AUSTRALIAN
RESEARCH
INDEPENDENT INVESTMENT RESEARCH

Global Metals and Mining Limited
(ASX:GBE)

January 2024

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INVESTMENT RESEARCH

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Global Metals and Mining Limited

(ASX:GBE)

Note: This report is based on information provided by the company as at 16 January 2024

Investment Profile	
Share Price ($) at 16 January 2024	0.035
Issue Capital:	
Ordinary Shares (M)	675.9
Options (M)	22.5
Performance Shares (M)	nil
Fully Diluted (M)	698/3
Market Capitalisation (M)	23.7
12 month L/H ($)	0.032-0.010

Board and Management

Directors:

Alice Wong – Non Executive Chairperson

Bo Tan – Non Executive Director

Ricky Lau – Non Executive Director

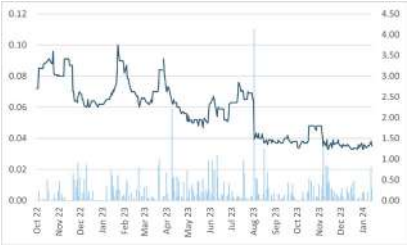
Michael Barrett – Non Executive Director

Michael Choi OAM – Non Executive Director

Grant Hudson - Chief Executive Officer

Major Shareholders as at	
Apollo Metals Investments	52.0%
AO-Zhong International	17.5%
Triple Talent Enterprises	10.3%

Share Price Performance



RIGHTSIZING FOR BATTERY NIOBIUM STARTUP

Globe Metals and Mining Limited is an Australian listed African focussed resource company. Its major project is the Kanyika Niobium Project in Malawi, from which it plans to produce niobium and tantalum products for high strength low alloy steel and electronic applications including very fast charging lithium-ion batteries.

KANYIKA – THINGS HAVE CHANGED

The Kanyika Niobium project has been around for a while – This is a well-studied project that Globe has worked on for over a decade waiting for the granting of the Mining License. It had the Resource, costings and flowsheet for a mine, concentrator and refinery in 2013. Potential investors would ask why this project hasn't been built yet and has anything changed to make it more likely to be built now. There have been four big changes over the last two years.

Change 1: Mining Development Agreement was granted on 29 March 2023. The Mining License was granted on 19 August 2021 and was effective from 1 September 2021.

Change 2: The niobium pentoxide market has different dynamics from the ferroniobium market – The niobium market is controlled by CBMM in Brazil which supplies around 70% of global niobium demand and has maintained a flat ferroniobium price for over a decade by adjusting supply rather than price. However, in the last two years, the niobium pentoxide price has exhibited considerable volatility and its premium over ferroniobium has increased. This means the CBMM has less control over the 18% of the market that needs the oxide, and there are supply shortages from time to time, creating the opportunity for new entrants. The oxide is the feedstock for new applications outside the steel industry like niobium oxide anodes in lithium-ion batteries allowing full recharge in 10 minutes.

Change 3a: The 2023 project rework has produced a very low-cost operation – To the extent that we can see competitor operating costs, they appear to be between US$20/kg and US$30/kg for ferroniobium, and more for niobium pentoxide which is typically made from ferroniobium. The Kanyika project plans to produce pentoxide directly from concentrate at a cost of around US$10/kg after byproduct credits. At that cost Globe has a place in global supply.

Change 3b: Refinery switch in location and process – The 2021 Feasibility Study assumed a hydroflouric process in UAE and has changed to a carbo-chloride process in Namibia which has resulted in major operating cos savings and a lot more byproducts which contribute to lower operating costs net of byproduct revenue, and creates potential for a secondary business processing lowgrade niobium concentrates from African copper mines currently going to tails.

Change 4: Resizing the project to make funding possible – The 2021 Feasibility Study planned to process 1.5Mtpa ore. Globe is planning a Phase 1 processing 190ktpa costing US$60M and is considering a smaller Phase 0 of 95kpta but has released no details. The investment returns on these smaller projects appear attractive, but more clarity is needed.

News flow on these changes in the near term – Revised Preliminary Feasibility Study with updated costings and including results of detailed design of long lead items is planned for the March 2024 quarter. Product samples are currently being sent to potential offtake partners, which could lead to the announcement of sales agreements and possibly funding support (ie customers providing equity, making prepayments against future sales, and/or providing debt). 2024 is likely to be a watershed year for the project and the news flow will be considerable.

Cash on hand $4.36M at 30 September 2023 - Additional cash may be required to maintain the project momentum and newsflow shown in Figure 18.

Valuation A$0.15/sh to A$0.362/sh

The value of the company as a whole at US$42/kg niobium pentoxide and US$350/kg tantalum pentoxide at an exchange rate of AUDUSD 0.66 is estimated to be A$444M at June 2024 or A$0.657/sh before dilution. The valuation range after estimated dilution is A$0.15/sh to A$0.362/sh. The lower end of the range assumes the raising of A$100M at 3cps, and the upper end assumes an issue at 14cps. Any funding from non equity sources would reduce dilution

and increase the valuation. Both issues immediately create value of 5x to 2.6x the respective issue price. The first stage in the re-rating process would be driven by near term Phase 1 earnings, after which the market should start to focus on the Net Present Value reflecting the expanded project.

OVERVIEW

STRATEGY

Building a vertically integrated niobium pentoxide producer

Globe is progressing the development of the Kanyika Niobium Project in Malawi with plans to build a mine and concentrator in Malawi and a niobium/tantalum oxide producing refinery in Namibia.

The overall niobium market is around 80ktpa (source:USGS) of contained niobium of which the niobium pentoxide share is around 14ktpa of niobium or 20kt of niobium pentoxide. The oxide market appears to be experiencing stronger demand growth and is significantly more supply constrained than the ferroniobium market, offering opportunities for new oxide focussed projects like Kanyika to find customer support.

The capital cost of a refinery is relatively low and once built, represents a second income stream potentially independent of Kanyika because it would have the potential to process low grade niobium concentrates from elsewhere including some African copper mines that could produce niobium concentrates that currently goes to tailings.

Rightsizing the project to match Globes funding capability and demand growth

The current market capitalisation of Globe is around A$23M compared to the pre-production capital cost in the 2021 Feasibility Study (1.5mtpa ore) of US$250M. Unless the market re-rates Globe, building that project will be financially very difficult. In addition, adding 3250tpa of oxide to the current market would increase oxide supply by 15%. The planned Echion/CBMM anode precursor plant will need 2000tpa so demand growth will be in lumpy steps, and potentially could absorb the larger project, but Globe's market entry would be smoother and less potentially disruptive if its production increments were smaller.

Globe has indicated that it will adopt a phased development approach, initially building a smaller project to demonstrate the technology and build customer support for the full scale project.

The proposed Phase 1 making 720tpa of oxide would require an initial capital raise of US$60-70M, which is large compared to the company's current market capitalisation, so a Phase 0 of 300tpa oxide is also being considered. Both start mining in a higher grade zone.

Figure 1 Currently proposed two phase development strategy - Globe could replace Phase 1 with a smaller Phase 0 of 300tpa Nb_2O_5

Source: 4 August 2023

ALTERNATIVES TO EQUITY FUNDING

- Offtake partners provide cash prepayment against future offtake, and /or contribute equity.
- Equipment suppliers (especially from US or Germany) supply debt funding from government export banks, particularly for commodities that are considered strategic.
- World bank and other institutions aid programs especially for project infrastructure like water supply.

- Sale of a royalty on sales revenue with long life and close to production projects getting best deals.

Anything that reduces the dilution to shareholders significantly improves valuation per share and evidence of external support for the project assists in validating the business model and de-risks the company.

VALUATION – A$0.137/SH TO A$0.364/SH

Table 1 Valuation of A$0.137/sh to A$0.364/sh based on Net Present Value and Price Earnings Ratio

	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Kanyika	496.3	636.9	677.4	721.6	1132.6	1086.8	1044.8
Exploration	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corporate Overhead	-42.5	-44.8	-46.2	-45.6	-45.0	-44.3	-43.5
Tax Benefit	13.5	13.5	13.5	13.5	13.5	13.5	13.5
Dividend Withholding Tax	-14.2	-15.5	-17.0	-18.6	-20.3	-22.2	-24.3
Cash on hand	0.3	4.1	7.5	17.4	30.4	67.8	116.2
Debt	0.0	0.0	0.0	0.0	-250.0	-218.8	-187.5
Net Working Capital	-0.3	-2.9	9.3	7.5	-12.9	36.0	38.3
Valuation A$M	453,2	591.3	644.5	695.8	848.7	918.8	957.4
Issued Shares m	724	3424	3432	3446	4888	4888	4888
Valuation A$/sh	0.626	0.173	0.188	0.202	0.174	0.188	0.196

Sensitivity to Issue Price

NPAT A$/sh

Phase 1 Issue Price A$/sh	NPV A$/sh @June 2025	Earnings Valuation in A$/sh @ PER of 18x FY26
0.03	**0.137**	**0.052**
0.04	**0.173**	**0.066**
0.05	**0.205**	**0.079**
0.08	**0.285**	**0.109**
0.10	**0.328**	**0.125**
0.12	**0.364**	**0.139**
0.14	0.395	0.151
0.16	0.423	0.161

Source: IIR estimates

- The Phase 1 pre-production capital of US$70M is fundable at any issue price from 3cps to 16cps, in the sense that the post dilution earnings per share x the market Price Earnings Ratio of 18x on FY26 earnings is worth more than the issue price in the years before the expansion. At an issue price of 16cps the discount is to earnings x 18 is zero, and at 3cps the discount is 74% to the PER valuation of A$0.052/sh. We believe a very large issue should take place between A$0.03/sh and A$0.14/sh based only on immediate earnings.
- The NPV at all these issue prices is worth more than the corresponding earnings x PER of 18 because it includes the includes the impact of ongoing expansions, and represents the real value of the project. We only look at near term earnings as an interim valuation step.
- Production growth can be in the form of one big Phase 2 project or a number of steps similar to Phase 1. The Phase 1 cash flow can self fund the smaller steps on our assumptions if required. At a Phase 1 issue price of 3cps (ie 14% discount to the current share price), the diluted NPV is A$0.137/sh or 4.6x the issue price.
- As the market gets clarity on the project numbers, particularly if Globe can improve its financial disclosure, we would expect the valuation gap to be arbitraged, with the initial arbitrage resulting in the share price moving into a valuation range of A$0.10/sh to A$0.14/sh on earnings, then potentially switching focus to NPV and looking at the A$0.137/sh to A$0.364/sh range.
- At A$0.14/sh the company has a market capitalisation of A$94M pre dilution and a major issue is possible at A$0.10/sh or more. At an issue price of A$0.10/sh, the NPV post dilution becomes A$0.328/sh and the company is worth A$532M.

- We estimate the issue for Phase 1 is around A$110M. While an issue of that size sounds very large relative to a A$94M market capitalisation, it potentially unlocks a 3.3x increase in realisable value (ie from A$0.10/sh to A$0.328/sh) making the story attractive to institutions that would come onto the register to participate in the re-rating. The key issue will be building credibility.
- No debt is contemplated for Phase 1 funding in our base case valuation.

How Table 1 works

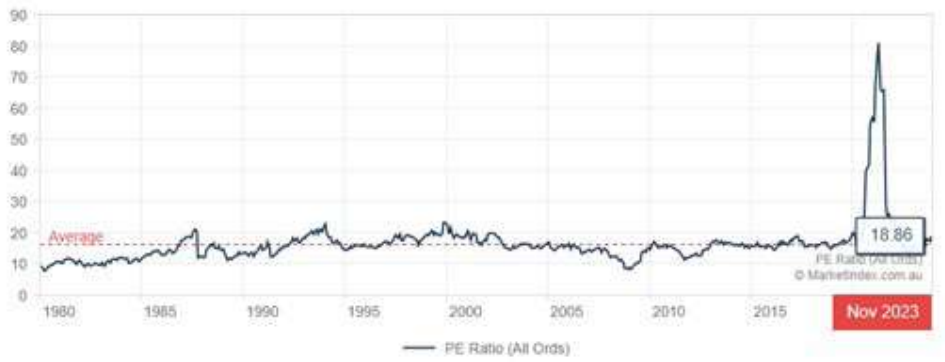
The top half of Table 1 shows IIR's Globe valuation broken into the Kanyika Project and various corporate items. The key assumptions are a niobium price of US$42/kg, AUDUSD 0.65, a discount rate of 9.38%pa and assuming the proposed Phase 1 and Phase 2 development.

The lower half of the table looks at the impact of the equity dilution required to commence Phase 1 operations. The Phase 1 pre-production cost of US$70M is assumed to be entirely funded by equity. The issue price of that equity raise is shown in column 1 of the lower part of the table.

The NPV per share is at June 2025 reflect the valuation at that time, post the Phase 1 dilution.

The Price Earlings Ratio (PER) driven valuation per share takes the A$M forecast earnings for FY26 being the first full year of Phase 1 earnings and divides by the post issue number of shares to generate an earnings per share post dilution at the various issue prices. The earnings per share is multiplied a Price Earnings Ratio (PER) of 18x which is similar to the average PER of the Australian All Ordinaries (Figure 2). That PER reflects the potential growth of earnings expected over time. While Globe's earnings from Kenyika may ultimately be capped by the size of the Resource, the Phase 1 ore processing rate is 190ktpa and the company plans to grow to 1.5Mtpa ie 7.9x, so Globe's earnings growth potential from Phase 1 has to be up there with the rest of the market.

Figure 2 Australian All Ordinaries historical Price Earnings Ratio 18.86x



Source: https://www.marketindex.com.au/statistics

CALCULATING THE DISCOUNT RATE OF 9.38%PA FOR THE NPV

The table below shows the derivation of the 9.38% discount rate used in the Net Present Value calculation using the Capital Asset Pricing Model approach. While the Phase 1 is assumed to have no debt, the larger Phase 2 is assumed to have 60% gearing, so the Weighted Cost of Capital is appropriate.

If the data sources are followed rigidly, the discount rate would be 7. 41%pa applied to inflating cash flows, but for a high risk stock like Globe, we believe that a Beta of 0.4 is too low. We note that Lindian Resources which is working up a rare earths project in Malawi also has a Beta of 0.4. However, TSX listed Mkango Resources is seeking to develop the Songwe Hill rare earth deposit in Malawi and it has a Beta of 2.13.

A Beta of 1.5 has been chosen, combined with a Risk Premium of 4% compared to the current implied market premium of 3.2%. and our risk free rate is the RBA monthly average of 4.58%. compared to the daily rate of 4.01%.

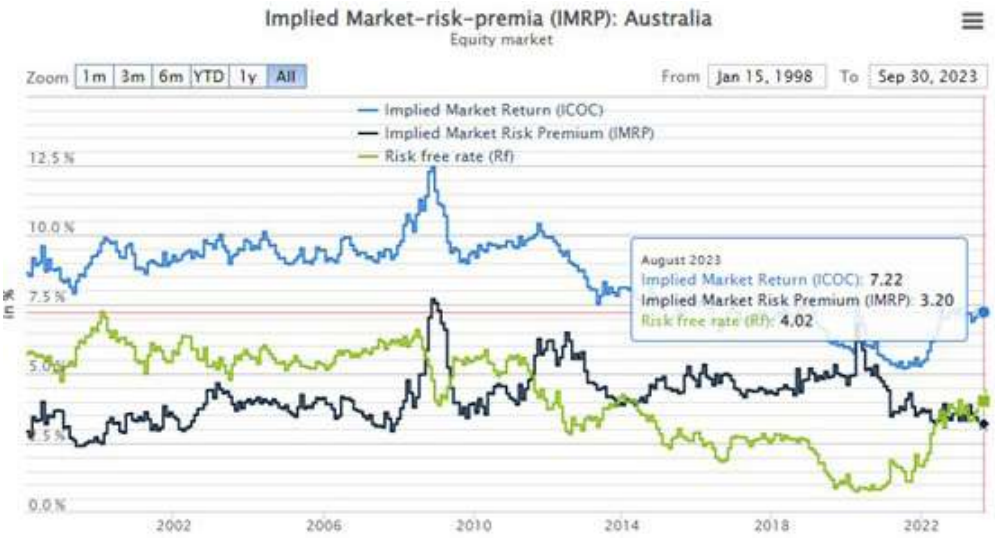
The valuation model assumes zero inflation of prices and costs. The effect of inflating both prices and costs at the same rate increases the NPV, because the profit margin is also being inflated. The rate of inflation of 2.60% (third last line) is a market forecast estimated by deduction the 10year indexed bond rate from the 10year bond rate and estimates a discount rate of 6.61%.

