



Niobium.

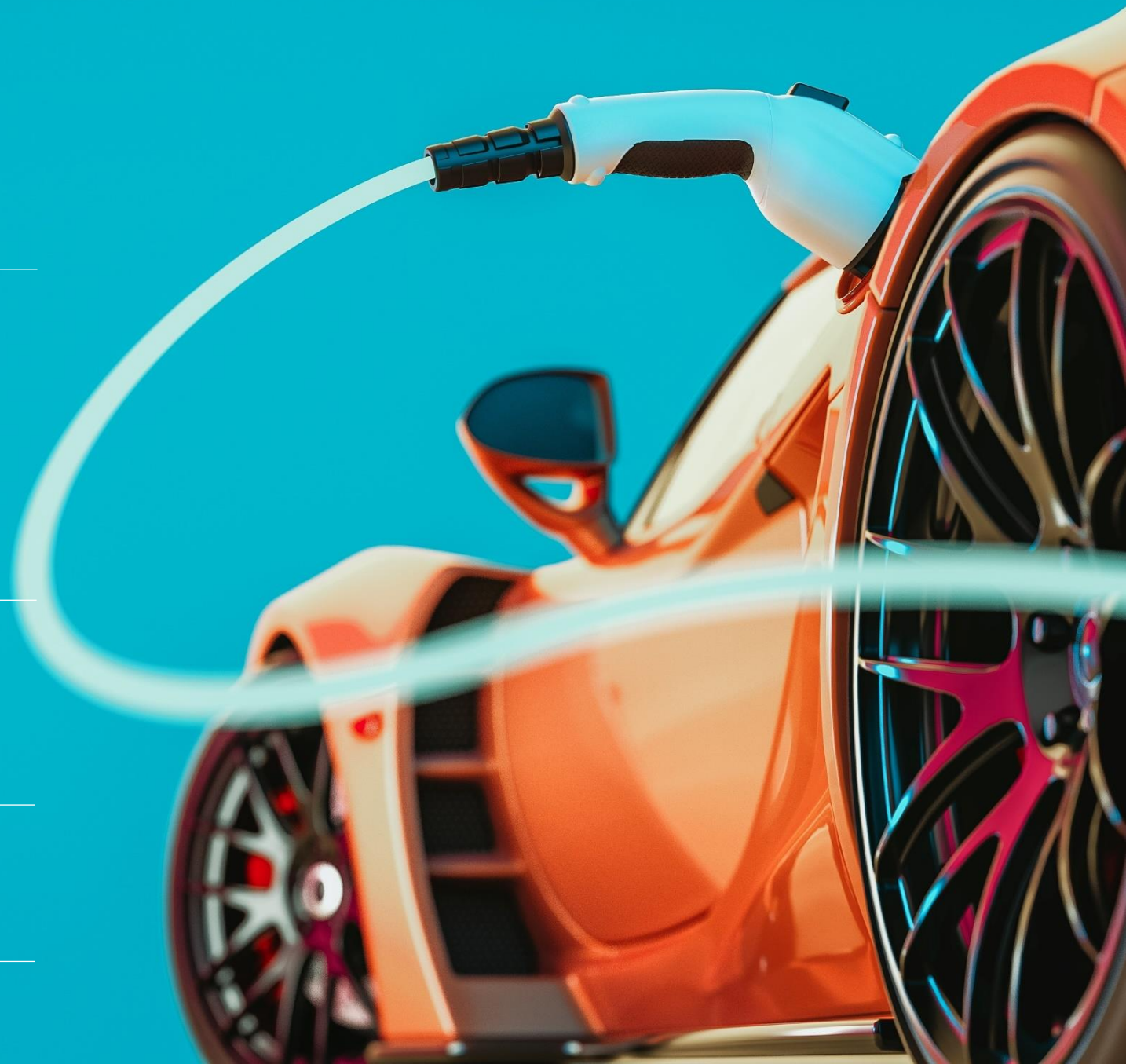
Critical for safe, ultra fast battery charging.

August 2023

Grant Hudson
Chief Executive Officer

Charles Altshuler
Chief Financial Officer

ASX: **GBE** | globemm.com



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What is niobium and how is it used?

