



# ***A Tanzanian Graphite Developer***

INVESTOR PRESENTATION MARCH 2016

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*The information in this report that relates to Exploration Results is based on information compiled by Steven Tambanis, who is a member of the AusIMM. He is an employee of Black Rock Mining Limited. Steven Tambanis has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 and 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Steven Tambanis consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

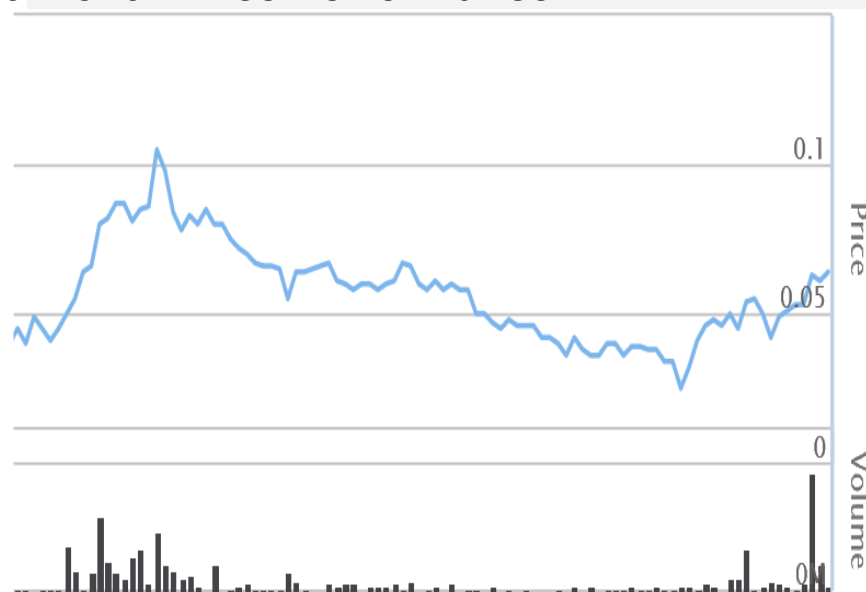
# Corporate Overview



## Capital Structure

Share Price	\$0.06
Shares on Issue	277m
Quoted Options on Issue <sup>1</sup>	77m
Market Capitalisation	\$16.6M
Cash in Bank	\$3.6M

## 6 Month Price Performance



www.blackrockmining.com.au

## Board and Management

### Stephen Copulos (Chairman)

- +30 years experience across a wide range of industries including mining, manufacturing, property, fast food and hospitality.
- Chairman of Crusader Resources Limited (ASX:CAS) and Consolidated Zinc Limited (ASX:CZL)

### Steve Tambanis (Managing Director)

- Geologist with extensive commercial and operational experience in the resources industry including business development roles at WMC Resources.

### Gabriel Chiappini (Director & Company Secretary)

- Chartered Accountant and member of Australian Institute of Company Directors with extensive experience as Director and Company Secretary to ASX listed companies.
- Director of Fastbrick Robotics Ltd (ASX:FBR), Sunbird Energy Ltd (ASX:SNY) and Global Geoscience Ltd (ASX:GSC)

### Cygnnet Capital (Corporate Advisor)

# The Mahenge Graphite Project, Tanzania



**Fourth largest flake graphite JORC Resource in the World. On track to commercialise within 2 years**

- Largest and highest grade resource in Tanzania. **131Mt@ 7.9% TGC\*** with high grade portions of **37.6Mt @10.2%** or **16.7Mt@ 11.1%**.
- Higher grades compared to Tanzania Peer group provides flexibility - scope to initially develop a smaller mine then scale-up as demand increases. **Lower capital & lower risk**
- Higher proportion of coarse and jumbo flake compared to Mozambique. Excellent purities in the 96-98% range for coarse flake. This is a premium graphite product
- Scoping Study results clearly confirm potential for a long life and low cost mining operation with NPV of US\$286M and 63% IRR
- Pre Feasibility Study (PFS) underway
- Final 30 drill hole programme in April to increase proportion of Indicated Resource and define more high-grade tonnes
- Significant news flow for next six months on development and marketing process
- **BKT is materially undervalued compared to Peers**

# Mahenge Graphite Project (Cont'd)



**Tanzania's largest and highest grade graphite resource with 10.4Mt contained graphite. Fourth largest JORC Resource in the World**