Table 2 Calculation of Weighted Average Cost of Capital for use as the Net Present Value discount rate

Cost of Equity	Base Case	Source	Market Case
Beta Range	1.50	https://au.finance.yahoo.com/quote/GBE.AX/	0.40
Risk free rate (Rf)	4.58%	https://www.rba.gov.au/statistics/tables/	4.58%
Market Risk premium (Rm)	4.00%	http://www.market-risk-premia.com/au.html	3.2%
Market premium (Rm)	8.76%		7.93%
Cost of Equity	**10.85%**	**Ke = Rf + Beta(Rm - Rf)**	**5.9%**
Nominal WACC			
Cost of Equity Ke	10.9%		5.9%
Cost of Debt Kd	12.0%		12.0%
Gearing D/(D+E)	60.0%		60.0%
Gearing E/(D+E)	40.0%		40.0%
Tax Rate	30.0%		30.0%
Weighted Cost of Capital (Ke)	9.38%	W = (Ke * (E/V)) + (Kd * (1-t)*(D/V))	7.41%
Real WACC			
Expected Inflation	2.60%	https://www.rba.gov.au/statistics/tables/	2.6%
(1+real) = (1+Ke)*(1+I)	1.066		1.047
Therefore Real WACC	**6.61%**		4.7%

Source: refer column three

Figure 3 Estimated Australian equity market return and implied market risk premium



Source: refer Table 2

SENSITIVITY

Table 3 Sensitivity to major variables

Sensitivity	A$M	A$/sh
Niobium Pentoxide +US$10/kg	286	0.084
Tantalum Pentoxide +US$100/kg	138	0.040
AUDUSD +0.05	=43	-0.003
Discount Rate +1%	-67	-0.020
Cost Inflation since 2018 +10%	-49	-0.014

Source: IIR estimates

Our base case assumes a Phase 1 Issue price of 4cps. This is above the current price but below the average of the last 12 months. We use the valuation at June 2026 because it includes the effect of the Phase 1 funding dilution. That means these sensitivities are variations from a base valuation of A$0.174/sh or A$591M.

The valuation is not particularly sensitive to the AUDUSD because both costs and revenues are largely in USD. The current share price is factoring in something like US$25/kg niobium pentoxide, US$300/kg tantalum pentoxide, and an AUDUSD of 0.67 or a variation of this mix.

RISKS

- **Country Risk** – Malawi does not have a large mining industry but is keen to develop one and currently appears to be very supportive of new projects, of which Kanyika is one. Lindian Resources (ASX:LIN) is seeking to develop the Kangankunde rare earth project and Mkango Resources (TSV:MKA) is seeking to develop the Songwe Hill rare earth project. There are also a number of uranium, coal and bauxite projects, but at present no large scale mining operations. As with all countries with little of no modern mining industry, the population is unclear on the benefits and how the interactions with mining companies will be, so the relationships will have to be very carefully managed.
- **Commodity price risk** – Niobium is a very special case because almost 100% of global supply comes from three companies and most of that from just one company and one mine. The major producer CBMM has maintained a stable niobium price for many years and is likely to continue to do so. However, CBMM has a significantly higher grade deposit than anyone else including the potential new entrants, and so could lower the price to shut out competition if it chose to do so. The expectation is that niobium has a large role to play in reducing carbon emissions, which will drive demand at a rate that even CBMM will struggle to keep up with, so the likelihood is that price risk is to the upside.
- **Technology and operating costs** – Globe is proposing to use the carbo-chloride process in its refinery, which has not been used for producing niobium oxide before. However, it has for decades been the preferred technology for producing titanium dioxide of high purity for the paint pigment industry and is very well understood. Globe's decision to start with a small Phase 1 plant means that in the event that there are technical issues, the smaller plant means that repairs or replacement of equipment will be physically smaller and therefore lower cost and more manageable.
- **Tax and financial arrangements** – The Government of Malawi has agreed to a 10 year standstill on taxation. The project holding company is a UK registered entity and therefore any dispute with the Government would go to the International Court of Arbitration, an extremely powerful and effective organisation that has an excellent track record of extracting compensation from African and Asian countries that break agreements or disrespect title.
- **Funding Risk** – This is the core risk that needs to be overcome. The company's strategy is to start small with a project sized to match the company's capital raising capacity. Funding the larger Phase 2 is contingent of getting Phase 1 right. However, a successful Phase 1 would bring in potential equity from customers, strategic partners including governments concerned by supply shortages or concentration in supply chain ownership, as well as increasing the project's bankability.

FINANCIALS

Table 4 Profit and Loss

PROFIT & LOSS	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Revenue	0.0	0.0	49.7	49.7	49.7	261.5	271.3
Operating Costs	0.0	0.0	-23.6	-23.6	-23.6	-100.	-118.6
Corporate OH	-2.40	-2.40	-4.00	-7.0	-7.0	-7.0	-7.0
EBITDA	-2.4	-2.4	22.0	19,0	19.0	153,9	145.7
D&A	0.0	-0.4	-4.1	-4.1	-4.1	-22.0	-27.8
EBIT	-2.4	-2.8	18.0	15.0	15.0	131.4	117.9
Interest Costs	-0.1	0.0	0.0	0.1	-14.8	-27.9	-23.9
PBT	-2.5	-2.8	18.0	15.0	0.1	103.9	94.0
Tax Expense	0.7	0.8	-5.4	-4.5	0.0	-31.2	-28.2
NPAT	-1.7	-2.0	12.6	10.5	0.1	72.8	65.8
Dividend $M	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Franking	0%	0%	0%	0%	0%	0%	0%
Shares on Issue	724	3424	3432	3446	4888	4888	4888
Adj EPS A$/sh	-0.002	-0.001	0.004	0.003	0.000	0.015	0.013
Options on Issue M	22.5	22.5	14.2	0.0	0.0	0.0	0.0

Source: IIR estimates

The equity to build Phase 1 is raised in early FY25 and construction completed by the end of the financial year consistent with the time scale in Figure 18. The cash flow generated continues for four years compared to the company's estimate of three years. The next major capital raise in our model is FY2028 to build Phase 2 which starts in FY29, one year later than in Figure 18.

Table 5 Cash Flow

CASH FLOW	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Receipts From Customers	0.1	0.0	44.2	49.7	49.7	238,3	270.3
Payments to Suppliers	-2.2	0.2	-34.4	-28.8	-10.3	-133.4	-129.9
Cash Flow from Operations	-2.1	0.2	9.8	20.9	39.8	104.9	143.4
Interest Received	0.0	0.0	0.0	0.1	0.2	0.2	0.5
Financing Costs	0.0	0.0	0.0	0.0	-15.0	-28.1	-24.4
Taxes Paid	0.0	0.0	0.0	-5.4	-4.5	0.0	-31.2
Net Cash from Operations	-2.1	0.3	9.9	15.5	20.1	77.0	88.4
PP&E	-4.5	-104.5	-0.7	-0.7	-403.7	0.0	0.0
Mine Development	0.0	0.0	-6.7	-6.7	-6.7	-6.7	-6.7
Investing Activity	-4.5	-104.5	-7.5	-7.5	-410.4	-8.7	-8.7
Issue of Equity	8.0	108.0	1.1	1.8	153.7	0.0	0.0
Debt Movement	-0.08	0.0	0,0	0.0	250.0	-31.3	-31.3
Financing Cost	-0.5	0.0	0.0	0.0	0.0	0.0	0.0
Financing Activity	6.7	108.0	1.1	1.8	403.7	-31.3	-31.3
Net Increase in Cash	0.1	3.7	3.5	9.9	13.3	37.0	48.4
YE Cash on Hand	0.3	4.1	7.5	17.4	30.8	67.8	116.2

Source: IIR estimates

Table 6 Balance Sheet

BALANCE SHEET	Jun-24	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Cash	0.3	4.1	7.5	17.4	30.8	67.8	116.2
Receivables	0.0	0.0	5.4	5.4	5.4	28.7	29.7
Inventories	0.4	0.0	4.9	5.5	5.5	19.2	22.4
Other	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Current Assets	0.8	4.1	18.0	28.4	41.7	115.7	168.4
PP&E	4.6	108.6	105.3	102.0	501.7	479.6	451.8
Exloration & Mine Devt	30.4	30.4	37.1	43.8	50.5	59.3	68.0
Deferred Tax Asset	0.7	1.6	1.6	1.6	1.6	1.6	1.6
Total Non Current Assets	35.7	140.6	144.0	147.4	553.8	540.4	521.3
Total Assets	36.5	144.7	162.0	175.8	595.5	656.1	689.7
Trade Payables	0.8	2.9	1.1	3.4	23.8	11.8	13.8
Borrowings	0.0	0.0	0.0	0.0	250.0	218,8	187.5
Current Tax Liabilities	0.0	0.0	5.4	4.5	0.0	31.2	28.2
Total Liabilities	0.8	2.9	6.5	8.0	273.9	261.7	229.5
Net Assets	35.8	141.8	155.5	167.8	321.7	394.4	460.2
Issued Capital	91.7	199.7	100/8	202.8	356.4	356.4	356.4
Retained Profits	-55.6	-57.6	-45.0	-34.5	-34.4	38.4	104.2
Shareholder Equity	36.2	142.2	155.6	168.3	322.1	394.9	490.7

Source: IIR estimates

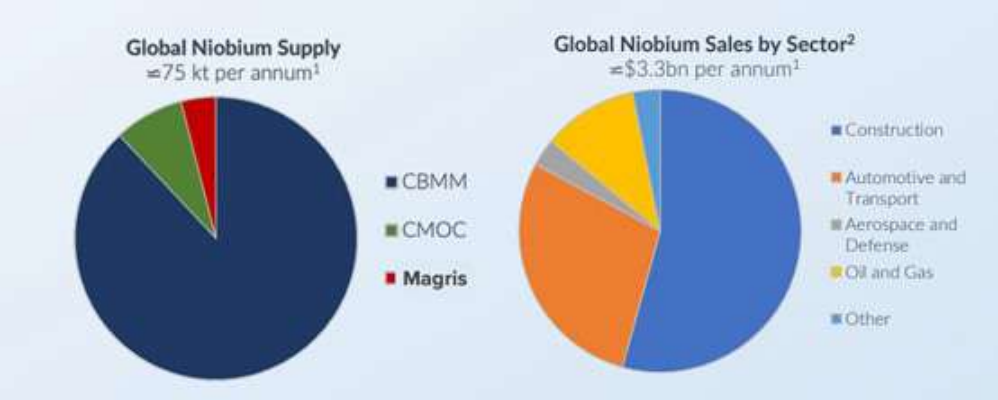
NIOBIUM DEMAND

On our assumptions, Niobium provides 68% of revenue.

Niobium (Nb) has a body-centred cubic crystal structure and a very high (ie refractory) melting point of 2,468 °C (4,474 °F).

Of the refractory (or high melting point) metals, it has the lowest density and best workability; for this reason, niobium-based alloys are often used in aerospace applications. Because of its strengthening effect at elevated temperatures, its principal commercial use is as an additive in steels and superalloys. Also, Niobium-titanium and niobium-tin alloys are used as superconducting materials (Source: Encyclopedia Britannica).

Figure 4 Niobium supply and demand at a glance

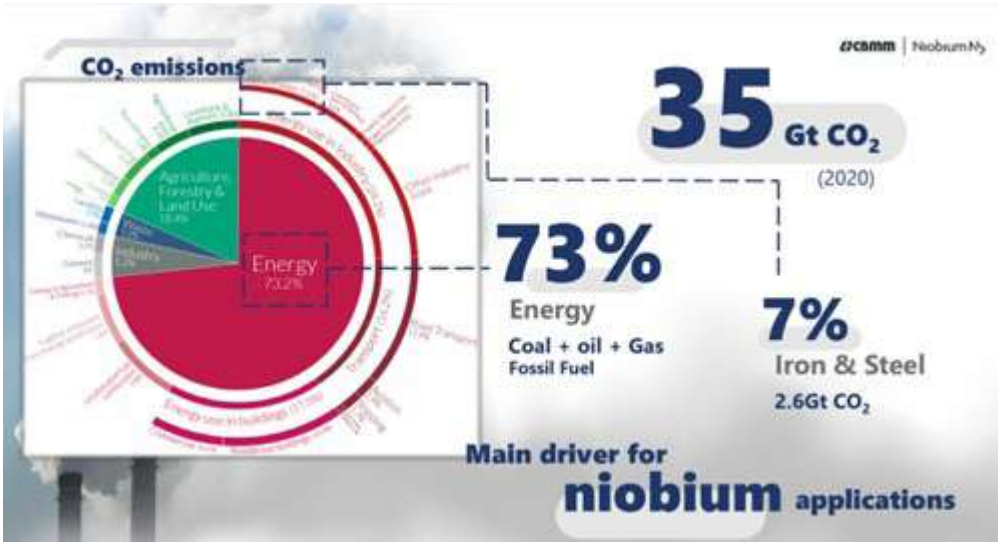


Source: NioCorp website

MAJOR DEMAND MARKET IS AS AN ALLOYING ADDITIVE IN STEEL

Niobium use in steel is largely about decarbonisation

Figure 5 Global carbon emissions in 2020 by carbon producing activity



Source: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://niobium.tech/-/media/NiobiumTech/Images/Images---Pages--HUB/Embaixada-Toquio/PDFs/Niobium-solutions-for-a-sustainable-future---Niobium-technology-for-clean-energy.pdf

With current and foreseeable technology, the only replacement for steel is less steel. The 1800mtpa steel market is so large it is not sensible to contemplate replacing it with another material. However, the amount of steel used can be reduced by using thinner sheet or smaller cross section structural beams, provided the strength is retained.

Adding small amounts of niobium to steel increases its tensile strength and also makes it more ductile (ie the steel can be bent or folded without cracking along the fold line).

21% of global steel produced in 2020 contained niobium, reducing carbon dioxide emitted by 105 million tonnes in that year, as a result of lightweighting.

The Øresund Bridge between Sweden and Denmark was constructed with 82,000 tonnes of steel. A 0.02% niobium addition led to a 15,000t reduction in weight and a cost saving of $25 million.

Improved ductility is important in automobile construction

Figure 6 Automobiles use High Strength ow Alloy (HSLA) steel in the vehicle body

Source: WA1 presentation 16 November 2023

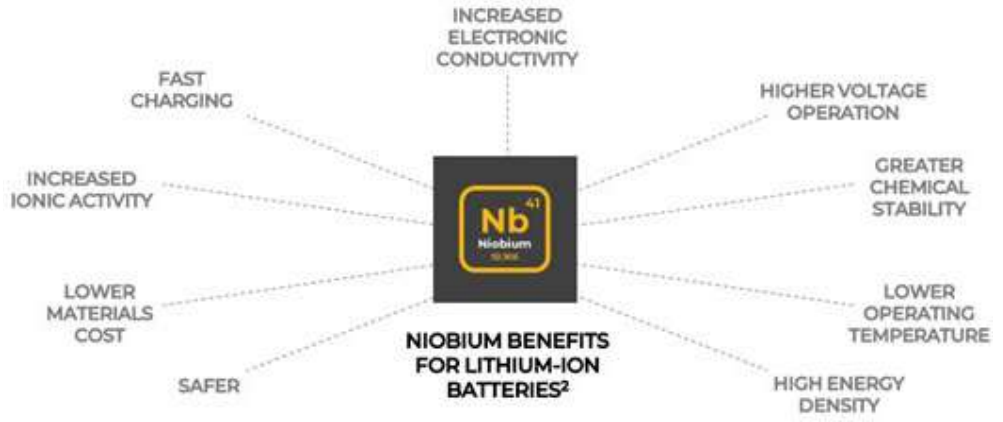
As designers try to reduce vehicle weight and steel usage, the remaining steel is thinner and is being asked to bend and be shaped into more complex shapes with smaller bend radii without cracking or losing strength. Niobium assists in achieving this as part of the high strength steels.

NON STEEL RELATED DEMAND APPLICATIONS

Early days in the rollout of lithium-ion batteries using niobium anodes

One of the higher growth potential uses for niobium is for anodes in lithium-ion batteries.

Figure 7 Benefits of niobium battery anodes



Source: WA1 presentation 16 November 2023

The niobium oxide spinel structure proposed for the anode is more porous that conventional anode materials and can accommodate more lithium ions without the dentrite formation that can cause battery failure.

CBMM is actively involved in this industry. On Sept. 24, 2021, CBMM signed an agreement with Toshiba and Sojitz Corp. to develop a lithium-ion battery with Niobium Titanium Oxide (NTO) as the anode.

CBMM has also signed an agreement with battery materials company Echion Technologies announcing a multi-year manufacturing partnership that will construct a new 2000 tonne per year facility in Araxá, Brazil, to supply niobium oxides of anode grade to be applied in Echion's safe, fast-charging and long-life XNO (niobium oxide with another metal) battery anode material.

The facility is due to open in early 2024 and will have the capacity to supply material equivalent to 1GWh of battery cell production. This positions Echion as the first in the market to guarantee the commercial supply of niobium-based battery anode oxides.

Echion's niobium-based anode material XNO enables lithium-ion batteries to be safely charge in less than 10 minutes, maintain high energy densities even at low temperatures, and deliver high power across a cycle life of more than 10,000 cycles. Applications powered by XNO include battery electric and hybrid trains, mining haul trucks, high-demand buses and delivery vehicles as well as applications in motorsport and space (Source: https://www.greencarcongress.com/2022/12/20221215-echion.html).

