



Fast-tracking Graphite Development in Tanzania

Kibaran Resources Limited (ASX: KNL)
Andrew Spinks, Executive Director

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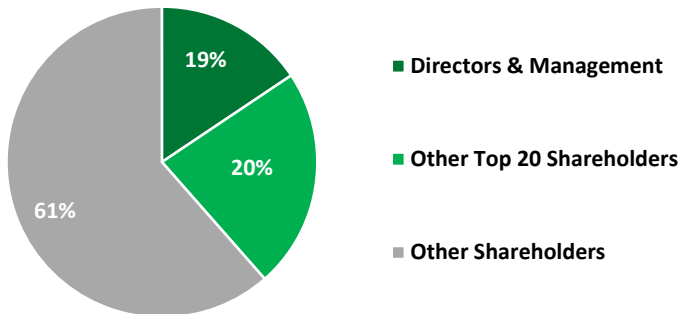
CORPORATE SNAPSHOT

Capital Structure

KNL:ASX

Shares on Issue	126.3m
Share Price (31 October 2014)	\$0.13
Market Capitalisation	\$16.4m
Net Cash (30 September 2014)	\$2.9m
Enterprise Value	\$13.5m
Options	
Listed Options	Exp 5 August 2015, Ex \$0.20 4.5m
Unlisted Options	Various Exp, Various Ex Prices 9.9m
TOTAL	14.4m

Shareholders



INVESTMENT HIGHLIGHTS

➤ World-class graphite assets

MAHENGU

- **Flagship Epanko Deposit:** Measured and Indicated JORC resource, advanced metallurgy and ongoing Environmental and Social Impact studies
- Positive Scoping Study (NPV \$213 million) with significant value upside

MERELANI

- Three significant exploration targets defined.
- **MoU signed** to consolidate Merelani graphite province which includes the historic graphite mine

- Graphite Sales and Offtake - **20,000tpa LOI with Thyssenkrupp** and **10,000tpa binding offtake agreement** signed with major European graphite trader
- **Significant Market Opportunity:** Growing global graphite demand plus market shortage of large flake product
- **Graphite & Graphene 3D Printing:** exposure to high-growth industry via *3D Graphtech Industries*
- **Experienced Board and Management** with in-country industry experience and technical expertise

BOARD AND MANAGEMENT

John Park - Non-Executive Chairman

- Metallurgist with successful track record in technical, financial and management in minerals industry
- Held Executive and Board positions for UK, Canadian and Australian listed companies
- Founder & Exec. Director of TSX-listed SAMAX Gold, which developed and operated Merelani graphite mine in Tanzania – the first new mine since Independence and remains the largest historical production of graphite in East Africa

Andrew Spinks - Executive Director

- Geologist with 25 years experience
- Expertise in exploration, mining and management across a number of commodities
- Association with operations in Africa for the past 13 years, including co-founding Tanzgraphite Pty Ltd

Grant Pierce OAM - Executive Director - Projects

- Mining engineer with over 25 years experience
- Extensive management experience & knowledge of Tanzanian mining sector
- Senior operational management roles in mining and exploration projects in Africa at several companies including, Perseus Mining, Resolute Mining, Africa Resources and Barrick Gold in Tanzania

Robert Hodby - Company Secretary

- Over 20 years industry experience in financing and administration of public and listed companies at both operational and corporate levels
- Provides corporate, management and accounting advice to a number of companies involved in the resource and energy industries



His Excellency Jayaka Kikwete (R), President of Tanzania with Grant Pierce (L) and Andrew Spinks (C) at Mahenge on the 20 August 2014 discussing the significance of Kibaran's Epanko and Merelani graphite projects to Tanzania.