- Metallurgical test work indicates high coarse flake recoveries with high purities: testing from Epanko north primary zone returned 54.2% coarse flake or larger at 98.27% purity. This is high quality graphite with considerable scope to further improve flake quality
- The large flake size and high purity of Mahenge graphite tested to date suggests that Mahenge graphite can be applied to the premium battery market as well as traditional applications
- These key positive attributes:

• Large Resource	• Straightforward Metallurgy (large flake, high purity)
• High Grade	• Simple mining with low strip ratio

indicate excellent potential for a low cost, long life mining operation.

- Graphite marketing underway.
- Tanzania is a mining friendly jurisdiction with a good history of new mine development

# Excellent Scoping Study Results



Description	Unit	50,000 tpa case
Plant throughput	Tpa	500,000
Plant recovery	%	93.0
Feed Grade	%TGC	10.5
Concentrate Production	tpa	52,000
Cash cost of production	US\$/t	450
Basket Sales Price	US\$/t	1,236
Mine Life	years	25
Capital cost	US\$M	57
Mine strip ratio	Waste: ore	1.23:1
Discount Rate	%	10
<b>NPV</b>	US\$M	<b>285.7M</b>
<b>IRR</b>	%	<b>62%</b>
Payback	years	2

## Independent Scoping Study assessment returned solid conceptual economics

- Low capital cost of US\$57.3m delivers NPV of US\$286m
- Two year payback
- Low operating costs of US\$458/t
- Long mine life of 25 years uses <10% of Mineral Resource

# Commercial Objectives



In February 2016, our exploration team delivered the largest and highest grade contained graphite resource in Tanzania, or the fourth largest Globally. This resource provides huge flexibility for small or large production rates. The subsequent Scoping Study delivered solid economics with cash costs of US\$458/t and NPV of US\$287M with US\$57.3M capex

We have a very pragmatic and commercial focus with a primary aim of generating significant returns to shareholders. Black Rock will look to develop a mine over the next 12-24 months as we demonstrate a clear pathway for a sustainable long life operation.

We have engaged World class expertise from all relevant disciplines to assist us in determining the economic viability of a mining operation at Mahenge.

## **Our objectives are:**

- Sufficiently low cash costs of production. US\$458/t FOB port. A conservative basket price for sales: ≈US \$1,236/t; To begin with modest production, minimising capital expenditure and risk. 52,000tpa with capacity for future staged production increases
- To understand what product we can consistently produce over the life of mine. Indications to date are highly encouraging with a high purity flake concentrate and coarse sizing combining to make a premium graphite flake product
- To match our graphite attributes to customer requirements, match offtake to planned production, evaluate selling a range of graphite products into different applications, explore downstream value-added options;
- To work in harmony with the local community for a long term, sustainable partnership.

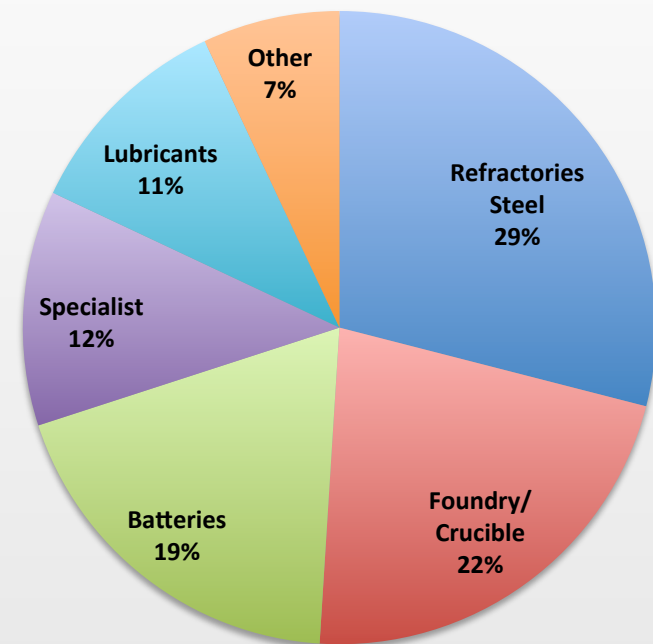
# Natural flake graphite market



## Set for continuing battery demand growth

- Production is currently dominated by China (75%) and Brazil (10-15%)
- China does not have significant coarse flake proportions compared to Africa
- East Coast Africa is set to become a new low cost supplier with potential to offer coarse flake graphite at higher purities than Asian sourced material.
- Typical end uses are steel making, refractories, brakes, lubricants and batteries
- Battery usage is a strong growth sector for electronic appliances and the fast developing electric vehicle (EV) market
- Even larger growth is expected for electrical storage (home and industrial). This sector has potential to eclipse the EV market in battery demand