Niobium based solid electrolyte batteries under development

Niobium-graphene batteries being developed at the CBMM-CA2DM Advanced Battery Laboratory in Singapore reportedly have greater performance and safety compared to traditional lithium-ion batteries. The volatile and flammable liquid electrolytes in lithium-ion batteries will be replaced by niobium-containing solid electrolytes, enhancing the batteries' safety and energy density.

The performance of niobium-graphene batteries is approximately 10 times longer (estimated to be around 30 years) than lithium-ion batteries, making them more durable and reliable. The niobium-graphene batteries are claimed to operate at a safe voltage window and safely discharge without overheating in case of accidental damage (Source: https://www.electronicsonline.net.au/content/power/news/niobium-graphene-batteries-developed-with-30-year-lifecycles-553938994#:~:text=Niobium%20is%20the%20primary%20active,electronic%20conductivity%20and%20structural%20stability).

Other uses for niobium

Superconductor applications

Niobium has superconducting properties. It is used in superconducting magnets for particle accelerators, MRI scanners and NMR equipment.

Optical applications

Niobium oxide compounds are added to glass to increase the refractive index, which allows corrective glasses to be made with thinner lenses.

Ceramic applications

Niobate ceramics can be used for the production of capacitors. Single crystal lithium niobate and potassium niobate compounds make a type of optoelectronics and electronics material with good crystal, piezoelectric, pyroelectric and optical properties, which has been widely applied to infrared technology, laser technology and electronic industry. In addition, niobium has high melting point, high emission electron capacity, and has the ability to attract air. It can be used to make electron tubes and other electronic vacuum devices.

Medical Applications

Niobium has good resistance to physiological corrosion making it biocompatible, will not interact with various liquid substances in the human body, and will hardly damage living organism tissues. Niobium can adapt to any sterilization method, so it is often used in the manufacture of bone plates, skull plate bone screws, dental implant roots, and surgical appliances.

Chemical industry applications

In the chemical industry, niobium is a high-quality material resistant to acids and liquid metals. It can be used to make cookers, heaters, coolers, etc. In addition, niobic acid is an important catalyst.

Lighting

Niobium can also be used in the lighting industry. For example, an alloy of niobium and 1% zirconium can be used to make a precise bracket for high-efficiency and high-strength sodium vapor streetlamps, so that these small parts have high thermal strength, excellent formability, and resistance to sodium vapor corrosion performance.

SUBSTITUTION

Substitution of a metal with other metals in any one of its application sectors can have an impact on the demand for the metal. Supply stress in the case of tantalum and niobium can be reduced by substitution in select cases.

Aluminium and ceramics are substitutes of tantalum in the ceramic industry. Niobium, platinum, and titanium are used as substitutes for tantalum in corrosion-resistant equipment whereas zirconium, hafnium, iridium, molybdenum, rhenium, and tungsten are some substitute metals that can be used in the high temperature applications.

In low alloy steels, molybdenum and vanadium are substitutes of niobium.

In stainless steel, titanium is a substitute for tantalum.

In ceramics, molybdenum, tantalum can substitute with tungsten used in high-temperature applications.

However, in each case the substitute is significantly poorer in quality than either niobium or tantalum.

RECYCLING

Recycling is a secondary source of tantalum and niobium.

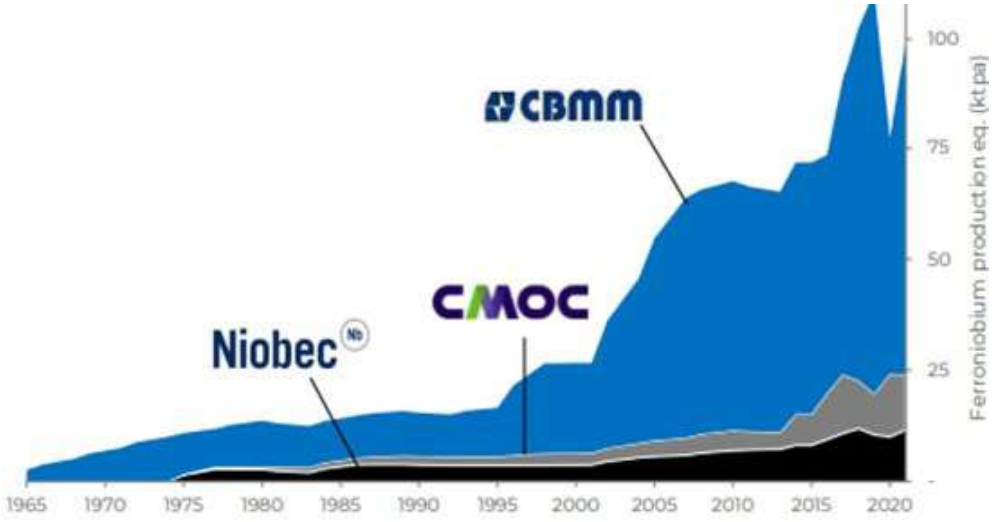
Data for the rate of recycling of niobium are not available but recycling is estimated to be about 10%-15% of total consumption while the recycling rate of tantalum is about 20% (USGS, 2009). The recycling occurs when scrap steel is recovered and reused. The niobium is left in the steel and recycled with the steel.

Primary ores remain the largest source of tantalum and niobium supply at 80% and 85%-90%, respectively (USGS, 2009) and therefore recycling as a source of metal for both tantalum and niobium currently may have limited impact today, and even less impact if demand growth accelerated due to new applications for which the currently available scrap is inappropriate.

NIOBIUM SUPPLY ANALYSIS AND PEER REVIEW

There are only three producers of niobium raw materials globally so they have been included for background. All three operations are in private companies with no public reporting obligations, so there is little public domain information available.

Figure 8 Global supply comprises three companies dominated by CBMM



Source: WA1 presentation 16 November 2023

In 2019, CBMM estimated the market size to be 130 million kg of which 120 million kg was for ferroniobium and the balance for oxide and metallic powder. (Source: https://wap.asianmetal.com/interview/2019/interview_adalbertoparreiraEn.shtml)

Table 7 Current producers of niobium raw materials

Company	Mine	Country	Capacity ktpa	Resource Mt	% Nb2O5	Life yrs
CBMM	Araxa	Brazil	100	+400	2.50%	+200
CMCC	Catalao	Brazil	9	25	0.93%	15
Magris	Niobec	Canada	7	75	0.55%	+20

Source: Niobay 43-101 report 27 November 2020

The three companies are summarised in the table above. CBMM is privately held by 70% Brazilian interests, 15% Chinese steel makers and 15% Japanese steelmakers. CMCC is China Molybdenum, and Magris is a North American private equity group.

The main product of all three companies is ferroniobium which is 60-70% niobium with the balance being iron with minor silica. The companies quote output in contained niobium, and the price received per kilogram of contained niobium.

Currently, it appears that CBMM is the only one of the three that produces niobium pentoxide. Pentoxide is also produced in China and elsewhere by conversion of imported concentrate or ferroniobium into oxide.

CBMM (COMPANHIA BRASILEIRA DE METALURGIA E MINERAÇÃO)

CBMM is the giant of the industry and likely to be the price setter and technology innovator. It would be the lowest cost with its scale and because it sources its ore from an open pit and probably the oxide zone of the pit grading 2.5% niobium pentoxide. It continues to invest heavily in capacity, including:

- US$100M to expand capacity to 150ktpa of ferroniobium (105ktpa niobium) by 2020. 2019 capacity was 110ktpa.
- US$555M spend to get to 230ktpa by 2030.
- US$80M committed in late 2022 to expand battery grade niobium oxide production to 3ktpa by 2024.
- The company plans to have 40ktpa niobium oxide capacity by 2030.

NIOBEC, CANADA

While Niobec is currently privately owned, from 2007 to January 2015, it was owned by IAMGold, and financial, operational, and Reserve information is available for that period shown in Table 8. In most of this period the operation had an ore processing capacity of 2.5Mtpa.

Table 8 Operating and financial data for Niobec from 2008 to 2014

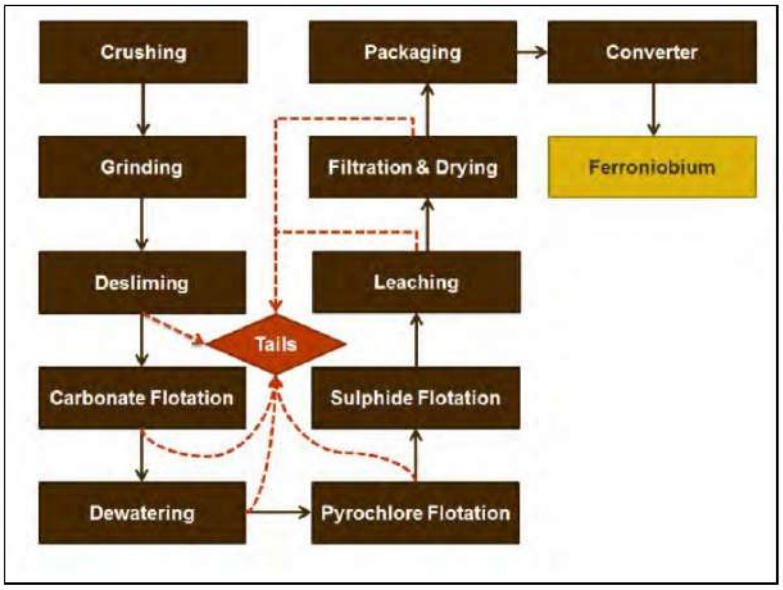
Year Ended December	2008	2009	2010	2011	2012	2013	2014
Reserves Price US$/kg Nb_2O_5	25	25	25	45	45	45	45
Reserves Ore Mt					423	416	
Grade Nb2O5 ppm					4200	4100	
Reserves million kg Nb_2O_5		181	244	1746	1768	1707	
Measured & Ind. mill. kg Nb_2O_5		181.3	243.8	2014	2563	2653	
Inferred million kg Nb_2O_5		219	316	547	263	229	
Material Mined kt	1801	1773	1792	2087	2155	2381	2355
Ore Milled kt	1788	1755	1864	2113	2195	2348	2374
Grade Nb_2O_5 ppm	6200	6100	6100	5700	5500	5900	5800
Contained Mkg Nb_2O_5	11.1	10.7	11.4	12.0	12.1	13.9	13.8
Contained Nb Mkg	7.7	7.5	7.9	8.4	8.4	9.7	9.6
Recovery	57%	55%	55%	55%	56%	55%	58%
Production million kg	4.4	4.1	4.4	4.6	4.7	5.3	5.6
Sustaining Capex US$M						31	23
Devt Capex Capex US$M					9.6	44.1	21.2
Total Capex						75	44
Ferroniobium Sales Mkg Nb	4.2	4.4	4.3	4.6	4.7	4.9	5.8
Revenue US$M	143.1	159.3	158.7	177.8	190.5	199.8	233.8
Operating Cost US$M	-63.7	-74.1	-79.4	-111.2	-117.9	-110.5	-118.7
Other Costs US$M		-0.6		0.9	-0.2	0.3	-2.0
Margin US$M	79.4	85.8	79.3	67.5	72.4	89.4	113.1
Average Selling Price US$/kg	34.1	36.2	36.9	38.7	40.5	40.8	40.3
Operating Cost US$/kg	15.2	16.8	18.5	24.2	25.1	22.6	20.5
Margin US$/kg	19.0	20.0	18.0	15.0	15.0	18.0	20.0

Source: IAMGold annual reports

In December 2013, IAMGold produced a 43-101 document describing the transition to a 10Mtpa block caving operation that would lift output to 13 million kg/yr . The company sold the operation for US$530M in January 2015.

The new owner, Magris, has continued the operations at 2.5mtpa of ore and allowed output to fall to 7ktpa of niobium as grades fell, rather than pursuing the capital intensive transition to low cost block caving.

Figure 9 Niobec processing flowsheet



Source: IAMGold 43-101 10 December 2013

Description of the Converter Stage

Most of the Niobec flowsheet contains processes that are familiar to investors in Australian mining sector. The part that would be unfamiliar is the Converter Stage which converts the concentrate into ferroniobium.

Figure 10 Ferroniobium billet being removed from a converter at Niobec

Source: https://www.magrispm.com/niobec

Converting transforms the pyrochlore concentrate into ferroniobium via an aluminothermic reaction on a batch basis. Ferroniobium is sold directly to steel producers.

In this process, the concentrate is mixed with hematite (an iron oxide), aluminum powder, and small quantities of fluorspar and lime fluxes in a rotary mixer and then unloaded into steel containers lined with magnesite refractory bricks. Here the charge is placed in circular concave pits made of a mixture of lime, fluorspar, and silica sand, and reduction is initiated by the ignition of a mixture of aluminum powder and sodium chlorate or barium peroxide.

The exothermic reaction lasts about 15 to 30 minutes, and the temperature reaches about 2,400 °C (4,350 °F). Most of the gangue impurities from the concentrate, including all the thorium and uranium oxides, enter the molten slag. When the reaction is finished, the slag is tapped off and the vessel is lifted, leaving the metal to solidify in the sand.

CATALAO, BRAZIL

Anglo American plc sold its niobium and phosphates business to China Molybdenum Co. Ltd for a total cash consideration of US$1.5 billion on 28 April 2016.

Table 9 Production and financial history of Catalao Niobium from 2008 to 2015

	2008	2009	2010	2011	2012	2013	2014	2015
Ore Mined kt	768.1	906.7	1209.4	866.6	933.2	1228.8	985.9	2131.7
Ore Processed kt	818.1	873.5	909.3	902.5	973.5	963.1	1084.0	2231.3
Grade Nb kg/t	11.1	9.3	9.4	11.6	12.1	11.6	10.4	9.6
Grade Nb_2O5 kg/t	15.9	13.3	13.4	16.6	17.3	16.6	14.9	13.7
Contained Nb Mkg	9.1	8.1	8.5	10.5	11.8	11.2	11.3	21.4
Recovery	51%	63%	47%	37%	37%	40%	42%	29%
Production Mkg Nb	4.6	5.1	4.0	3.9	4.4	4.5	4.7	6.3
Sales Mkg Nb	4.6	5.2	4.0	3.7	4.2	4.7	4.6	4.7
Revenue US$M	141	184	152	149	173	182	180	111
Operation Costs US$M	-61	-73	-81	-92	-88	-88	-105	-71
EBITDA US$M	80	111	71	57	85	94	75	40
D&A US$M	-2	-5	-4	-3	-6	-6	-6	-7
EBIT US$M	78	106	67	54	81	89	69	33
Capex US$M						101	198	26
Selling Price US$/kg	41	41	41	41	41	39	39	24
Cash Cost US$/kg	13.14	14.04	20.25	25.12	20.82	18.89	22.83	15.11
EBITDA Margin US$/kg	17.23	21.35	17.75	15.56	20.18	20.11	16.30	8.51

Source: Anglo American annual reports and factbooks (D&A in 2012 and 2013 are IIR estimates)

The stability of the average selling price suggests that sales were covered on long term fixed price contracts. The price fall in 2015 looks anomalous and may be a function of the reported volume data not matching the reported financial data for that period.

The business consists of one mine and three processing facilities, two non-operating mines, two further mineral deposits and sales and marketing operations in the United Kingdom and Singapore. The two businesses are integrated to the extent that the fines tailings from the phosphate business are processed to recover niobium. Cataloa is the niobium business and Cubatao is the phosphate business with some overlap.

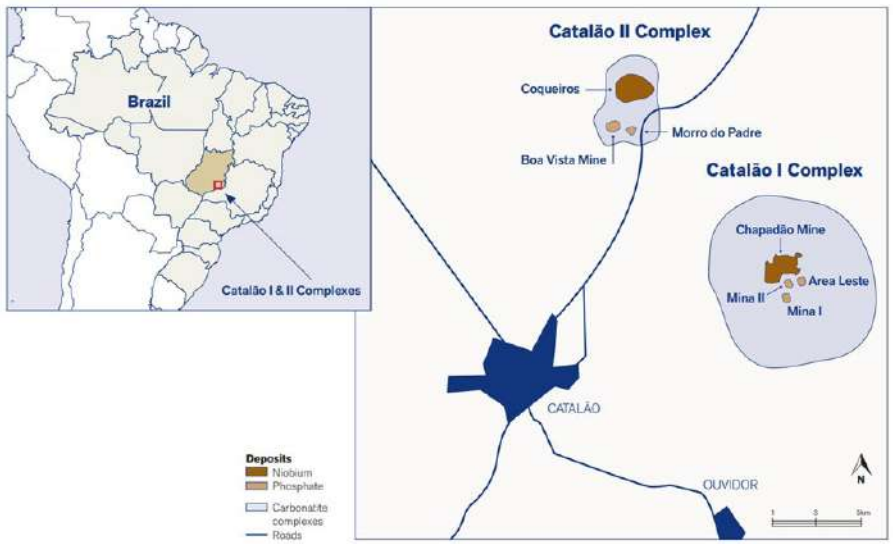
The phosphates business comprises the following assets and facilities:

- Chapadao mine
- Ouvidor beneficiation plant
- Catalão complex
- Cubatão complex
- Coqueiros and Morro Preto deposits

The niobium business comprises the following assets and facilities:

- Boa Vista mine
- Boa Vista plant and metallurgical plant
- Boa Vista Fresh Rock plant
- Tailings plant
- Mina I and Mina II (non operating)
- Area Leste and Morro do Padre deposits

Figure 11 Location of Calalao I & II complexes in Goias State Brazil



Source: Anglo American 2015 Resource and Reserve report

TANTALUM SUPPLY AND DEMAND

Tantalum pentoxide sales contribute 26% of the revenue on our assumptions.