GRAPHITE OVERVIEW

- Industrial mineral with unique physical properties:
 - Superior heat/electricity conductivity, stable wide temperature range, high melting point, excellent lubrication, malleable, resistant to chemicals
- Used in a number of applications:
 - **Technology** - essential component in lithium ion batteries (smart phones, tablets, electric cars etc)
 - **Industrial** - nuclear, aircraft and aerospace, mechanical applications such as heavy machineries, refractories, construction materials, commercial printing etc
 - **Energy** – storage capabilities for electricity, thermal and renewable energy
- Potential application in **graphene**
 - a derivative of graphite lauded as “the world’s next super material”



GRAPHITE MARKET

Major global growth commodity of the 21st century:

- Global demand for natural graphite forecast to increase 37% by 2020
- Several types of graphite: Expanded, Spherical and Micronised
- Battery market forecast to be major driver of demand
 - Increasing use of batteries in consumer electronics and electric vehicles
 - Currently represents 23% of global flake graphite demand
 - Battery demand for graphite forecast to double in next six years
 - Three battery mega-factories (Tesla, LG Chem, Foxconn Technology) expected to come online in the next few years, potentially prompting a demand surge for raw material
- Spherical graphite is immediate key growth sector; a key graphite ingredient in batteries
 - Battery applications: graphite largest raw material input. Flake size and conductivity instead of high graphite grade are key properties
- Expanded Graphite, driven by thermally efficient building product demand has the potential to be a larger market than Spherical Graphite

Graphite has the potential to become a mainstream commodity led by technological advances and drive for efficiency

WHY TANZANIA?

Mineral-rich landscape:

- Significant graphite endowment
- Largest graphite flake sizes in East Africa - high metamorphic gradient
- High-grade graphite occurrences
- Has potential to become a top five graphite producer

Mining-friendly country:

- Stable Government committed to mining sector growth and development
- Significant mining support services
- Extensive infrastructure network (road, rail and ports)
- Third largest gold industry in Africa
- Significant commercial mining activity in place
- Access to skilled and educated local workforce



New Road and Bridge Constructions on route to Epanko

BINDING OFFTAKE AND LOI AGREEMENTS

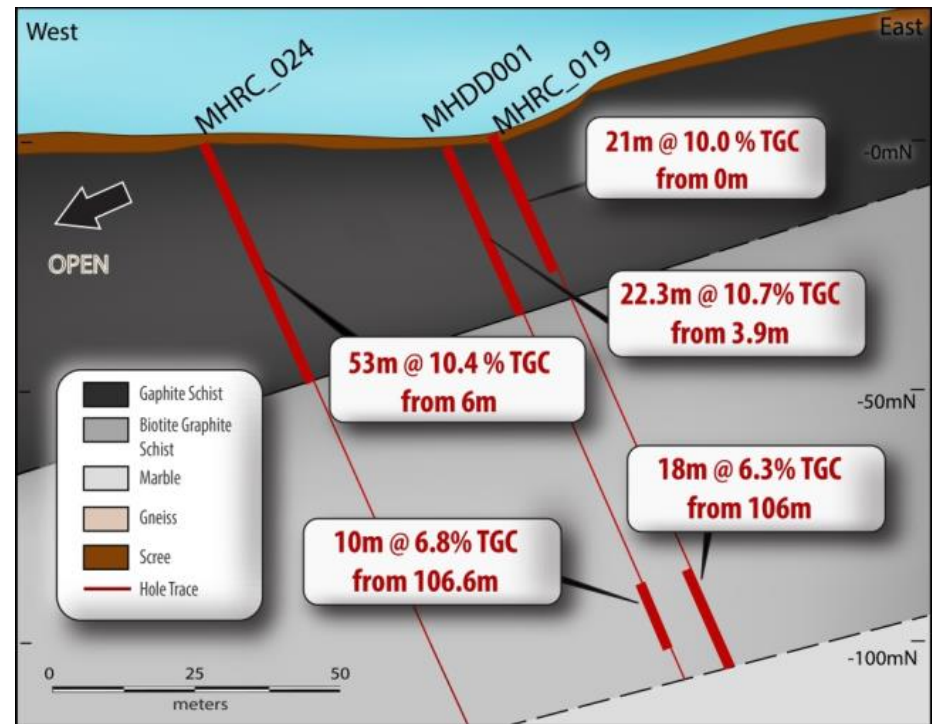
- Kibaran is the first ASX company to sign a binding offtake agreement and partnership for graphite sales
- **Only company globally with a binding offtake agreement outside China**
- **Agreements in place for 30,000tpa for 10 years:**
 - 10,000tpa binding offtake with sophisticated European graphite market trader
 - 20,000tpa LOI with ThyssenKrupp and assistance with debt
- **Discussions commenced with traders and end-users (Japan and USA) for further graphite offtake agreements**



