

Building a niobium supply chain

Globe Metals & Mining Ltd (ASX:GBE) is a Perth-based, Africa-focused resources company developing the Kanyika niobium project in Malawi, east Africa. GBE has been undertaking exploration and resource development activities at Kanyika since identifying niobium and tantalum mineralisation at the site back in 2007, and is now poised to bring the first niobium mine into production in more than 50 years and the first ever for Africa. The Kanyika niobium project has a mineral resource of 68Mt at 0.283% niobium based on approximately 33km of drilling. Recent progress includes the completion of an optimisation study (announced 5 February 2024) which confirmed and enhanced the 2021 Definitive Feasibility Study (DFS) metrics incorporating the pre-tax NPV_{8%} of US\$1.004bn over the 27-year mine life at an internal rate of return (IRR) of 47.1%. The study also highlighted the two-phase development approach for the project and refined the initial upfront capital cost to US\$30mn from US\$70mn previously, significantly reducing the risk profile of the project. A change in refining technology to the chlorination process also improved the project's economics and environmental sustainability, with the process producing high-purity products which can command premium prices. Globe Metals & Mining has a 20-year, worldwide and exclusive licensing agreement with TCM Research for its suite of chlorination processing technologies for the treatment and recovery of metals including iron, titanium, vanadium, tin, tungsten, tantalum, niobium, and rare earth elements. Adoption of the process has realised a 15% improvement in the total cash operating cost per kg of Nb₂O₅.

Project description

The Kanyika niobium project is located in central Malawi, approximately 55km north-east of the regional centre of Kasangu and secured by a large-scale mining licence which grants GBE security of tenure and the right to mine niobium, tantalum, and deleterious uranium. Kanyika has the potential to become the first new niobium mine in 50 years, with average production of 3,267tpa of niobium pentoxide (Nb₂O₅) and 136tpa of tantalum pentoxide (Ta₂O₅). The project involves a low-cost, open-pit mining operation with mineral processing to produce 20% Nb₂O₅ concentrate and further processing using closed-circuit chlorination refining technology to generate initially 313tpa of refined Nb₂O₅, and eventually 3,155tpa of refined Nb₂O₅. Refined Nb₂O₅ currently commands US\$54,000t for 99.9%. The recently completed optimisation study builds on the 2021 definitive feasibility study (DFS) and estimates a pre-tax IRR of 47.1% based on NPV_{8%} of US\$1.004bn. The project incorporates two stages with first production from a 2,000tpa plant expected under stage one in Q2 CY25 with expansion to 18,000tpa contemplated in 2027. Total capex for the project is US\$280mn (phase one and two), with the first stage at US\$30mn. Estimated EBIT over the life of the project is US\$2.72bn, using US\$51.48/kg of Nb₂O₅ and US\$280/kg for Ta₂O₅ over the life of the mine (LOM). The LOM gross cash margin is forecast to be 70.8%.

Project progressing with several milestones in 2024

GBE is currently undertaking metallurgical test work to confirm the product specification and undertake the pilot plan design (121 presentation 5 February). The company plans to begin construction on the pilot plant in Q2 CY24 to produce samples of niobium and tantalum for off-takers. The DFS is expected to be updated in Q3 CY24 and include the chlorination refining technology with the front-end engineering design (FEED) also expected at this time. Capital required for the DFS and FEED phase is expected to be US\$5mn with the company looking to raise in Q3 (121 presentation). GBE also hopes to confirm offtake agreements by the end of Q3. Capital for phase one is expected to be raised in Q4 CY24 with first production from the 2,000tpa plant forecast for Q4 CY25. Phase one is expected to produce 313tpa of refined niobium oxide production. Phase two, which will require US\$250m in capital and is slated for commencement in CY27, will see a 10-fold increase in production to 3,155tpa. LOM revenue is forecast to be US\$4.79bn and LOM NPAT US\$2.68bn.

Trading at a discount to peers on a market cap/project NPV basis

We view GBE's relevant peers as Australian Strategic Materials (ASX:ASM), Hastings Technology Metals (ASX:HSU), and RareX (ASX:REE), all of which are advancing niobium projects. We have looked at this group from a post-tax NPV_{8%} basis and found that GBE is currently trading at 0.02x NPV_{8%} (post-tax), compared with its peer group which trade at an average of 0.10x post-tax NPV_{8%}. We would expect to see this discount narrow as Globe Metals & Mining passes more milestones in the delivery of its project.

Share Details

ASX code	GBE
Share price (16-Feb)	\$0.034
Market capitalisation	\$23.0M
Shares on issue	675.9M
Net cash at 31-Dec-23	\$3.37M

Share Performance (12 months)



Upside Case

- Strong tailwinds for critical metals, inc. niobium
- Better-than-expected test work on concentrate
- Scaleable start-up with early cash flows

Downside Case

- Slower-than-expected approvals
- Market for equity raises remains weak
- Opaque nature of niobium market

Catalysts

- Pilot plant built and operating (Q2 CY24)
- Feasibility study updated (Q3 CY24)
- Offtake agreements confirmed (Q3 CY24)

Comparable Companies (Aust/NZ)

ASM, HAS, REE, WA1

Board and Management

Alice Wong	Non-Executive Chair
Grant Hudson	CEO
Michael Barrett	Non-Executive Director
Michael Choi	Non-Executive Director
Ricky Lau	Non-Executive Director
Bo Tan	Non-Executive Director
Charles Atshuler	CFO
Paul Smith	COO
Rex Zietsman	CTO
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FINANCIAL SERVICES GUIDE

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