

## SGQ In The Niobium Nation: WAI Watch Out!

We initiate coverage on St George Mining with a Speculative BUY, underpinned by its accelerated path to development for its 100% owned Araxá Niobium–Rare Earths Project in Minas Gerais, home to one of the globe's largest niobium and rare earth deposits.

- **Tier 1 Mining Location:** Adjacent to CBMM's world-leading niobium operation, with established infrastructure, renewable power, and a skilled workforce in Brazil's most mining-friendly state.
- **Globally significant resource base** of 41.2Mt at 0.68% Nb<sub>2</sub>O<sub>5</sub> (280kt contained niobium) and 40.6Mt at 4.13% TREO (1.7Mt contained rare earth oxides), including a high-value magnet REE component (19% of TREO) from Maiden MRE (Apr 25).
- **Strong Growth Potential:** Only 10% of the tenement drilled; mineralisation remains open in all directions and at depth, indicating substantial resource expansion upside.
- **Low-Cost, Near-Surface Development:** 100% of the resource is weathered material, 95.8% within 100m of surface, enabling free-digging, low-strip, open-pit mining.
- **Clear Pathway to Production:** Fast-track permitting MoUs with the Minas Gerais government, access to proven processing flowsheets, and an experienced team drawn from CBMM position SGQ for first production by 2027.
- **First to Market:** Expected to be operational before WAI, NioCorp and Globe Metals. First production possible as soon as 2027.
- **Strategic Market Exposure:** Niobium and rare earths are critical to decarbonisation, advanced manufacturing, and defence, with global demand projected to grow at a near-10% CAGR through 2030.
- **Robust Economics:** Two development scenarios deliver NPVs of A\$2.24–2.33B and IRRs of 66–82%, with payback periods under two years and strong unit margins.
- **Strong Strategic Interest:** Shown by offtake with steel making giant Fangda and also the A\$8m equity investment by Xinhai.

### Comps & Re-rating Potential

SGQ trades (excluding REE) favourably at A\$328/Mt Nb compared to its comparables WAI at A\$464/Mt Nb, because of its comparable grade.

On a broader TREO scope, massive potential for re-rating for SGQ, from its current A\$54.78/Mt (excluding Nb) TREO to be placed in between Lynas (A\$3,389/ Mt TREO) and Northern Minerals (A\$2657/MT TREO) given its Grade and TREO tonnage. Feasibility decisions around TREO should trigger a massive rerating for SGQ.

DCF Outcomes		
Parameter	Standalone Development	Opportunistic Acquisition
Initial Capex	US\$200M	US\$150M
Production Start	2030	2028
FeNb-66 Production	15ktpa (2032) -> 22ktpa (2037)	15ktpa (2030) -> 22ktpa (2035)
Mining and Processing Cost	US\$16.5/Mt ROM	US\$16.5/Mt ROM
First 5 Years Production	101kt FeNb-66	
First 5 Years ROM Grade	1% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production ROM	0.65% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production	22ktpa FeNb-66	
Mine Life	40+ Yrs	
Steady State EBITDA	US\$309M/yr (2032) -> US\$464M/yr (2037)	US\$309M/yr (2030) -> US\$464M/yr (2035)
AISC (excl. credits)	US\$12.3K/t -> US\$11.7K/t	US\$12.3K/t -> US\$11.7K/t
NPV	A\$2.24B	A\$2.34B
IRR	66%	82%
Implied Share Price (A\$) (85% Risked)	\$0.09 (2.1x upside)	\$0.10 (2.4x upside)

### Catalyst

Completion of 10,000m auger drilling and assay results  
 Araxa MRE Upgrade  
 Araxa Metallurgical Test Results  
 Araxa Scoping Study

### Timeline

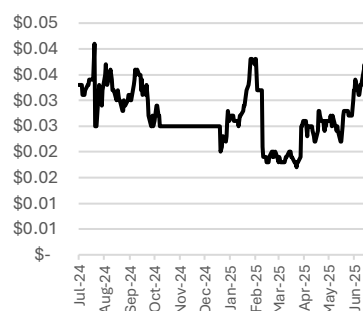
Sep 2025  
 Q4 2025  
 Q4 2025  
 H2 2025

<b>Recommendation</b>	<b>BUY</b>
<b>Share Price</b>	<b>A\$0.041</b>
<b>12 Month Target Price</b>	<b>A\$0.14</b>
<b>Date</b>	<b>15 July 2025</b>
<b>Analyst</b>	<b>Eric Samuel</b>

### Company Profile

Market Cap	~A\$109.59M
SOI	~2.67B
Cash	~A\$5M
ADV (3-month)	~15.53M share
52-Week Range	A\$0.015-0.045

### Price Performance



1 Year	+24.24%
YTD	+64%
1 Month	+51.85%

### Company Overview

St George Mining Limited is an Australian exploration company leading with Araxa, a globally significant Niobium deposit in Minas Gerais, Brazil. The company also holds a portfolio of exploration tenements in copper, gold and lithium in Western Australia.

### Top Shareholders (S.H)

ITAFOS	9.98%
BNP Nominees	8.42%
Xinhai	8.04%
Citi Corp	8.04%
Xueqing Yang	3.07%



Contents

1. Investment Case .....3

2. Minas Gerais: An established Tier 1 Mining Jurisdiction in Brazil.....7

3. Niobium Market Outlook.....7

    Supply.....7

    Niobium Demand: The Building Block of Today's and Tomorrow's World .....9

    Niobium: A Universe of Strategies .....10

4. St George's Mining .....12

    Introduction.....12

    Araxa Acquisition.....12

    Araxa.....13

    Resource .....14

    Resource Comparison.....16

    Permit Status.....17

5. Push for an Expedited Development .....18

6. DCF Analysis.....20

    Results of DCF Valuation .....22

7. WAI vs. SGQ: Comparative Analysis.....25

8. Comparables Analysis.....26

9. Management.....27

10. Other Projects .....28

11. Risks.....30

# 1. Investment Case

St George Mining Limited (ASX: SGQ) offers a compelling investment proposition as a pure-play developer of critical minerals, anchored by its 100%-owned Araxá niobium and rare earths project in Minas Gerais, Brazil.

## Corporate Overview

Market Capitalization: A\$109.59M, 15 July 2025, and the cash position at ~A\$5M and no debt on balance sheet.

## Araxa Project: Globally Significant Niobium Asset

- Located just 6 km from the town of Araxá in Minas Gerais, Brazil, a Tier 1 mining jurisdiction globally recognized for its extensive mining infrastructure and skilled workforce.
- Sits within the Barreiro Carbonatite complex, the epicenter of global niobium production, responsible for over 80% of worldwide niobium output. Adjacent to the CBMM Araxá mine (the world's largest niobium producer).
- Globally significant resource base of 41.2Mt at 0.68% Nb<sub>2</sub>O<sub>5</sub> (280kt contained niobium) and 40.6Mt at 4.13% TREO (1.7Mt contained rare earth oxides), including a high-value magnet REE component (19% of TREO) from Maiden MRE (Apr 25).
- Only 10% of the tenement has been explored, and only up to a depth of 100m.
- Exceptional Drill Results, more than 500 intercepts of significant >1% Nb<sub>2</sub>O<sub>5</sub> mineralisation.
  - o 43m at 1.5% Nb<sub>2</sub>O<sub>5</sub> from surface
  - o 20m at 2.4% Nb<sub>2</sub>O<sub>5</sub> from surface including 10m at 2.4% Nb<sub>2</sub>O<sub>5</sub> from 2m
  - o 33m at 2.1% Nb<sub>2</sub>O<sub>5</sub> from 4m including 14m at 2.9% Nb<sub>2</sub>O<sub>5</sub> from surface
  - o 13m at 2.8% Nb<sub>2</sub>O<sub>5</sub> from 25m including 1.2m at 8.3% Nb<sub>2</sub>O<sub>5</sub> from 26m
  - o 11m at 3% from Nb<sub>2</sub>O<sub>5</sub> from 5m
- Deposit contains very competitive NdPr grade at 0.78%. The ratio of MREO to TREO is 20% average across all REE intercepts, with neodymium (Nd): Praseodymium (Pr) grades of up to 5.5%.

## Niobium Market Outlook: The Case for Rapid Development

- Niobium and rare earths are critical to decarbonisation, advanced manufacturing, and defence, with global demand projected to grow at a near-10% CAGR through 2030.
- Highly Concentrated Supply, Rising Strategic Risk: Global niobium supply is dominated by just three producers—CBMM (80%, Brazil), CMOC (11%, Brazil), and Niobec (9%, Canada).
- Short-term additions (2025–2027) will be modest, most early-stage projects remain years from production. Mine production has plateaued at ~110 kt/year.
- Demand is projected to outstrip supply by 7 kt in 2025 and by over 78 kt by 2030, creating a substantial and growing deficit.

## Why Quicker Development Matters

- First-Mover Advantage: With a looming supply gap and slow pace of new supply, projects that reach production soonest can secure premium offtake agreements and establish themselves as reliable suppliers in a market hungry for diversification.

- Strategic Partnerships: Rapid development attracting downstream partners such as automakers, battery manufacturers, and governments, seeking to lock in non-monopolistic supply.
- Pricing Power: Early entrants benefit from strong pricing as supply tightens, especially for high-purity niobium products needed in batteries and defense.
- De-risking Supply Chains: For buyers outside Brazil and China, new producers offer critical supply security, making them preferred partners for long-term contracts.
- Policy Tailwinds: Governments are incentivizing and supporting rapid development of critical mineral projects to reduce single-country dependencies and bolster national security.

### Accelerated Path to Production

Within just three quarters (Aug 2024 – Feb 2025), SGQ completed the acquisition of Araxá and established a framework for fast-tracked development:

- Government Support: Signed a Memorandum of Understanding (MoU) with the State of Minas Gerais to expedite permitting, drawing on the region's reputation for efficient approvals and mining-friendly policies. This approach has already proven successful for other miners, reducing typical licensing timelines from years to months.
- Strategic Partnerships: Secured MoUs with SKI Hong Kong and Liaoning Fangda for project development and offtake, ensuring early market channels for Araxá's output.
- Engineering & Funding: Partnered with Xinhai, a global mining EPC leader, for fixed-price engineering, procurement, and construction, as well as project finance and technical support. **Xinhai also invested A\$8M in SGQ's A\$20M equity raising in Jan 2025**, demonstrating commitment to rapid development.
- Innovation & Sustainability: Collaborated with leading Brazilian research institutes (EMBRAPPII, SENAI/FIEMG) to develop greener processing methods and downstream rare earth magnet production, with exclusive rights to commercialize new intellectual property.
- Talent Acquisition: Recruited top technical experts from CBMM, the world's leading niobium producer, to de-risk and accelerate project execution

Expected to become operational before WAI, NioCorp and Globe Metals, possibly as soon as 2027

- Not restricted by lack of supporting infrastructure, less constrained to native title considerations or environmental approvals unlike WAI.
- Increased jurisdictional investor confidence, strong indications of project finance and construction support (Xinhai), unlike Globe at Malawi.
- Focused approach to Niobium, reducing timelines and technical complexity, unlike NioCorp.

### Multiple Development Scenarios with significant upside

- We model two development paths differing on their approach to tailings dam permitting requirements: Standalone Development and Opportunistic Acquisition (of nearby Mosaic's Processing Plant).
- The DCF analysis employs conservative long-term FeNb-66 prices of US\$40,000/t; the cashflows are discounted at 10%.

**Assumptions used in our SGQ DCF Valuation**

Particular	Assumptions	
<b>FeNb-66 Price Forecast</b>	US\$40,000/t	
<b>Discount Rate</b>	10%	
<b>Royalties</b>	6%	
<b>Land Access Fee</b>	3%	
<b>Resource at FID</b>	124Mt at 0.68% Nb <sub>2</sub> O <sub>3</sub>	
<b>Niobium Beneficiation Recovery</b>	60%	
<b>Niobium Pyrometallurgical Recovery</b>	85%	
<b>Sustaining Capital Expenditure</b>	5% of the Initial Capex per year	
<b>SG&amp;A</b>	US\$10M/yr	
Particular	Standalone Development	Opportunistic Acquisition
<b>Initial Capex</b>	US\$200M	US\$150M
<b>Production Start Year</b>	2030	2027
<b>Mining and Processing Cost (ROM)</b>	US\$16.5/t	US\$16.5/t
<b>Incremental Capex for 5Mtpa ROM</b>	US\$60M	US\$60M
<b>Incremental Capex Year</b>	2035	2033

DCF Outcomes		
Parameter	Standalone Development	Opportunistic Acquisition
Initial Capex	US\$200M	US\$150M
Production Start	2030	2028
FeNb-66 Production	15ktpa (2032) -> 22ktpa (2037)	15ktpa (2030) -> 22ktpa (2035)
Mining and Processing Cost	US\$16.5/Mt ROM	US\$16.5/Mt ROM
First 5 Years Production	101kt FeNb-66	
First 5 Years ROM Grade	1% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production ROM	0.65% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production	22ktpa FeNb-66	
Mine Life	40+ Yrs	
Steady State EBITDA	US\$309M/yr (2032) -> US\$464M/yr (2037)	US\$309M/yr (2030) -> US\$464M/yr (2035)
AISC (excl. credits)	US\$12.3K/t -> US\$11.7K/t	US\$12.3K/t -> US\$11.7K/t
NPV	A\$2.24B	A\$2.34B
IRR	66%	82%
Implied Share Price (A\$) (85% Risked)	\$0.09 (2.1x upside)	\$0.10 (2.4x upside)

Sum of Parts NPV estimate for all the assets combined yield a valuation of A\$0.14/share, a 2.9x upside.

