Kanyika Niobium Project

Positioned to be the first globally significant Niobium mine in 50 years

Poised to take advantage of the EV revolution



Lake Malawi

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Niobium is powering the future. From safer, fast-charge batteries to stronger wind-towers, niobium is a key part of the green revolution.



Corporate snapshot

Company ASX Code	GBE
Share Price[1]	AUD$0.088
Ordinary Shares on Issue	~466M
Options on Issue	~5M
Market Capitalisation (undiluted) [1]	~AUD$42.4M
Debt[2]	~AUD$1.0M
Cash Held[3]	~AUD$0.7M

GBE ASX Chart



1 As at 14/10/2022
2 As at 30/6/2022
3 As at 30/6/2022

Alice Wong | Non-Executive Chairperson

- Entrepreneur with over 10 years' experience in mining, luxury products and healthcare businesses
- Extensive experience in investment banking in Asia

Grant Hudson | Chief Executive Officer

- Finance and Law Graduate with MBA – extensive experience in minerals sector as a senior executive
- Was CEO of lithium miner Bikita Minerals in Zimbabwe and Managing Director of Tantalite Holdings

Rex Zietsman | Chief Technology Officer

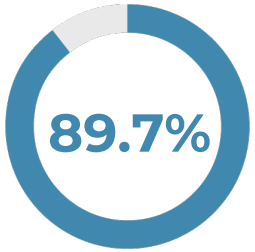
- Chemical engineer with 40 years experience in operations, design, engineering and consulting
- Was shareholder and director of AR Process Projects who co-designed the PBMR nuclear fuel plant
- Experience in the operation and engineering of tantalum/niobium ore concentration and refining

Paul Hardie | General Counsel & Company Secretary

- Holds a Bachelor of Laws and a Bachelor of Economics
- Experienced commercial lawyer who has both advised public companies and held senior executive and non-executive positions with ASX-listed public companies for over 20 years
- Joined Globe in July 2022

Michael Fry | Chief Financial Officer

- 10 years' experience working in chartered accounting with KPMG and Deloitte and
- Senior roles with Troika Securities and Swick Mining Services Ltd; Joined GBE in 2015 and leads financial management and reporting functions
- Joined Globe in July 2022



Top 20 Shareholders

Name	Shares	Capital
Apollo Metals Investment Co. Ltd	245,983,611	52.80%
Ao-Zhong International Minerals Pty Ltd	118,143,062	25.36%
BNP Paribas Nominees Pty Ltd	14,055,718	3.02%

Company overview

Kanyika Niobium Project (KNP) is positioned to be the first niobium mine into production in more than fifty years and the first ever in Africa

Fully permitted, advanced staged; Large-scale mining licence, all environmental and land approvals in place to immediately commence construction

An ESG friendly and highly efficient processing facility – staged development planned; Globe will be the only vertically integrated NB-oxide producer outside the Americas

Long life project up to 38 years: JORC (2012) compliant Mineral Resource Estimate of 68 Mt with grade of 0.283% Nb_2O_5 (M+I+I) (Cut-Off Grade = 1,500 ppm Nb_2O_5); based on ~33km of drilling

Strong relationships with community, local leaders and senior government officials, as well as industry operators

Niobium is a critical mineral in high demand across multiple sectors; favourable market dynamics and macro tailwinds;

Niobium has extremely favourable market dynamics

- Commercial Niobium projects are rare, strategic and valuable
- China is the largest global consumer with no commercially viable niobium mines
- Niobium is a ‘strategic’ and ‘critical’ metal for USA, Russia and the EU
- Niobium titanium/tungsten/oxide anodes expected to become standard for fast charging, next generation Lithium-Ion batteries for battery electric vehicles – refer Toshiba announcement, October 2017