Flake Graphite by Use





# Metallurgical test work, Perth



**Extensive metallurgical test work programme underway with first stage results expected in March**

- Formal programme to evaluate Epanko and Ulanzi lodes. 500kg sample from Ulanzi processed to make flake concentrates for further evaluation and marketing
- Excellent results to date with scope to improve with ongoing optimisation
- Results from Epanko oxide and fresh zones up to 98.3% purity and average TGC of 97.88% for all fractions >75 $\mu$  (table below)

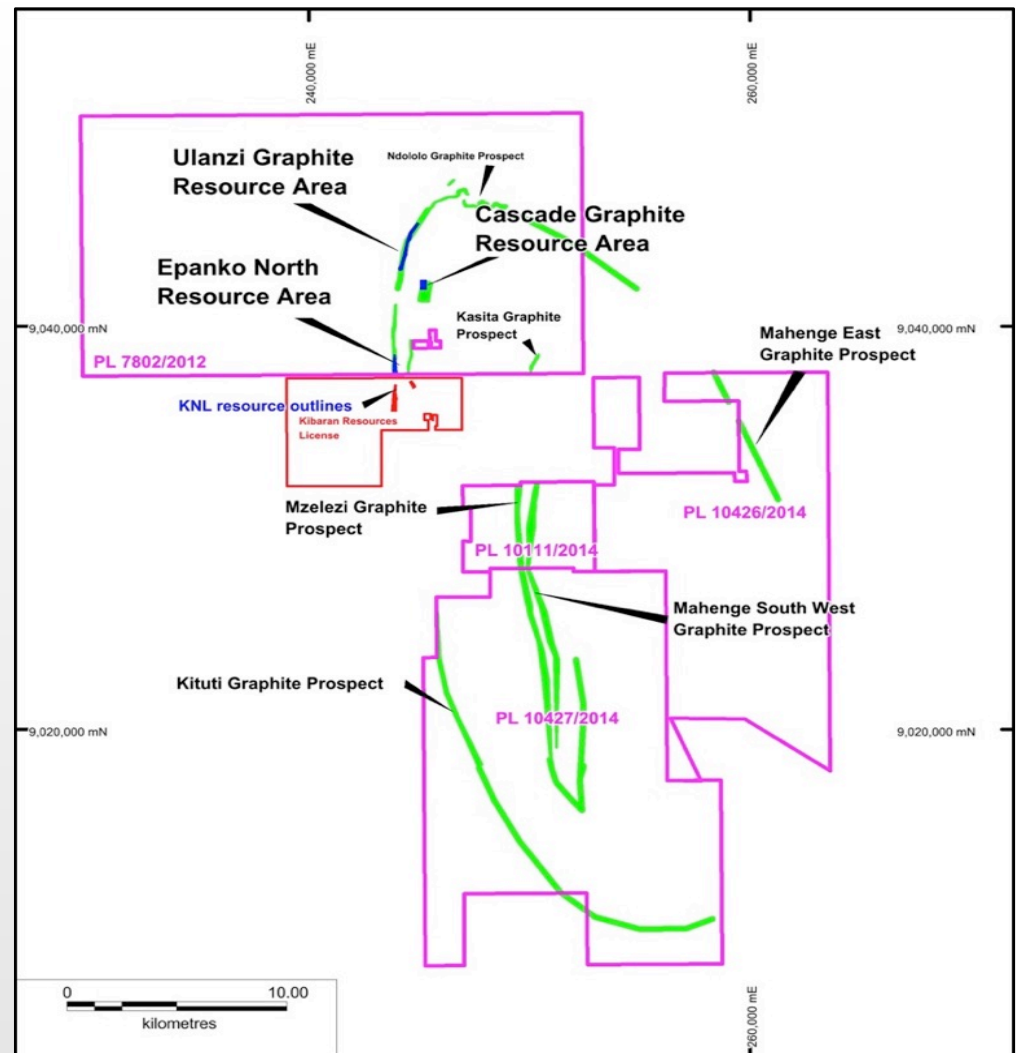
Screen Size	Mass	TGC (%)
	%	Assay
+300 $\mu$ m	16.5	98.2
+180 $\mu$ m	37.8	98.3
+150 $\mu$ m	9.4	97.3
+106 $\mu$ m	13.8	97.6
+75 $\mu$ m	8.7	96.5
+38 $\mu$ m	7.7	89.2
-38 $\mu$ m	6.2	76.7