Valuation of SGQ Interests		Risked Value	
Asset	Value Range, A\$M	A\$M	A\$/sh
<b>Araxa (85% risked)</b>	2,244 – 2,339	351	0.10
<b>REE Resource Valuation</b>		125	0.04
<b>West Australian Exploration Assets</b>		30	0.01
<b>Cash</b>		5	0
<b>Exploration and Corporate</b>		-25	-0.01
<b>Total</b>		<b>486</b>	<b>0.14</b>

**Comps Valuation:** SGQ trades favourably at A\$328/Mt Nb (excluding REE) compared to its comparables WAI at A\$464/Mt Nb, because of its comparable grade, despite having a significantly lower total Nb tonnage in Resource.

On a broader TREO scope, there is a massive potential for re-rating for SGQ, from its current A\$54.78/Mt (excluding Nb) TREO to be placed in between Lynas (A\$3,389/ Mt TREO) and Northern Minerals (A\$2657/MT TREO) given its Grade and TREO tonnage. Feasibility decisions around TREO should trigger a massive rerating for SGQ.

#### NPV Sensitivity Standalone Development

NPV Sensitivity		FeNb 66 US\$/T				
		25,600	32,000	40,000	48,000	57,600
Disc	5%	1933	2826	3942	5059	6398
	8%	1355	1993	2791	3589	4547
	10%	1074	1594	2244	2894	3673
	12%	855	1284	1820	2357	3000
	15%	611	940	1351	1762	2256

#### Opportunistic Acquisition

NPV Sensitivity		FeNb 66 US\$/T				
		25,600	32,000	40,000	48,000	57,600
Disc	5%	2061	2954	4071	5187	6526
	8%	1460	2098	2896	3694	4652
	10%	1169	1689	2339	2989	3769
	12%	943	1372	1908	2444	3088
	15%	690	1019	1431	1842	2335

#### Risk Assessment

- Execution and Permitting: Pending mining concession and environmental licences; mitigated by MoU with state government and experienced permitting advisors.
- Resource and Metallurgy: Only 10% drilled; further work needed to expand and upgrade resource. Metallurgical recoveries to be validated by pilot plant.
- Market and Funding: Niobium and REE prices are tightly controlled; project requires further equity/debt funding.
- Jurisdictional: Brazil remains the dominant niobium jurisdiction, but Araxá benefits from established mining laws and infrastructure.

## 2. Minas Gerais: An established Tier 1 Mining Jurisdiction in Brazil

Minas Gerais stands as Brazil's preeminent mining jurisdiction and ranks among the world's Tier 1 mining destinations. The state is responsible for 53% of Brazil's metallic mineral production and 29% of overall national mineral production.

The jurisdiction hosts operations such as Vale's Vargem Grande Complex (32.4Mtpa) and Itabira (29.5Mtpa), Anglo's Minas Rio (26.5Mtpa), CSN's Casa de Pedra and AcelorMittal assets. Lithium operations in the Jequitinhonha Valley have positioned the region as Brazil's "Lithium Valley," containing 85% of Brazil's lithium resources. Major projects include Lithium Ionic's Bandeira project and Sigma Lithium's operations, which collectively support the global battery supply chain. Minas Gerais has also emerged as a global leader in critical minerals production. The state produces 80% of the world's niobium and hosts significant operations in rare earth elements. The Caldeira rare earth complex in southwestern Minas Gerais contains the world's largest ionic clay rare earth deposit by tonnage, with 1.1 billion tonnes grading 2,413 ppm total rare earth oxides ("TREO").

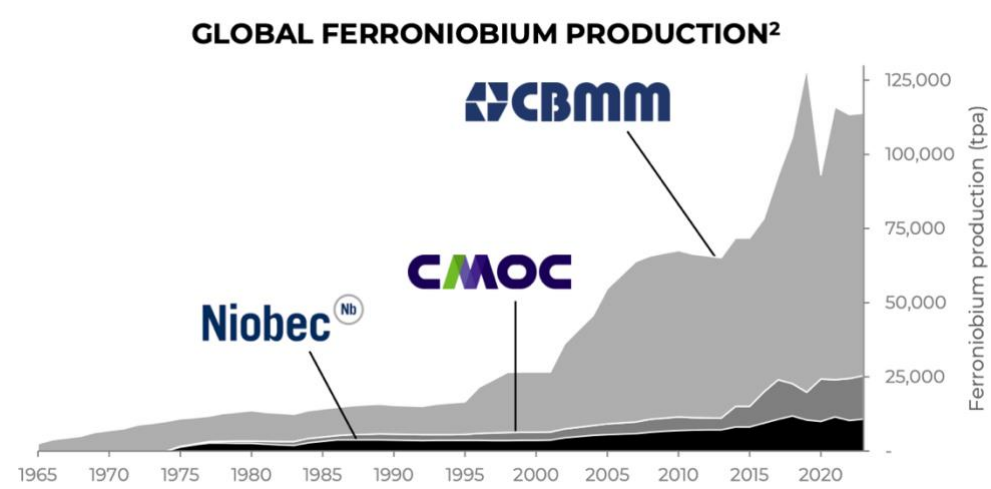
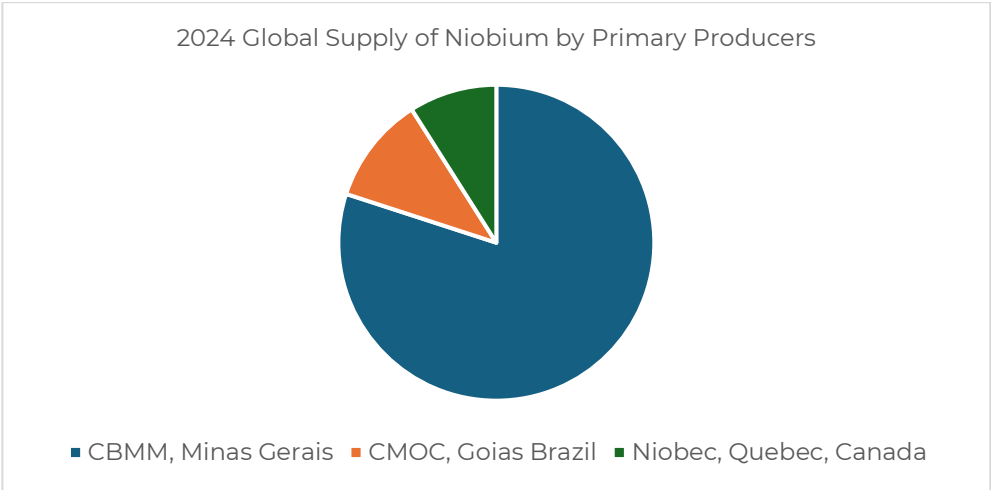
Minas Gerais boasts Brazil's most comprehensive mining infrastructure, featuring the nation's largest road network, the second-largest rail system, and direct access to key ports. Major highways efficiently link mining hubs to São Paulo, Rio de Janeiro, and Brasília, while the Vitória-Minas Railway and the MRS Logística network connect over 300 mines to export terminals in Espírito Santo and Rio de Janeiro. The state also leads in renewable energy for mining, with CEMIG supplying 12% of Brazil's electricity, mainly from hydroelectric sources, ensuring reliable, sustainable, and cost-effective energy for the sector.

The mining district operates a streamlined permitting process designed to facilitate responsible mineral development. After initial baseline studies, companies must secure an Environmental Licence (Licença Prévia, "LP"), which evaluates the project's environmental feasibility. Upon approval, the Installation Licence ("LI") is granted, authorizing the construction of necessary infrastructure, subject to detailed governmental reviews. Once compliance with all regulatory and operational requirements is confirmed, the Operations Licence ("LO") is issued, permitting the commencement of mining activities.

## 3. Niobium Market Outlook

### Supply

Niobium supply is highly monopolistic, with only three producers of Niobium in the world. The biggest producer is CBMM at 80% of the global supply, based out of Minas Gerais and a neighbour to SGQ. CMOG supplies 11% of global output out of Goiás, Brazil and Niobec the remaining 9% from Quebec, Canada.



**Supply Trend**

In the short term (2025–2027), incremental increases will stem from capacity expansions at existing Brazilian operations (including a planned 3ktpa niobium oxide line to serve battery markets) and the commissioning of the first U.S. primary processing facility at Elk Creek, Nebraska, projected to add about 5.8ktpa of ferroniobium once financed and built. Meanwhile, Africa’s maiden niobium project at Kanyika in Malawi is slated for 2026 start-up, targeting 3.25ktpa of Nb<sub>2</sub>O<sub>5</sub>, and Dubbo in Australia aims to contribute nearly 2ktpa of FeNb by around 2028. Early-stage Canadian projects such as James Bay and Crevier offer prospective supply but remain years from production.

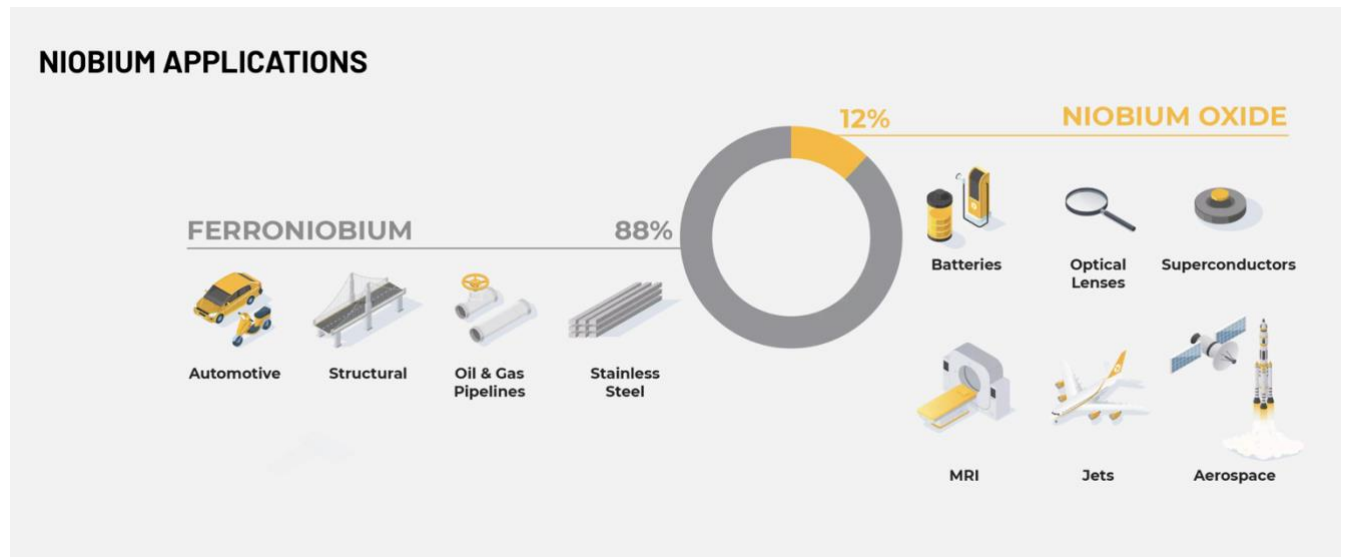
By the mid-term (2028–2030), these new mines and processing facilities could raise global output to meet demand. However, lengthy permitting, financing and construction timelines mean that concentrated Brazilian supply will still dominate, and nascent recycling efforts (< 20% recovery) are unlikely to materially offset primary production constraints. This near-duopoly within Brazil (CBMM + CMOC) creates single-country and single-company concentration that exacerbates supply risk from operational disruptions or policy changes. Current recycling rates for niobium (<20%) are minimal, offering little near-term relief from primary supply constraints.