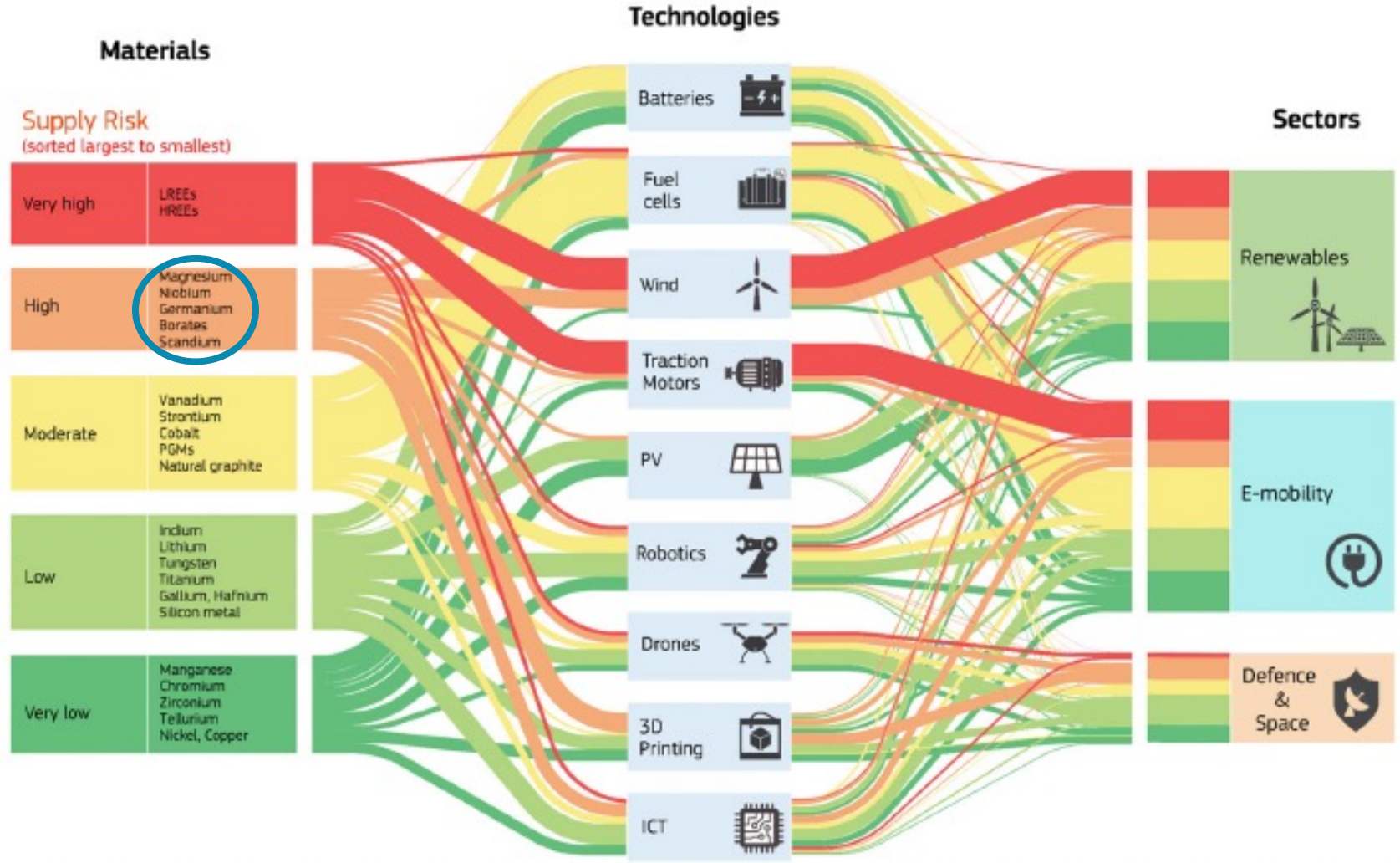
- No cost-effective substitutes for the use of Niobium in steel which can match its strength/weight characteristics
- Increase in demand for higher quality steels is leading to higher intensity of use. Emerging countries, especially China & India, underpin a long term upswing in demand
- Existing producers responsible for >95% of global supply with >85% concentrated in Brazil