SUPPLY

The chief tantalum ores are tantalite ((Fe,Mn)(Ta,Nb)2O6), which also contains iron, manganese and niobium, and samarskite, which contains seven metals. Another ore which contains tantalum and niobium is pyrochlore.

The main mining areas with 2022 production in tonnes contained tantalum are:

- Australia 44kt
- Brazil 360kt
- Congo 790kt
- Nigeria 110kt
- Rwanda 269kt
- Total 1840kt

DEMAND

Tantalum finds use in high-temperature applications, such as:

- aircraft engines;
- electrical devices, such as capacitors;
- surgical implants and
- handling corrosive chemicals.

It is rarely used as an alloying agent because it tends to make metals brittle. Tantalum resists corrosion and is almost impervious to chemical attack, for this reason it has been employed in the chemical industry, e.g. for heat exchanger in boilers where strong acids are vaporized. Capacitors account for 40% of demand and is generally the application with the strongest growth for electronics and energy storage.

NIOBIUM AND TANTALUM PRICE

NIOBIUM: KEY POINTS OF RELEVENCE TO GLOBE METALS

Over the last year, niobium pentoxide has traded at a premium to ferroniobium of between US$7/kg to US$27/kg of contained niobium. The volatility is evidence that supply demand for the oxide is different to that of the ferroniobium market. The premium is evidence that there is

a cost to convert ferroniobium into oxide and that oxide is in short supply. Globe is planning to go directly to oxide, potentially generating a cost advantage.

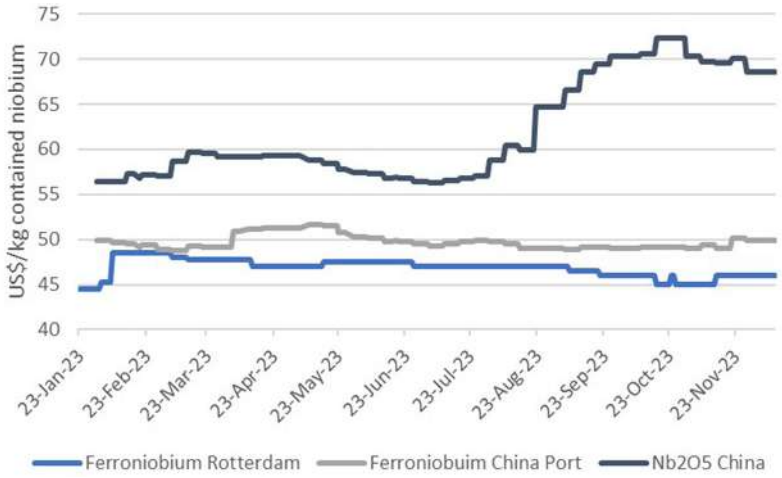
The stability of the ferroniobium market suggests that it is well supplied by the dominant supplier and a new entrant is likely to have difficulty breaking into such a market without initially offering heavily discounted product.

The volatile premium priced oxide market offers the new producer the opportunity to enter a relatively undersupplied market where the incumbent has less control and influence.

Chinese ferroniobium prices are around US$5/kg of contained niobium higher than European landed prices. Cargoes from Brazil would have to go past Walvis Bay in Namibia so Globe's production would probably earn US$2/kg of niobium more than the Brazilians for sales to China or Japan due to freight premium alone.

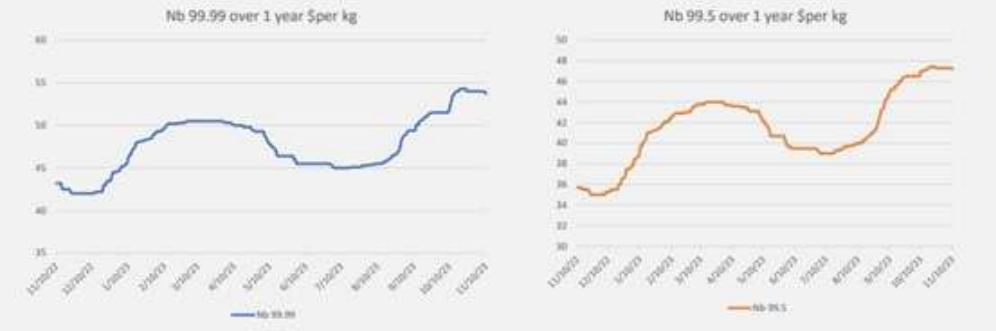
NIOBIUM: LEARNINGS FROM SOME MARKET PRICE HISTORY

Figure 12 Niobium product price history and relativity



Source: https://www.scrapmonster.com/metal-prices/minor-metals/niobium/761

Figure 13 The upward trend on niobium pentoxide and the volatility is evident in the last two years



Source: GBE presentation 29 November 2023

The price data in Figure 12 is shown on the basis of the value per kilogram of contained niobium, and not as ferroniobium or oxides as traded in the marketplace. This has been done to make the price comparisons between products without variances due to different grades.

Note that the price of ferroniobium (65-66% niobium 30% iron 5% other) has been very stable, and if the historical realised prices for various suppliers in Tables 8 and 9 are examined, the price has been stable for years. The difference in the two ferroniobium prices in the chart below probably reflect the shipping costs which would be less from Brazil to Rotterdam than from Brazil to China.

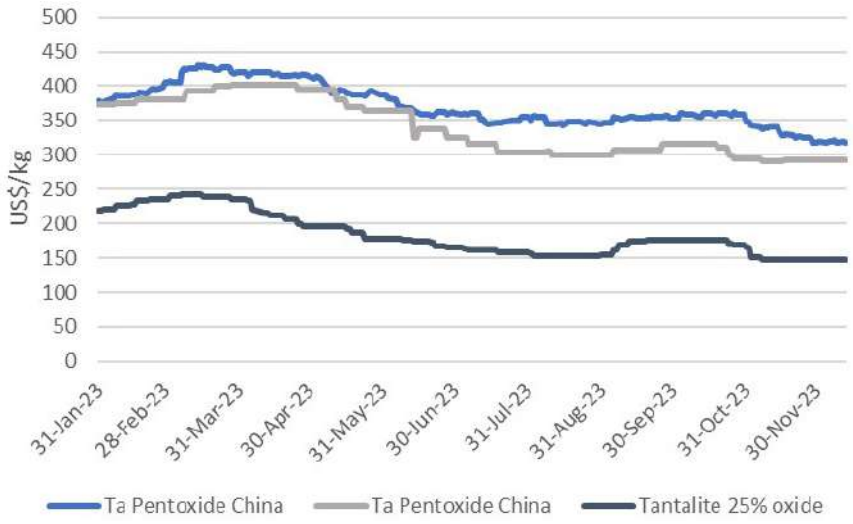
The price of niobium pentoxide behaves very differently, in all probability reflecting the demand for chemical grade niobium compounds having a different and more strongly growing dynamic than niobium use as an alloy in steel.

In the first half of the year, the niobium in oxide traded at an average of US$10.40/kg above niobium in ferroniobium, and in the second half of the year the premium was US$24.09/kg. The most common way to make oxide is to use ferroniobium as a feedstock, so the US$10/kg may reflect the processing cost, with the additional US$14/kg that appeared in the second half of 2024 possibly reflecting a scarcity premium.

TANTALUM: KEY POINTS

The tantalum price has historically been more volatile than the highly controlled ferroniobium price. The bulk of the world's tantalum supply comes from mines that have tantalum as the dominant product, so are responsive to demand and market pricing, but lack the presence of a major supplier to balance the market.

Figure 14 Tantalum pentoxide and tantalite concentrate



Source: https://www.scrapmonster.com/metal-prices/minor-metals/niobium/761

SELECTING PRICES FOR FINANCIAL MODELLING

Conclusion

- Niobium pentoxide US$42/kg rising with inflation (zero in the model)
- Tantalum pentoxide US$350/kg rising with inflation (zero in the model)

SETTING NIOBIUM PRICES BASES ON COMPETITOR ECONOMICS

Earlier in this report the accounts of two of the three current niobium suppliers are summarised and the operating cost estimated, at least to 2014 (Tables 8 & 9). The table below does not include CBMM which supplies 70% of demand and is probably the lowest cost. However, CBMM is likely to price off the economics of these other two, so the smaller producers' costs and typical margins are relevant.

Table 10 Estimating current competitor pricing intentions

	Operating Cost US$/ kg Nb	Cost +50%	Margin US$/kg Nb	Constant margin price US$/kg Nb	Conversion to oxide US$/ kg Nb	Constant margin price US$/kg Nb	Constant margin price US$/kg N_2O_5
Niobec, Canada	20.50	30.75	18.00	48.75	10	58.75	41.13
Catalao, Brazil	22.83	34.24	16.30	50.55	10	60.55	42.38
Average 2023 prices				46.81		62.04	43.43

Source: Tables 8 & 9

The table above takes their 2014 operating cost and margin in US$/kg Nb and increases it by 50% to reflect general inflation over the period from 2014 to 2023 and adds the historical margin to estimate a price for each that would generate a constant margin. These companies produce ferroniobium which at the margin would be shipped to China and converted into oxide at an inferred cost of US$10/kg Nb based on the discussion of Figure 7 above. That price of around US$60/t Nb is then converted to an oxide price of around US$42/kg niobium pentoxide.

Pricing model supported by average 2023 actual prices

The table above also includes the actual average spot prices for 2023, being US$46.81/kg Nb in ferroniobium, US$62.04/kg Nb in niobium pentoxide and US$43.43/kg niobium pentoxide. Overall, the actual prices are generally supporting of the logic on which the table is based, and likewise, the current prices are consistent with niobium being priced at cost plus a constant margin.

We have applied the same inflation increase to Globe's Feasibility Study costs so model-wise, it we are wrong on the level of increase, the error effects both costs and selling prices evenly.

Contract example indicating contracts are available for new entrants

Niobec reported an offtake agreement with Thyssen Krupp for 50% of its Elk Creek project output for 10 years prices at a 3.75% discount to the Argus Metals index price for ferroniobium on 10 November 2014.

KANYIKA NIOBIUM PROJECT

LOCATION AND TENURE

Figure 15 Location of mine and proposed refinery

Source: GBE presentation 4 August 2023

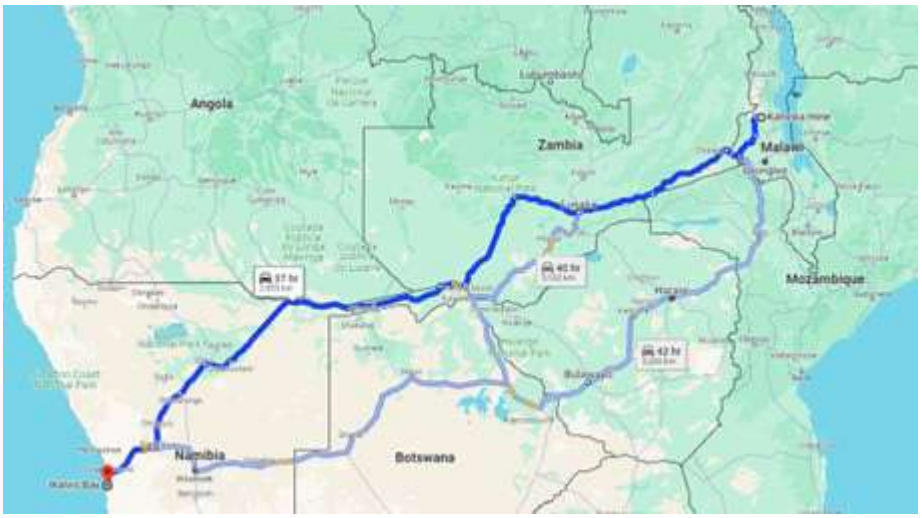
The Kanyika Project is located at 1,050m above sea level, some 60km west of Lake Malawi.

The topography of the project area is moderate with small hills and incised streams and river valleys. The Milenje River cuts across the northern section of the deposit. The most prominent topographical feature in the area is Mphunju, a hill approximately 5km east of the ore body.

Most of the project footprint is located within degraded miombotype woodland areas that have been extensively disturbed through various land use activities, most significantly by cultivation, harvesting of timber and grazing by livestock. The area is well populated with extensive subsistence level agriculture and domestic cattle, chickens and goats with limited commercial crops.

The proposed 3029km transport route through South Africa is shown in Figure 15 and a shorter 2855km alternative is shown in Figure 16.

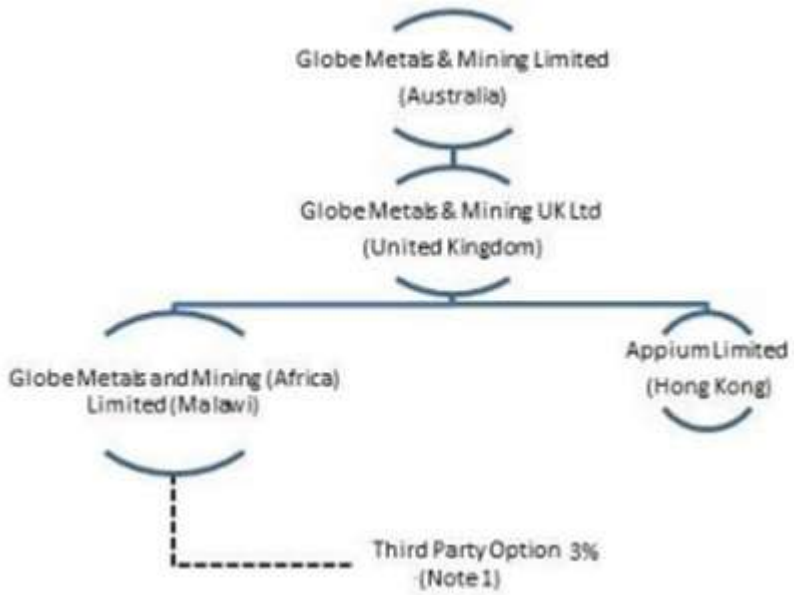
Figure 16 Alternative transport routes



Source: Google Maps

Tenure

Figure 17 Current corporate structure - The Malawi government has a right to 10% of the project which is not shown here



Source: GBE Feasibility Study 2021 Note 1: The Company, GMMA, and a third party are parties to an agreement dated 11 November 2010 pursuant to which the third party will have a right to subscribe A$1m for 3% of GMMA's capital, which (dilutable) right is exercisable within 30 days of the date of the first commercial export sale of product by GMMA. The IIR model assumes this is purchased by Globe as part of the capex of Phase 2.

Globe's wholly owned subsidiary, Globe Metals & Mining (Africa) Limited (GMMA) was granted Large Scale Mining Licence LM0216/21 on 13 August 2021 and was effective from 1 September 2021.

LM0216/21 is valid for twenty-five years and entitles GMMA the exclusive right to prospect for and mine minerals in the licence area on the terms and conditions attaching to the licence.

GMAA also has a granted Exploration Licence EPL0421/15.

Key aspects of the Mining Development Agreement

The MDA was announced on 29 March 2023 and will govern the relationship between Globe, the Malawi Government, and the people of Malawi in relation to the Project, and carries conditions regarding sustainable development and economic, social, and environmental investment.

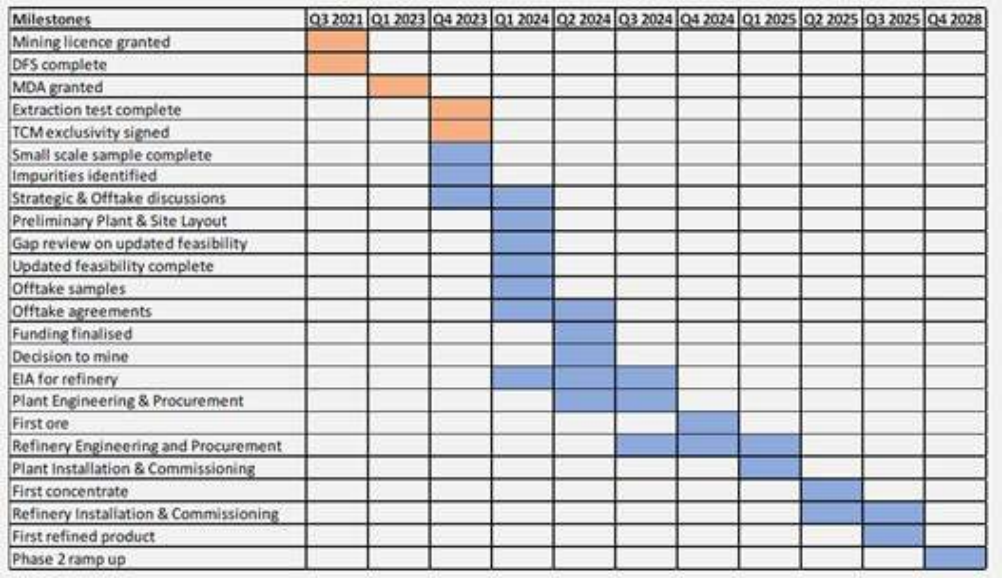
The key aspects of the Mining Development Agreement are as follows (Source 2021 Feasibility p92 and the GBE release of 29 March 2023):

- Globe has the right to mine niobium (Nb), tantalum (Ta), and deleterious uranium (U) and to establish and operate a Processing Facility to be located in the Mining Area;
- The Government of the Republic of Malawi to receive, at no cost, a non-diluting 10% equity interest in the Kanyika project.

