

# **MAHENGE**

BLACK ROCK

### **BEST IN CLASS GRAPHITE PROJECT**

Mining Journal Conference June 2019

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#### COMPETENT PERSONS

The information in this report that relates to Exploration Results and Mineral Resource Statements is based on information compiled by John de Vries, who is a member of the AusIMM. He is an employee of Black Rock. John de Vries 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'.

The information that relates to Mineral Resources is based on and fairly represents information compiled by Mr Lauritz Barnes, (Consultant with Trepanier Pty Ltd) and Mr Aidan Patel (Consultant with Patel Consulting Pty Ltd). Mr Barnes and Mr Patel are members of the Australian Institute of Mining and Metallurgy and have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to the activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Barnes, Mr Patel and Mr de Vries consent to the inclusion in this report of the matters based on their information in the form and context in which they appear.

The Ore Reserves have been compiled by Black Rock Mining, under the direction of Mr John de Vries, who is a Member and Chartered Professional of the Australasian Institute of Mining and Metallurgy. Mr de Vries is a full-time employee of Black Rock Mining and holds performance rights in the company as part of his total remuneration package. Mr de Vries has sufficient experience in Ore Reserve estimation relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves".

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### **Corporate overview**



Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange (ASX:BKT) with a 100% interest in the Mahenge Graphite Project located in Tanzania.

The Project has a JORC compliant Mineral Resource Estimate of 212m tonnes at 7.8% TGC.

The Reserve is 70m tonnes at 8.5% TGC and supports a mine life of 250k tonnes of graphite per annum for 25 years.

The contained graphite of the project is ranked #2 in terms of Ore Reserves and #4 in terms of Resources



### **Leadership Team**







Mining Engineer with over 35 years-experience in mine development and operations. Previously, General Manager Technical Services with St Barbara and integral in the 2014 turnaround. John has held positions at BHP Ni West, and was Global Business Manager, Advanced Mining Solutions with Orica Mining Services. John's geographic experience includes Africa, the Pacific, the FSU, North America and South America.



RAYMOND HEKIMA
Vice President – Corporate
(Tanzania)

Holding qualifications in Environmental Sciences and Management with over 13 years experience with Government and Corporate sectors. Raymond is responsible for overall business and operations in Tanzania and manages relationships and interactions with, National Government, Local Government, NGO's and Community relations.



JEFF DAWKINS
Chief Financial Officer &
Joint Co-Secretary

Chartered Accountant with over 25 years commercial and corporate experience including over 20 years working for resources companies with particular experience in mine development and start up of offshore projects. Jeff was previously CFO during the financing and development phase of Archipelago Resources, Hanking Gold and Blackham Resources. Jeff was also CFO at Peak Resources and most recently Battery Minerals.



RICHARD CROOKES
Non-Executive
Chairman

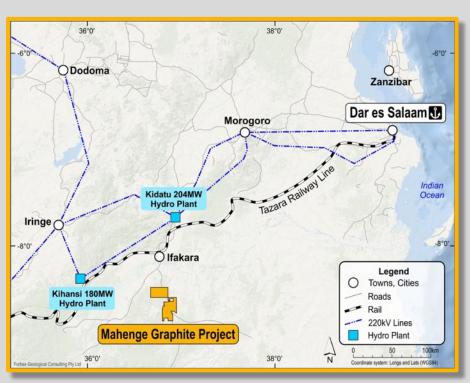
A geologist with over 30 years executive experience in the resources and investments industries. Prior roles include Investment Director at Mining PE Fund EMR Capital, Executive Director in Macquarie Bank's Metals & Energy Capital Division and Chief Geologist then Mining Manager with Ernest Henry Mining. Has raised capital and financed a number of projects globally, including across Africa.

### **Black Rock Mining**



### **MAHENGE - Unique Geology and Geography**

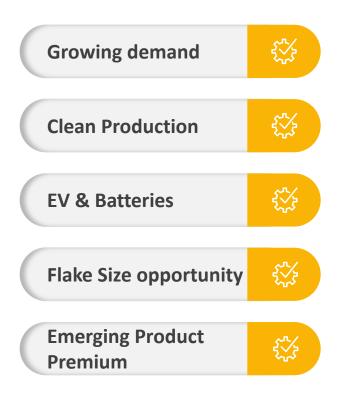
- No overprint mineralisation results in industries highest and cleanest graphite concentrate
- Large flake distribution places product in uncontested and multiple markets
- Large deposit results in intergenerational mine life
- Large grind size permits dry stacking
- Proximity to national grid provides access to grid power
- Proximity to rail and deep water ports lowers logistics complexity and costs
- Well educated local workforce eliminates commute and camp