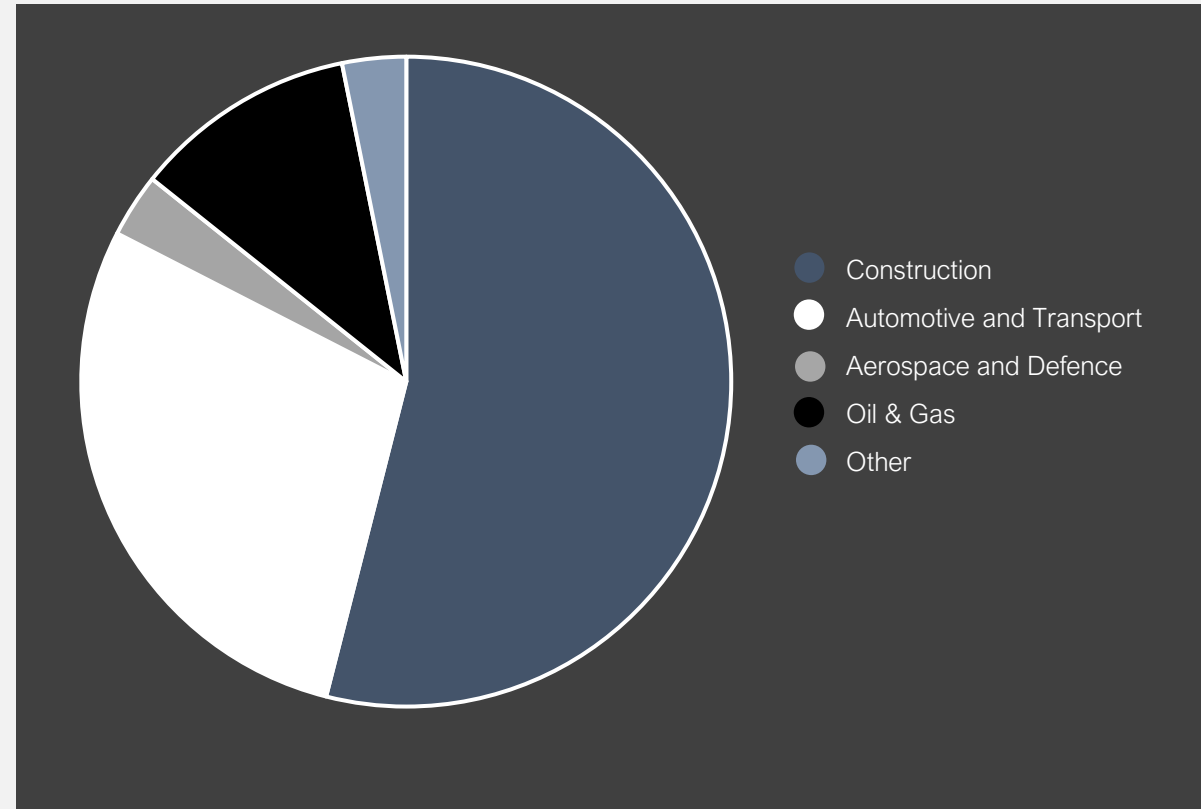
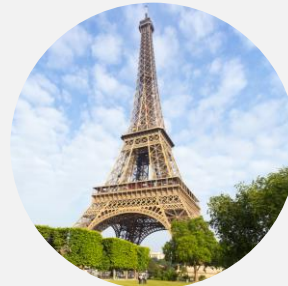
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Ferroniobium (at 65% niobium) is the primary saleable form of the metal and sells for over US\$40,000/tonne.

Ferroniobium is primarily used in the production of High Strength Low Alloy (HSLA) steel which is used extensively in the construction and automotive industries and in the manufacture of high-pressure gas and oil pipelines, providing extra strength, and greater resistance to heat and corrosion.

Fast fact

Construction of the Eiffel Tower used 7,300t of wrought iron. Today, it could be built using 2,000t of HSLA steel.



Global ferroniobium sales by sector¹

~100,000t/year

~US\$3 billion per year²

¹ Source: CBMM

² Niobium Outlook to 2030 Roskill , 2020

A game-changing market opportunity

¹ Source: <https://www.autofutures.tv/topics/how-niobium-makes-batteries-greener--cheaper-and-cleaner---with-insights-from-a-nobel-prize-winner--/s/7457515b-c647-434f-8877-31321e968592>

²Source: World's Leading Niobium Anode Battery Materials Supplier (echiontech.com) 2023

³ Source: <https://www.global.toshiba/ww/products-solutions/battery/scib/next/nto.html>

Niobium makes batteries greener, cheaper and cleaner.¹

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Ultra-fast charging

Niobium batteries can be fully charged in less than **10 minutes** at lower operating temperatures²



Increased range

Niobium increases the energy density of batteries by **200%** at a lower material cost²



Better performance

Niobium batteries are more stable and can withstand **10,000** charging cycles²



Toshiba's Niobium Titanium Oxide (NTO)-SCiB battery can provide a mileage of up to 320km, reaching 90% capacity after six minutes and can fast charge to 80% capacity after 25,000 cycles.³

Niobium demand will grow but supply is limited

1 Source: <https://www.mining.com/web/niobium-mining-the-first-step-in-building-a-fighter-jet/>

2 Source: <https://www.mining-technology.com/projects/niobec-niobium-mine-quebec/>

3 Source: https://www.researchgate.net/publication/272424460_Niobium_oxide_mineral_flotation_A_review_of_relevant_literature_and_the_current_state_of_industrial_operations