- The Government of the Republic of Malawi is entitled to purchase, at Fair Market Value, a further a ten per cent (10%) equity interest in the project, that is capable of being diluted in the event that the Government does not meet any call by the Company for additional equity funding.
- The Government undertakes that it shall not, by direct or indirect means, nationalize or expropriate, except pursuant to a public purpose and under the process of Law; and on a non-discriminatory basis; and upon prompt payment of just and adequate compensation based on Fair Market Value.
- The Company will have a stability period in the fiscal regime for 10 years from the decision to mine, during which time it will be subject to a resource rent tax of 15%, a withholding tax of 10% on dividends paid to non-residents and an income tax of 30%.
- The Government of the Republic of Malawi to receive a royalty of 5% as prescribed for Minerals under the Taxation Act. The Kanyika Community to receive a royalty of 0.45% as prescribed under the Mines and Minerals Act (2018).
- Globe to be subject to the provisions of the Taxation Act, the Value Added Tax Act, the Customs & Excise Act and any other applicable Tax Laws except that Globe to be exempt from import duty and import excise and shall be zero rated for VAT on imports and capital goods, consumables and services; excepting that Globe will not be subject to any increases in applicable taxes during the Stability Period of 10 years or such other length of time as extended;
- Globe to expend its Investment Commitment of US$200M substantially in the manner and on the terms set out in the Agreement;
- Globe to conduct all operations within the laws of Malawi and in accordance with International Standards;
- Globe to maintain adequate production and mining records and to report this information to the Malawi Mines Minister on a monthly, quarterly and annual basis;
- Globe shall comply with the applicable Environmental Laws, and Atomic Energy Act and Regulations, and provide an environmental performance bond of US$5 million in the form of an irrevocable letter of credit or bank guarantee with a commercial bank in Malawi;
- Globe to be responsible for resettling of affected Malawi citizens in accordance with an approved Resettlement Policy Framework;
- Globe to be responsible for carrying out activities set out in an approved Social Responsibility Plan;
- Globe to preferentially employ and train Malawian citizens for operations, and unskilled labour positions, and in the areas of financial, accounting, technical, administrative, supervisory, managerial and executive positions and other skilled positions (provided applicants have necessary skill and experience and are fit and proper;
- Globe to preferentially procure goods and service from local Malawi businesses provided that goods and services are at least comparable in quality, terms, delivery, service, quantity and price;
- Globe to indemnify and hold harmless the Government and its officers and agents from all losses and liabilities incurred as a direct consequence of death or injury to Persons or damage to property directly resulting from the conduct of the Company;
- The environmental performance bond is US$5m; and
- The project will have a maximum debt to equity ratio of 75:25.
- In a release of 14 June 2023, the company announced that the Government had agreed to a revised deadline for commencement of mining by 29 September 2024 and commencement of substantial mineral production (ie Phase 2) by 29 March 2028.

Development timeline in the Mining Development Agreement

Figure 18 Development timetable at November 2023 subject to funding etc



Source: GBE presentation 29 November 2023

The table above includes a decision to mine Phase 1 in Q2 2024, first ore in Q4 2024, and first product produced on Q3 2025 with FY2026 being the first operating year. This is subject to funding and the completion of the Namibian environmental approval process for the refinery, plus the release of the revised feasibility study numbers for either the Phase 1 or the smaller Phase 0 starter project. Our financial estimated assume the first year of operation from Phase 1 is FY26, but Phase 2 is delayed with first production in FY29, so we are taking a conservative view on the time line, but earlier Phase 2 production would improve our valuation.

No matter what path Globe decides to go and the final time lines, 2024 is likely to be year of considerable news flow, and is likely to be a watershed year for the project.

GEOLOGY

Regional geology and discovery history

Kanyika is an intrusion-hosted Pyrochlore-Zircon mineralized deposit. It lies within the Malawi Province of the Mozambique Orogenic Belt. It is almost entirely underlain by Precambrian and Lower Palaeozoic Basement Complex, predominantly gneiss metamorphic rocks.

Most of the rocks in the region are para-gneiss originating from variable protoliths including pelites, sandstones and limestones. Several granitoid bodies of variable size have intruded the gneiss basement and may have originated wholly or in part by anatexis (partial melting). A few small concordant bodies of alkaline syenite rocks containing nepheline are also present, including the strike-extensive body which hosts the Kanyika Pyrochlore-Zircon mineralization.

Description of Kanyika deposit

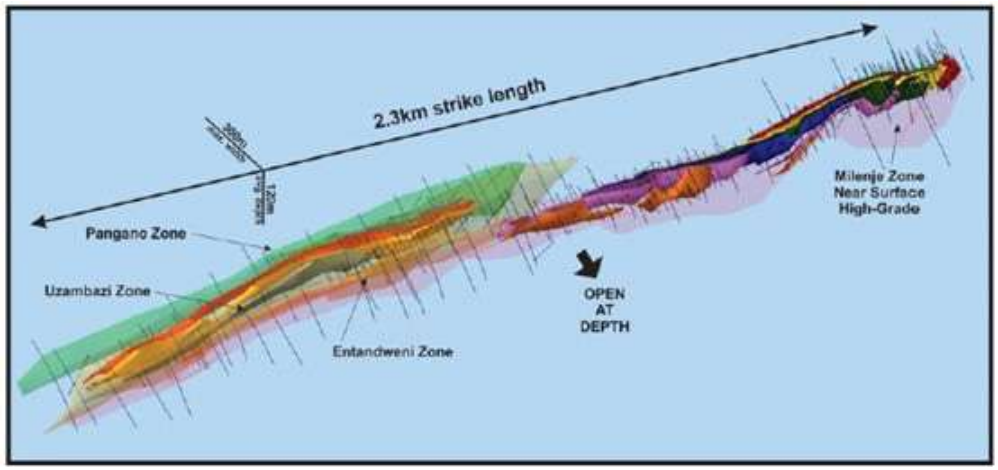
The Kanyika deposit is orientated in a N-S direction, is steeply dipping, and is open to the north and to the south. The deposit lies on the western flank of a regional fold associated and is hosted within a NNE striking, westerly dipping alkaline granitoid, which has broadly concordant contacts with enclosing biotite gneiss. The host unit outcrops over 3.5 km strike length, and averages 200m wide at surface in the south and 50m in the north.

The total strike length of the Kanyika mineral resource extends 2440 metres. At its widest the breadth of the mineralised system is 135 m. The maximum depth extent is 160m.

Airborne radiometric anomalies and follow-up geochemical sampling programs led to the discovery of the Kanyika deposit. With good surface exposure and abundant drill data, the local geology at Kanyika is well known. Niobium and tantalum mineralization occur as the mineral pyrochlore. The pyrochlore mineralization occurs only within the alkali granitoid, in disseminated form as well as in clustered aggregates forming centimetre wide bands. Within the resource area, four broad mineralisation zones are associated with 2 separate sheets of the alkali granitoid that contain disseminated, pale yellow pyrochlore grains. Each of the four

broad mineralized zones appear to correlate broadly to footwall and hanging wall zones of the two granitoid sheets. Higher-grade shoots appear to occur generally at slightly more shallowly dipping orientations and thus have a broadly echelon distribution. Zircon mineralization is associated with pegmatite zones spatially associated with these higher-grade shoots and is commonly, but not always, associated with pyrochlore mineralization in the disseminated and higher-grade forms.

Figure 19 Zones of mineralisation comprising the Kanyika deposit



Source: GBE feasibility study 2021

The intrusion appears to be divided into two planar units separated by biotite-rich rock and contains pyrochlore and zircon mineralisation in disseminated zones, with the niobium and tantalum mineralization occurring within the mineral pyrochlore, with negligible tantalum minerals such as tantalite and microlite.

Pyrochlore appears as a disseminated and a relatively non-metamict (absence of crystalline destruction) form within the alkaline granite, as well as in clustered aggregates forming centimetre wide bands.

High-grade mineralisation features pyrochlore bands associated with euhedral centimetre size zircon crystals. Generally, zircon is not always directly associated with pyrochlore.

Four mineralised zones have been modelled in this resource estimate:

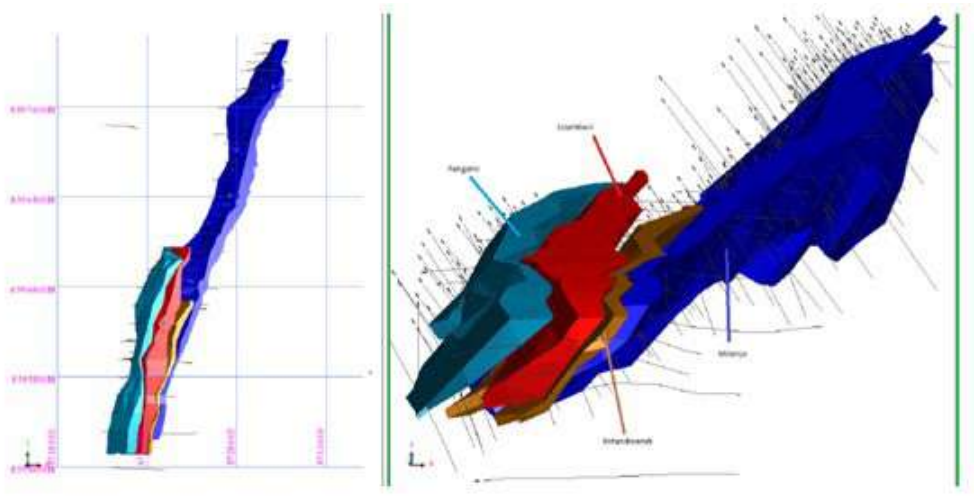
- The Milenje Zone (red) is the northernmost and most extensive. This zone extends 2,200 metres from 5200 mN to 7400 mN along a NNE strike direction and remains open to the north.
- The Entandweni Zone (orange) is located just west of the Milenje Zone and forms the hanging wall mineralised zone of the eastern sheet-like granitoid unit and is open to the south.
- The Pangano Zone (green), is located on the western side of the central section of the deposit, and has an overall NNE strike. Uzambazi and Pangano Zones (from east to west) together make up the central/southern area.
- The Uzambazi Zone (yellow) lies parallel to the Pangano Zone and forms the footwall mineralised zone of the western sheet-like granitoid unit and remains open to the south.

Based on the outcomes from geological logging, examination and the subsequent testwork, Kanyika mineralisation has been classified into 3 vertical domains, based generally on degree of apparent oxidation:

- Saprock comprised of decomposed saprolite (rock and fines) is generally homogenous across the mineralised body and usually constitutes no more than the upper 5m of the horizon, (up to 10 m).
- Transition materials can be extensive. The unit can exhibit considerable variation in oxidation from weak to moderate and be distinguished on the degree of competency.
- Fresh rock is characterized by a lack of oxidation. The rock is generally competent, highly siliceous with distinct veining of pyrochlore and zircon. There are several sub-domains within each classification, including biotite, amphibolite and variable zircon. Some samples also exhibit hematite and goethite and other minor minerals.

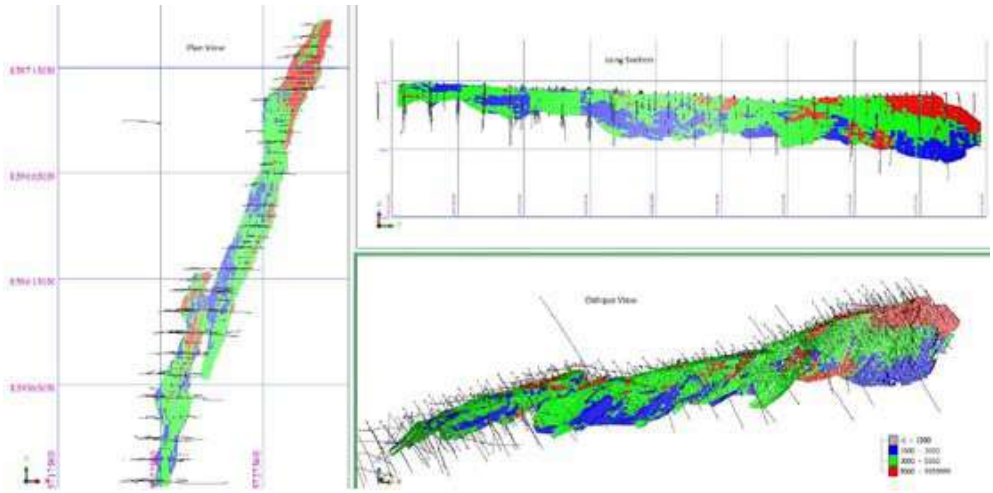
Typically, pyrochlore mineralisation remains constant through each domain and throughout the resource. The mineral particle size decreases moving from Milenjie to Uzambazi and the degree of pyrochlore compositing increases.

Figure 20 Kanyika deposit showing four structural zones



Source: GBE release 19 August 2021

Figure 21 Kanyika deposit showing grade distribution (Green 3000-5000ppm, red over 5000ppm)



Source: GBE release 19 August 2021

Table 11 Resources

	Mt	Nb2O5 ppm	Ta2O5 ppm	Nb2O5 t	Ta2O5 t
Measured	5.3	3770	180	19981	954
Indicated	47	2860	135	134420	6345
Inferred	16	2430	120	38880	1920
Total	68.3	2830	135	193281	9219

Source: GBE presentation 17 October 2022

Table 12 Reserves

	Mt	Nb2O5 ppm	Ta2O5 ppm	Nb2O5 t	Ta2O5 t
Proved	5.3	3680	171	19504	906
Probable	28.5	2930	136	83505	3876
Total	33.8	3048	141	103009	4782
Proved/Measured	100.0%	97.6%	95.0%	97.6%	95.0%
Probable/Indicated	60.6%	102.4%	100.7%	62.1%	61.1%

Source:GBE presentation 17 October 2022

STAGED DEVELOPMENT

The 2021 feasibility study envisaged constructing a 1.5mtpa mine and concentrator at Kanyika and a refinery receiving 11000tpa of concentrate and producing 3400tpa Nb_2O_5 and 150tpa Ta_2O_5.

In Globe's presentation dated 4 August 2023. The company flagged three capital raises related to three stages of project development:

- Capital raise 1 A$8M to finalise Phase 1 project design. This raise was completed on 4 September 2023 with 78% uptake raising A$6.1M. A remaining 51.7M shares is yet to be placed for A$1.91M.
- Capital raise 2 US$70M around H1 2024 to construct a project to mine 340ktpa of ore, producing 3600tpa concentrate and 720-740tpa niobium pentoxide.
- Capital raise 3 US$250M around November 2027 to expand to 11900tpa concentrate and 3250tpa niobium pentoxide.

2021 FEASIBILITY STUDY

The 2021 Feasibility Study is a high-quality document that had taken the engineering work to an advanced stage. Mine design has been completed to a Class 2 level and plant design, engineering drawings, completed to Class 3 with Class 2 quote-based costings of equipment.

The metallurgical testing has been relatively extensive, at least to concentrate production stage.

However, those quoted were mid 2018 vintage, and the world has experienced inflation since then. The project has also experienced major changes including:

- the refinery technology, flowsheet and location has changed so US$50M of the 2021 estimate is no longer relevant.
- The company has changed the concentrator equipment selection for the crushing and flotation sections; and
- A smaller throughput lower capital cost Phase 1 is being contemplated with subsequent expansions by adding modules. The 2021 concentrator flowsheet does not appear to be particularly modular in design.

Table 13 Feasibility study accuracy of estimation

Ore Reserves	Class 2	15.1% Proven 84.9% Probable
Mine Design	Class 2	Complete year one, defined thereafter
Equipment quoted	Class 2	Multiple budgetary quotes - out of time
Piping & Electrical	Class 3	Calculated or detailed, multiple quotes to supply - out of time
Project Master Schedule and Ramp Up Schedule	Class 3	Defined and resources, critical path fully detailed
Diagrams and engineering drawings	Class 3	Complete
Cash flow modelling	Class 3	Complete subject to change
AAEC 18R-97 Standards	**Degree of definition**	**Expected Accuracy**
Class 1	65-100%	-10% to +15%
Class 2	30-75%	-15% to +20%
Class 3	10-40%	-20% to +30%

Source: GME release 19 August 2021

Updating capital and operating costs for inflation

The Feasibility Study was released on 19 August 2021 and any cost numbers released by the company always reference that study and comment that the study costings have not been updated for inflation. We do not have sufficient information to comment on the details of the costings, but can make some macro comments. The company expects to produce an updated Study in the March 2024 quarter.