However, world niobium mine production has plateaued at around 110 kt per annum (2023–2024), almost entirely sourced from Brazil (~92%) and Canada (~7%). With demand set to exceed supply by approximately 7kt in 2025, and by over 78kt by 2030 if production remains unchanged—a substantial supply gap is forecast in both the short and midterm.



## Niobium Demand: The Building Block of Today's and Tomorrow's World

Niobium is produced into Ferroniobium and Niobium oxide. Ferroniobium comprises 88% of the demand for this rare earth element.

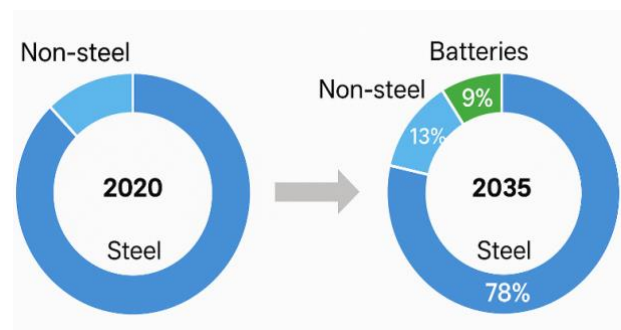


### Current Steel Use

Ferroniobium is used in the steel industry to deliver performance improvement through creation of stronger, lighter, corrosion and heat-resistant steel ideal for tougher applications such as pipelines, automobiles, structural steel in construction and military equipment. Adding as little as 0.02% niobium to steel can increase its strength by up to 30%, enabling lighter, more fuel-efficient military vehicles, aircraft, and naval vessels, as well as corrosion-resistant pipelines and bridges. In aerospace and hypersonic applications, vacuum-grade niobium's exceptional thermal stability (withstanding temperatures above 2,400 °C) and low density are critical for heat-resistant superalloys in turbine blades, missile airframes, and spacecraft components, capabilities that no substitute metal can match.

### EV Use

Niobium oxide is produced through further refinement of ferroniobium, and is used in Batteries, MRI equipment, optical lenses, superconductive magnets, aerospace and defence applications.



Source: SFA (Oxford)

Niobium's incorporation into lithium-ion battery electrodes is poised to unlock ultra-fast charging and extreme durability. Niobium-doped cathode and anode materials improve ionic conductivity, thermal stability, and structural integrity, enabling:

- 6-minute full charging in EV concept cars (Nyobolt) and heavy-duty vehicles (VW Trucks).



- Over 20,000 fast-charge/discharge cycles with minimal capacity fade (TNO-SCIB).
- 10× longer battery life and smaller cell form factors for enhanced power density.

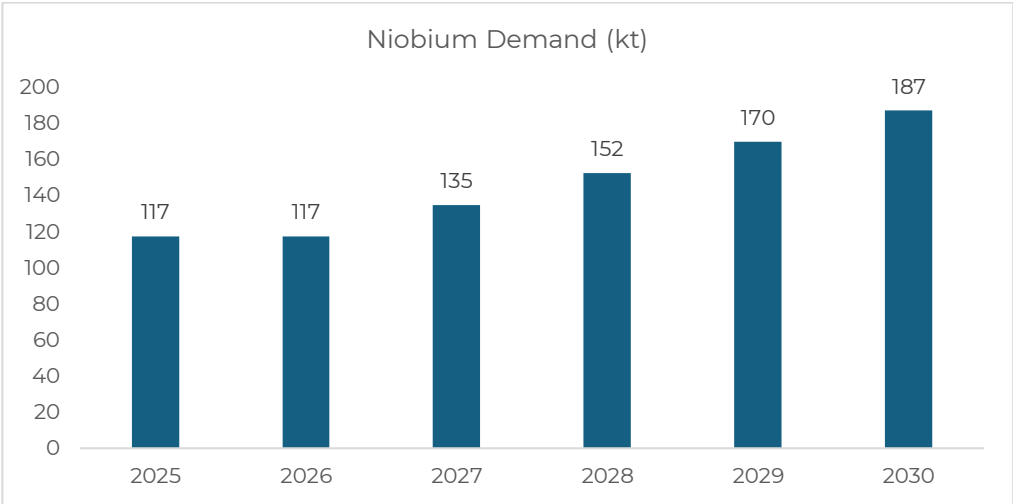
By 2030, forecasts suggest niobium oxide demand from battery applications could rise from under 5% of total niobium demand today to over 15%, reflecting its strategic importance in both decarbonizing transportation and fortifying global supply chains.

**Demand Trend**

The total global niobium consumption reached approximately 105.8kt of niobium content in 2024 and is projected to climb to about 117.45kt in 2025, growing at a near-10% CAGR through 2030 to reach 188.47kt.

In the short term (2025–2027), demand will be driven predominantly by high-strength low-alloy (HSLA) steels—accounting for roughly 57–77% of total consumption for use in automotive lightweighting, construction, pipelines, and infrastructure projects owing to niobium’s capacity to increase steel strength by over 30%. Superalloys for aerospace and defense comprise about 21–43% of demand, enabling high-temperature turbine blades, rocket components, and nuclear reactor internals thanks to niobium’s heat resistance and corrosion resistance. Emerging applications in next-generation batteries (niobium oxides in fast-charging, high-life EV cathodes) currently contribute under 5% of volume but are expected to accelerate as manufacturers commercialize battery-grade Nb<sub>2</sub>O<sub>5</sub> for energy storage. Superconducting materials (niobium-titanium and niobium-tin alloys) for MRI scanners, research magnets, and future quantum devices represent under 3% of volume but remain strategically important.

Mid-term demand (2028–2030) will see diversification: widespread adoption of niobium in solid-state and advanced lithium-ion batteries, expansion of niobium-enhanced pipelines in energy transition infrastructure, and growth in superconducting grid applications. By 2030, steel and superalloys will still constitute over 85% of volume, but battery and superconducting segments combined may approach 15% of total consumption<sup>7</sup>.



Source: Mordor Intelligence

**Niobium: A Universe of Strategies**

**Chinese Steelmakers**

China has aggressively secured niobium supply to underpin its steel industry’s shift to high-performance micro alloyed steels such as in April 2016 when CMOC paid Anglo American US\$1.5B for 100% of its niobium and phosphate business in Brazil, and earlier in 2011 when Chinese steel consortiums paid US\$1.95B for 15% equity in CBMM.

Beyond equity investment, CITIC Metal has served as CBMM's exclusive 30-year distributor in China, driving adoption of niobium microalloying technology across major steel mills (e.g., Baowu, Ansteel, TISCO), thereby growing China's niobium-bearing steel output to over 90 million tpa and accounting for more than one-third of global consumption.

### **Ex-China Steelmakers**

Outside China, major steelmakers have similarly pursued minority interests in CBMM to de-risk supply. In March 2011, a Japanese–Korean consortium comprising JFE, Nippon Steel, Sojitz, POSCO and Japan Oil, Gas & Metals National Corporation paid US \$1.8 billion for a 15% CBMM stake. These strategic partnerships grant downstream producers preferential pricing and technical support for integrating niobium into high-strength, low-alloy (HSLA) steels.

### **EV Manufacturers**

The rapid uptake of electric vehicles has catalysed alliances to tailor niobium chemistry for next-generation batteries. CBMM has entered joint development agreements with leading OEMs and battery innovators:

- Volkswagen Caminhões e Ônibus partnered with CBMM to integrate niobium-oxide-enhanced anodes for ultra-fast charging electric trucks, targeting sub-10-minute recharge times and improved cycle life.
- Nyobolt and Williams Advanced Engineering have collaborated on niobium-based lithium-ion batteries capable of six-minute full-charging and over 2,000 fast cycles without degradation, addressing high-power demands in motorsport and commercial EVs.
- Toshiba's Titania-Niobium oxide (TNO-SCIB) battery, developed with CBMM's support, demonstrated 350 Wh/L energy density and retained 80% capacity after 25,000 cycles, exemplifying niobium's role in prolonging battery lifespan and safety.

### **Critical Mineral for Defence**

Niobium is designated a critical and strategic mineral by the U.S. government due to its indispensable role in enhancing the performance of high-strength, low-alloy (HSLA) steels and superalloys used across defense and infrastructure sectors.

The U.S. Department of Defense's recent multibillion-dollar public-private partnership with MP Materials, operator of the Mountain Pass rare earths mine, exemplifies the Pentagon's strategic shift toward securing domestic supply chains for critical minerals, including but not limited to niobium analogues in rare earth magnets. Under the agreement,

- DoD will purchase \$400 million of convertible preferred stock (acquiring an effective 15% equity stake), provide a 10-year price floor of \$110/kg for neodymium-praseodymium oxides, and
- Commit to offtake 100% of magnet output from the "10X Facility" (10 000 t/year capacity) once it begins commissioning in 2028.

This partnership not only de-risks front-end capital for U.S. magnet manufacturing, vital for fighter jets, drones, and precision guidance systems, but also serves as a template for future DoD engagements to underwrite domestic production of other strategic materials such as niobium oxide, as seen in parallel funding for Global Advanced Metals' niobium oxide facility in Pennsylvania (\$26.4 million) to re-establish U.S. output after a 30-year hiatus. REEs are also increasingly attracting attention for magnet applications, with REEs such as neodymium, praseodymium, terbium and dysprosium essential for high-capacity computer hard drives, EV motors, robotics and military equipment. The



REE supply chains are dominated by the Chinese, producing upto 60% of the global REEs and handling 90% of the processing capacity.

## 4. St George’s Mining

### Introduction

St George Mining Limited (ASX:SGQ) is an emerging leader in critical minerals development, strategically focused on advancing its flagship Araxá niobium and rare earths project in Minas Gerais, Brazil. Shifting away from legacy commodities, SGQ has positioned itself at the forefront of the global supply chain for high-value materials essential to clean energy, advanced manufacturing, and technology sectors. The company’s wholly owned Araxá project boasts a JORC-compliant resource of 41.2 million tonnes at 0.68% Nb<sub>2</sub>O<sub>5</sub> and 4.13% TREO, placing it among the world’s most significant undeveloped niobium and rare earth deposits

The company has A\$5.2M in cash and equivalents, and no debt on its balance sheet as per its last quarterly report in April 2025. Within the last year, the company raised capital thrice,

- **January 2025:** On 7 January 2025, St George announced that it had received firm commitments from investors to raise new funds of A\$20 million for acquisition costs, exploration expenses and working capital for the Araxá niobium-REE Project. These new funds replace the proposed A\$18.5 million equity raising announced on 6 August 2024.
- **December 2024:** On 3 December 2025, raised A\$3 million through the issue of 150M ordinary shares at a price per share of A\$0.02, and 75M options to acquire ordinary shares in St George, with one free-attaching option for every two shares subscribed for and issued, and each option having an exercise price of A\$0.04 and an expiry date of two years after the date of issue

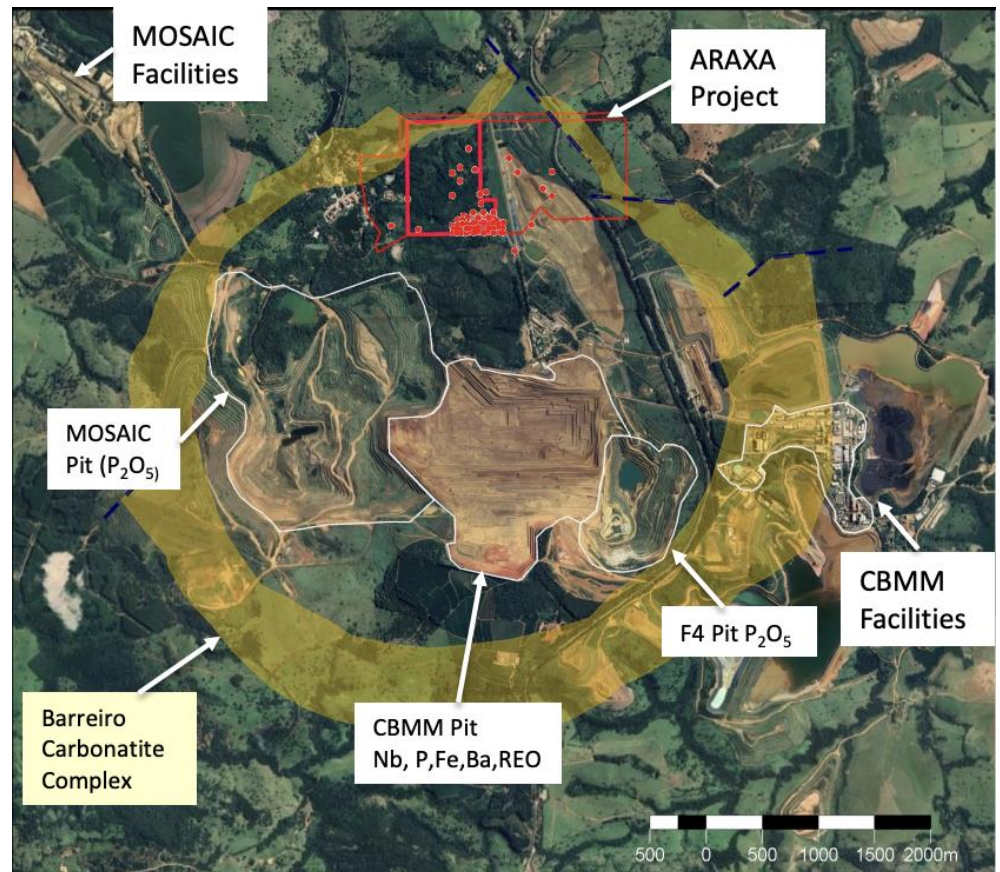
### Araxa Acquisition

SGQ completed its 100% acquisition of the Araxá Project on 26 February 2025, securing full ownership through a combined cash and equity transaction. The project was sold by Itafos, a US-based fertilizer company, primarily because the asset no longer aligned with its strategic focus and shareholder mandate. Although Araxá contained significant niobium and rare earth element (REE) resources, the company had originally acquired Araxá for its phosphate potential, but subsequent studies and market developments demonstrated that its greatest value lay in niobium and REEs.