Validates quality and commercial appeal of Kibaran's large flake graphite, and longevity supports a strong long-term outlook for natural graphite demand

FLAGSHIP EPANKO DEPOSIT

- Total JORC Mineral Resource Estimate: 22.7Mt at 9.8% TGC for 2.22Mt contained graphite
- Scoping study based on Indicated Mineral Resources Estimate of 12.8Mt at 10.0% TGC for 1.28Mt contained graphite
- Highest grade graphite Mineral Resource to be delineated in Tanzania
- Grade compares favourably to past graphite-producing operations in Tanzania:
 - Merelani Mine: 8.3% TGC



*as released 22 May 2013

Robust and thick high-grade zones of oxidised mineralisation assist low operating costs - simple liberation with no fine grinding or acid treatments

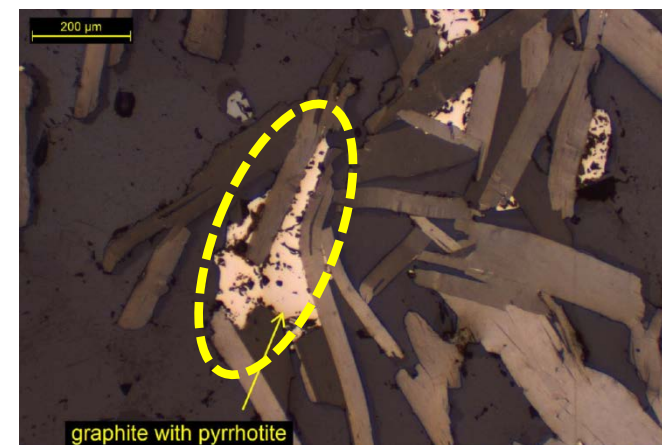
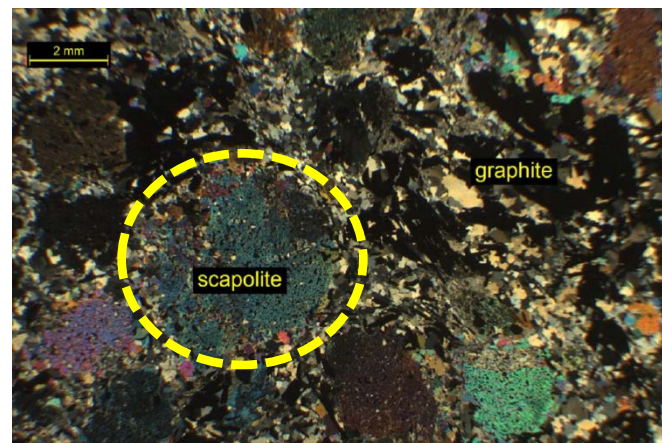
GEOLOGICAL FINDINGS

Mineralogy and Petrographic Findings

- Flake size linked to metamorphic gradient not grade
- Significant quantities of large flake graphite with flake sizes frequently in excess of 1000 micron long (In-situ)
- Epanko dominant host mineral Scapolite (a calc silicate mineral)
- Low sulphide and not intercalated with Graphite

Rock Mineralogy Impacts

- Depth of weathering
- Graphite Liberation and Yield



GRAPHITE CRYSTALLINITY

Metamorphic Gradient

- High metamorphic gradient is the key factor to graphite crystallinity - large flake size distribution and high purity

Mineralogy at Epanko

- Eclogite and Granulite facies - highest pressure and high temperature

Benefit of High Metamorphic Gradients

- High Purity (99.98%) and Melting Point (1,305°C)
- Low percentage of fine flake (< 75micron) = low value and likely unsaleable (oversupply)
- High percentage of large flake provides higher basket prices and increased saleability