Capital cost inflation - US$250M has probably increased slightly to US$256M

Inflation has been a big issue over the period since mid 2018 when the 2021 Feasibility Study costs were determined. The Feasibility Study provided a breakdown of the initial capital cost by the currency from which the equipment, material and labour was sourced.

The breakdown in 2018 and the impact of the currency changes since then are shown in the figure below. The impact of currency changes alone is to reduce the US$250M cost 12.8% to US$218M due to non US dollar depreciation by other currencies.

The US capital goods GDP deflator measures equipment inflation in the USA and has risen by 11% from mid-2018 to September 2023 and has been selected because the US dollar component probably relates to plant and equipment. The other inflation rates reflect Consumer Price Index changes in the various countries, because they probably relate to labour and general construction costs. Ther result is that the original US$250M is likely to have inflated to US$256M with inflation in source countries partly offset by currency depreciation.

Table 14 Adjusting capital costs for inflation

	US$M	FX Rate in FS	Source Currency M	Current FX	US$M	Inflation Factor	Inflated Cost US$M
Capital Cost 2021	250				217.8		255.7
Sourced in USD	120	1	120	1	120.0	11%	133.2
Sourced in ZAR	100	14	1400	18.96	73.8	27%	93.8
Sourced in AUD	22	1.3	28.6	1.52	18.8	19.7%	22.5
Sourced in MKR	5	779	3895	1685	2.3	20%	2.8
Sourced in EUR	2	0.864	1.728	0.93	1.9	20%	2.2
Sourced in GBP	1	0.765	0.765	0.8	1.0	20%	1.1

Sources: Capital splits from GBE 2021 Feasibility Study p103, US equipment inflation per US Bureau of Economic Analysis, and for other countries the change in Consumer Price Index supplied by each countries central bank.

Operating Cost Inflation

The main cost drivers will be cost of electricity, chemical reagent prices, and diesel for mining fleet and logistics.

Figure 22 Diesel Price in USD/litre in the USA

Source: https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=emd_epd2d_pte_nus_dpg&f=m

Table 15 Determination of 2021 Feasibility Study refinery operating cost and estimation of current costs

Estimation of Refining Costs and impact of inflation	20121 FS LOM	2021 FS Annual	Savings 4/8/23 Annual	Revised Annual	Inflated Annual
Total Site Costs US$M	1550	67.4		54.0	81.0
Less Identified Costs					
Admin	118	5.1		5.1	7.70
Mining	320	13.9		13.9	20.87
Concentrator	516	22.4	-6.4	16.0	24.05
Environmental	48	2.1		2.1	3.13
Logistics	215	9.3		9.3	14.02
Remainder = Refinery	333	14.5	-7.0	7.5	11.22
Ore Processed Mt		1.5		1.5	1.5
Waste Moved Mt		2.31		2.31	2.31
Concentrate processed kt	260	11.3		11.3	11.3
Mining US$/t		3.65		3.65	5.48
Environmental US$/t ore		1.39		1.39	2.09
Concentrate US$/t ore		14.957		10.69	16.035
Logistics US$/t Conc		827		827	1240
Refinery US$/t conc		1280.8		662	992

Sources: Columns 2 and 3 from Feasibility Study 18 August 2021, Column 3 from GBE release 4 August 2023, Inflated costs assume 50% increase from 2018, the base year for the 2021 Study costs.

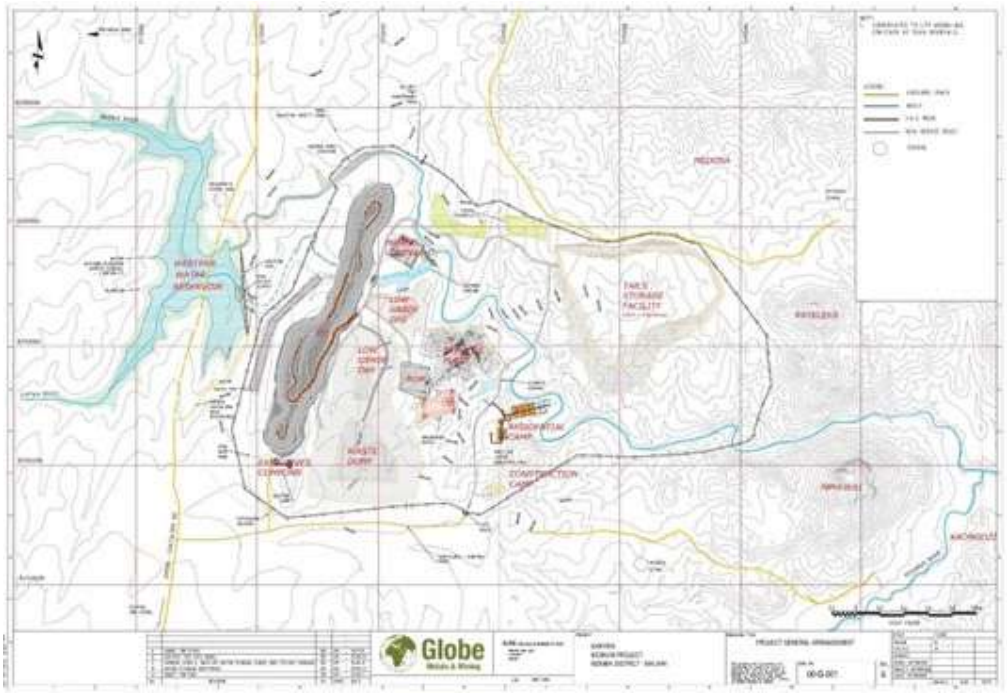
The operating costs for the refinery in the UAE were not specifically stated in the 2021 Feasibility Study release of 19 August 2021. They can be derived by deducting the explicitly stated Life of Mine operating costs from the stated total operating cost as shown in Table 15.

All the costs are adjusted for the savings announced on 4 August 2023 with particularly large cost savings from the new refinery, which were specifically stated to be calculated on the 2018 cost base used in the 2021 Feasibility. The resultant numbers have been inflated by 50%.

The 50% reflects the inflation that can be identified in the US dollar diesel price (up 50%) and in South African electricity prices (up 56% per Reserve Bank of South Africa).

MINING OPERATIONS

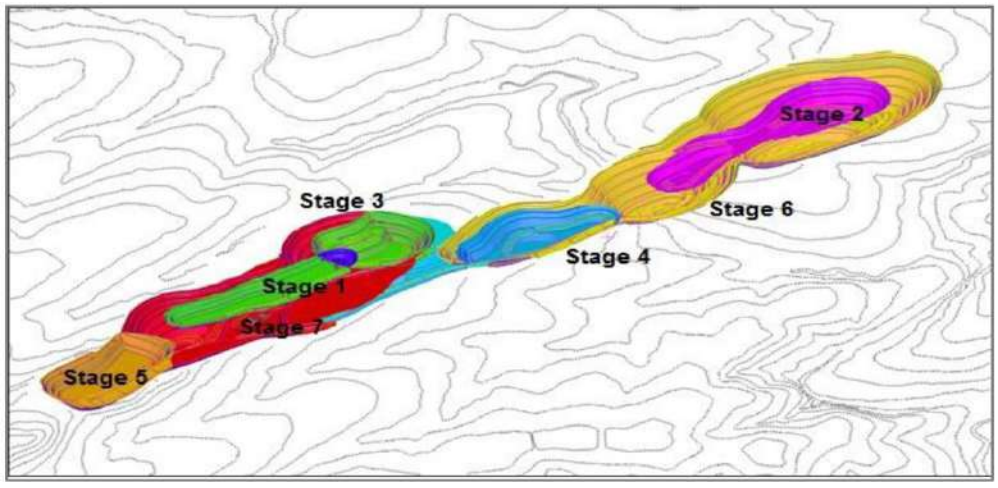
Figure 23 Layout of mine concentrator and infrastructure at Kanyika



Source GBE Feasibility Study 19 August 2021

In the 2021 Feasibility Study, ore production rates ramps up from 1.0 Mtpa in the first year to 1.5 Mtpa with the life-of-mine stripping ratio to average 1.54 tonnes of waste to 1 tonne of ore. The final open pit dimensions are expected to be in the order of 250 m wide, 2.2 km long (north-south) and average 130 m deep.

Figure 24 Mining sequence



Source GBE Feasibility Study 19 August 2021

The plan to start with a smaller Phase 1 project could be based on mining either Stage 1 or Stage 2, with Stage 2 having a higher average grade but also a higher stripping ratio.

Our analysis of the relative economics is overwhelmingly in favour of mining Stage 2 first, even with the higher stripping ratio.

Table 16 Details of each mining stage – Phase 1 could start in either Stage 1 or Stage 2

Stage	Waste Mt	Strip Ratio	Ore Mt	Ore Processed	Nb205 Grade ppm	Ta205 Grade ppm	Contained Nb205 kt	Contained Ta205 kt
1	0.4	0.24	1.7	1.7	3564	165	6.06	0.28
2	2.8	1.71	1.6	1.6	4443	206	7.29	0.34
3	2.5	1.56	1.6	1.6	3296	132	5.27	0.21
4	1.4	0.70	2.0	2.0	3433	156	6.87	0.31
5	1.6	0.59	2.7	2.7	2785	128	7.52	0.35
6	32.5	3.00	10.9	10.9	3191	140	34.62	1.52
7	9.9	0.90	11.0	11.0	2678	133	29.32	1.46
8	2.1	0.88	2.4	2.4	2585	134	6.20	0.32
Total	53.2	1.57	33.8	33.8	3048.3	141.37	103.15	4.78

Source GBE Feasibility Study 19 August 2021

METALLURGY

The Kanyika mineralisation is unique and not analogous to other niobium-tantalum projects and therefore an extensive effort has been focused on devising a process suitable for a commercially favourable outcome. The concentrator will produce a pyrochlore concentrate bearing niobium and tantalum which will be transported to Walvis Bay in Namibia for refining into 99.5% pure niobium oxide.

There are no deleterious elements detected in the mineralogy of the feed or the concentrate produced relative to niobium and tantalum final product specifications (source: Feasibility Study P77).

Many geological occurrences of niobium are associated with complex mineralogy caused by metamictisation (crystalline structural degradation and destruction typically by uranium within the mineral lattice) resulting in high grade deposits having poor recovery or being unrecoverable. Secondary weathering can also complicate the metallurgical recovery processes. Careful selection of processes based on mineralogy is considered extremely important metallurgically.

Concentrate Grade – some niobium basics

Pyrochlore is the economic niobium containing mineral of relevance. Its chemical formula is:

- $(Na,Ca)2Nb_2O_6(OH,F)$.

The two economic niobium product compounds are Niobium Pentoxide (Nb_2O_5 ie 69.9% Nb) and ferroniobium (~65% niobium ~30% iron with minor silica).

That formula means the each Nb_2O_6 is attached to two anions (ie 2xNa, 2xCa or Na+Ca) and a cation (either Hydroxide or Fluorine). The table below shows the range to element mixes, and the Nb_2O_5 in pyrochlore ranges from 60.8% to 76.6%. A pure pyrochlore concentrate would typically be around 73% Nb_2O_5. For practical purposes, a high grade pyrochlore concentrate would be around 60-70% Nb_2O_5.

Table 17 Theoretical proportion of niobiun and niobium pentoxide in an pyrochlore concentrate

	Atomic Weight of Element	Number of elements in Pyrochlore					
Sodium	22.99	2	1	0	2	1	0
Calcium	40.08	0	1	2	0	1	2
Niobium	92.91	2	2	2	2	2	2
Oxygen	16.00	6	6	6	6	6	6
Hydroxide (OH)	17.01	1	1	1	0	0	0
Fluorine	19.00	0	0	0	1	1	1
Total		344.79	361.88	378.97	346.78	363.87	380.96
Niobium	185.8	53.9%	51.3%	49.0%	53.6%	51.1%	48.8%
Niobium pentoxide	265.8	77.1%	73.5%	70.1%	76.6%	73.0%	69.8%

Source: Wikipedia

Kanyika Concentrator

The key steps in the devised Kanyika project metallurgical process (Figure 18) are as follows:

- Comminution (crushing and grinding) to a p80 size of ~106 µm (approx. 100% material below 175 µm) to liberate pyrochlore mineralisation,

- Magnetic separation to remove gangue components and upgrade the pyrochlore,
- Combination of flotation and magnetic beneficiation to further concentrate the pyrochlore concentrate such that it is suitable for transport and processing.
- Filtration, drying and product packaging.

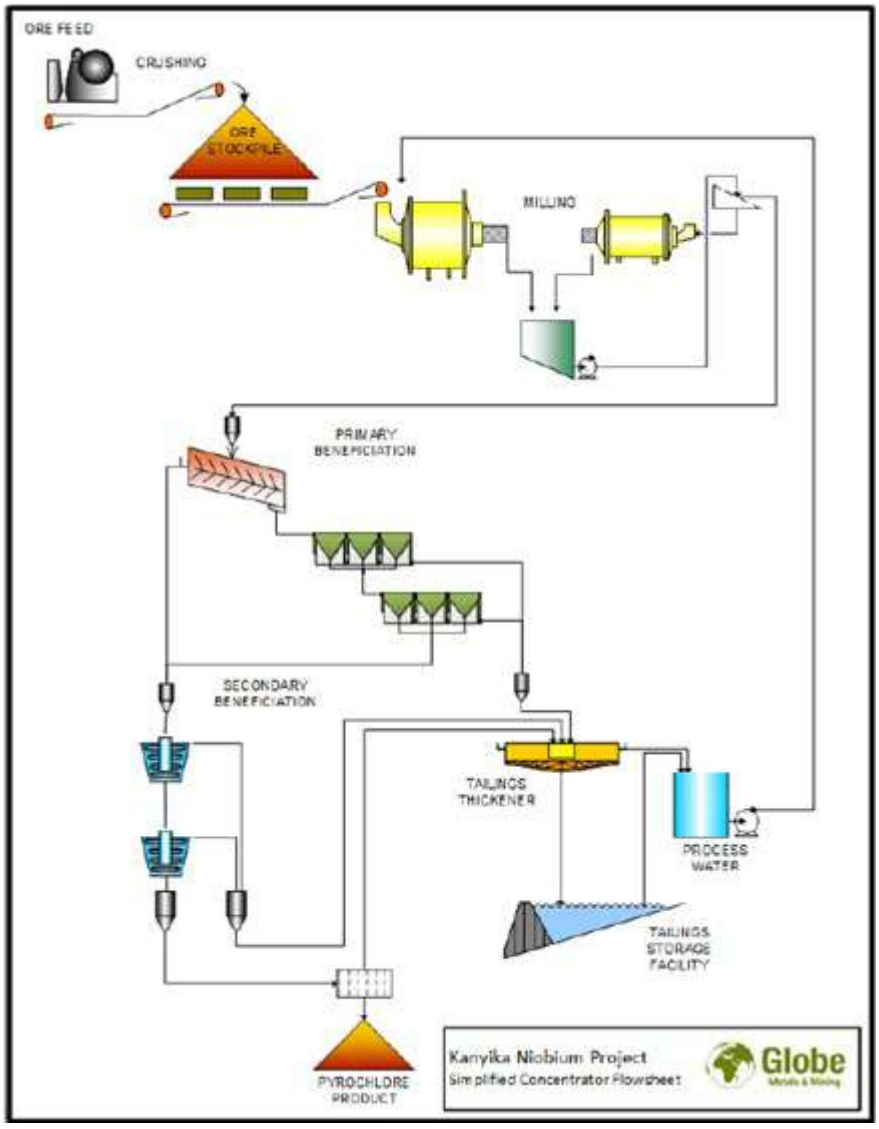
The Company undertook its own internal test work program for magnetic separation and developed a magnetic separation circuit that allowed rejection of waste material with minimal losses of Nb and Ta.

The optimisation program consisted largely of batch and locked-cycle flotation tests and focused on an organic acid reagent-based flotation scheme. Lock cycle tests for recovery-grade outcomes have been undertaken.

The results demonstrated that the concentrate grade and niobium pentoxide (Nb_2O_5) recovery were approximately ~30% and 76% respectively, over a wide variety of samples.

Because commercial niobium concentrates must be 50% Nb_2O_5, and the product from the mine will not be that grade at economic recovery rates, Globe will have to build its own refinery. The refinery design can accept lower concentrate grades so Globe may elect to produce a lower concentrate grade than 30%.