Map showing location of Mahenge Graphite Project in Tanzania

## Why Graphite?



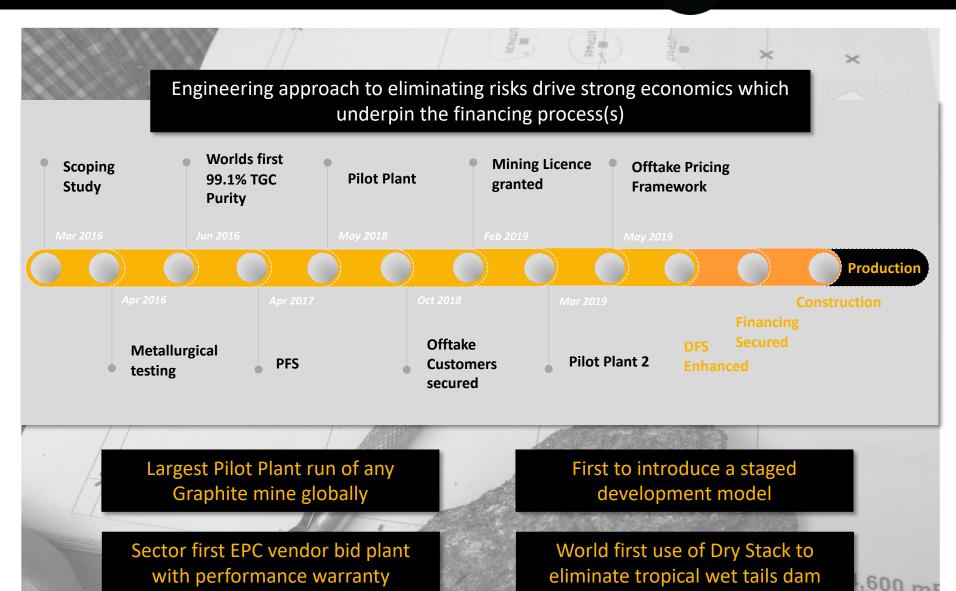


- Demand for energy storage and expanded applications is likely to double volumes over next decade
- In the expandable market, urbanization and building renovation are driving demand for large flake and purity products
- Search for high grade graphite producers



### **Redefining the Road to Production**





### **Enhancing the DFS**



# Mahenge Graphite

# Black Rock DFS Financial Metrics Post-tax, unlevered NPV10 Post-tax, unlevered IRR Capex for Phase One (83k tonnes per annum) AISC margin Average steady state production rate Value US\$895m 42.80% US\$115m 63.6% 250k tonnes per annum

Offtake Commitments						
	Year 1	Year 2	Year 3			
Qingdao Fujin <sup>(1)</sup>	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			

	Regular	Premium	Ultra			
Nominal Graphite Grade (TGC)	94.5% - 95.5%	97.5% - 98.25%	>99%			
CIF China (ex-duty) (USD\$/tonne)	\$ 1,117	\$ 1,490	\$ 2,161			
Reference exchange rate	RMB:USD 6.71					
Rise & fall pricing reference USD\$/tonne	95% TGC - #100 mesh Benchmark Minerals \$ 950/t as at Nov 2018					

**Pricing Framework** 

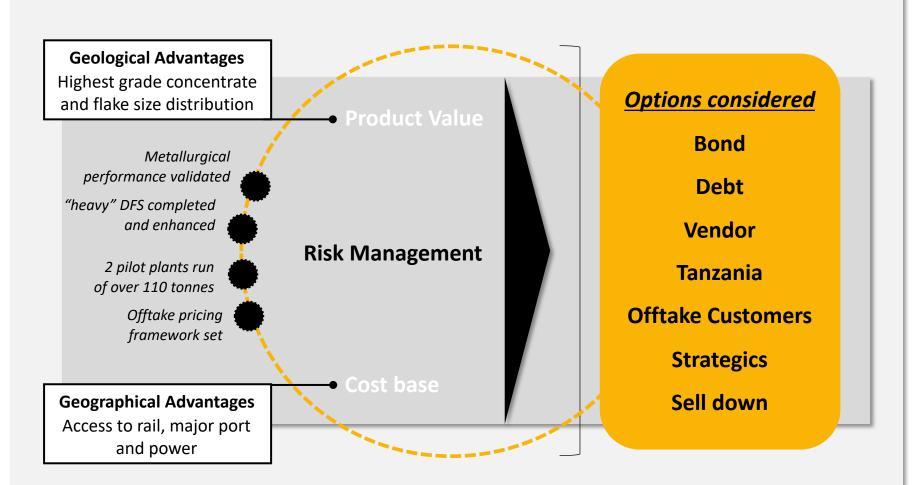




## **Financing Mahenge**



Blended finance model is designed to leverage project advantages and match risks to participants who are best placed to manage it