SGQ's Acquisition of Araxa	
Details	
Cash Consideration (excluding taxes)	US\$10M, on completion, this has been reported to be paid. US\$6M, 9 months after completion US\$5M, 18 months after completion
Security Consideration	~226.8M ordinary shares in SGQ, comprising 10% of issued capital post-acquisition capital raise ~86.1M options to acquire SGQ shares at an exercise price of A\$0.04/sh, within 2 years of expiry ~11.1M performance rights

## Araxa

The Araxá project is located just 6 km from the town of Araxá in Minas Gerais, Brazil's premier mining state and a globally recognized Tier 1 jurisdiction. Situated within the prolific Barreiro Carbonatite complex, the epicenter of global niobium production, Araxá stands at the heart of the world's most important niobium and rare earths district. This region is responsible for over 80% of global niobium output, anchored by the neighboring CBMM Araxá mine, which has set the industry benchmark for more than half a century, and the Mosaic Araxá phosphate operation.



Geologically speaking the deposit at CBMM are similar as SGQ Araxá Project, both situated close to each other within the Barreiro Carbonatite, a carbonatite plug that has intruded country rock with ultra high-grade niobium in a near surface blanket of weathered ore, with further high-grade niobium in deeper primary (fresh) rock. The similarity in the geology offers SGQ's deposit the advantage of leveraging a proven flotation and processing flowsheet that is already present at CBMM, alongside incorporating operational tweaks gathered by CBMM's team for productivity from the get-go. CBMM employs conventional, low-cost processing comprising wet grinding, magnetic-process separation and flotation to produce a concentrate of 60%  $\text{Nb}_2\text{O}_5$  producing final products such as ferroniobium, niobium oxide and pure metal niobium.

Araxá's location also confers significant logistical and operational advantages. The project is seamlessly integrated into Brazil's most extensive mining infrastructure, with direct access to a vast road network, rail connections, and nearby deepwater ports, facilitating efficient export routes. The area benefits from reliable, low-cost renewable energy, and proximity to the regional hub of Belo Horizonte ensures a steady pipeline of skilled labor, technical services, and mining expertise.

## Resource

The mineralisation lies within the 5km wide Barreiro Carbonatite complex that hosts niobium, REE and phosphate mineralisation. The maiden JORC resource was released recently on 1 April 2025, and has about 41.2Mt of Measured, Indicated and Inferred Niobium resource at 0.68% Niobium oxide containing 280kt of metal content alongside a 4.13% TREO and 0.78% MREO, making it a globally significant niobium and REE resource.

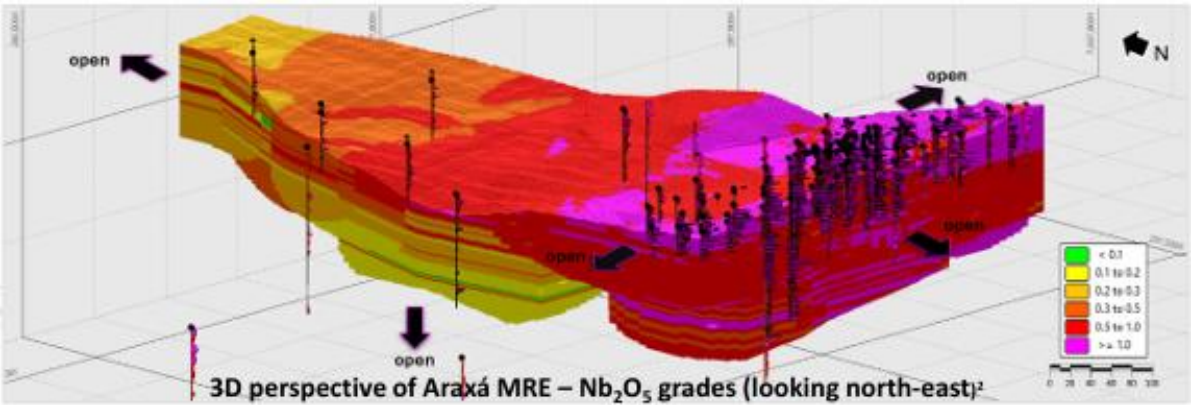
<b>Niobium Resource-</b> 41.2Mt at 0.68% Nb <sub>2</sub> O <sub>5</sub> (6,800ppm of Nb <sub>2</sub> O <sub>5</sub> ) comprising of at cut-off 0.2% Nb <sub>2</sub> O <sub>5</sub>		
	<b>Million Tonnes (Mt)</b>	<b>Nb<sub>2</sub>O<sub>5</sub>%</b>
Measured	1.90	1.19
Indicated	7.37	0.93
Inferred	31.93	0.59
<b>Total</b>	<b>41.20</b>	<b>0.68</b>

<b>TREO Resource-</b> cut-off 2% TREO			
	<b>Million Tonnes (Mt)</b>	<b>TREO%</b>	<b>MREO%</b>
Measured	1.90	5.44	1.04
Indicated	7.37	4.76	0.90
Inferred	31.37	3.90	0.74
<b>Total</b>	<b>40.64</b>	<b>4.13</b>	<b>0.78</b>

Mineralisation intercepts at the property show high grade of niobium and TREO outcroppings and present at shallow depths. The company reports more than 500 intercepts of significant >1% Nb<sub>2</sub>O<sub>5</sub> mineralisation.

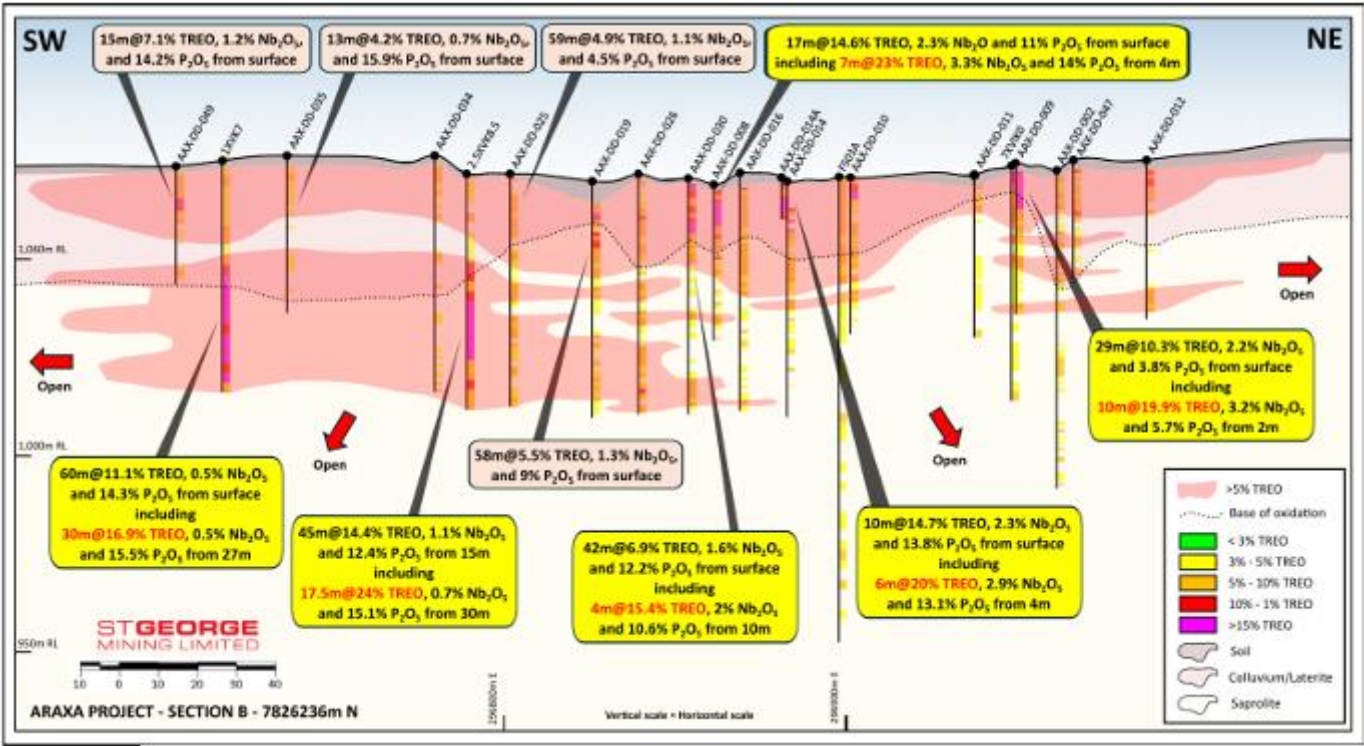
- 43m at 1.5% Nb<sub>2</sub>O<sub>5</sub> from surface
- 20m at 2.4% Nb<sub>2</sub>O<sub>5</sub> from surface including 10m at 2.4% Nb<sub>2</sub>O<sub>5</sub> from 2m
- 33m at 2.1% Nb<sub>2</sub>O<sub>5</sub> from 4m including 14m at 2.9% Nb<sub>2</sub>O<sub>5</sub> from surface
- 13m at 2.8% Nb<sub>2</sub>O<sub>5</sub> from 25m including 1.2m at 8.3% Nb<sub>2</sub>O<sub>5</sub> from 26m
- 11m at 3% from Nb<sub>2</sub>O<sub>5</sub> from 5m
- 60m at 11.1% TREO from surface including 30m at 16.9% TREO from 27.7m
- 45m at 14.4% TREO from 15m including 7.5m at 31.5% TREO from 40m
- 29m at 10.3% TREO from surface
- 42m at 6.9% REO from surface
- 17m at 14.6% TREO from surface
- 10m at 14.7% TREO from surface





Only 10% of the project area has been drilled so far, and a 5,000m drill program commenced in March 2025. Mineralisation is open in all directions, and SGQ has not included resources below 100m in the MRE. The company is reasonably confident of significant expansion potential with further exploration along strike as well as at depth.