Figure 25 Kanyika concentrator flowsheet



Source GBE Feasibility Study 19 August 2021

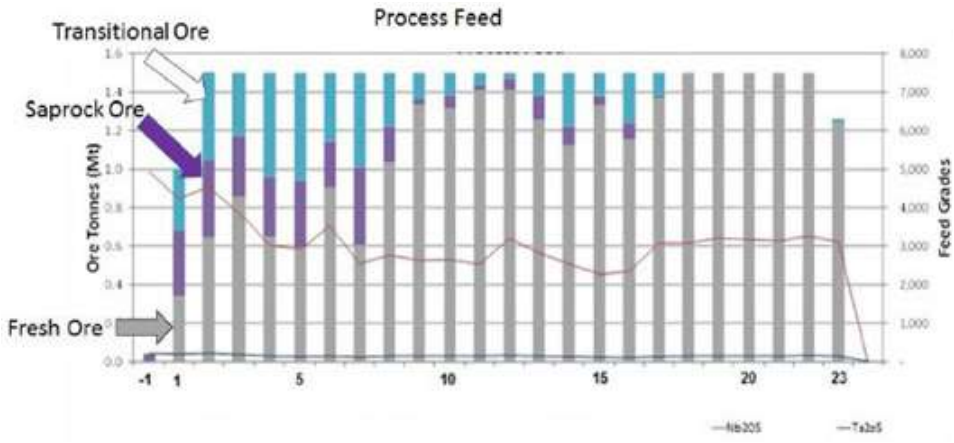
Recoveries: niobium 76.8% tantalum 70.7%

In the 2021 Feasibility Study, Life of Mine concentrator recoveries were 76.8% for niobium and 70.7% for tantalum. In the years 2-11 of the 1.5mtpa project, the recoveries were 77.4% for niobium and 71.3% for tantalum, due to the higher share of transitional ore being processed.

In the first year, 1mt is processed at a recovery of 74.5% for niobium and 68.9% for tantalum. This would be the relevant recovery for the early years of a smaller start up stage, if the ore was mined from the Stage 1 pit.

All these recoveries assume a concentrate grade of 29% Nb_2O_5. However, if a lower grade concentrate was selected as a result of the change in technology being considered for the refinery, the recoveries from the Kanyika concentrator are likely to be higher.

Figure 26 Ore processed in the 1.5Mtpa capacity plant split by ore phase



Source GBE Feasibility Study 19 August 2021

Power for Kanyika to be sourced from the South African ESCOM grid

Estimated electrical power demand for the operation is based on the current equipment list indicates an installed electrical load of approximately 10 MW with an operating annual power draw of 80,000 MWh/a and a load of 19.5 MW. The current design and operating strategy include the supply input of all power needs from the Malawian electrical grid. The operations strategy is currently based on connection to the ESCOM transmission line to source power from the ESCOM grid and provide baseload power supply. In our view, there may be reliability issues with ESCOM, requiring backup power or consideralion of alternative power supply.

Transport of concentrate

The 2021 Study was based on transport to a port in Mozambique or South Africa and shipment to a hydrofluoric process refinery in the United Arab Emirates. That has changed to a carbo-chloride process refinery in Walvis Bay Namibia. The refinery is located in an industrial zone where chemical reagents and skilled industrial labour are available.

The annual concentrate in the 2021 Study is small in volume at 11,900tpa.

The Walvis Bay proposal assumes trucking via Zimbabwe and South Africa. But trucking through Zambia into Namibia direct is also a possibility.

The transportation of unpackaged (bulk loaded) concentrate in small volumes is not cost effective, and higher risk compared to product packed and stored into sea containers. In addition, containerised materials are widely used and are easy to handle and pose little threat of containment loss due to dust emanation.

The mineral concentrate product is a radioactive NORM (Naturally Occurring Radioactive Material) and will classify as a Class 7 for transportation purposes. The packaged and containerised product will have no occupational radiation exposure risk. Transportation of packaged concentrate will require licencing permits to be issued for cross border purposes.

However, adding a concentrate transport step is expensive. The 2021 Feasibility Study included logistics costs of US$827/t concentrate which we have inflated to US$1240/t which translates to US$4.1/kg or niobium pentoxide. Some of this would be marketing costs of transporting final product to customers but concentrate transport would be US$2-3/kg pentoxide at least.

Walvis Bay Refinery

The 2021 feasibility study included a refinery costing US$50M located in the United Arab Emirates using a hydrofluoric acid process. The company's current thinking is to locate the refinery at Walvis Bay in Namibia (GBE release 24 August 2023) based on a chlorine process commonly used to produce titanium dioxide for the paint pigment industry (GBE release 23

October 2023). The capital cost of this new refinery design has not been published. In our modelling we have assumed the 2021 cost for a refinery processing 11,900tpa concentrate.

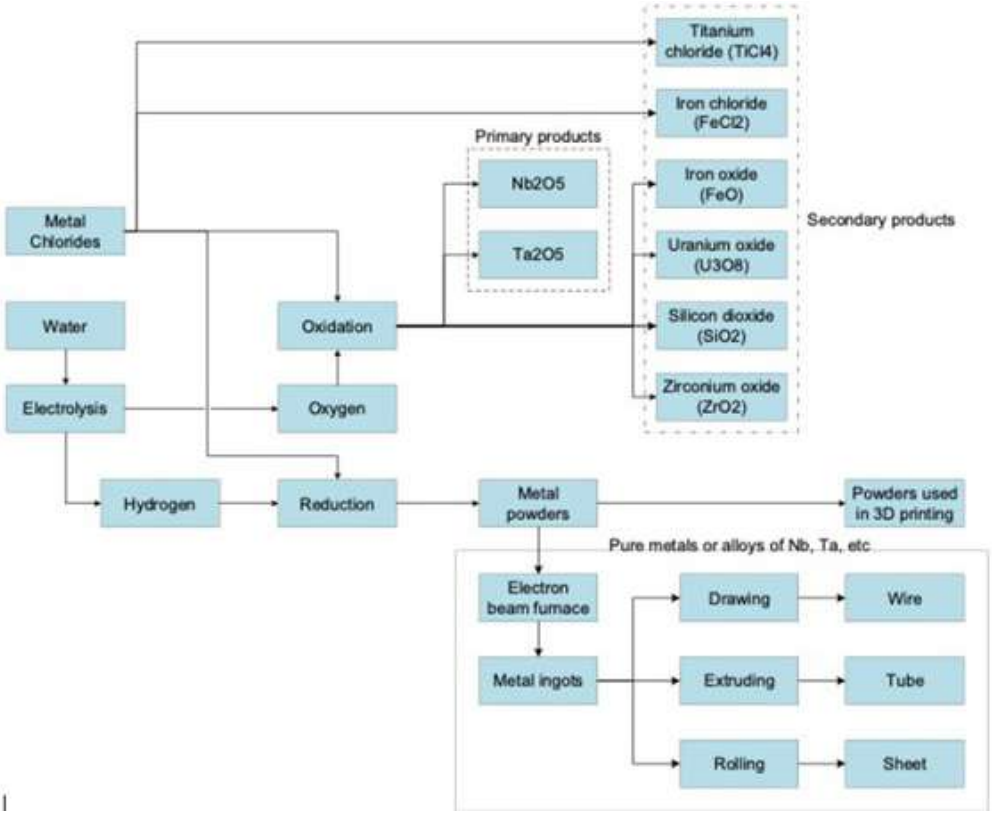
In the new refinery design, high-grade niobium oxides will be manufactured using carbochlorination. In this process mineral concentrates, containing metal oxides, are mixed with a carbon source before reaction with chlorine gas.

The reactions are exothermic (ie energy generating) and typically take place between 700°C and 1 000°C.

Figure 27 Refining processes

Source: GBE presentation 4 August 2023

Figure 28 More detailed refinery flowchart showing product streams



Source: GBE presentation 29 November 2023

In the reactor, chlorine gas reacts with the feed to produce metal chlorides which leave the reactor as gases. Systematic cooling of the reactor gas then allows groups of metal chlorides to condense as the gas is cooled down, and niobium and other metal chlorides are collected as a crude mixture in one of the condensing stages before being distilled to produce high-grade niobium chloride.

The chlorides are reacted with oxygen to produce high purity oxides while regenerating chlorine gas which is recycled to the reactor.

Make up chlorine is produced by the electrolysis of salt (ie table salt or NaCl) which is produced in Walvis Bay, some 10km from the proposed refinery site. Globe may contract with a supplier to take the electrolysis plant off balance sheet.

The process converts the concentrate into metal chlorides in around two hours, and the exothermic nature of the reaction means that energy addition is not a cost driver in the refinery, although it is the main cost in the electrolysis plant that makes the chlorine.

The adoption of this process has dramatically reduced the plant operating cost from US$1281/t concentrate to US$662/t concentrate in 2018 dollars or US$992/t concentrate in today's dollars on our estimates of inflation.

The major operating costs of the process are:

- Provision of make-up chlorine gas
- Energy consumed in the distillation phase of the process. The higher the final product purity, the greater the number of distillation stages and the greater the energy requirement.
- Plant maintenance given the highly corrosive nature of combined chlorine and high temperatures.

Refinery technology to be supplier by TCM Research

Globe has signed a non-binding term sheet for a technology agreement with TCM Research Limited on 23 October 2023. Under the terms. Globe has to pay US$15,000/quarter until the start of production then pay a royalty of 1% on all sales produced from any TMC process.

TCM is to provide the technical expertise for design, construction and operation of the refinery.

In the immediate term, TCM will be paid US$0.43 million for testwork on sample concentrates sourced from a 10 tonne bulk sample which was reported on 3 May 2023. Geolabs Global are responsible for preparing the concentrate and TCM for metallurgical refining.

TCM process extracts 99% of niobium and tantalum from the concentrate

The first test results from TCM were reported on 24 October 2023. The initial base-line test showed 98% Niobium and 90% Tantalum extraction. Note that extraction rate plus distillation recovery = total recovery. Based on this encouraging result, a series of kinetics and optimization tests were conducted. This culminated in tests showing above 99% extraction for both niobium and tantalum.

New refinery process route could be a competitive advantage

The classic hydrofluoric acid/SX route requires a combined Ta + Nb concentration of at least 40%. This is because Western hydrofluoric acid costs around US$2000/ton and at least 460kg acid per tonne of concentrate is required for digestion. At a combined 40% concentration, that is roughly 1.3kg acid/kg of Ta/Nb combined or $2.6/kg. If you drop the combined Ta/Nb to say 20%, the 460kg HF/ton is still required and you now incur $5.2/kg.

At the same time, the process needs double the amount of sulphuric acid as hydrofluoric acid, or around 900kg/ton concentrate. Both the fluoride and sulphate molecules from the process require about 1.7 tons of lime to neutralise before release to storage. Combined you end up with over 3 tons of solid effluent/ton of concentrate.

The carbochlorination process has certain intrinsic benefits, including:

- Dry process: This offers a substantial (OPEX and environmental) advantage over the hydrofluoric process in eliminating the infrastructure requirements and complexity of wastewater and effluent monitoring and treatment. It also significantly reduces the legacy cost of the neutralised material that must be stored.
- Recycling the main reagent, chlorine, allows lower grade concentrates to be cost effectively processed. This allows operators to maximise recovery over grade in concentrator operations.
- Recycling also allows many lower grade and diverse chemistry concentrates to be processed and not just tantalum and niobium.
- Producing a diverse range of value-added products that cannot be generated via the hydrofluoric route. This allows revenue generating co-products to limit the effects of downturns in commodity price cycles.
- Energy: The exothermic upfront extraction process provides a substantial amount of energy for re-utilization in other process areas (eg. concentrate drying) or for on-site power generation.
- Low Waste and Tailings potential: Low waste and tailings greatly improves overall project value and acceptance while reducing the burden of environmental bonds, remediation, and closure liabilities.

- Smaller, more efficient, self-sustaining process plants allow on-site reagent generation and recycling which substantially reduces input logistics, costs and overall carbon footprint. This offers a higher level of internal control over Scope 1, 2 and 3 emissions.
- The technology offers superior overall ESG potential thereby facilitating stakeholder buy-in and attracting appropriate investment and like-minded suppliers, service providers, clients, and end users.

THE KANYIKA VALUATION MODEL

Table 18 Kanyika valuation model physical volumes and financials (100% of project Globe share 90%)

Currency in US$	LOM	Jun-25	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30
Volumes							
Waste Mined kt	53200	34	323	323	323	774	838
Strip Ratio	1.57	1.70	1.70	1.70	1.70	1.70	0.85
Ore Mined kt	33800	20	190	190	190	1030	1300
Nb_2O_5 grade ppm	3051	4443	4443	4443	4443	4443	3564
Ta_2O_5 Grade ppm	141	266	266	266	266	266	165
Nb_2O_5 Contained t	103150	89	844	844	844	4576	4633
Ta_2O_5 Contained t	4782	5	51	51	51	274	215
Ore Processed kt	33800	0	190	190	190	1000	1400
Nb2O5 grade ppm	3051	0	4443	4443	4443	4443	3564
Ta2O5 Grade ppm	141	0	266	266	266	266	165
Nb2O5 Contained t	103150	0	844	844	844	4443	4990
Ta2O5 Contained t	4782	0	51	51	51	266	231
Nb2O5 Recovery	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%	75.0%
Ta2O5 Recovery	73.0%	73.0%	73.0%	73.0%	73.0%	73.0%	73.0%
Nb2O5 Prodn t	77362	0	633	633	633	3332	3742
Ta2O5 Prodn t	3491	0	37	37	37	194	169
Concentrate Grade Nb2O5	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%
Concentrate Prodn t	266765	0	2183	2183	2183	11491	12904
Capital Spend							
Sustaining Capex A$M	115	0	5	5	5	5	5
Growth Capex A$M	340	70	0	0	270	0	0
Exploration	30	0	0	0	0	2	2
Capex	510	70	5	5	275	7	7
Financials							
Revenue	4368.5	0.0	37.0	37.0	37.0	194.7	202.0
Costs	-2205,9	0.0	-17.6	-17.6	-17.6	-74.0	-88.3
EBITDA	2162.6	0.0	19.4	19.4	19.4	119.8	113.7
Depn	-513.0	-0.3	-3.0	-3.0	-3.0	-16.4	-20.7
EBIT	1649.6	-0.3	16.4	16.4	16.4	103.3	93.0
Tax	-494.9	0.1	-4.9	-4.9	-4.9	-31.0	-27.9
NPAT	1154.7	-0.2	11.5	11.5	11.5	72.3	65.1
Capex	510.0	70.0	5.0	5.0	275	6.5	6.5
Cash Flow Pre Tax	1652.6	-70.0	14.4	14.4	-255.6	113.3	107.2
Cash Flow Post Tax	1157.7	-70.0	9.5	9.5	-260.5	83.3	79.3
NPV pre tax		474	504	537	843	809	778
NPV post tax		302	321	342	634	612	590

Source: IIR estimates

Since the 2021 Feasibility Study, there have been two major changes to the project

- The initial phase could be a US$70M project processing 190ktap ore, or could be a smaller project processing 90ktpa, basically depending of sizing the initial project to match the company's funding capability.

- The hydrofluoric process refinery in the United Arab Emirates assumed in the Study has been replaced by a carbo-chloride process refinery at Walvis Bay in Namibia. This is expected to halve the annual refinery operating cost from US$14.5M pa to US$7.5M pa for a plant processing 11,900tpa concentrate.

In the IIR model, a major equity raise in FY25 is used to fund the Phase 1 capital spend of US$70M, resulting in production of 190Ktpa ore, 633t niobium pentoxide and 37t of tantalum pentoxide, generating A$19.4M in EBITDA. This is close to the company's forecast of US$63M over three years. The IIR model runs Phase 1 for four years vs the company's three years and builds Phase 2 in the fourth year (FY28).

Table 19 Kanyika valuation model revenue and cost calculations

Currency in US$	LOM	Jun-26	Jun-27	Jun-28	Jun-29	Jun-30	Jun-31
Revenue Calculation							
Nb2O5 Price US$/kg	42	42	42	42	42	42	42
Ta2O5 Price US$/kg	350	350	350	350	350	350	350
Nb2O5 Sales t	7362	0	633	633	633	633	633
Ta2O5 Sales t	3491	0	37	37	37	37	37
Nb2O5 Payable	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%	92.5%
Ta2O5 Payable	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%	96.0%
Nb2O5 Revenue US$M	2924	0	25	25	25	129	145
Ta2O5 Revenue US$M	1173	0	12	12	12	65	57
Other Revenues	271	0	0	0	0	0	0
Total Revenue US$M	4369	0	37	37	37	195	202
Royalties							
Malawi Government	217	0	2	2	2	10	10
Kanyika Community	20	0	0	0	0	0	0
TCM	44	0	0	0	2	2	2
Total Royalties	237	0	2	2	2	13	13
Operating Costs US$M							
Site Admin	133	0	3	3	3	3	3
Mining	462	0	3	3	3	10	12
Concentrator	549	0	3	3	3	16	22
Refinery	387	0	3	3	3	17	19
Environmental	71	0	0	0	0	2	3
Logistics	322	0	3	3	3	14	16
Total	1924	0	15	15	15	62	75
Unit Costs by process							
Mining Cost US$/t moved	5.48	0.00	5.48	5.48	5.48	5.48	5.48
Concentrator US$/t Processed	16.03	0.00	16.03	16.03	16.03	16.03	16.03
Environmental	2.09	0.00	2.09	2.09	2.09	2.09	2.09
Refinery US$/t conc	1488	0	1488	1488	1488	1488	1488
Logistics US$/t conc	1240	0	1240	1240	1240	1240	1240
Costs per Product							
Operating Cost U$/kg Nb2O5	25.55	0.00	24.02	24.02	24.02	18.71	20.12
Royalty Cost US$/kg Nb2O5	3.74	0.00	3.77	3.77	3.77	3.48	3.35
Byproduct Credit U$/kg Nb2O5	-19.18	0.00	-19.59	-19.59	-19.59	-19.59	-15.15
Net Op Cost US$/kg Nb2O5	10.11	0.00	8.20	8.20	8.20	2.89	8.45

Source: IIR estimates

An alternative to the big Phase 2 is the addition of another production module, doubling production. In our view, the limit on incremental expansions is the availability of ore over 4000ppm niobium pentoxide. Table 16 indicates that there is 1.6Mt of this material in the mine plan, sufficient for Phase 1 to last 8.4 years or three to four years if another module is added. This is important because it means that Globe is in control of the timing of Phase 2.