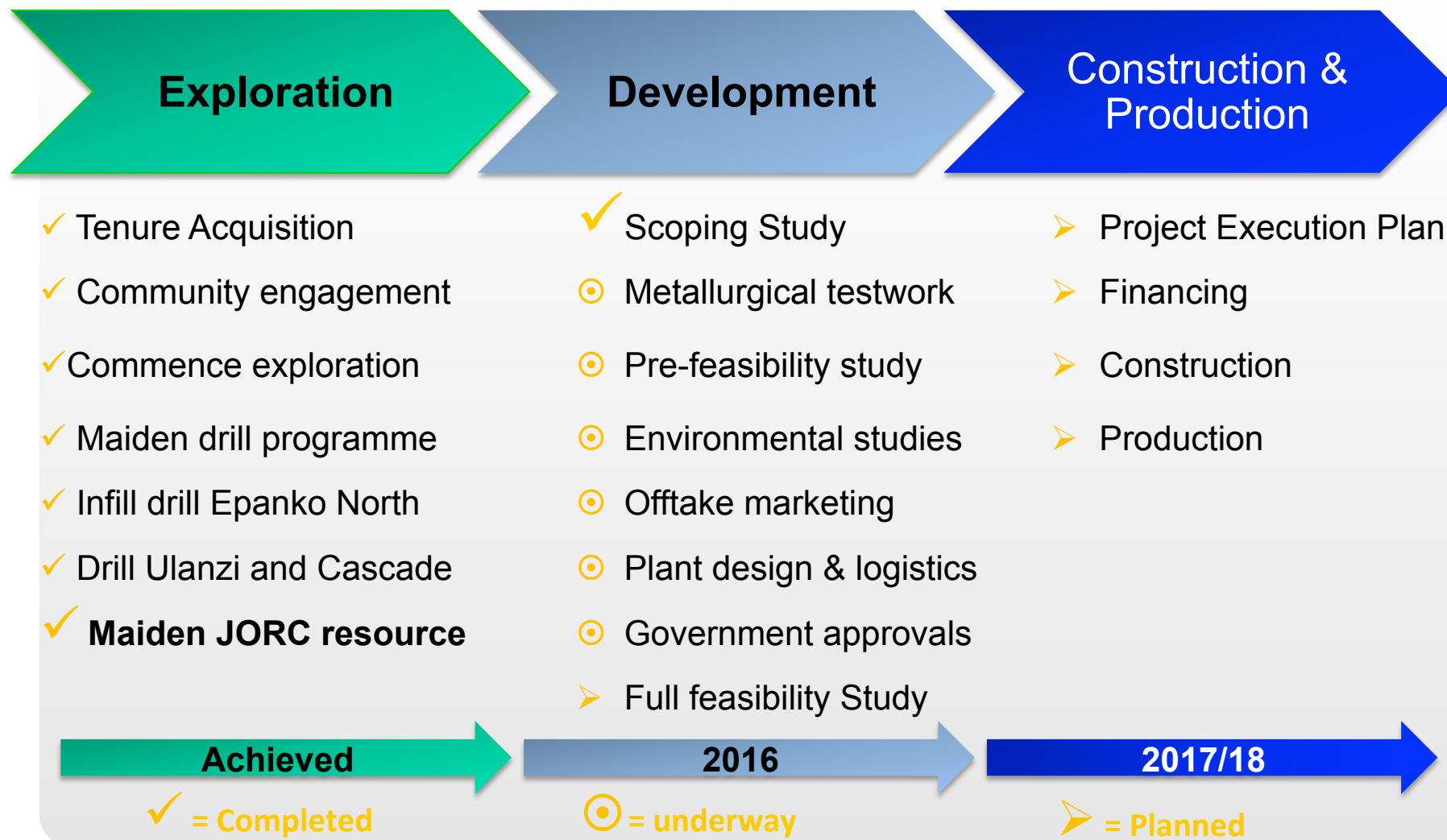
# Mahenge Project Area



- 680km<sup>2</sup> of tenure
- The Epanko north, Ulanzi and Cascades graphite zones contain Tanzania's largest and highest grade graphite resource. Additional drilling will yield more graphite mineralisation
- 60km from Ifakara which has mains power from the nearby Mikumi Hydroelectric plant and rail head to Dar es Salaam Port
- Green zones represent mapped graphite bearing lode structures within the Mahenge north tenement.
- Significant additional resource potential between Ulanzi and Epanko north, plus 22km of untested graphite lodes at Kituti