4 Source: <https://cbmm.com/en>

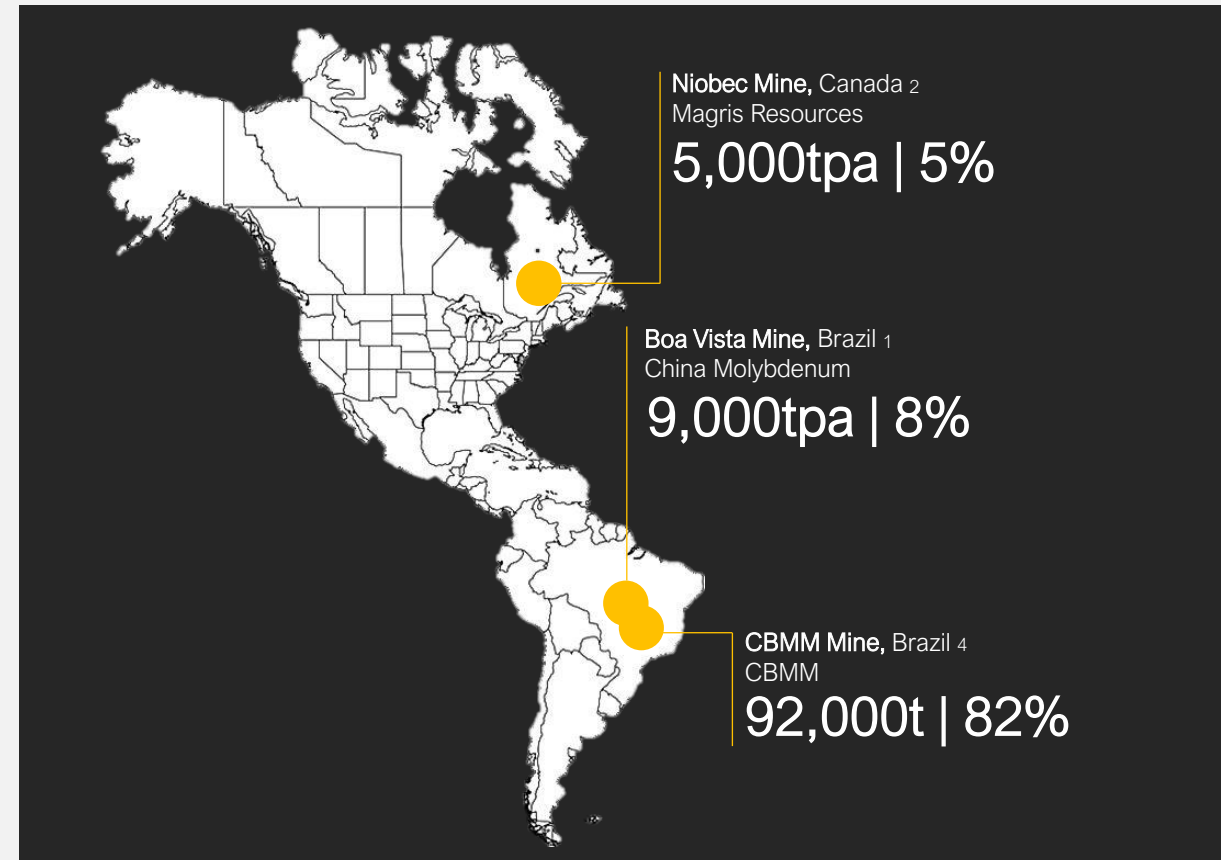
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Three mines account for over 95% of the global mined niobium supply and no new mines have been brought into production for over 50 years.³

- Excessive dependence on single supplier countries makes global consumers vulnerable.

- Niobec and Boa Vista only produce ferroniobium. Only CBMM produces Niobium Oxide used in lithium-ion batteries.

- All three companies use the leach process together with electric arc furnace which is a carbon intensive process with significant slag.³

Global production of niobium (FeNb + Nb₂O₅)
~112,000 tonnes per annum



That's why its at the top of critical mineral lists

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Niobium is considered critical not just in Australia but also in the EU, US, Japan, and India.



CBMM is dramatically increasing niobium oxide production.

¹ Source: Derived and extrapolated from reports on <https://niobium.tech/>, <https://www.echiontech.com/>, <https://cbmm.com/en/>

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CBMM will invest U\$80m on increasing their niobium oxide capacity from 10,000 tonnes per annum to 45,000tpa by 2030 to serve the growing battery market. ¹

CBMM invest in Eichion, Battery Streak, VW Brazil and Lighting Motorcycles plus 40 other projects.

25% of CBMM's sales will be for the battery market by 2023.



Niobium is five times the price of copper

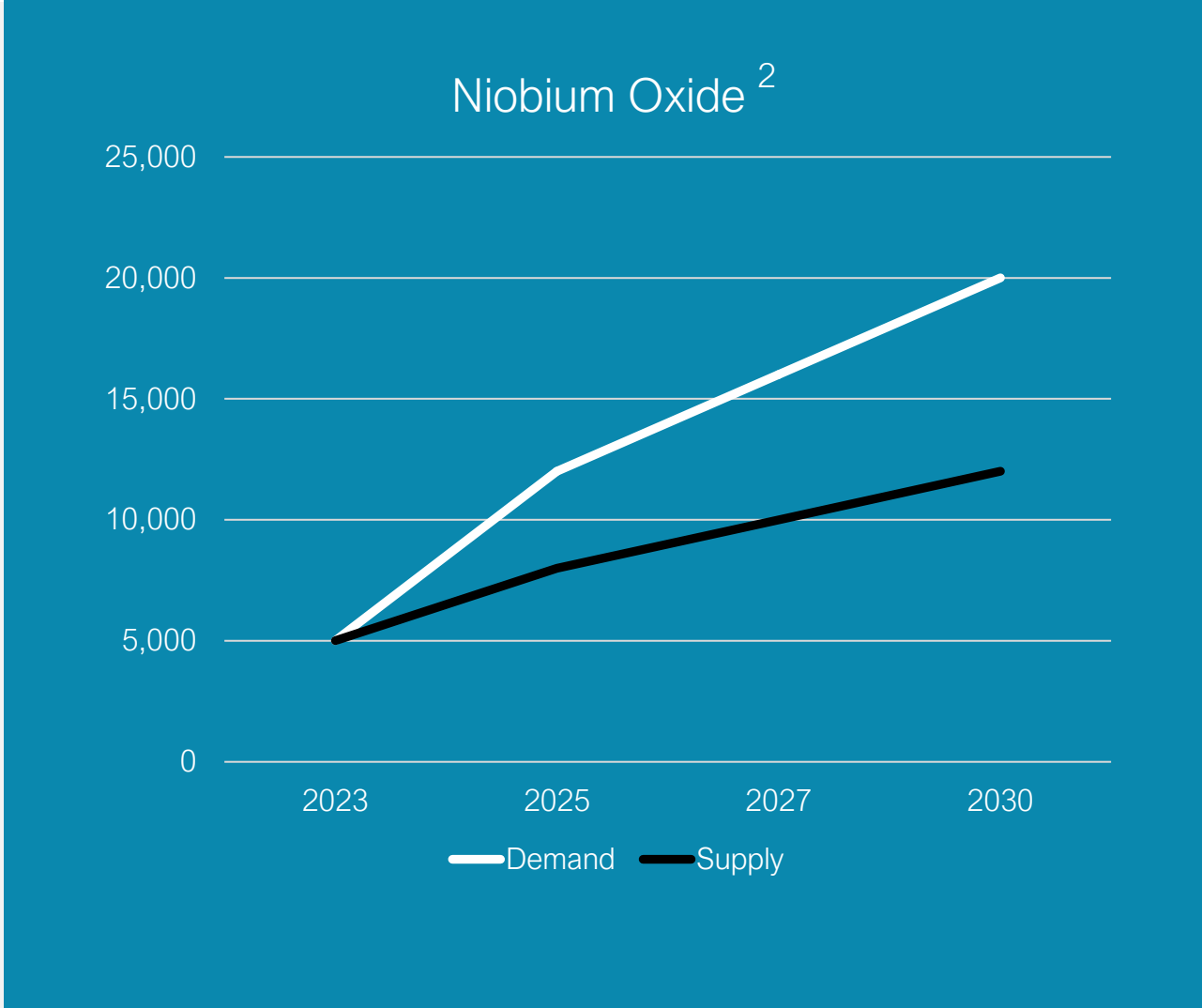
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Currently, average niobium oxide (Nb_2O_5) prices are¹:

