrate	214	72	392	311	114	1,103
98% concentrate	234	79	432	342	125	1,212

Source: REFWIN, ICCSino, Asian Metals, Blue Ocean estimates

PRICE TARGET & RATING

While we acknowledge that bringing a new graphite mine into production is no easy task, the potential reward for BKT shareholders could potentially be *very* substantial and we regard the recent Strategic Alliance with POSCO as strong industry validation.

We regard Black Rock as a relatively high-risk, high-reward proposition and we initiate coverage with a Spec Buy recommendation and 25c price target, an implied potential return of ~160%.

Our 25c Price Target is based on:

- A DCF for the Mahenge graphite project at a net average graphite price of ~US$900/t, based on:
    - Current graphite prices
    - Assuming BKT sells 100% of its graphite products
    - 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 50% discount to our NPV to account for development risks ahead as well as potential future dilution

STRATEGIC TARGET

We have a 35c Strategic Target on Black Rock, representing a potential return of over 300%. Our Strategic Target assumes a net average graphite price of ~US$1,100/t vs. compared to our base case which uses ~US$900/t.

For context, in its eDFS, the company used Roskill for its graphite price forecasts which employed a net average graphite price of ~US$1,300/t. On the Roskill price deck our Price Target would rise to 55c, an implied potential return of >500%!

KEY RISKS

Black Rock is exposed to all the normal risks associated with exploration and the development of a 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 consummation of the Strategic Alliance with POSCO, given our investment thesis is built on the customer validation and potential project funding assistance this strategic relationship provides. If POSCO withdraws from its Strategic Alliance with BKT, we would expect a material negative impact on the company's share price.

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, which we regard as a relatively stable and safe jurisdiction compared to most other jurisdictions in Africa, but a higher risk jurisdiction than Australia and other western jurisdictions.

MODEL SUMMARY: FINANCIALS & VALUATION

Stock Details					
Recommendation:	SPEC BUY			Enterprise Value	$76m
Target	$0.25	Share Price	$0.095	Diluted MCap	$88m
NAV	$0.25	52 Week High	$0.098	Diluted Shares	931m
Implied Return	163%	52 Week Low	$0.026	Free Float	85%
				Avg Daily Value	$0.04m

Macro Assumptions	FY20	FY21E	FY22E	FY23E	FY24E
Graphite Price (US$/t conc)	919	919	919	881	844
Exchange Rate (A$/US$)	0.67	0.71	0.70	0.70	0.70

Profit & Loss (A$m)	FY20	FY21E	FY22E	FY23E	FY24E
Revenue	-	-	-	43	94
Operating Costs	-	-	-	(23)	(48)
Operating Profit	**-**	**-**	**-**	**21**	**45**
Corporate & Other	(3)	(3)	(3)	(4)	(5)
Exploration Expense	-	-	-	-	-
EBITDA	**(3)**	**(3)**	**(3)**	**17**	**40**
D&A	(0)	(0)	(0)	(3)	(6)
EBIT	**(3)**	**(3)**	**(3)**	**13**	**34**
Net Interest Expense	0	-	-	(6)	(9)
Pre-Tax Profit	**(3)**	**(3)**	**(3)**	**7**	**25**
Tax Expense	-	-	-	(3)	(8)
Minorities	-	-	-	-	-
Underlying Profit	**(3)**	**(3)**	**(3)**	**5**	**18**
Signficant Items (post-tax)	(0)	-	-	-	-
Reported Profit	**(3)**	**(3)**	**(3)**	**5**	**18**