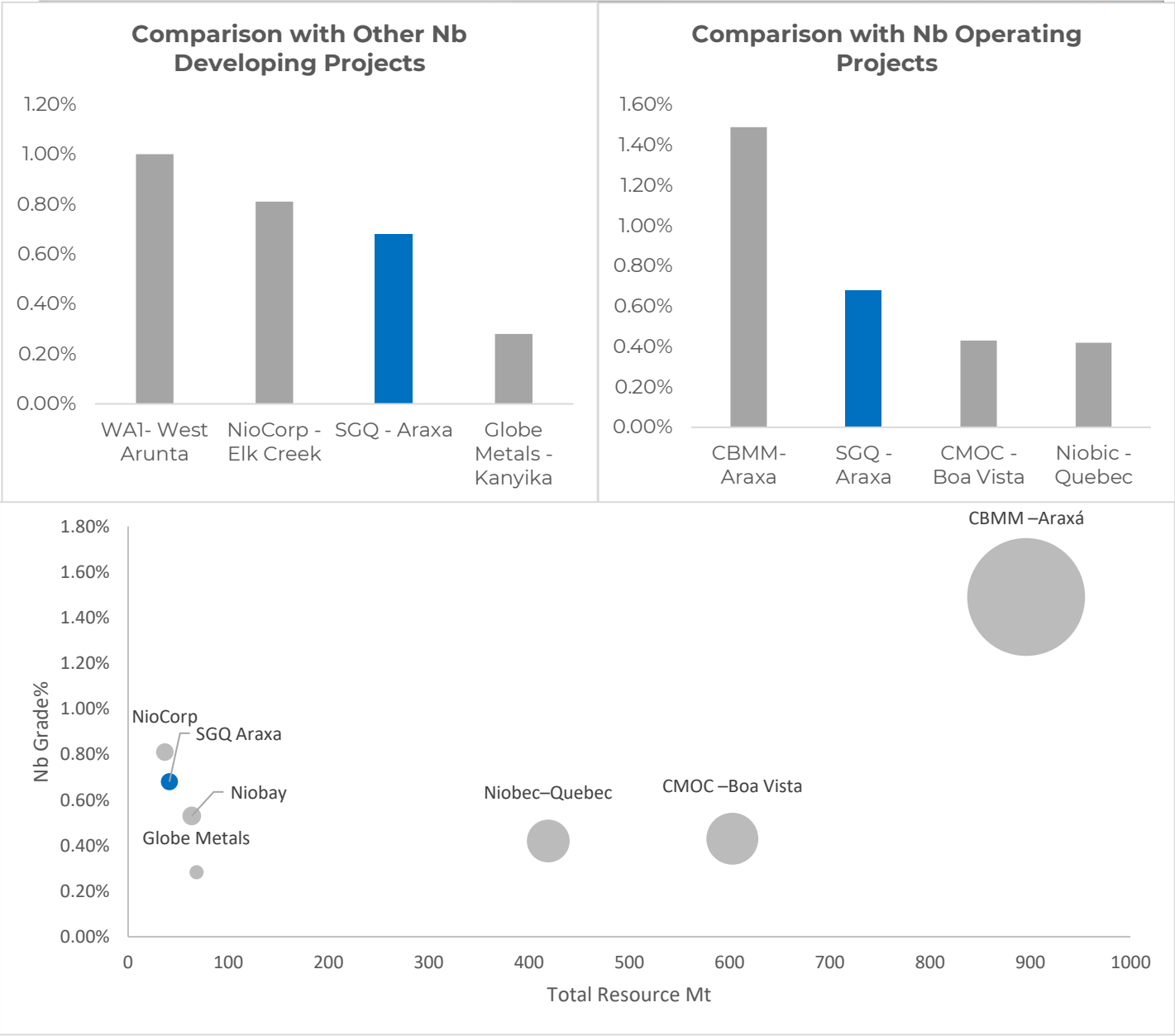
100% of the JORC resource is constrained within the weathered profile at the project and 95.8% is within 100m from the surface, making is favourable for a free-digging shallow open-pit operation in the future. Free-digging nature of the operations reduces mining costs as blasting may not be required, and processing costs, as weathered material lends itself to easier crushing to requisite size.





## Resource Comparison

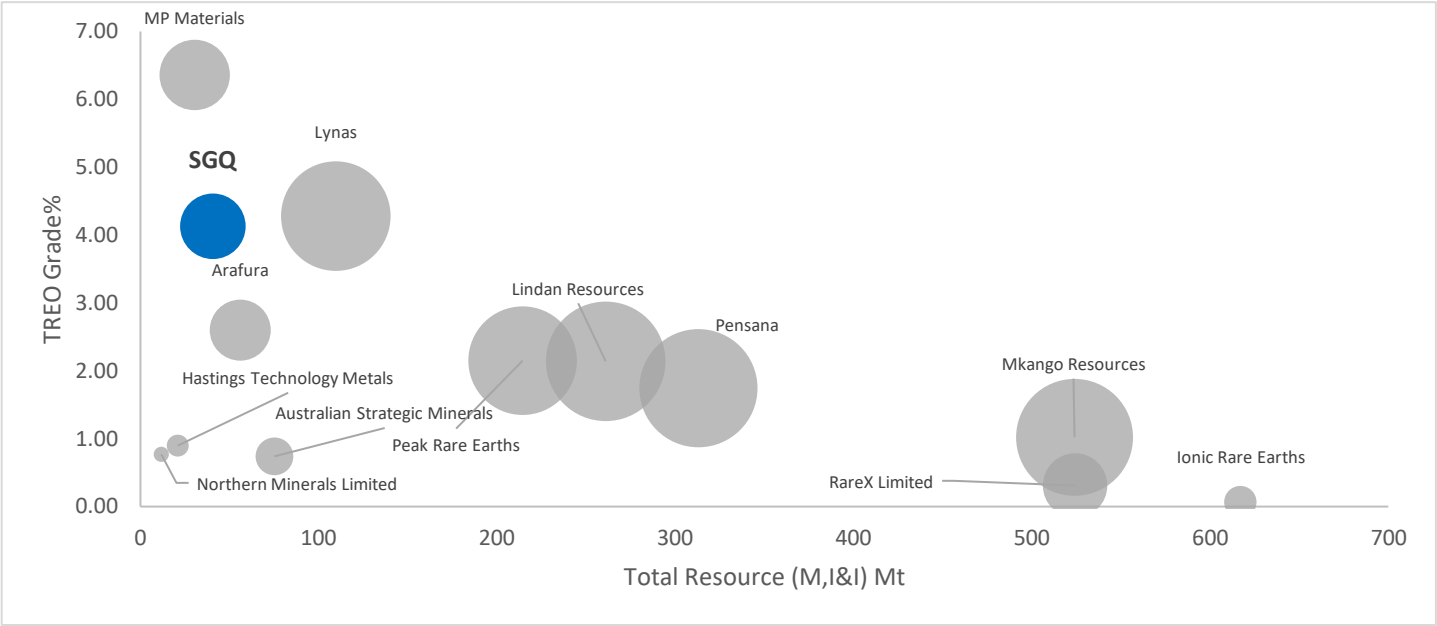
In terms of grade, SGQ's Araxa stands very competitively amongst both, Nb mines in development and operating stage. The total resource tonnage is expected to improve with the ongoing exploration, especially since only a small portion (10%) of the tenement has been explored, and only up to a depth of 60m.



For a wider comparison across other REE deposits in the world, we find SGQ Araxa Project to have a very competitive NdPr grade at 0.78%, and a high ratio of NdPr to total TREO resource compared to production REE mines outside China. The ratio of MREO to TREO is 20% average across all REE intercepts, with neodymium (Nd): Praseodymium (Pr) grades of up to 5.5% and NdPr:TREO ratio of up to 35%, averaging 20%.

An NdPr oxide grade of 0.78% within a Total Rare Earth Oxide (TREO) resource is exceptionally high by global standards and carries several strategic and economic advantages. NdPr (neodymium-praseodymium) oxides command the highest unit value among rare-earth elements, often contributing over 60–70% of a deposit's basket

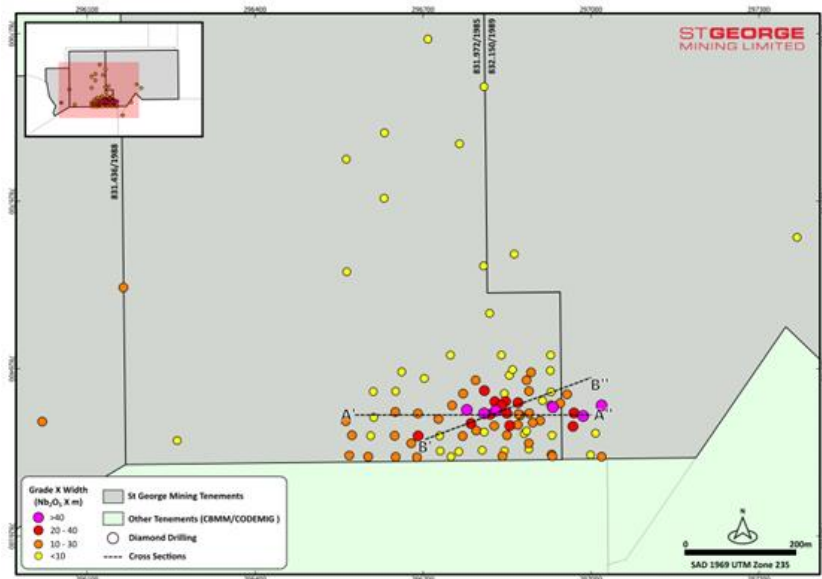




price because they are the indispensable feedstock for NdFeB permanent magnets used in electric vehicles, wind turbines, robotics, aerospace actuators, and defense systems. A high NdPr/TREO ratio signifies that a large proportion of the resource is comprised of the most valuable magnet-grade elements rather than lower-value light or heavy REEs. This enriches a project’s “magnet feed” stream, optimizing separation circuits by reducing the volume of non-critical REEs that must be removed, thereby lowering processing costs and environmental tailings burdens. Downstream offtakers prioritize deposits with elevated NdPr ratios given tight global magnet-grade supplies.

With special attention now being paid by the global west to magnets and REEs (by being placed on the critical minerals list in both US and EU), SGQ’s significant REE deposit outside of China may have a distinct advantage in terms of offtakes to these countries. The presence of renewable energy, and high grades of niobium position it well in terms of ESG, with potentially lower emissions and lower land footprint compared with other REE deposits across the world.

Permit Status



Two of the project tenements are in the process of renewal and extension application have been filed to the relevant approving authority. One of the tenements 831.972/1985, the one that has been explored the most so far (marked above) has been applied for a mining concession.

The company does state that tenements comprising the Araxa project are situated on private land and has been able to get access arrangements have been in past for exploration. We also note that some areas within the Araxa Project are listed as a preservation zone by the municipality according to the current master plan recognised by Brazil and the State of Minas Gerais. This classification is designed to protect water resources and vegetation within the designated area.

## 5. Push for an Expedited Development

The global niobium market presents a compelling case for accelerated development timelines, to ride on the wave of constrained supply, growing demand, and strategic importance. The supply-demand imbalance is particularly acute leading to niobium's designation as a critical mineral by major economies.

**SGQ** has made a decisive and swift approach to the Araxa project with a push on the timelines to bring it to rapid production. Within the period a binding acquisition agreement was made and the acquisition completed (3 quarters, 6 Aug 2024 – 27 Feb 2025) SGQ has

- **Signed MoUs with Minas Gerais to expedite permitting**
- **Signed MoUs with SKI and Fangda for development and offtakes**
- **Signed EPC +F MoU with Xinhai, and**
- **Partnered with research institutes for a greener development.**
- **Poached talent from CBMM – CBMM ex senior executives Thiago Amaral and Adriano Rios, head of Mineral Processing, Chief plant engineer are now a part of SGQ**

Being in Minas Gerais itself is a definite advantage for SGQ, allowing for fast-track development of the deposit supported by the well-established mining jurisdiction, access to infrastructure- roads and renewable power, a proven route to market, skilled workforce and open pit free digging operation.

**MoUs with Minas Gerais to expedite permitting:** The company has secured a non-binding Memorandum of Understanding (Oct 2024) with the State Government of Minas Gerais (**Invest Minas**) to expedite project approvals associated with the project, with the state committing to assist with progressing the regulatory approvals in an accelerated manner in recognition to the SGQ's investment in the region. This arrangement has worked well for companies like Latin Resources, now a subsidiary of Pilbara Minerals (ASX:PLS), leading to their **Preliminary Licence being issued in 9 months against a typical 3-4 yrs.**

In terms of the permitting process itself, SGQ's reports that environmental and heritage studies are already underway, has been making submissions to relevant authorities to have the permitting completed in 2026. SGQ has appointed Alger Consultoriae Assessoria Juridica (**Alger**) to advise on socio-environmental and cultural heritage matters in connection with the licensing of proposed mining operations. The consultant has previously assisted with licensing for Sigma Lithium (NASDAQ: SGML, TSXV: SGML), Latin Resources (ASX: LRS), Meteoric Resources (ASX: MEI) and many other mining projects in Minas Gerais.

The company has initiated downstream network study as of 5 March 2025, and prepares to drill at Araxa as of May 2025. The drilling programs focused on expansion and resource definition, aim to significantly increase the maiden JORC MRE within 2025. Met testwork is underway to produce processing flowsheet, and initial results are expected in Q2 2025. The company hopes to potentially re-start existing pilot plant to produce sample products. Environmental, geotechnical and development studies have commenced, with economic study slated for Q4 2025.

**Signed EPC +F MoU with Xinhai:** SGQ also has secured an MoU with the Xinhai Group, a prominent global service provider in mining space (2000+mines in 100+ countries) for EPC + F contracts, engineering, design, procurement, construction and finance at fixed price. **Xinhai had invested a total of A\$8M in A\$20M equity fund raising completed by SGQ in support of the project acquisition.**

**Signed MoUs with SKI and Fangda for development and offtakes:**

SGQ has MoUs in place to collaborate on the project development are with Liaoning Fangda, a steelmaking giant, and SKI Hong Kong, a specialist ferro-alloy trading firm. SGQ has stated that it continues to discuss with multiple potential strategic investors and offtake partners to secure comfort around the development of the project.