# Development Pathway



# ASX Peer Comparison – total resource size

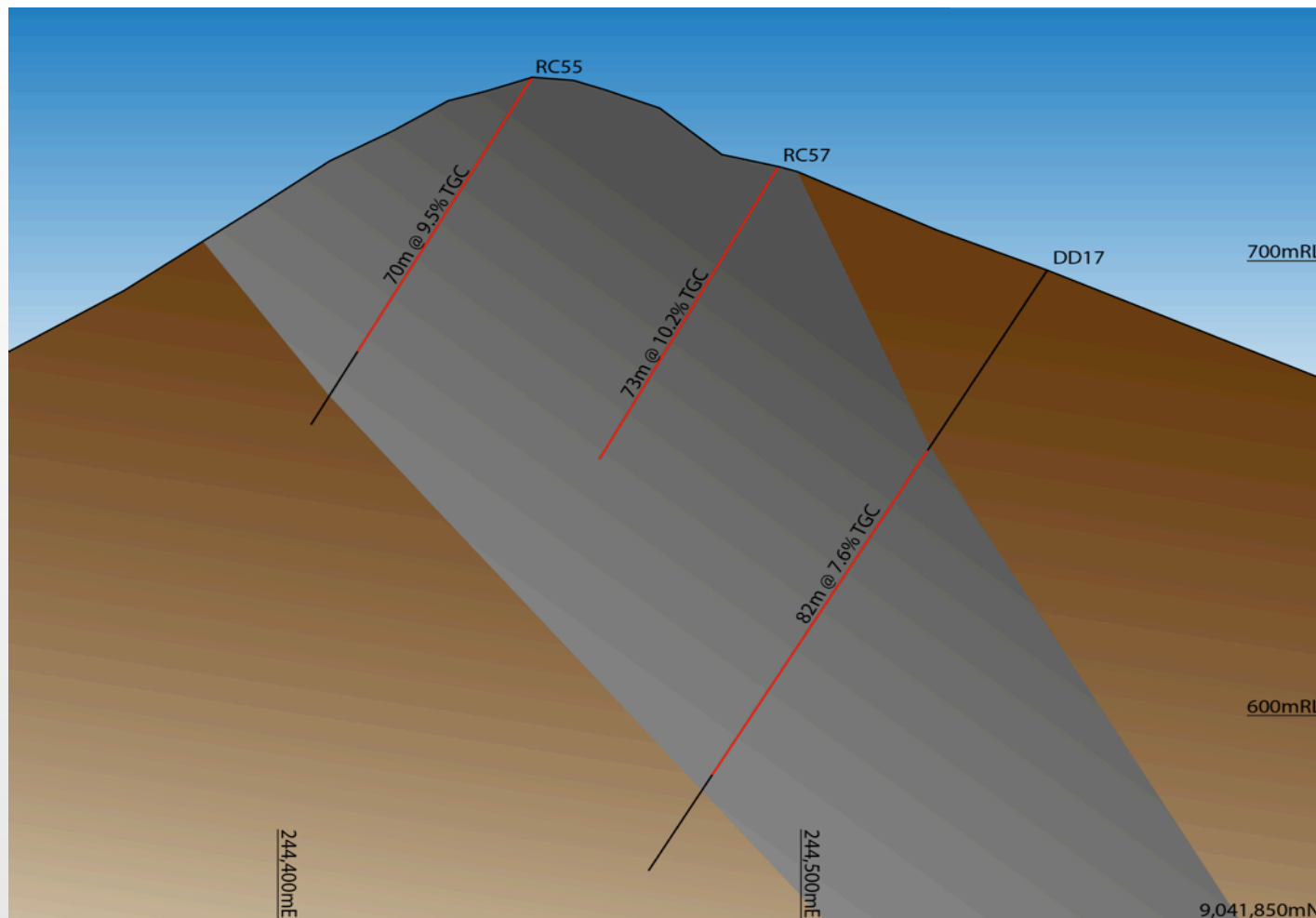


Company	Market Cap (\$M)	Resource Size (Mt)	Grade (TGC%)	Cont. Graphite (Mt)	Type	Resource Category (JORC)	Project Location	Enterprise Value A\$m	EV/Tonne Graphite A\$/t	
Syrah Resources (SYR)	\$1,009	1,150	10.2%	117	Flake	Measured, Ind, Inf	Mozambique	818	\$6.99	
Triton Minerals (TON) (Suspended)	\$30	1,457	10.7%	155	Flake	Indicated, Inferred	Mozambique	29.7	\$0.19	
Metals of Africa (MTA) GLOBAL	\$10.2	83.5	8.8%	7.4	Flake	Measured, Ind, Inf	Mozambique	8.7	\$1.18	
Black Rock Mining (BKT) global res	\$13.6	131.1	7.9%	10.4	Flake	Indicated, inferred	Tanzania	8.67	\$0.84	
Mozambi Resources (MOZ)	\$20	178	5.1%	9.08	Flake	inferred	Tanzania	14.4	\$1.59	
Magnis Resources (MNS)	\$111	174	5.4%	9.40	Flake	Measured, Ind, Inf	Tanzania	106.42	\$11.33	
KNL global resource	\$30	89.1	7.4%	6.6	Flake	Measured, Ind, Inf	Tanzania	26.6	\$4.03	
IMX Resources (IXR)	\$5.0	9.2	10.7%	0.98	Flake	Indicated, Inferred	Tanzania	4.3	\$4.39	Tanz. Av.