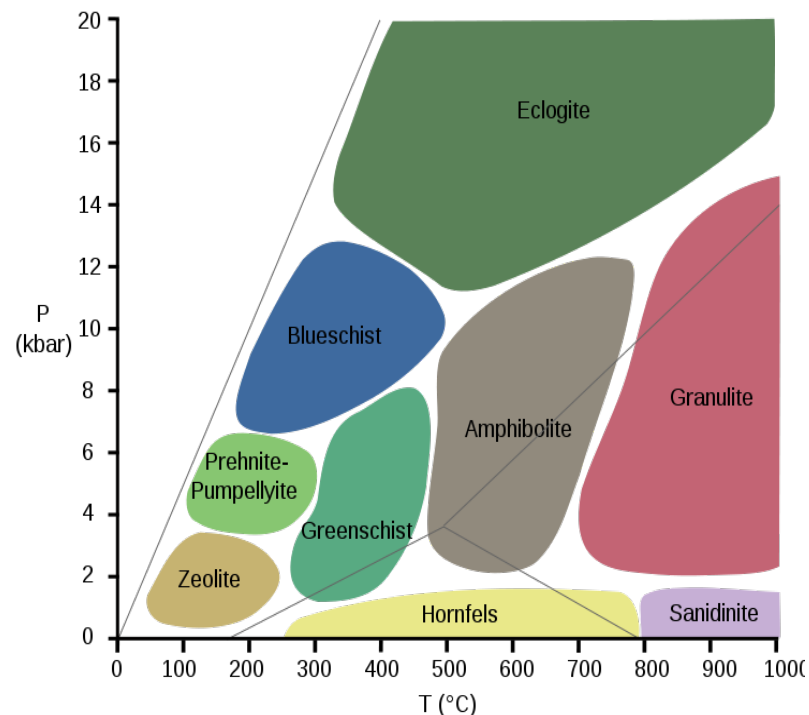


Diagram showing metamorphic facies in pressure-temperature space (Source: Wikipedia)

Grade is not related to flake size. Flake size is determined from metamorphic gradient

METALLURGICAL RESULTS

Independent but complementary testwork programs completed:

- Carried out by a leading European manufacturer of carbon-based products
- Independent mineral processing work by a large sophisticated European graphite trader

Results:

- **Ultra High Purity – 99.98% achieved in a simple one-step purification process**
- **Simple Flotation achieved >96% recovery** of graphitic carbon. Concentrate graded at 93% fixed carbon
- Flotation test work yielded **large flake** graphite:
 - 73.8% in >106µm (micron) fraction; and
 - 21.6% in >300µm (micron) fraction
- Clean product with no visible natural mineral impurities
- **Suitable for the 'expanded' and 'spherical' battery market**
- Amenable to standard recovery processes
- Marketable and saleable product



Graphite foil produced from Kibaran large flake graphite

Results support binding off-take agreement with European graphite trader

POSITIVE SCOPING STUDY

HIGHLIGHTS

- Indicates Epanko as an economically robust graphite deposit capable of producing premium quality large flake graphite with no limitations to its industrial use
- Net Present Value (NPV) of \$213m
- Capital payback period of 2.5 years
- Extremely low strip ratio (W:O) with first 15 years 1.3 to 1 and LOM of 2.2 to 1
- Substantial mine life of 27 years

STUDY CONFIRMED

- Confidence to advance immediately to Feasibility Study based on production of 40ktpa
- Ability to increase production as market demand increases

		Base Case
Plant throughput	(tpa)	420,000
Plant Recovery	(%)	96%
Feed Grade	(%)	9.64%
Production Concentrate	(tpa)	40,000
Base Price Assumption	(\$/t)	\$1,258
Cost/t Concentrate	(\$/t)	\$489
Mine life	(yrs)	27
Pre-Production Capital	(\$m)	\$56
Strip ratio	(W:O)	2.2:1
Discount Rate	(%)	10
Net Present Value (NPV)	(\$m)	213

SCOPING STUDY FLOWSHEET AND DESIGN

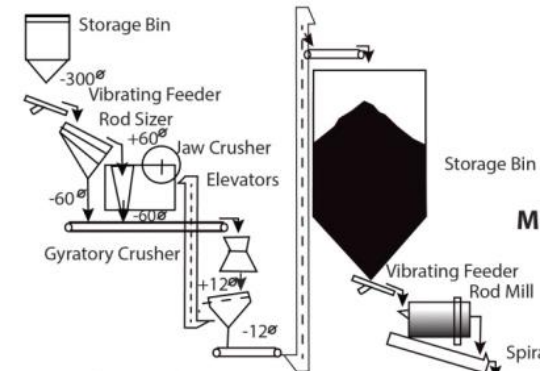
Flowsheet and plant design:

- Simple flow sheet design
- Outstanding test results producing an attractive size fraction