Cash Flow (A$m)	FY20	FY21E	FY22E	FY23E	FY24E
Operating Cashflow	(3)	(3)	(3)	17	40
Tax	-	-	-	(3)	(8)
Net Interest	0	-	-	(6)	(9)
Net Operating Cash Flow	**(3)**	**(3)**	**(3)**	**8**	**24**
Exploration	(2)	(1)	(1)	(1)	(1)
Capex	(0)	-	(83)	(84)	(51)
Acquisitions / Disposals	-	-	-	-	-
Other	-	-	-	-	-
Net Investing Cash Flow	**(2)**	**(1)**	**(84)**	**(85)**	**(52)**
Equity Issue	3	14	57	-	-
Borrowing / Repayments	-	-	-	103	22
Dividends	-	-	-	-	-
Other	-	-	29	-	-
Net Financing Cash Flow	**3**	**14**	**86**	**103**	**22**
Change in Cash Position	(1)	9	(2)	26	(6)
FX Adjustments	(0)	-	-	-	-
Cash Balance	**1**	**10**	**8**	**34**	**28**

Balance Sheet (A$m)	FY20E	FY21E	FY22E	FY23E	FY24E
Cash	1	10	8	34	28
Other Current Assets	0	0	0	0	0
PP&E	0	0	83	167	218
Exploration & Development	23	24	26	24	18
Other Non Current Assets	-	-	-	-	-
Total Assets	**24**	**34**	**117**	**224**	**264**
Debt	-	-	-	103	125
Other Liabilities	1	1	1	1	1
Net Assets	**23**	**33**	**116**	**121**	**138**

Ratio Analysis		FY20	FY21E	FY22E	FY23E	FY24E
Diluted Shares	m	629	891	1,481	1,481	1,481
EPS - Diluted	Ac	(0.5)	(0.4)	(0.3)	0.3	1.2
P/E	x	**n.m.**	**n.m.**	**n.m.**	**29.4x**	**8.0x**
CFPS - Diluted	Ac	(0.4)	(0.4)	(0.3)	0.5	1.6
P/CF	x	**n.m.**	**n.m.**	**n.m.**	**17.6x**	**5.9x**
FCF - Diluted	Ac	(0.4)	(0.3)	(5.8)	(4.7)	(1.2)
P/FCF	x	**n.m.**	**n.m.**	**n.m.**	**n.m.**	**n.m.**
Dividends	Ac	-	-	-	-	-
Dividend yield	%	-	-	-	-	-
Payout Ratio	%	-	-	-	-	-
Franking	%	-	-	-	-	-
Enterprise Value	A$m	88	79	80	157	185
EV/EBITDA	x	**(26.9x)**	**(26.2x)**	**(26.7x)**	**9.5x**	**4.6x**
ROE	%	(14%)	(9%)	(3%)	4%	13%
ROA	%	(14%)	(9%)	(3%)	2%	7%
Net Debt or (Cash)	A$m	(1)	(10)	(8)	69	97
Gearing (ND/(ND+E))	%	(3%)	(42%)	(8%)	36%	41%
Gearing (ND/E)	%	(3%)	(30%)	(7%)	57%	70%

Reserves & Resources

Resource	Tonnes mt	Grade % TGC	Contained kt
Measured	25.5	8.6	2.2
Indicated	88.1	7.9	6.9
Inferred	98.3	7.6	7.4
Total	**211.9**	**7.8**	**16.6**
Reserve	**mt**	**% TGC**	**kt**
Probable	69.6	8.5	6.0
Total	**69.6**	**8.5**	**6.0**

Earnings Sensitivity			FY23E A$m	FY24E A$m	FY23E %	FY24E %
Graphite Price	US$/t conc	+10%	3	7	57%	36%
FX Translation	A$/US$	-10%	1	3	26%	17%

Valuation	Discount	Stake	A$m	A$/sh
Mahenge (unrisked)	-	100%	494	0.53
Mahenge (risk-adjusted)	50%	100%	247	0.27
Exploration / Other projects			10	0.01
Corporate & Other			(39)	(0.04)
Debt			-	-
Cash*			12.1	0.01
Cash from option strikes			2.7	0.00
Risk adjusted NAV			**232**	**0.25**

*Including US$7.5m investment from POSCO

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.

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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Steuart McIntyre does not own shares in Black Rock Mining Limited.