Walkabout Resources (WKT)	\$5.8	15.3	10.1%	1.5	Flake	inferred	Tanzania	5.524	\$3.68	\$4.31
Talga Resources (TLG)	\$45.0	8	24.4%	1.85	amorph	Indicated, Inferred	Sweden	40	\$21.62	
Lamboos Resources (HXG) Hexagon	\$20.0	17.2	4.6%	0.8	Flake	Indicated, Inferred	Australia (WA)	19.5	\$24.38	
Archer Exploration (AXE)	\$6.00	5	7.6%	0.4	Flake	Measured, Ind, Inf	Australia (SA)	5	\$12.50	
Valence Industries (VXL) (suspended)	\$22	3	11.7%	0.35	Flake	Indicated, Inferred	Australia (SA)	21.4	\$61.14	Aust. Av.
Lincoln Minerals (LML)	\$10.50	2	15.1%	0.33	Flake	Indicated, Inferred	Australia (SA)	9.53	\$28.88	\$31.72

Source: ASX Company announcements. Cash position post capital raisings as at 29 February 16

Source: ASX Company announcements. Market Capitalisation as at 04 March 2016

# Ulanzi cross section



Cross sectional view of Ulanzi mineralised lode showing mineralisation on top of steep dipping ridge structures, ideal for low cost mining. Mining strip ratio is expected to < 1:1 Waste:Ore.