Operating costs are inflated by 50% as discussed in Table 15 and page 26.

The 2021 Feasibility Study capital costs are likely to have risen in USD by US$5M to US$255M (Table 14). However, the IIR model assumes US$270M (vs US$250M) for Phase 2 and US$70M for Phase 1 (compared to the US$60M in Figure 29 for mine and refinery).

There is a little detail available on the Phase 1 (See Figure 29). The IIR model is close to the revenue at US$36Mpa vs the model at US$37Mpa but has slightly higher operating costs and sustaining capital which reduces the cash flow compared to Figure 29.

Figure 29 Key operating and financial metrics of the smaller Phase 1 operation

Source: GBE release 4 August 2023

CAPITAL AND SHAREHOLDER STRUCTURE

CAPITAL STRUCTURE

Table 20 Issued shares and options

	Shares milliom	
Issued Shares	675.868	96.8%
Options		
Expire 10 Jan 2026 exercise $0.13/sh	14.190	2.0%
Expire 30 Jun 2026 exercise A$0.13/sh	5.000	0.7%
Expire 30 Nov 2025 exercise A$0.13/sh	3.273	0.5%
Total	22.463	3.2%
Diluted Capital	698.331	100.0%

Source: GBE release 8 November 2023

SHAREHOLDER STRUCTURE

The current shareholder structure is very tight with the top three shareholders controlling 79.7% of the company and the top 20 shareholders controlling 91.4%.

However, in the results of the recent three for seven share entitlement issue announced on 4 September 2023, AO-Zhong did not participate, potentially signaling their intention to dilute over time.

Table 21 Shareholder Structure

	Holding million	Share of copmany
Apollo Metals Investment Co	351.405	52.0%
AO-Zhong International	118.143	17.5%
Triple Talent	69.429	10.3%
BCP Paribas Noms Clearstream	14.278	2.1%
CR & C Searl	12.115	1.8%
Rest of Top 20	52.322	7.7%
Outside Top 20	58.176	8.6%
Total Shares on Issue	675.868	100.0%

Source: GBE Annual Accounts FY2023 released 29 September 2023, release 8 November 2023, substantial shareholder notice 3 November 2023

BOARD AND MANAGEMENT

Alice Wong – Non Executive Chairperson

Ms. Alice Wong is an accountant by training and 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, Ms. Wong extended her entrepreneurial endeavour into luxury products and healthcare businesses. Ms. Wong invested in Globe via Apollo Metals Investment Co. Ltd during 2014 and has since served as the Non-Executive Chairperson of its Board of Directors where she has played an integral role in advancement of the Kanyika Project, including the granting of the mining licence in August 2021.

Ms. Wong holds a Bachelor of Business Administration in Accounting and Finance from the University of Hong Kong and is a member of the American Institute of Certified Public Accountants (AICPA).

Bo Tan – Non Executive Director

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

Mr Tan has 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.

Mr Tan holds a Bachelor of Economics from Renmin China and a MBA from Thunderbird USA, M.A University of Connecticut.

Ricky Lau – Non Executive Director

Mr Lau has 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.

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

Michael Barrett – Non Executive Director

Mr Barrett is a Chartered Accountant with over 30 years' international experience in strategy, capital markets, investor relations, and risk management.

Mr Barrett 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. Since 2015, Mr Barrett spent two years as National Lead Partner for Deloitte's Risk Advisory Energy and Resources practice. He specialised in Board Advisory and Risk Management for many of the largest mining and energy and resources companies nationally. Subsequently, he established his own consulting business, helping develop smaller businesses across the energy and resources industry. Most recently, he acted for Garnet International Group, including completing feasibility studies, multiple financing rounds, and offtake agreements as it sought to develop its Balline Garnet Project.

Mr. Barrett is a Graduate of the AICD, holds a Joint Honours Bachelors degree, and is the Lead Independent, non-executive director and Chair of the Audit Committee with TSX-listed Novo Resources Corp (TSX Code: NVO); and a non-executive director of ASX-listed Pearl Global Ltd (ASX Code: PG1). Mr. Barrett resides in Perth, Western Australia.

Michael Choi OAM – Non Executive Director

Mr Choi has 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.

Mr Choi is the 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.

Mr Choi holds a Bachelor of Engineering, is a Registered Professional Engineer Queensland, a Member of Australia Institute of Project Management, a Member of the Australian Institute of Company Directors and Vice President of Australia China Business Council (Queensland). corporate governance matters, U.S. securities laws and complex M&A transactions.

Grant Hudson - Chief Executive Officer

Mr Hudson is a finance and law graduate with a Masters of Business Administration who has a long history in mining with extensive experience in shareholder and stakeholder relations.

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 100 years and is the world's foremost supplier of the lithium mineral petalite.

Mr Hudson's other former involvements include 3 years as Manager of the M'beta tantalite mine in Zimbabwe and 3 years as Managing Director of Tantalite Holdings.

Mr Paul Smith - Chief Operating Officer

Mr Smith has over 30 years experience as a senior mining industry executive across exploration, feasibility, project development, and operations management on a global platform. He has extensive experience with start-up and turnaround strategies, leveraging significant expertise in stockbroking, corporate finance, and project funding in delivering key business objectives.

Mr Smith has previously held senior executive positions with Aquarius Platinum Limited (now part of Sibanye Stillwater Limited), Weiszwe Platinum Limited, and more recently Impala Platinum Holdings Limited.

Mr Smith has a Bachelor of Science, Geology & Chemistry from Rhodes University (South Africa), a Bachelor of Commerce (Hons) from Stellenbosch University (South Africa), a Graduate Diploma in Extractve Metallurgy from Camborne School of Mines (United Kingdom), and a Master of Business Administration from Stellenbosch University (South Africa).

Rex Zietsman - Chief Technical Officer

Mr Zietsman is a highly experienced chemical engineer with a Masters of Business Administration who has broad engineering and project management experience gained over a career of thirty-five years that has involved working across a broad range of industries and commodities including rare earths, niobium, tantalum, uranium, phosphoric acid and biomass renewable energies.

Mr Zietsman recently occupied the positions of Project Manager and Mine Executive for Bikita Minerals in Zimbabwe, where he worked closely with Grant Hudson. Among other projects, he was involved in the prefeasibility study for a new spodumene concentrator and the debottlenecking of the Bikita tantalite gravity separation plant. Other significant relevant experience includes: Technical Director for AR Process Projects who participated in numerous uranium related projects including the engineering of the Pebble Bed Modular Reactor Fuel Plant programme, specialist scrubbing systems for Uranium One and a large scale slurry preheater for Paladin Energy in Namibia; consulted to Tantalite Resources in South Africa on the solvent extraction of niobium and tantalum and the building of the new tantalum K-salt plant; was the Competent Person signatory and consultant in the development of a unique process flow for the concentrator for the Frontier Rare Earths Project in the Northern Cape of South Africa, and Study Manager for a Bankable Feasibility Study for the Botswana Development Corporation for the Selibe Phikwe Tailings to Fertiliser Project.

Mr Zietsman oversees Globe's engineering and construction teams working on the Kanyika Niobium Project which involves team building and leading, external and internal relationship management, risk identification, management and reporting, contractual management, the management of mining, processing and site administration personnel, and reporting against agreed business and management plans.

Charles Altshuler - Chief Financial Officer

Mr Altshuler has over 18 years' experience as a Chartered Accountant (CA ANZ and CA SA) and holds an Australian MBA, and advanced project management qualifications from Stanford University.

Prior to joining Globe, Mr Altshuler held senior finance positions in Anglo American and other large corporations in various industries in South Africa, and more recently was the Chief Financial Officer of an ASX-listed pharmaceuticals company.

Mr Altshuler has extensive experience in capital raises, off-take agreements, introduction of strategic investors, mergers and acquisitions, post-merger synergies, and cost reduction projects. His considerable experience in both Africa and Australia ensures he plays a key role as Globe's Chief Financial Officer in maximising value for Globe and its shareholders.

Paul Hardie - General Counsel & Company Secretary

Mr Hardie has more than 20 years' professional, corporate, and business experience in senior legal and corporate advisory roles, as well as a range of executive management and non-executive appointments. His extensive boardroom and board sub-committee experience includes ASX-listed entities, unlisted public companies, and proprietary organisations across a wide range of industry sectors including mining and resources, manufacturing, technology, and financial services.

Prior to joining Globe, Mr Hardie was part of the mergers and acquisitions team at a top-tier national law firm before establishing his own commercial law practice specialising in general corporate and commercial advisory, regulatory compliance, and M&A for start-ups and ASX-listed entities. In addition to his role with Globe, Mr Hardie is currently the General Counsel & Company Secretary of ASX-listed Matrix Composites & Engineering Ltd (ASX: MCE).

Mr Hardie is admitted as a practitioner of the Supreme Court of Western Australia and the High Court of Australia and has a Bachelor of Laws and a Bachelor of Economics.

Mr Louis Schoeman - Project Manager

Mr Schoeman spent over 6 years at Kumba Iron Ore, a division of Anglo American, where he rose to the position of Senior Project Manager. In this role, he was part of the team that completed the successful Kolomela Iron Ore Mine in the Northern Cape province of South Africa

Before this, Mr Schoeman worked for 20 years at various construction and engineering companies in Africa and Australia where he held senior positions across the petrochemical, mining, and industrial chemical processing sectors.

Mr Schoeman has a N. Dip (Mech Eng) from Vaal University of Technology (formerly Vaal Triangle College for Advanced Technical Education) and has completed the Programme in Project Management from the University of Pretoria in South Africa.

Neville Huxham - Malawi In-Country Manager, Chairman - Globe Subsidiary in Malawi

Mr Huxham has extensive management experience in mining operations, particularly in Africa, where he played a key role in Malawi's major uranium mining development. He is a specialist in Government and Community Relations, Communication and CSR, and has worked for leading multi-national mining organisations at senior executive level in numerous African countries, as well as in Australia, Europe, UK, Russia, Siberia (Sakha Republic) and Kazakhstan.

As Globe's Country Manager in Lilongwe, Malawi, Mr Huxham has responsibility for negotiating the Development Agreement with the Malawi Government for the Kanyika Niobium Project and manages the Lilongwe local office. Previously, he had a 30-year career as a senior executive with the Anglo American Corporation/De Beers Group, and worked with exploration, precious metals and diamond mining, sales and marketing, and was extensively involved with global government authorities, diamond producers, and media engagement.

As Paladin's first Country Manager and deputy chairman in Malawi, Mr Huxham led the Government interface and community relations of the Kayelekera Project until the project achieved Commercial Production. He was intimately involved in establishing relations with all stakeholders and personally designed, implemented, and managed community interaction protocols in the Karonga and Kayelekera area.

Dean Lungu - Director - Globe Subsidiary in Malawi

Mr Dean Lungu is President of the Malawi Chamber of Mines and Energy, and currently serves on the boards of numerous companies including TNM, Alliance Capital, and MyBucks Bank Corporation. He has extensive experience in the private sector: is a former chairman of Malawi Railways and of Press Corporation, and a director of Malawi Bureau of Standards, Intraco (London-based), Macsteel, Select Financial Services Ltd and Marsh (MW) Ltd.

Mr Lungu has a BSc in Mechanical Engineering (University of Massachussets, USA, 1975) and an MSc in Industrial Engineering from Cranfield Institute of Technology (UK, 1979). He is a Registered Professional Engineer and worked as an engineer during the 70s with Portland Cement Co. In 1980 he joined Maltraco Ltd, Malawi's Caterpillar dealership, rising to the position of Chief Executive before setting up his own engineering construction company in 1997. He is the promoter and Chairman of Bwanje Cement Company, establishing an integrated greenfield cement production plant in Ntcheu District of Malawi, with an initial clinker capacity of 500,000 tpy.

Lisungu Banda - Senior Accountant / Director - Globe Subsidiary in Malawi

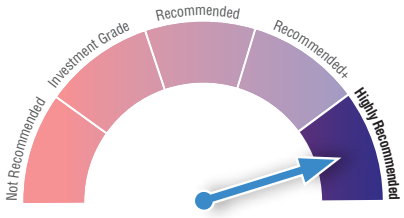
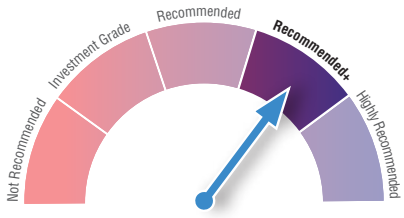
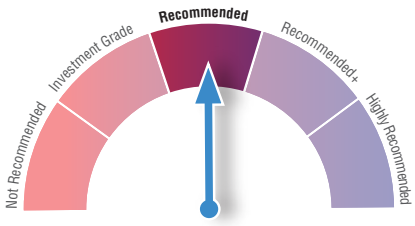
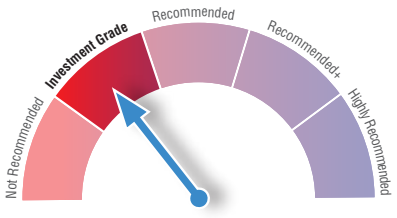
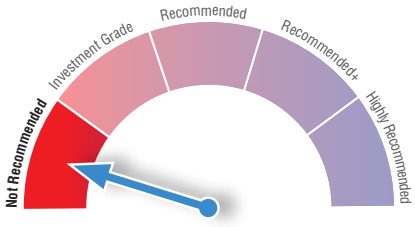
Mr Banda is a qualified accountant with significant resources experience. A Malawian national based in Globe's Lilongwe office, Mr Banda is responsible for all financial reporting related to Globe's Projects in Malawi. Prior to joining Globe in 2008, Mr Banda held the position of Company Accountant with Macsteel.

Mr Banda is currently studying the CIMA professional Scheme and is a member of the Institute of Chartered Accountants in Malawi (ICAM) (formerly Society of Accountants in Malawi).

APPENDIX 3 – RATINGS PROCESS

Independent Investment Research Pty Ltd "IIR" rating system

IIR has developed a framework for rating investment product offerings in Australia. Our review process gives consideration to a broad number of qualitative and quantitative factors. Essentially, the evaluation process includes the following key factors: management and underlying portfolio construction; investment management, product structure, risk management, experience and performance; fees, risks and likely outcomes.

LMI Ratings	SCORE
Highly Recommended	**83 and above**
	This is the highest rating provided by IIR, indicating this is a best of breed product that has exceeded the requirements of our review process across a number of key evaluation parameters and achieved exceptionally high scores in a number of categories. The product provides a highly attractive risk/return trade-off. The Fund is likely effectively to apply industry best practice to manage endogenous risk factors, and, to the extent that it can, exogenous risk factors.
Recommended +	**79–83**
	This rating indicates that IIR believes this is a superior grade product that has exceeded the requirements of our review process across a number of key evaluation parameters and achieved high scores in a number of categories. In addition, the product rates highly on one or two attributes in our key criteria. It has an above-average risk/return trade-off and should be able consistently to generate above average risk-adjusted returns in line with stated investment objectives. The Fund should be in a position effectively to manage endogenous risk factors, and, to the extent that it can, exogenous risk factors. This should result in returns that reflect the expected level of risk.
Recommended	**70–79**
	This rating indicates that IIR believes this is an above-average grade product that has exceeded the minimum requirements of our review process across a number of key evaluation parameters. It has an above-average risk/return trade-off and should be able to consistently generate above-average risk adjusted returns in line with stated investment objectives.
Investment Grade	**60-70**
	This rating indicates that IIR believes this is an average grade product that has exceeded the minimum requirements of our review process across a number of key evaluation parameters. It has an average risk/ return trade-off and should be able to consistently generate average risk adjusted returns in line with stated investment objectives.
Not Recommended	**<60**
	This rating indicates that IIR believes that despite the product's merits and attributes, it has failed to meet the minimum aggregate requirements of our review process across a number of key evaluation parameters. While this is a product below the minimum rating to be considered Investment Grade, this does not mean the product is without merit. Funds in this category are considered to be susceptible to high risks that are not reflected by the projected return. Performance volatility, particularly on the down-side, is likely.

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