- \$US41,500t for 99.5% (FOB China)
- \$US51,500t for 99.99% (FOB China)

This equates to 200% increase compared to 2001.

¹Source: Daily Niobium / Tantalum price, Lme Comex Shfe Price of Niobium / Tantalum live | SMM - Metal Market <https://www.metal.com/Niobium-Tantalum>
²Source: Derived and extrapolated from reports on <https://niobium.tech/>, <https://www.echiontech.com>, <https://cbmm.com/en/> and Mordor Intelligence Industry Reports for Niobium Market



Kanyika Niobium Project

Malawi, Africa

The first globally significant niobium mine in 50 years.

Shovel-ready, fully permitted, advanced staged project covered by a Mining Development Agreement, Mining Licence, and all environmental and land approvals required to immediately start construction.

by the numbers

JORC (2012) Compliant
Mineral Resource Estimate
(Measured, Indicated and Inferred)

68Mt
2,830ppm Nb₂O₅

Project Life
Phase 1 (3 years) – 340,000t/year
Phase 2 (20 years) – 1.5Mt/year

23
years



Figure 1. Signing ceremony for the Mining Development Agreement between the Globe and Malawi Government : 29 March 2023



Figure 2. Sample collection at Kanyika mine site: 28 April 2023

Kanyika Niobium Project

Malawi, Africa

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Production in Malawi. Processing in Namibia.

Malawi is a conflict free, democratic country underpinned by its 2022-2027 mining strategic plan where mining will be the main contributor to the sustainable socio-economic growth and development of the country.

Namibia: EIA and scoping project underway for processing plant to convert niobium concentrate produced in Malawi to Niobium Oxide (Nb_2O_5) /Metal Powders or Ferroniobium (FeNb).

Location of the mine and process plant and route of the concentrate chosen by GBE in consultation with C. Steinweg Group.



Large resource base and long mine life

The first globally significant niobium mine in 50 years.