Day-to-day application of Niobium is extensive



Source: CBMM Sustainability Report 2021

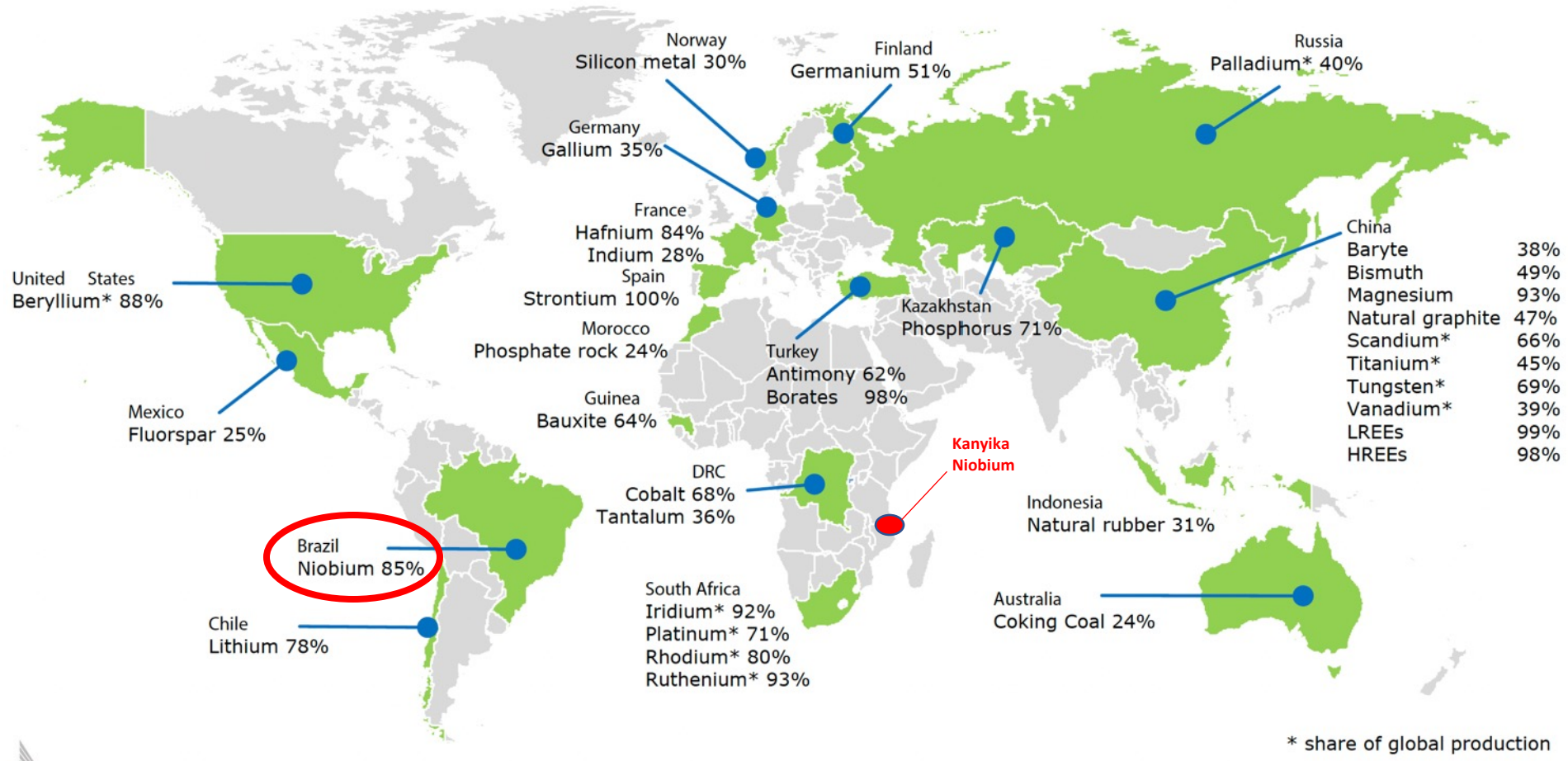
A critical raw material with high supply risk



Action Plan on Critical Raw Materials: European Commission Report 03.09.2020

Kanyika – a solution for supply-side risk

Excessive dependence on single supplier countries makes Europe vulnerable



Action Plan on Critical Raw Materials: European Commission Report 03.09.2020

Huge emerging demand for Nb in Li-on batteries

Why is Niobium important for LIB development?