**Partnered with research institutes for a greener development:** Given the strategic importance of the mineral, SGQ is has started working with EMBRAPII (Brazilian Association for Research and Industrial Innovation) and SENAI/FIEMG (National Industrial Educational Services), two govt funded leading scientific organizations in Brazil, to develop a sustainable process for production of ferroniobium and rare earth products.

The co-venture with EMBRAPII and SENAI aims to optimise flowsheet. According to the agreements in place, costs of the co-venture will be borne 50% by EMBRAPII, 10% by SENAI and 40% by St George. St George will have the exclusive rights to commercialise the intellectual property (IP) developed by the co-venture for 10 years, with no royalty or other fee payable to EMBRAPII and SENAI.

SGQ is particularly involved with SENAI to collaborate on the production of rare earth magnets. SENAI/FIEMG will operate the existing pilot plant at Araxá with aim of producing sample products for a pilot production program. FIEMG has planned for initial capacity to produce 100 tonnes of permanent magnets per year, and to double that capacity within the first 3 years.

**Other Competing Development Stage Projects**

**WAI's Luni** deposit represents the most significant niobium discovery in over 70 years, with 220 Mt at 1.0% Nb<sub>2</sub>O<sub>5</sub> containing 2.2Mt of niobium. However, WAI's resource remains entirely in the inferred category, requiring significant additional drilling and resource definition work before feasibility studies can commence. The project's remote West Arunta location presents significant infrastructure challenges too. The project is located 490km from Halls Creek and over 600km from the nearest operating mine, and would require extensive greenfield infrastructure development including roads, power generation, and water supply systems. These infrastructure requirements alone could add 2-3 years to development timelines. WAI may also face extended permitting timelines due to remote location, native title considerations, and environmental approvals in undeveloped terrain. The company has not yet announced definitive production targets, suggesting first production unlikely before the early 2030s.

**Globe Metals' Kanyika** project in Malawi, while benefiting from a completed definitive feasibility study, faces significant timeline risks due to jurisdictional challenges and funding constraints. The project requires significant infrastructure development in a nascent mining jurisdiction, with limited precedent for large-scale critical minerals production in Malawi. Consequently, Globe has struggled to secure project financing, with the company needing to construct a refinery pilot plant to produce marketing samples for offtake agreements. The project has received a one-year extension to September 2025 to commence substantial development, highlighting ongoing execution challenges.

For **NioCorp's Elk Creek** project in Nebraska, while benefits from U.S. jurisdiction and critical mineral policy support, it faces extended timelines due to its focus on producing multiple products (ferroniobium, scandium oxide, titanium, rare earth oxides), adding to technical complexity and extended development timelines beyond 15 years.

In essence, St George Mining's (SGQ) Araxá project emerges as the clear frontrunner in the race to market, and we estimate that with all aforementioned factors in its favour, it can target production as early as 2027 through an innovative two-pathway development strategy.

## 6. DCF Analysis

We see the need for an independent processing plant and tailings dam as the biggest bottlenecks for a quick development of the prospect. Brazil's multi-layered regulations, federal laws, ANM resolutions, and state policies, impose comprehensive restrictions on tailings disposal methods, facility design, monitoring, and decommissioning, ensuring that tailings are managed sustainably and safely the same time as making permits for new tailings dam a time-consuming process.

For the development scenarios, we consider two possibilities,

- **Standalone Development:** SGQ will be able to progress through to the FID stage and obtain the requisite mining and tailings dam permits from the relevant authorities. This will delay the time to market for SGQ to a conservative 2030 for first production. We estimated a staged development, with initial capex of US\$200M, inclusive of US\$50M for Mine Development, US\$100M for processing plant, and US\$50M for a tailings dam for an initial ROM rate of 3Mtpa, and an incremental capex of US\$60M to increase the ROM processing rate to 4.5Mtpa, 5 years after start of operations.

Even though SGQ tenements are located on private land, we do not account for capex for land acquisition as Brazil separates mineral rights from surface rights, with mining companies conventionally negotiating land access agreements (50% of the royalty) rather than purchasing land outright.

- **Opportunistic Acquisition:** SGQ acquires Mosaic's Araxa mine beneficiation facilities in order to fast track its permitting process in line with SGQ's strategy to race to market. We see this as a possibility because Mosaic has launched a dual tract process to either sell its Araxa Phosphate mine and beneficiation facilities or attract capital to develop niobium processing at the Araxa beneficiation plant. (Mosaic's Q1 FY25 Report).

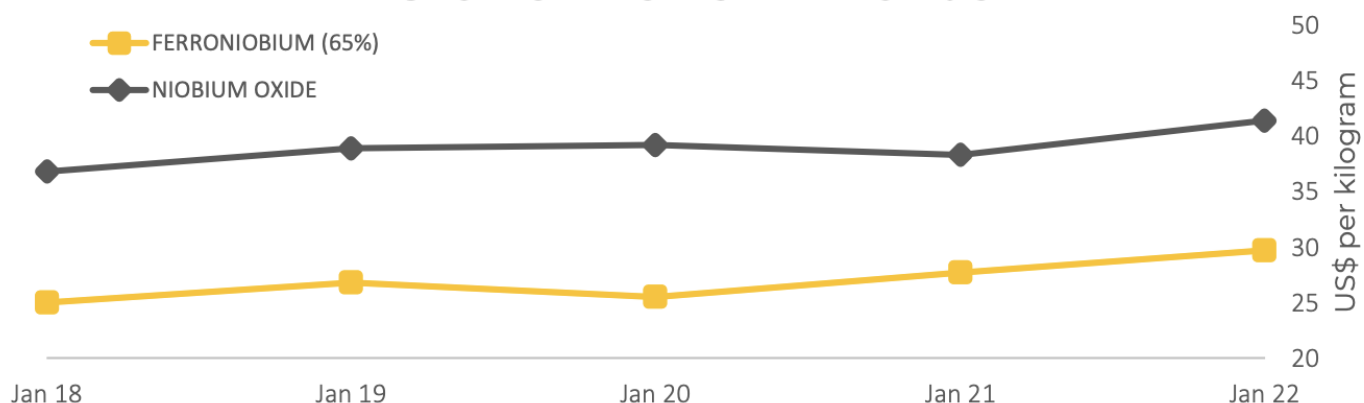
If SGQ were to acquire the beneficiation plant or assist in terms of capital, there would be corresponding decrease in initial capex required. We estimate the initial capex for this development pathway to be ~US\$150M, inclusive of US\$50M for mine development and additional haulage trucks, and US\$100M for the processing plant, lower given ready infrastructure at Mosaic site. We reason SGQ would opt for this early route to market (by 2027 by our estimates). Same as our standalone development, we expect SGQ to increase ROM production rate to 4.5Mtpa through an incremental capex of US\$60M, 5 years into operational life.

We rule out the possibility of a toll treatment arrangement between SGQ and CBMM, given CBMM has its own strategic plans to expand niobium oxide from 3kt/annum to 20kt/annum by 2030.

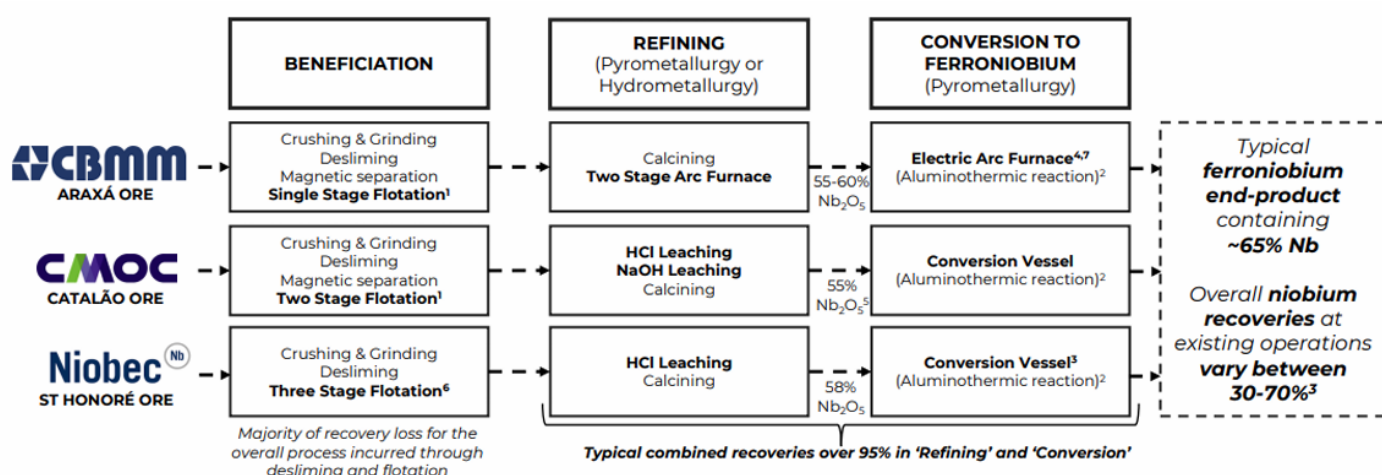
Common to both the development scenarios our list of assumptions and associated rationale is as follows:

- **Commodity Price:** We take a conservative view of the FeNb-66 price at US\$ 40K/t given the massive support they have had over the past few years. Given that FeNb, targeted towards steel industry, comprises of 88% of the demand the price outlook is expected to be more resilient to any downsides compared to Niobium Oxide, geared more towards battery performance improvements and speciality alloy manufacturing.

## HISTORIC PRICING BY PRODUCT



- Our **Beneficiation and Pyrometallurgical Recoveries** assumptions are based on a considerable conservative lower end of the beneficiation (60-65%) and pyro (90-95%) benchmark ranges for niobium processing to FeNb 66 product.



- **Mining and Processing Cost** assumption of US\$16.5/t ROM represent the conservative end of a operation that involves free digging, concentration and pyrometallurgical processing in Brazil, relevant to the both the Development pathways.
- **Resource Growth:** We assume that SGQ will be able to increase its resource base from 41.2Mt at 0.68% Nb<sub>2</sub>O<sub>3</sub> to 124Mt while maintain little to no grade loss overall at 0.68%. We find this reasonable given the frequency (500+) of high grade >1% intercepts that SGQ has reported for its maiden MRE, the deposit being open along strike and depths, and only being drilled to 100m depths at the time of reporting. This resource size is sufficient to sustain the operation at our planned rate of 23 yrs.
- We assume **Prioritization of High Grade** at 1% Nb<sub>2</sub>O<sub>5</sub> in the first 8 years, producing at an average rate of 0.65% Nb<sub>2</sub>O<sub>5</sub> thereafter. The initial project ramp up will be 3 years.
- **Royalties and Land Access** we estimate the state royalties at 6% of the revenues. Conventionally mining companies in Brazil negotiate land access agreements (50% of the royalty) rather than purchasing land outright

- **Sustaining Capital Expenditure** of 5% of the Initial Capex per year has been assumed.
- **Project Finance Assumptions:** We assume SGQ will be able to secure project finance for 60% of the initial capex at 10% interest rate. We also assume that the 40% of the initial capex will have to be raised through equity, which SGQ will be able to at A\$0.07/share at first year the capex is required in respective development cases.