Mineral Resources

Measured

5.3Mt

3,770ppm Nb₂O₅
19,981t Contained Nb₂O₅

180ppm Ta₂O₅
954t Contained Ta₂O₅

Indicated

47Mt

2,860ppm Nb₂O₅
134,420t Contained Nb₂O₅

135ppm Ta₂O₅
6,345t Contained Ta₂O₅

Inferred

16Mt

2,430ppm Nb₂O₅
38,880t Contained Nb₂O₅

120ppm Ta₂O₅
1,920t Contained Ta₂O₅

Total

68.3Mt

2,830ppm Nb₂O₅
193,281t Contained Nb₂O₅

135ppm Ta₂O₅
9,219t Contained Ta₂O₅

Ore Reserves

Proved

5.3Mt

3,680ppm Nb₂O₅
19,504t Contained Nb₂O₅

171ppm Ta₂O₅
906t Contained Ta₂O₅

Probable

28.5Mt

2,930ppm Nb₂O₅
83,505t Contained Nb₂O₅

136ppm Ta₂O₅
3,876t Contained Ta₂O₅

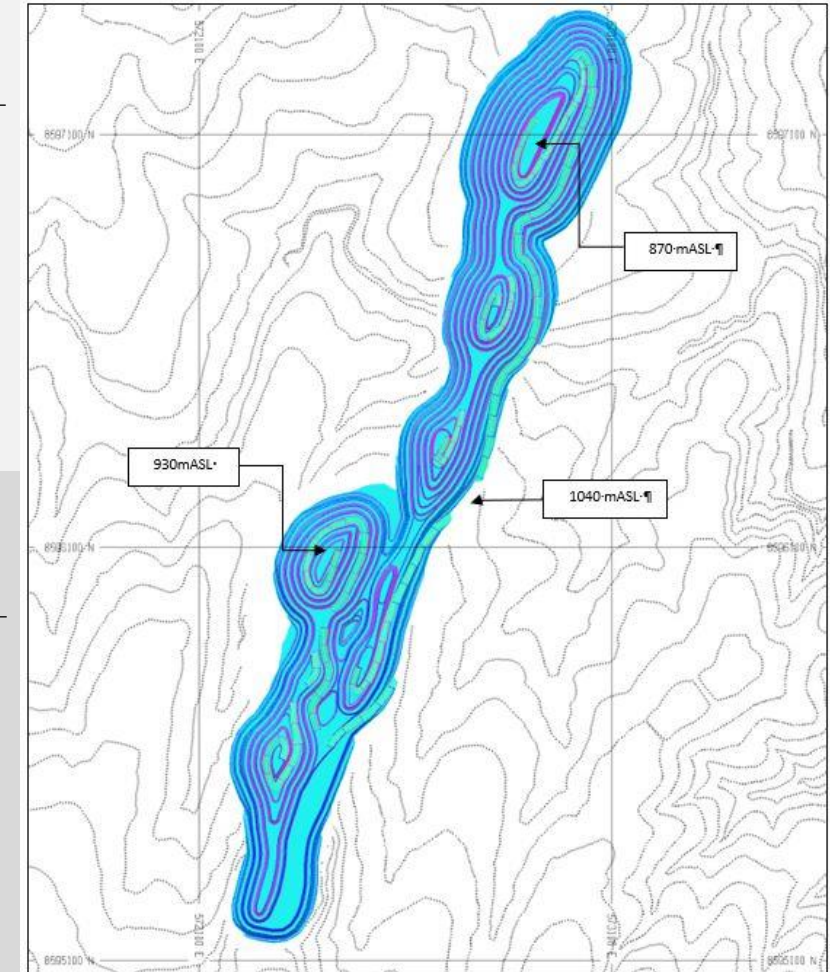
Total

33.8Mt

3,048ppm Nb₂O₅
103,009t Contained Nb₂O₅

141ppm Ta₂O₅
4,782t Contained Ta₂O₅

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



Development plan

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Decision to mine

Capital Raise 1

Approx. A\$8m

March 2023 >
Feasibility Study

H1 2024
Decision to mine

Finalise the Phase One design and to establish confident cost estimates for capital and operating expenses

Production of product samples from ore bulk sample from 10t ore sample collected for offtake evaluation.

Globe expects the feasibility study for Phase One in Q1 2024 at which time Globe will evaluate the Final Decision To Mine (or not).

First ore

Capital Raise 2

US\$70m

Based on internal 2021 feasibility study estimates

H1 2024 >
Phase 1 Mine and Processing Plant

Q4 2024
First ore

Demonstrate its ability to mine, concentrate, refine and sell niobium products.

Additional funding might be required in the first half of 2024 (including entering into potential offtake agreements) to proceed with Phase One

Mine concentrate
3,600tpa

Niobium oxide
720tpa

Full-scale

Capital Raise 3

US\$250m

Based on internal 2021 feasibility study estimates

November 2027
Phase 2 full-scale plant

Mine concentrate
11,900tpa

Niobium oxide
3,250tpa

2021 Definitive Feasibility Study to be updated and re-costed for Phase 2 plant.

Phase One

Scaleable start-up operations

Kanyika mine site: Phase One- 340,000 tons of ore (190,000) and waste mined per annum at 25tph



Open pit mining

"Free dig" mining
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- 740 tons of Niobium Oxide per annum



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

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Phase One Metrics

Small scale ramping up to large scale

All quoted in USD

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Production (Nb₂O₅)

3 years

720tpa

>97% recovery | >99% product

Production (Ta₂O₅)

3 years

32tpa

>96% recovery | >99.9% product

Kanyika concentrate

3 years

3.6ktpa

90% concentrator availability

IRR

3 years

45%

Operating costs

3 years

\$11m

Average per year

NPV

3 years

\$90m

LOM| 8% discount rate

Total Revenue

3 years

\$108m

Total over 3 years

Total Opex

3 years

\$32m

Total over 3 years

Total EBITDA

3 years

\$65m

Total over 3 years

Capital costs

Phase 1 Mine Capital Cost

\$35m

Capital costs

Phase 1 Refinery Capital Cost

\$25m

Capital costs

Phase 1 Sustaining Capital

\$10m

3 years

Disclaimer and clarifier: The information, reports, financial models, forecasts and strategies are based on the feasibility study “Kanyika Project Feasibility” announced on 19 August 2021 (<https://announcements.asx.com.au/asxpdf/20210819/pdf/44zgwl83w5s55b.pdf>) This feasibility study not been updated since 19 August 2021 and hence has not considered potential changes in commodity prices, competition, foreign exchange, labour costs and shortages, logistics, capital costs and other economic conditions. Production targets are dependent on obtaining offtake agreements to the full value of the production target. For changes to the feasibility study refer to slide 16. Whilst the feasibility study has not been updated for the aforementioned macro-economic changes and, subject to additional feasibility work, the changes detailed on slide 16, as at the date of this Presentation, Globe confirms that all the material assumptions underpinning the feasibility Study (and the production target included in the feasibility study and forecast financial information derived from the production target included the feasibility study) as reported to the ASX on 19 August 2021 continue to apply and have not materially changed.

Life Of Mine Metrics

1.5 years payback post first production

All quoted in USD

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Production (Nb₂O₅)

23 years

3,250tpa

>95% recovery | >99.9% product

Production (Ta₂O₅)

23 years

140tpa

>95% recovery | >99.9% product

Kanyika concentrate

23 years

11.9ktpa

90% concentrator availability

IRR

23 years

50%

Operating costs

23 years

\$88m

Average per year

NPV

23 years

\$1bn

LOM | 8% discount rate

Total Revenue

23 years

\$5.6bn

LOM

Total Opex

23 years

\$1.6bn

LOM

Total EBITDA

23 years

\$3.7bn

LOM

Capital costs

Mine Capital Cost

\$200m

Capital costs

Refinery Capital Cost

\$50m

Capital costs

Sustaining Capital

\$100m

LOM

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Processing improvements to the original feasibility completed in August 2021

All quoted in USD

Concentrator

Refinery

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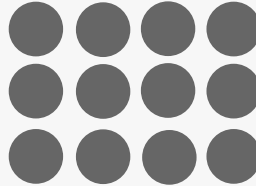
Original