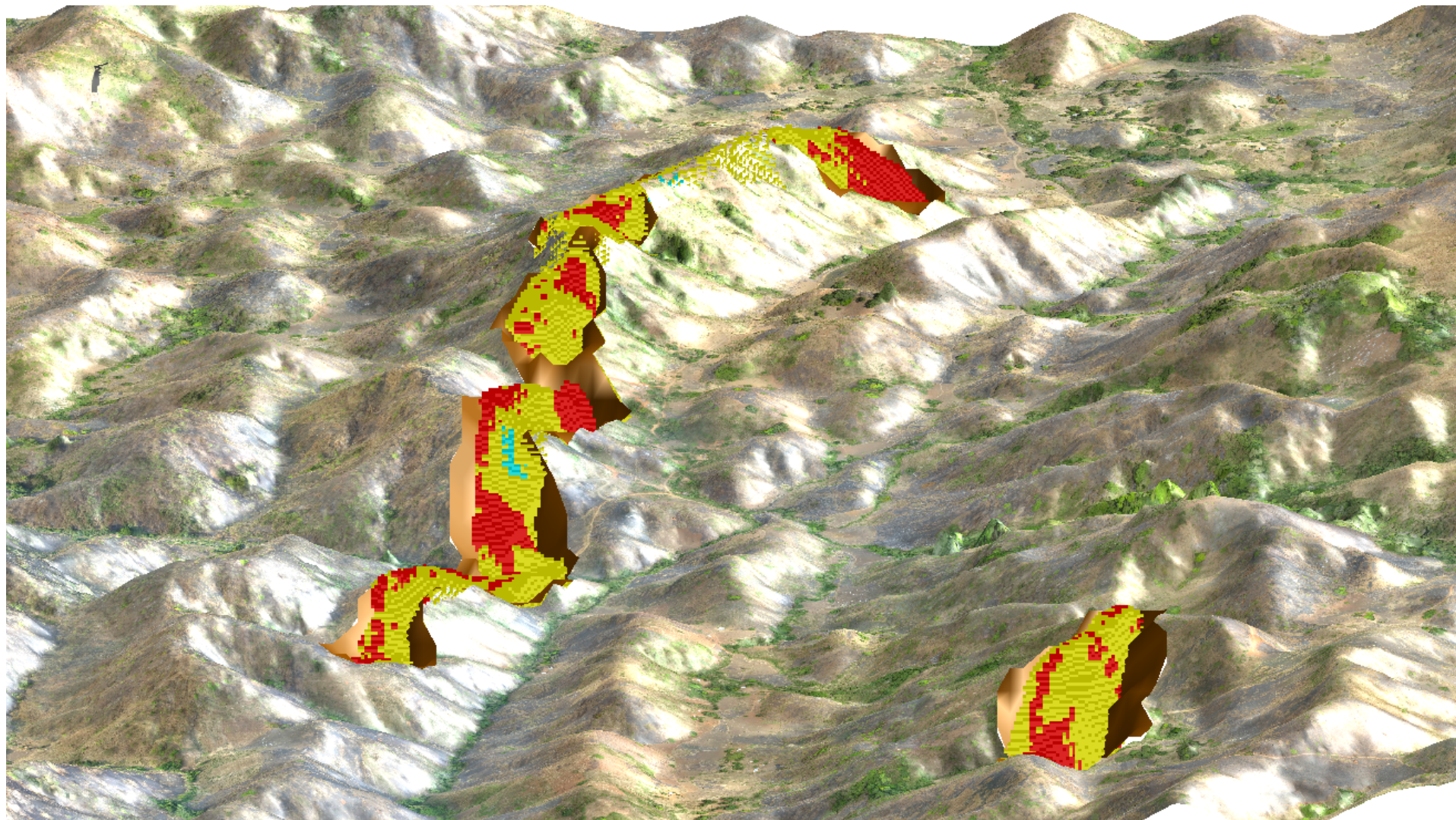
# Summary: The Value Proposition



- ✓ **The Largest and highest grade JORC resource in Tanzania**  
131Mt@ 7.9% TGC with 40% of resource tonnes in the Indicated category. High grade zones of 16.7Mt @11.1% TGC. Low strip ratio open pit mining  
Ability to produce 25-250ktpa of graphite concentrates without straining the resource
- ✓ **Metallurgical testing indicates excellent flake concentrate can be made from a simple three stage flotation process**
- ✓ **Straightforward Logistics**  
60km from TAZARA railhead at Ifakara. Train to Dar es Salaam Port. Road transport is a viable option. Potential for Mains power from nearby hydroelectric scheme at Mikumi
- ✓ **Excellent Scoping Study results. Low Capex US\$57m, high NPV of US \$286m. 62% IRR. Low Cash costs US\$458/t**
- ✓ **Marketing discussions underway**
- ✓ **Results indicate potential to establish a long-life, low cost mine**



# Ulanzi Block model 3d view



# Thank You

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