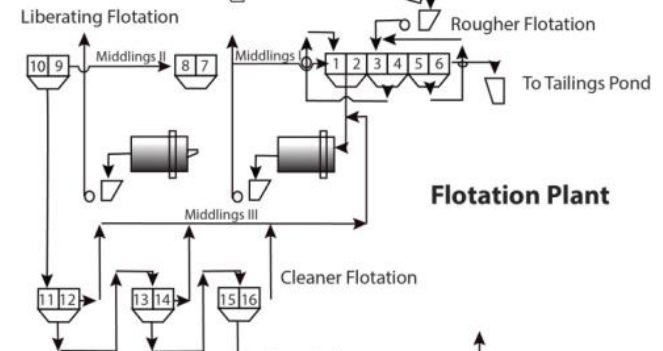
Size (Micron)	Portion of size Fraction (%)	Fixed Carbon (%)
> 500	8.4	97.6
> 300	13.2	95.4
> 180	28.6	93.8
> 106	23.6	93.6
> 75	10.4	91.0
< 75 *	15.8	87.5

Kibaran has the highest large flake distribution and lowest fines fraction among its peers

Crushing Plant

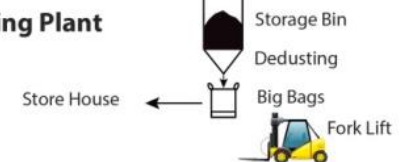


Milling Plant



Flotation Plant

Drying and Packing Plant



CURRENT GRAPHITE PRICING

- Pricing of graphite sales is related to flake size and product characteristics (size, purity, ash, moisture, etc)
- Larger flake size = higher price
- Flake distribution is critical to project economics and commercial viability
- Key marketable products are the large +180 micron size fractions
- **Based on metallurgical flotation results, over 50% of Epanko graphite is greater than +180 micron size fraction**

Indicative Graphite Pricing*

FLAKE SIZE	GRADE	PRICE
> 500 microns	96-98% C	US\$2,300/t
> 300 microns	94-96% C	US\$2,000/t
> 180 microns	94-96% C	US\$1,300/t
> 106 microns	94-96% C	US\$950/t
> 75 microns	90%+ C	US\$750/t
< 75 micron	90%+ C	US\$550/t

* Note

- Graphite does not trade on the metal exchanges
- Contracts negotiated directly between suppliers and consumers

Supply and environmental crackdown on Chinese graphite producers along with battery mega-factories will support prices

Source: Industrial Minerals, 16 December 2013

FUTURE PRICING

- Stormcrow Research – Highlights the competitive advantage of having a high proportion of Large (>180 micron) and Jumbo (>300 micron) flake distribution; combined with a low proportion of Fine (<75 micron)

FLAKE SIZE			SIZE FRACTION	CURRENT GRAPHITE PRICING		STORMCROW 2020 PRICES	
				PRICE (US\$/t)	VALUE (US\$)	PRICE (US\$/t)	VALUE (US\$)
Name	Microns	Mesh					
Jumbo	> 300	>48	21.6	\$2,300	\$497	6175	\$1,334
Larger	>180	>180	28.6	\$1,300	\$372	1165	\$333
Medium	> 106	>150	23.6	\$950	\$224	517	\$122
Small	> 75	>200	10.4	\$750	\$78	493	\$51
Fine	< 75	<200	15.8	\$550	\$87	359	\$57
Weighted Basket Price (Price x Size Fraction)					\$1,258		\$1,897

- Stormcrow prices forecast a 50% increase in Kibaran's graphite basket price value over current graphite prices