#### Assumptions used in our SGQ DCF Valuation

Particular	Assumptions	
FeNb-66 Price Forecast	US\$40,000/t	
Discount Rate	10%	
Royalties	6%	
Land Access Fee	3%	
Resource at FID	124Mt at 0.68% Nb <sub>2</sub> O <sub>3</sub>	
Niobium Beneficiation Recovery	60%	
Niobium Pyrometallurgical Recovery	85%	
Sustaining Capital Expenditure	5% of the Initial Capex per year	
SG&A	US\$10M/yr	
Particular	Standalone Development	Opportunistic Acquisition
Initial Capex	US\$200M	US\$150M
Production Start Year	2030	2027
Mining and Processing Cost (ROM)	US\$16.5/t	US\$16.5/t
Incremental Capex for 5Mtpa ROM	US\$60M	US\$60M
Incremental Capex Year	2035	2033

## Results of DCF Valuation

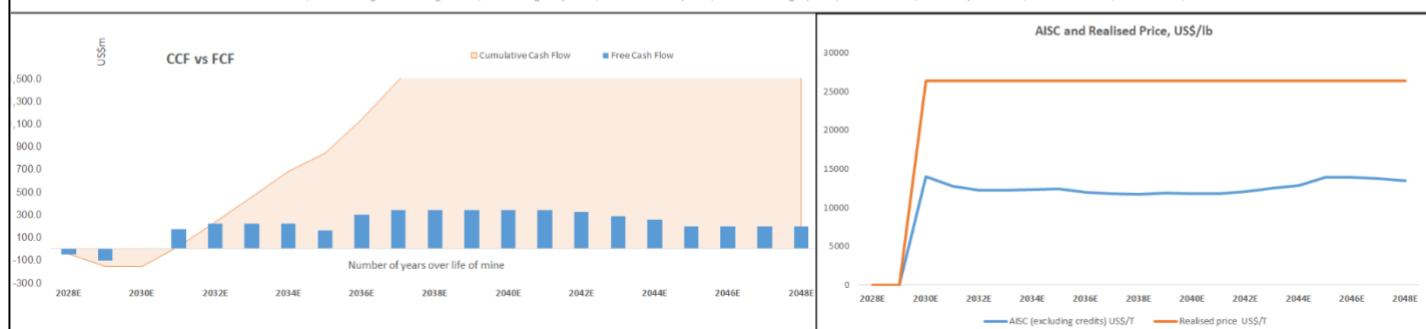
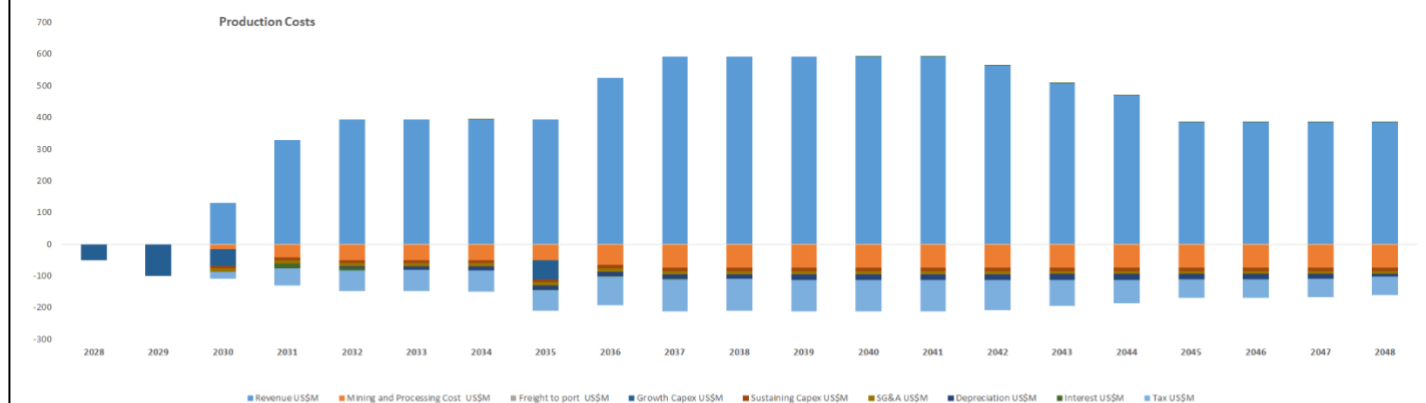
The development pathways generate NPVs of A\$2.24-2.33B at IRRs of 66%-82% given the timing and quantum of cashflows. In both the cases we see exceptional unit economics, and the ability to payback within 2 yrs of production.

## Standalone Development Pathway

If SGQ takes this pathway for the project, it will be able to start production from 2030 to the tune of 16ktpa of FeNb-66 containing 10ktpa Nb metal, generating an EBITDA of US\$309M/yr. In 2035, 5yr into production it will invest another US\$60M to increase production to 22ktpa FeNb containing 15ktpa Nb metal, generating US\$464M/yr in EBITDA. Over the longer horizon the focus will shift to lower grades in order to optimise the mine life, reducing FeNb-66 production to 20ktpa for the then EBITDA of US\$276M/yr. This development pathway has an NPV of A\$2.24B and an IRR of 66% at our base case FeNb-66 price of US\$40K/T, 85% risked valuation of A\$0.9/share, a 2.1x upside from current A\$0.041/sh.

Selected Case: Standalone Development		Units	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E	2035E	2036E	2037E	2038E	2039E	2040E
Ore Mined		MTPA			-	-	1.0	2.5	3.0	3.0	3.0	3.0	4.0	4.5	4.5	4.5	4.5
Ferroniobium Produced (FeNb 66)		Kt			-	-	5	12	15	15	15	15	20	22	22	22	22
Payable Niobium		Kt			-	-	3	8	10	10	10	10	13	15	15	15	15
Revenue		US\$M			-	-	131	329	394	394	394	394	526	591	591	591	591
COGS		US\$M			-	-	(17)	(41)	(50)	(50)	(50)	(50)	(66)	(75)	(75)	(75)	(75)
Royalties and Land Access		US\$M			-	-	(12)	(30)	(35)	(35)	(35)	(35)	(47)	(53)	(53)	(53)	(53)
EBITDA		US\$M			-	-	103	258	309	309	309	309	412	464	464	464	464
Operating Cashflow		US\$M			-	-	72	180	224	232	233	232	310	350	351	353	353
Growth Capex		US\$M			(50)	(100)	(50)	-	-	-	-	(60)	-	-	-	-	-
Sustaining Capex		US\$M			-	-	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
<b>Free Cash Flow</b>		<b>\$M</b>			-	(50)	(106)	1	174	218	222	223	162	300	340	341	343

Share Sensitivity		FeNb 66 US\$/T					NPV Sensitivity				
		FeNb 66 US\$/T					FeNb 66 US\$/T				
		25,600	32,000	40,000	48,000	57,600	25,600	32,000	40,000	48,000	57,600
Discount rate	10%										
Net Present Value, US\$M	1,496										
Project IRR	66%										
NPV, A\$M	2,244										
NPV, (85% risked)	337										
Implied Share Price, A\$	0.09										
Implied Upside	2.1x										

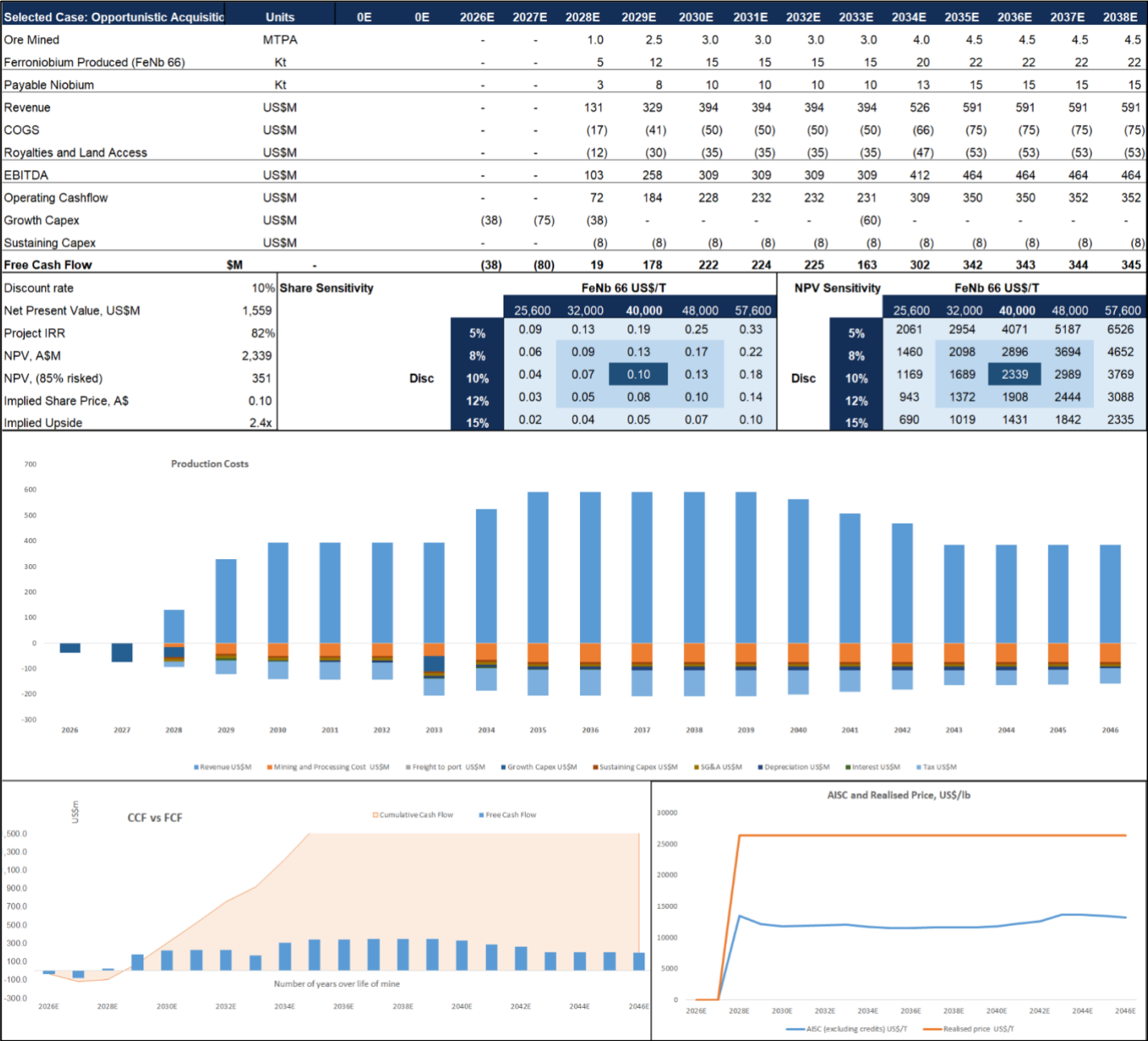






Opportunistic Acquisition Case

We see similar set of metrics for the Opportunistic Acquisition Case but for a lower initial capex by US\$50M and the cashflows starting 2 years earlier than the Standalone case. This development pathway has an NPV of A\$2.3B and an IRR of 82% at our base case FeNb-66 price of US\$40K/T, 85% risked valuation of A\$0.10/share, a 2.4x upside from current A\$0.041/sh.





DCF Outcomes		
Parameter	Standalone Development	Opportunistic Acquisition
Initial Capex	US\$200M	US\$150M
Production Start	2030	2028
FeNb-66 Production	15ktpa (2032) -> 22ktpa (2037)	15ktpa (2030) -> 22ktpa (2035)
Mining and Processing Cost	US\$16.5/Mt ROM	US\$16.5/Mt ROM
First 5 Years Production	101kt FeNb-66	
First 5 Years ROM Grade	1% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production ROM	0.65% Nb <sub>2</sub> O <sub>5</sub>	
Steady State Production	22ktpa FeNb-66	
Mine Life	40+ Yrs	
Steady State EBITDA	US\$309M/yr (2032) -> US\$464M/yr (2037)	US\$309M/yr (2030) -> US\$464M/yr (2035)
AISC (excl. credits)	US\$12.3K/t -> US\$11.7K/t	US\$12.3K/t -> US\$11.7K/t
NPV	A\$2.24B	A\$2.34B
IRR	66%	82%
Implied Share Price (A\$)* (85% Risked)	\$0.09 (2.1x upside)	\$0.10 (2.4x upside)

## 7. WAI vs. SGQ: Comparative Analysis

In the race to commercialize new niobium supply, WAI's Luni discovery and SGQ's Araxá project represent contrasting development profiles that highlight SGQ's relative undervaluation and strategic advantage. WAI's 220 Mt at 1.0% Nb<sub>2</sub>O<sub>5</sub> resource, by far the largest discovery in seven decades, has garnered a market capitalization near US\$700 million, reflecting investor enthusiasm for high-grade niobium projects. Yet Luni's remote location (~490 km from Halls Creek; >600 km from the nearest operating mine at Telfer) necessitates enormous greenfield infrastructure investment, likely in the hundreds of millions, for road, power and port access to Hedland, Karratha or Onslow. Moreover, WAI's resource remains entirely Inferred, carrying elevated geological and permitting risk.

In contrast, SGQ's Araxá asset sits within the Tier 1 niobium hub of Minas Gerais, adjacent to CBMM's Araxá mine and underpinned by existing roads, rail links and renewable power. SGQ's maiden JORC resource of 41.2 Mt at 0.68% Nb<sub>2</sub>O<sub>5</sub> (280 kt of contained Nb<sub>2</sub>O<sub>5</sub>; 4.13% TREO) is 100% Measured, Indicated and Inferred—95.8% within 100 m of surface—enabling a free-digging, shallow open-pit operation with minimal strip and crushing costs. Immediate access to CBMM's proven flotation and magnetic separation flowsheet further derisks processing and accelerates time to production.