Niobium addresses almost all of the major barriers to EV adoption

Barriers to EV adoption		Niobum's Role
RANGE ANXIETY		
Consumers worry that an EV will not travel as far as an ICE vehicle and that performance will vary		**Niobium** helps increase the energy density of batteries, giving more power and increased range, and improves performance at low temperatures
CHARGING TIME		
Charging times can vary significantly depending upon the car and charging station but can take several hours		**Niobium** materials can increase the rate with which batteries charge and discharge
PERFORMANCE/LONGEVITY		
Batteries have a relatively short operating life as materials degrade during charge/recharge cycle		**Niobium** increases the stability of the battery so it can withstand more charging cycles
COSTS		
Even with subsidies, BEVs are more expensive than equivalent ICE vehicles		**Niobium** is readily available and cost effective compared to other battery materials
CHOICE		
There are few BEVs on the market		This is changing rapidly

Niobium production has risen ~25% over the past 7 years, with major producer (CBMM) recently announcing a 4.5X increase in niobium oxide production capacity to cater for increasing demand from the electric vehicle battery sector.

JORC minerals estimated resource and proven reserves

Mineral resources:

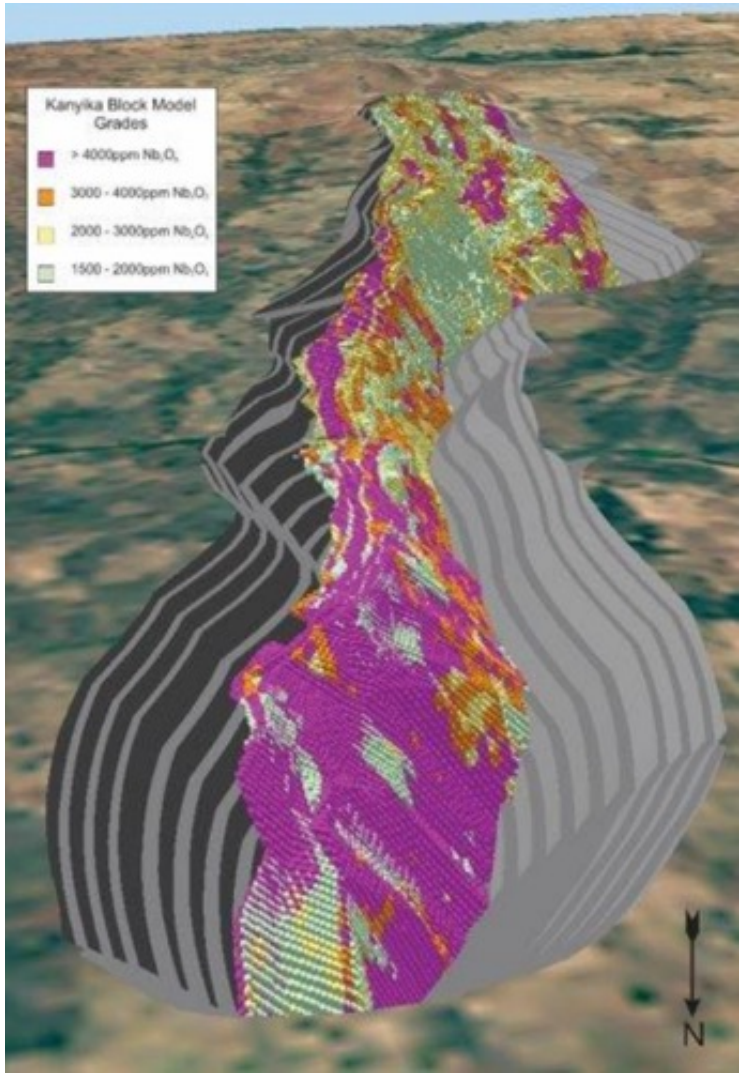
Classification	Tonnes (Mt)	Nb_2O_5 (ppm)	Contained Nb_2O_5 (t)	Ta_2O_5 (ppm)	Contained Ta_2O_5 (t)
Measured	5.3	3,770	19,981	180	954
Indicated	47	2,860	134,420	135	6,345
Inferred	16	2,430	38,880	120	1,920
Total	**68.3**	**2,830**	**193,281**	**135**	**9,219**

Ore reserve:

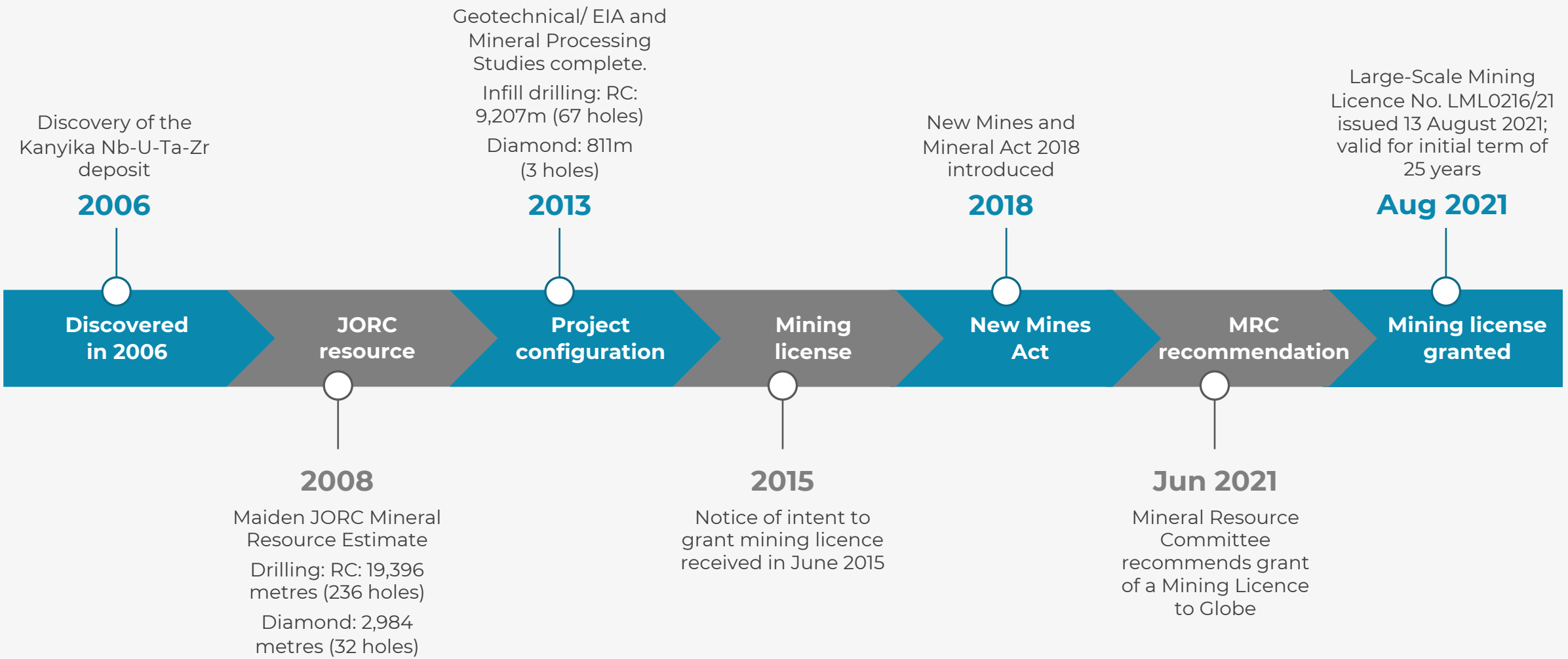
Reserve Classification	Tonnes (Mt)	Nb_2O_5 (ppm)	Contained Nb_2O_5 (t)	Ta_2O_5 (ppm)	Contained Ta_2O_5 (t)
Proved	5.3	3,680	19.504	171	906
Probable	28.5	2,930	83,505	136	3,876
Total	**33.8**	**3,048**	**103,009**	**141**	**4,782**

Geology of ore body:

- Contains pyrochlore and zircon mineralization in disseminated zones
- Niobium and tantalum mineralization occurs within the mineral pyrochlore
- High-grade mineralization features pyrochlore bands associated with zircon



Considerable progress made to date



Phase One: Low-cost start-up operations

Kanyika mine site: Phase One Pilot



Open pit mining:

Drill and blast

Load and haul



Crushing:

Primary jaw and secondary cone



Milling:

EDS mill

Ball mill



Flotation:

Single stage: Rougher, scavenger and cleaners



Drying:

Locally produced biomass as fuel



Concentrate:

Contains radioactive nuclides



Sale and trucking:

Bulk bags loaded onto flat bed trucks

Namibia refinery: Phase One Pilot



Salt (NaCl):

Electrolysis of salt to produce chlorine



Concentrate and chlorine gas:

Chlorine is recycled from oxidation and reduction



Chlorination reactor:

Metals converted to gaseous chlorides at high temperature

Selective cooling gives primary separation of metal chlorides



Distillation and purification:

Very high purity >99% achievable in batch distillation



High grade niobium (and other) metal oxides and powders:

Regenerated chlorine is recycled back to the chlorinator

Strong ESG Drivers

Social

Social and Labour Plan

- A percentage of turnover is spent on projects with qualified communities within a 20km radius from the mine

Irrigation water

- Globe will build a dam to divert the river and for fresh water storage
- Raising the dam wall will retain additional water that will be made available to local communities
- Being able to grow two crops per year is a significant income improvement

Growing biomass for purchase by Globe

- Globe will contract to buy suitable biomass as a fossil fuel replacement in the mining and plant operations
- This will provide a cash crop to the local community

Environment

Biogas from biomass

- The biomass purchased from the community will be anaerobically digested to produce biogas
- Biogas will be used to dry concentrate
- Biogas will be upgraded to biomethane
- Biomethane will replace 60% of the diesel in the mining fleet

Solar PV with battery storage

- Solar power will provide power to the plant and charge the battery during daylight
- The battery will be used to provide power during morning and evening peak
- The battery will be recharged at night from grid hydropower

Hydro power

- 96% of the Malawi grid is powered by hydro
- Globe will install a run-of-river hydro generator that will operate during the rainy season

Regenerative chlorination process

- The chlorination process regenerates and recycles chlorine
- Very low residue volumes remain

Near-term value drivers

2022

November

Complete Phase One concentrator and refinery engineering

- Engineering contracts signed
- MDA

December

Commence mine-site sample preparation for advanced engineering test-work

- Commence Phase One engineering programs
- Complete Namibia site selection and commence EIA

2023

May

Complete advanced sample test-work

- Milling through EDS mill
- Gravity volume reduction

Produce concentrate

- Flotation
- Chlorination
- Oxide sample production
- Update engineering design parameters

June

Design review of engineering programs

- Flow sheets
- Hazop studies
- Layouts
- Equipment selection
- Complete CDAs with 'qualified communities'

August

Complete Namibia EIA

- Complete all other Namibian regulatory requirements
- Complete provision uranium offtake agreement
- Produce saleable Nb_2O_5 sample for customer validation

October

Complete engineering and cost estimation programs

- Commence capital raise for Phase One mine and refinery pilot plants
- Commence relocation of Project Affected Persons

December

Commence Phase One project

- Purchase mining equipment
- Mine site development
- EPC contracts for concentrator and refinery
- Exercise option on refinery site

ASX: GBE

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Competent Persons Statement

Mineral resource estimates:

The information in this report that relates to Mineral Resources is extracted from the report titled "Kanyika Niobium Project – Updated JORC Resource Estimate" released to the Australian Securities Exchange (ASX) on 11 July 2018 and available to view at www.globemm.com and for which Competent Persons' consents were obtained. Each Competent Person's consent remains in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

The Company confirms that is not aware of any new information or data that materially affects the information included in the original ASX announcement released on 11 July 2018 and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the original ASX announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original ASX announcement.

Full details are contained in the ASX announcement released on 11 July 2018 titled "Kanyika Niobium Project – Updated JORC Resource Estimate" is available to view at www.globemm.com

Ore reserves:

The information in the report that relates to Ore Reserves is extracted from the report titled "Kanyika Niobium Project – Project Feasibility and Economics" released to the Australian Securities Exchange (ASX) on 19 August 2021 and available to view at www.globemm.com and for which a Competent Person's consent was obtained. The Competent Person's consent remains in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

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Kanyika Niobium Project

Addendums



Lake Malawi