2-stage
flotation



Original

12 flotation
reagents
Dual water
circuit



Original

Jaw crusher
SAG mill
Ball mill combination

Original

Hydrofluoric
Sulphuric Acid Leach with
Ammonia precipitation

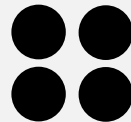
New

1-stage
flotation



New

4 flotation
reagents
Single common
water circuit



New

Jaw crusher
Cone crusher
EDS multishaft mill
Ball mill combination

New

Chlorination with
chlorine recycle

Savings

\$2 million less
CAPEX

Savings

\$3 million less
OPEX/year

Savings

\$1.3m less OPEX/year
due to less electricity usage
\$2.1m less OPEX/year
due to 20% reduction in ore
arriving at concentrator.
\$1m less CAPEX

Savings

\$7 million less
OPEX/year
minimum

Disclaimer and clarifier: The above improvement updates have not been verified and are subject to the completion of additional feasibility work, which is expected to be completed in or around the first quarter of 2024.

Near-term value drivers

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March 2023

Signing of MDA

- Signing of Mining Development Agreement on Kanyika Project

September 2023

Complete advanced sample test-work

- Milling through EDS mill
- Gravity volume reduction

Produce concentrate

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

November 2023

Namibia EIA

- Plant emission and residues data collected
- Location data collected
- Detailed EIA studies initiated.

Product samples

- Provided to potential offtake partners for analysis

August 2023

Capital raising

- For a pro-rata non-renounceable entitlement issue
- Issue price of \$0.037 per new Share (New Shares) on the basis of three (3) New Shares for every seven (7)
- To raise up to approximately \$8,000,000 before expenses.
- Irrevocable commitments from the major shareholders on full Entitlements totally \$4.3m.
- Irrevocable commitment from Triple Talent to apply for \$1.3 million in Additional New Shares (if available) under the Top Up Facility

October 2023

Commissioning of lab scale refinery pilot plant

- Allow to confirm design parameters on full scale plant
- Enable production of offtakes samples

Q1 2024

Update preliminary feasibility study

- Current Feasibility Study to be revised and financial model updated
- Establish confident cost estimates for capital expenditure and operating expenses for Phase One Process Plant.
- Detail Design for selected long lead items.

Corporate snapshot

ASX GBE

Share price

\$A0.069

1 August 2023
52 week high \$0.11, low \$0.047

Market capitalisation

A\$35.0m

1 August 2023

Debt

A\$1.2m

30 June 2023

Shares on issue

506.7m

1 August 2023

Cash

A\$0.2m

30 June 2023

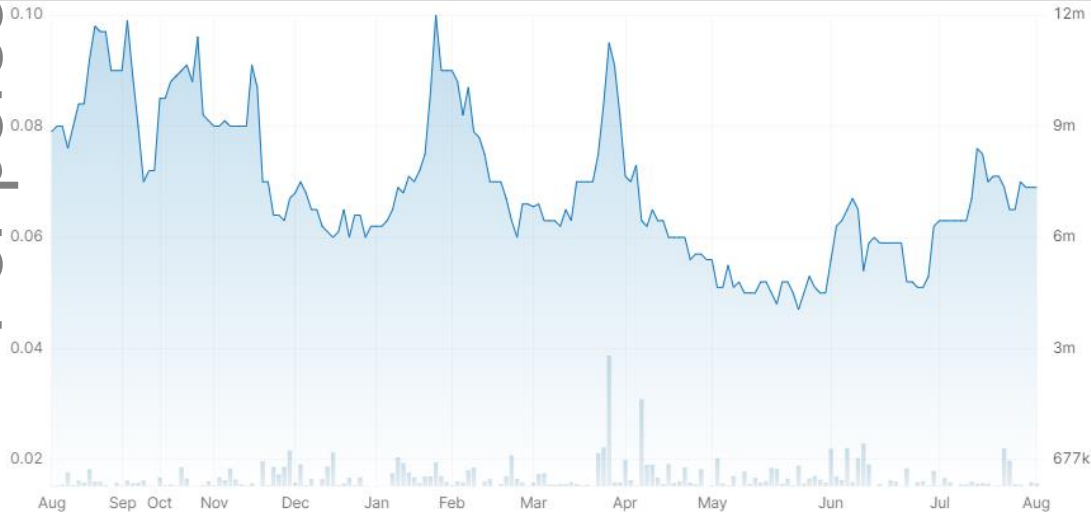
Various options

22m

1 August 2023

ASX Share price performance (\$A)