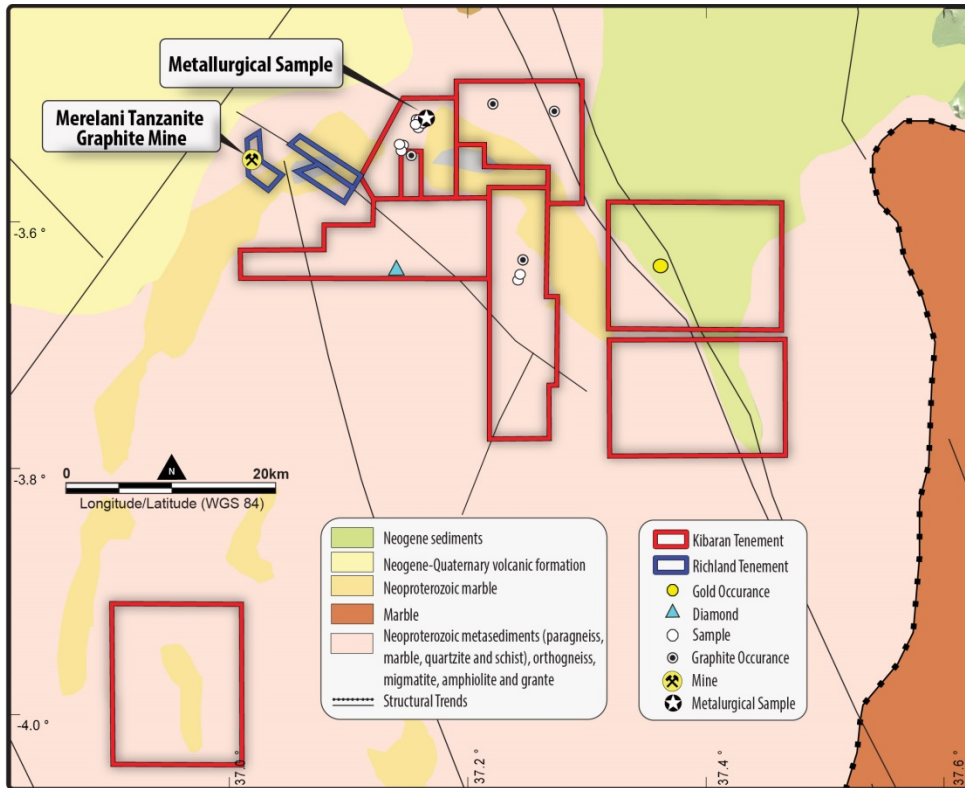
DEVELOPMENT SCHEDULE

Program on schedule and major value drivers expected in short term

ITEM	Month														
	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
MAHENGE GRAPHITE PROJECT (40ktpa base case)															
Exploration - Development															
Drill pad preparation	✓	✓													
Drilling to Upgrade Resource from Inferred to Indicated			✓	✓	✓	✓									
Water Monitoring Bores							✓	✓							
Diamond Drilling - Metallurgical/Geotechnical Engineering								✓	✓						
Resource Estimation						✓	✓	✓							
Feasibility Study															
Mine design, optimisation and scheduling															
Metallurgy and Pilot Plant Testwork															
Environmental and Social Base Line Studies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Issue of Environmental Certificate by NEMC															
Mining Licence Application															
Feasibility Study															
Detailed Processing Plant and Infrastructure Engineering															
Financing															

* Subject to a positive feasibility study is developed, which is uncertain at this point, the Company will advance these items.

MERELANI GRAPHITE PROJECT



- Located in world-class graphite province
- MoU signed to provide access to strategic graphite rights at project
- Parties working towards binding offtake agreement
- Merelani mine had largest historical production (15ktpa) in East Africa
- Associated mine infrastructure and historical resource exists
- **Significant upside:** Graphitic schist has been mapped over 1.5km length and up to 200m widths to the east of Merelani graphite mine
- Previous work returned rock chips assayed 8.1%TGC and metallurgical head grade 17.1% TGC



Tanzanite crystal on graphite matrix
(Merelani Tanzanite Mine)