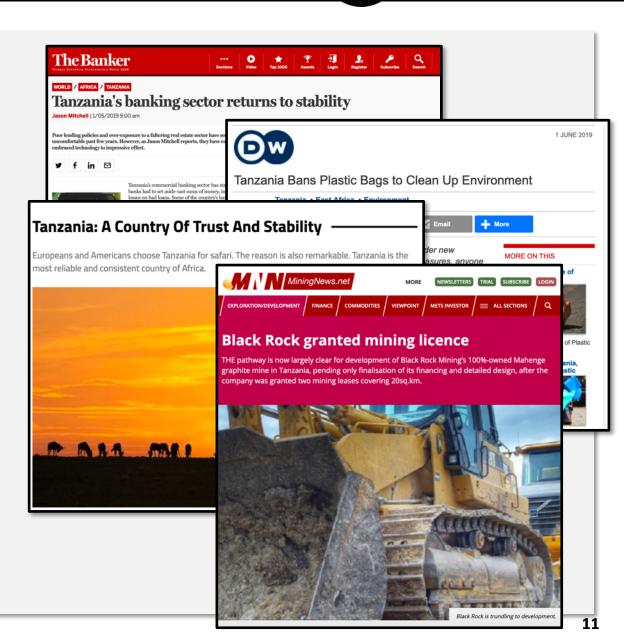


### Tanzania – Normalizing



# Continued political and socioeconomic stability

- Nedbank agrees to fund
   Strandline mineral sands
   subject to CP
- Export of processed minerals clarified
- Mining licences granted
- National banking laws consistent with Francophone Africa



## Why invest in Black Rock Mining?



The best undeveloped graphite project globally driven by geology and geography, which delivers a unique product that is suitable for multiple market segments and is uncontested in the high grade sectors



Geology

Highest grade concentrate and flake size distribution delivers significant value in use to customers



Geography

Low cost base driven by access to rail and major port at Dar es Salam along with direct grid power to site



**Risk Management** 

2 Pilot Plant runs of over 110 tonnes, enhancing DFS in progress, offtake pricing framework



**Exceptional Economics** 

CAPEX US\$115m | NPV<sub>10</sub> US\$895m | IRR 42.8% | MARGIN 63.6%

### **Summary**





### GROWING MARKET

- Significant growth opportunities across Electric Vehicles, Clean Energy and Battery markets
- Enormous demand for Mahenge's naturally high spec graphite product
- Emerging demand for "clean" graphite



# BKT WELL POSITIONED

- Geographical advantages drive a lower production cost base
- Geological (high product spec) delivers Value in use to customers
- Modular execution driven by customer demand
- Risk Management driven Execution and Financing strategy



# **EXCEPTIONAL ECONOMICS**

- Construction
   underwritten by Offtake
   commitments
   underpinned with a price
   framework
- Strong Financial Metrics with an enhanced DFS:
  - NPV<sub>10</sub> US\$895m
  - IRR 42.8%
  - Margin 63.6%



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### **About Black Rock Mining**



Black Rock Mining Limited is an Australian based company listed on the Australian Securities Exchange (ASX:BKT). The Company has a 100% interest in the Mahenge Graphite Project (the "Project") located in Tanzania. The Project has a JORC compliant Mineral Resource Estimate of 212m tonnes at 7.8% TGC. It also has Reserves of 70m tonnes at 8.5% TGC. The Reserve supports a mine life of 250k tonnes of graphite per annum for 25 years.

In October 2018, the Company released a Definitive Feasibility Study for the Project demonstrating exceptional financial metrics including:

- Low Capex: Lowest peak capital expenditure of US\$115M for phase one;
- Wigh Margin: AISC margin of 63.6%;
- Low Technical Risk: Two substantial pilot plant runs of 110 tonnes; and
- Superior Economics: IRR of 42.8% with NPV<sub>10</sub> of US\$895m

In January 2019 the Company announced it had substantially sold out of production with up to 205k tonnes of graphite subjected to binding offtakes in year three of production. In February 2019, it also announced receipt of its mining licence for the DFS project.

The Company is currently progressing financing discussions and detailed engineering with a view to commencing construction of the mine.