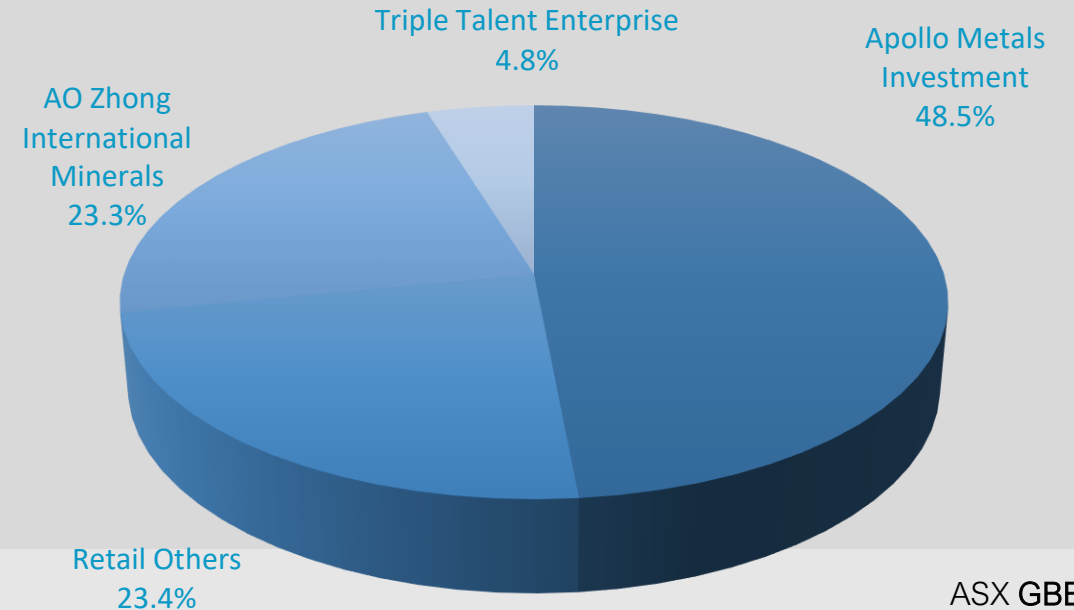
12 months to 1 August 2023



1 Day | 1 Week | 1 Month | 1 Year | 5 Year | Advanced Chart

Share register

Figures shown are approximate as at 1 August 2023



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Appendices

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Competent person's 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" and is available to view at www.globemm.com

Production target and forecast financial information:

The production target and forecast financial information derived from the production target included in this presentation were first announced to the ASX in the announcement released to the ASX on 19 August 2021 titled "Kanyika Niobium Project – Project Feasibility and Economics". Globe confirms that all the material assumptions underpinning the production target and the forecast financial information derived from the production target as reported to the ASX on 19 August 2021 continue to apply and have not materially changed.

Full details are contained in the ASX announcement released on 19 August 2021 titled "Kanyika Niobium Project – Project Feasibility and Economics" and 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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Full details are contained in the ASX announcement released on 19 August 2021 titled "Kanyika Niobium Project – Project Feasibility and Economics" and is available to view at www.globemm.com

Strong internal ESG Drivers (in addition to Niobium making batteries greener, cheaper and cleaner and hence supporting climate change)

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Social

Social and Labour Plan

- A percentage of turnover will be spent on projects with qualified communities within a 20km radius from the mine
- Training of artisans and other disciplines will draw trainees from the Kanyika environment

Irrigation water

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

Growing biomass for purchase by Globe ¹

- 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 ¹

- 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 plus Hydro power ²

- Solar power will provide power to the plant and charge the battery during daylight
- The battery will be recharged at night from grid hydropower (98% of Malawi grid is hydro) ³
- Globe will install a run-of-river hydro generator that will operate during the rainy season

Production optimisation

- Move from two stage flotation to single stage
- Reduction from 12 reagents to 4
- Single water circuit
- Move from SAG/ball mills to EDS/spiral/ball mill
- Early gangue rejection
- Reduced power consumption
- Lower flotation throughput

Regenerative chlorination process

- The chlorination process regenerates and recycles chlorine
- Very low residue volumes remain
- Dry process means no effluent water produced

¹ Source: Feasibility of Biogas Production from Napier Grass, The 6th International Conference on Applied Energy – ICAE2014, Vanatpornratt Sawasdeea and Nipon Pisutpaisal, www.sciencedirect.com

² Source: <https://www.angloamerican.com/media/press-releases/2022/18-03-2022>

³ Source: Taulo, John L, Gondwe, Kenneth Joseph, & Sebitosi, Adoniya Ben. (2015). Energy supply in Malawi: Options and issues. Journal of Energy in Southern Africa, 26(2), 19-32. Retrieved August 01, 2023, from <http://www.scielo.org.za/scielo.php>

Our partners

Significant experience civils, technology, refining and logistics. Minimizing logistics, mineral processing and production technology risk.

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S.R. NICHOLAS



Milling Technology

EDS has been developing a horizontal, multi-shaft mill that has a significantly lowered power consumption than the equivalent SAG ball mill since 2016.



Mine Plant

Solo has a wealth of experience in the design, build and commissioning of mineral plants in South Africa, and have supplied such installations all over the Continent. Selected to design and construct the mineral processing plant.



Logistics

C. Steinweg Group is a globally operating independent, worldwide logistics service provider. They operate in the fields of storage, handling, forwarding, chartering and other commodity related logistics services. C. Steinweg Group has over 5000 employees located across 100 locations in 52 countries. They are well-known in the region and are the largest logistics company in Malawi with 5 sites and an additional office in Namibia.



Refining Technology

TCM has been selected to design the refinery process for the Kanyika concentrate and to determine the design parameters of the refinery. TCM has worked with more than ten different ore concentrates that contain niobium and tantalum. In addition, they have processed concentrates containing PGMs, Rare Earths, gold, tin, vanadium and iron, tungsten, zircon and hafnium, nickel and copper sulphides as well as low levels of radioactive materials such as uranium, thorium and other fission daughter products.



Laboratory

Geolabs Global is the laboratory that will process the Kanyika bulk sample ore to concentrate. Geolabs Global is a leading provider of mineral processing solutions for the mining and minerals industry based in South Africa.



Refinery

Resonant Group will complete the engineering design for the refinery using the design parameters from TCM. Resonant is a multi-disciplinary engineering business active in the metals, minerals, chemicals, oil and gas, and infrastructure sectors.

Leadership- Board of Directors and Executive management

Global mining experience

Alice Wong Non-Executive Chairperson

Commenced her business career with Price Waterhouse. After more than a decade in the investment banking industry in Asia working for large multinational companies including Morgan Stanley, ABN AMRO Rothschild, and BNP Paribas Peregrine, she extended her entrepreneurial endeavours into luxury products and healthcare businesses. Ms. Wong is a director in Apollo Metals Investment Co. Ltd which holds 48.5% of Globe.