PRODUCTION GROWTH VIA DIVERSITY

Epanko Deposit

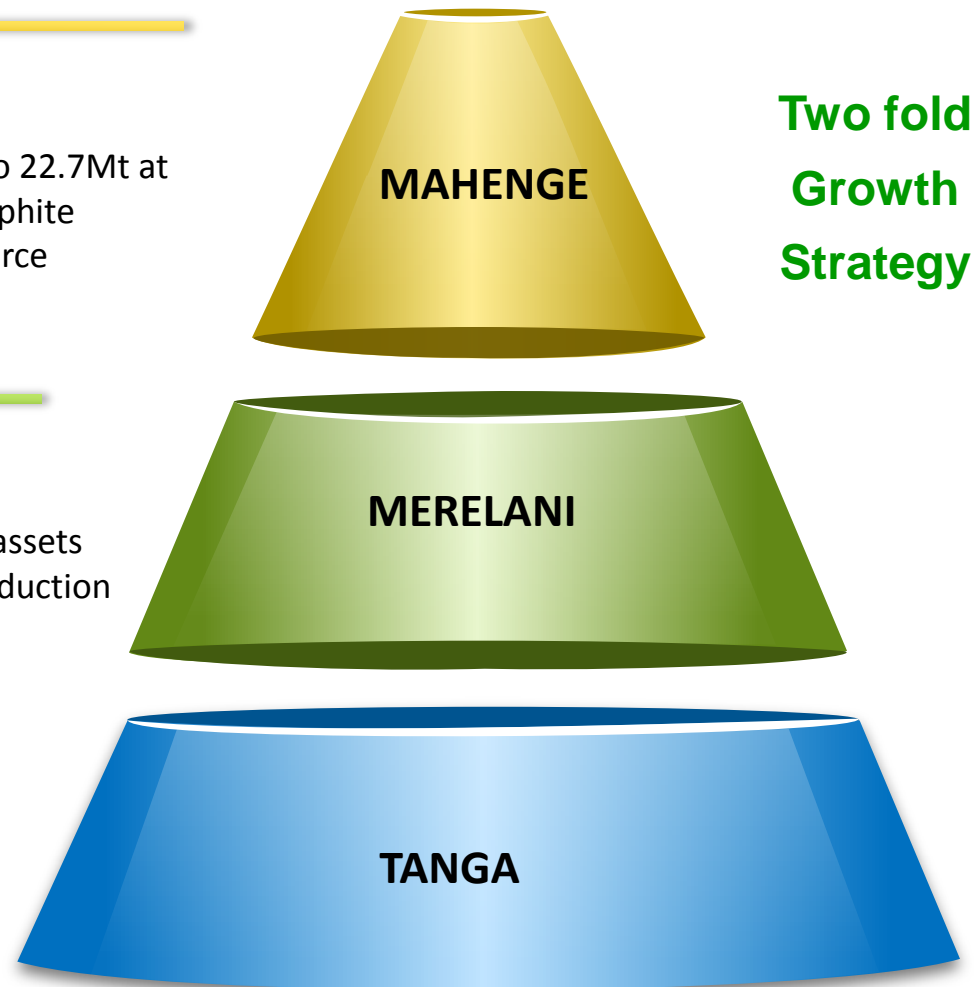
- JORC Mineral Resource upgraded to 22.7Mt at 9.8% TGC for 2.22Mt contained graphite
- Significant upside to increase resource
- Positive Scoping Study

Merelani

- Strategic consolidation of graphite assets
- Three key targets and historical production of 15ktpa

Early Stage Exploration

- Significant exploration potential and infrastructure access



GRAPHITE & GRAPHENE 3D PRINTING

- Strategic alliance signed with leading Australian 3D printing company - 3D Group
- Established jointly owned 3D Graphtech Industries
- Goals:
 - Pursue patents
 - Engage in collaborative research partnerships
 - Seek value-add strategic relationships
 - Graphite to be sourced exclusively from Kibaran
- Joint study with leading Australian research organisation CSIRO identified two opportunities that could lead to high volume/high quality graphite and graphene production, and potential application in 3D printing.

DOWNSTREAM EXPOSURE:

- Graphtech provides Kibaran a vehicle to participate in 3D printing market
- 3D printing market forecast to grow from US\$3.8 billion to US\$16.2 billion by 2018
- Proven technology with production of car parts, jewellery, dental applications

SUMMARY

- Graphite is a 21st century growth commodity driven in large part by technology – but significant supply opportunities expected to be limited to producers of premium, large flake graphite
- Epanko confirmed as containing a premium, ultra high purity, large flake graphite product, with highly attractive economics based on low capex and high margins
- Kibaran well placed to become a premium, large flake graphite producer in the near term – combined 30,000tpa with LOI with ThyssenKrupp and binding offtake with European Trader
- Epanko being fast-tracked into production & consolidation of Merelani graphite province provides opportunity to quickly advance second premium product production centre
- Focused strategy, experienced team with proven results, strategic partnerships in place

CONTACT DETAILS



Developing high value, premium quality graphite in Tanzania

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