Grant Hudson Chief Executive Officer

Prior to joining Globe, Mr Hudson was the Managing Director and Chief Executive Officer of Bikita Minerals, which has been mining lithium and tantalite in the Bikita hills of the Masvingo province in Zimbabwe for around 75 years and is the world's foremost supplier of the lithium mineral petalite.

Other mining appointments include three years as Manager of the M'beta tantalite mine in Zimbabwe and three years as Managing Director of Tantalite Holdings.

Bo Tan Non-Executive Director

A Canadian national, he has approximately 20 years' experience as a senior manager and director in financial planning, reporting, investment, capital structure and industrial research.

Worked for companies such as Bohai Industrial Investment Fund, Lehman Brothers Asia and Macquarie Securities Asia, and across international markets in China, Hong Kong, Canada and USA.

Rex Zietsman Chief Technical Officer

Registered professional engineer with 40 years of experience in the areas of chemical, mining and minerals processing, pulp and paper and fertilizer. His experience was initially in a production environment though he has been a design engineer for the last 30 years. He was also the NI 43-101 defined Competent Person on a TSX listed, Rare Earths project.

Rex occupied the role of Mine Executive at Bikita Minerals in Zimbabwe. This involved all aspects of running a fully integrated lithium mine and concentrator

Ricky Lau Non-Executive Director

Over 20 years of experience in the private equity industry in Asia and is presently the Managing Partner of Crane Capital Limited, a regional real estate private equity company based in Hong Kong.

Received an Executive MBA degree from Kellogg-HKUST and graduated with honors from the Sauder School of Business at the University of British Columbia.

Charles Altshuler Chief Financial Officer

A Chartered Accountant/ MBA is a finance and business leader with 18+ years experience. He has strong experience in IPO's, corporate finance, strategy, M&A, reporting and IT within both listed and family organizations globally across healthcare, mining, industrial, renewable energy and FMCG/retail businesses.

Mining experience includes 7 years in senior finance and business partnering roles in Anglo American, Samancor Manganese JV and Glencore in Africa and Australia.

Michael Barrett Non-Executive Director

Has held senior mining sector roles in Western Australia, including with Rio Tinto Iron Ore and WMC Resources Ltd before he took the position of Chief Financial Officer of Rio Tinto's US energy business in Wyoming and Denver from 2004 to 2015. He led Rio Tinto's divestment and IPO of the business as Cloud Peak Energy on the New York Stock Exchange in 2009 and continued to serve as CFO of the listed company. Non-executive director of Novo Resources Corp (TSX Code: NVO).

Macleod G. Nyirongo Director (Globe Africa)

Mr. Nyirongo began his career as Principal Economist in Malawi's Office of the President and Cabinet, responsible for economic analysis and formulation of economic and social policies to stimulate Malawi's growth. Thereafter he had more than 25 years within the United Nations (UN) organisation, where his official postings as UN Country Director included the People's Republic of China, Eritrea, and Zambia, and he was also the UN's Resident Director in Sierra Leone and Kenya.

Michael Choi OAM Non-Executive Director

Over 30 years' experience in business ownership and management and was a Member of the Queensland Parliament for 11 years between 2001 and 2012. He was at one stage the Assistant Minister for Mines and Energy and Assistant Minister for Trade. Founding managing director of a company in property development, project and development management as well as construction management. Established since the 90s, the company was recognised at one stage as one of the top 20 firms in Queensland in its sector with multiple industry awards.

Neville Huxham Chairman (Globe Africa)

Neville has extensive mining experience in southern Africa with the Anglo-American Corporation/De Beers group, and most recently as deputy chairman of Malawi's major uranium mining company. Over the past decade he headed Globe's in-country negotiations with the Malawi Government, culminating in the signing in March 2023 of the Mining Agreement authorising development of the Kanyika Niobium Project.

Dean Lungu Director (Globe Africa)

Mr. Dean Lungu is a prominent Malawian businessman and director of companies. He is a former chairman of Press Corporation Limited, Malawi's leading commercial conglomerate, and has served on the boards of several of the country's major companies, including Telekom Networks Ltd. and Alexander Forbes. Mr Lungu is President emeritus of the Malawi Chamber of Mines and Energy.

For personal use only

The market for Niobium

For personal use only

Niobium oxide NB205

E-Mobility including batteries

Cathode and anode materials in Lithium- ion battery

- 1.9 million fast charging (6C) 50 kWh batteries per annum using Nb₂O₅
- 148 million 4,000 cycle household batteries at 5kWh per annum using Nb₂O₅

**20,000
tons
Nb2O5**

Ferroniobium FeNb

Construction

High strength low alloyed steel (Microalloy) in Reinforcement, bar and strip steel

- 80m tons pa of HSLA contain Niobium

**120,000
tons
FeNb**

Transport including EV's and space/defence

High strength low alloyed steel (Microalloy) in Jet engines, body plates, casting, breaks

- 26m tons pa of HSLA contain Niobium

**40,000
tons
FeNb**

Renewable energy and telecoms

Soft Magnetic Nanocrystalline & Superconductors, micro alloys, electromagnetic shielding in EV chargers, Wind turbines, transformers, super conductors, wireless chargers.

- 190,000 high heat capacity EV chargers, 30,000 high strength wind turbines, 1 billion wireless chargers all using Niobium

**20,000
tons
FeNb**

Healthcare

Soft Magnetic Nanocrystalline Alloys in MRI Scanning machines, orthopaedic prosthesis.

- 6,000 MRI scanners

**500 tons
FeNb**