Even if WAI's resource was re-rated to a measurably de-risked category, its remote logistics would compress project economics and extend the development timeline into the early 2030s. By comparison, SGQ's proximity to existing beneficiation facilities, skilled workforce and a fast-track permitting MoU with the State of Minas Gerais supports a pathway to first production by 2027. In value terms, assuming a conservative one-fifth of WAI's market cap (~A\$140 million) for an analogous project, SGQ trades at a



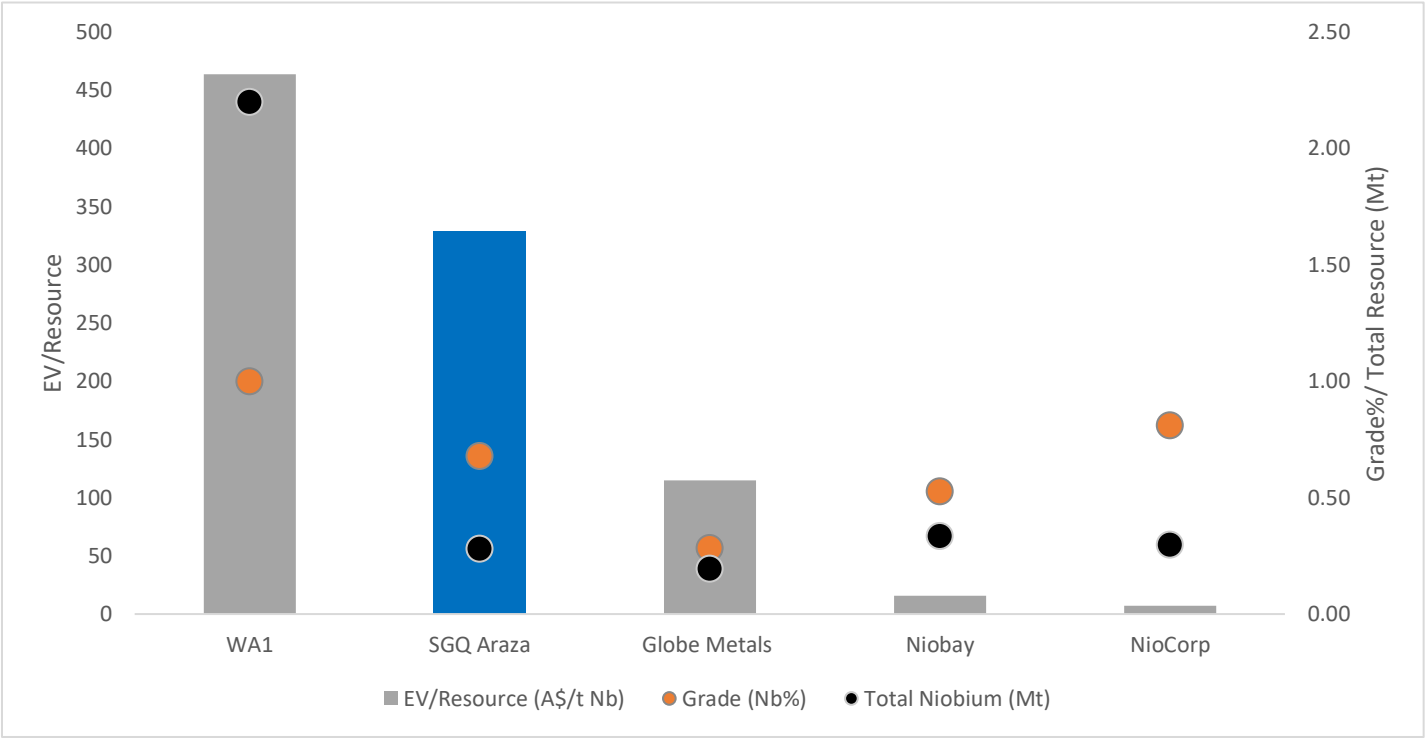
fraction on an enterprise-value per tonne Nb<sub>2</sub>O<sub>5</sub> basis (A\$328/t versus WA1's A\$464/t), despite SGQ's de-risked resource, superior infrastructure and clearer route to market. This divergence underscores SGQ's undervaluation and positions Araxá as the frontrunner to fill the critical niobium supply gap.

8. Comparables Analysis

We assess SGQ's comparable valuation from two lenses, (i) Niobium, which is the primary commodity of focus for SGQ, and the other (ii) TREO perspective, a possible play that can occur in future if the management decides to capitalise on the Resources by making appropriate modification in the flowsheet, an important piece of information we expect to know more about through PFS studies in due course.

SGQ trades favourably at A\$328/Mt Nb compared to its comparables WA1 at A\$464/Mt Nb, because of its comparable grade, despite having a significantly lower total Nb tonnage in Resource. We reason SGQ compares favourably to Globe Metals, Niobay and NioCorp due to clear path to development.

We exclude CMOC (multi-commodity exposure) and CBMM (private company) from our comps analysis.



EV/Resource Comps for SGQ, Niobium Only					
Company	Total Resource (Mt)	Nb Grade %	Total Nb Tonnage (Mt)	EV (A\$M)	EV/Resource (A\$/Mt)
WA1	220	1.00	2.20	1020	464
SGQ Araxa	41	0.68	0.28	92	328
Globe Metals	68	0.28	0.19	22	115
Niobay	64	0.53	0.34	5	16
NioCorp	37	0.81	0.30	259	7

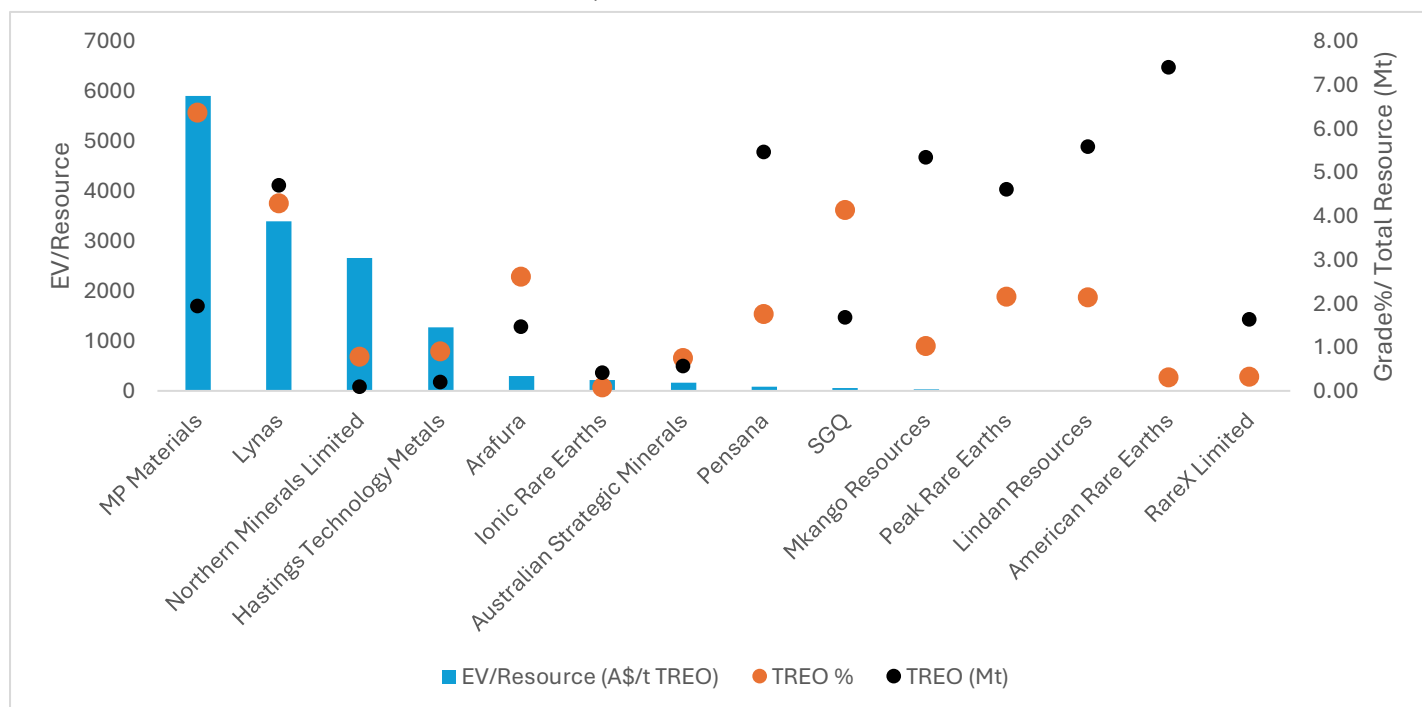
\*EV Values as of 13 July 2025. Resource (Measured, Indicated and Inferred) Values as per 2024 Annual Reports.

On a broader TREO scope, we find a massive potential for re-rating for SGQ, from its current A\$/54.78/Mt TREO to be placed in between Lynas (A\$3,389/ Mt TREO) and Northern Minerals (A\$2657/MT TREO) given its Grade and TREO tonnage. Feasibility

decisions around TREO should trigger a massive rerating for SGQ, but for now we refrain from evaluations on that aspect for the moment.

Company	Total Resource (Mt)	TREO %	Total TREO Tonnage (Mt)	EV (A\$M)	EV/Resource (A\$/Mt)
MP Materials	30	6.36	1.94	11446	5,910
Lynas	110	4.28	4.69	15895	3,389
Northern Minerals Limited	12	0.77	0.09	239	2,657
Hastings Technology Metals	21	0.90	0.19	239	1,272
Arafura	56	2.60	1.46	437	300
Ionic Rare Earths	617	0.07	0.41	87	213
Australian Strategic Minerals	75	0.74	0.56	89	161
Pensana	313	1.74	5.46	481	88
SGQ	41	4.13	1.68	92	55
Mkango Resources	524	1.02	5.34	182	34
Peak Rare Earths	214	2.15	4.61	107	23
Lindan Resources	261	2.14	5.59	102	18
American Rare Earths	2470	0.30	7.40	117	16
RareX Limited	524	0.31	1.63	15	10

\*EV Values as of 13 July 2025. Resource (Measured, Indicated and Inferred) Values as per 2024 Annual Reports.



## 9. Management

St George Mining's Araxá project is led by a cohort of former CBMM experts and seasoned executives, and a mix of technical, operational and strategic funding skillset.

### Thiago Amaral, Director – ESG & Technical Development

A 17-year CBMM veteran, he spearheaded sustainability, ISO certification, environmental licensing, and product-specification systems. Holds a Master's in Mechanical Engineering and an MBA; PhD in Materials Engineering in progress.

### Adriano Rios, Director – Mining Operations

With 23 years at CBMM's Araxá mine, he managed block-caving transition and achieved >94% niobium recoveries. His expertise ensures optimized mine planning and execution.

**Caue (Paul) de Araujo**, Director – Corporate Development

Former Global GM (Mine Finance) at Palaris and Regional Director at Hatch, he structures project financing and offtake deals, leveraging global capital markets networks.

**Wanderly Basso**, Senior Exploration Geologist

Brazilian-trained, with end-to-end experience in geological modelling, resource estimation, and metallurgical testwork, he drives rapid resource expansion.

**Carlos Alberto de Araujo**, Consultant – Plant Engineering

Led design and commissioning of CBMM's advanced flotation and magnetic separation plant, accelerating Araxá's processing flowsheet development.

**Ricardo Maximo Nardi**, Consultant – Mineral Processing

Over 30 years at CBMM, he pioneered pilot-scale flotation and reagent optimization to consistently deliver 60%+ Nb<sub>2</sub>O<sub>5</sub> concentrate grades.

**Adolfo Sachsida**, Board Advisor

Ex-Brazilian Minister of Mines & Energy, his deep regulatory insight and federal connections expedite approvals and government engagement.

**Alger Consultoria**, Permitting Advisor

Specialists in Brazilian environmental and heritage licensing, guiding compliance with ANM regulations and municipal preservation-zone requirements.

## 10. Other Projects

**Destiny Project**

The Destiny Project is located in the Eastern Goldfields region of Western Australia. St George's continuing tenure at the Destiny Project covers approximately 495 sq km with prospectivity for gold, nickel and lithium, over three granted exploration licences.

In recent financial quarter, St George elected to not exercise its option to acquire certain tenements within the Destiny Project that were subject to an option agreement with Belres Pty Ltd and WA Mining Partners Pty Ltd. The option held over nine tenements – seven granted Exploration Licences and two in application, and these have lapsed unexercised.

The company states that an airborne magnetic survey is planned for the Destiny Project in Q2 2025 to identify structures that may be associated with mineralisation. These areas of interest will be prioritised for follow-up exploration.

**Lithium Star**

Lithium Star is the joint venture vehicle of St George (90%) and Amperex Technology Limited (10%) which is exploring for lithium across a portfolio of projects in Western Australia.

The company reports that exploration programs were completed during the H2 2024 at several projects – Bunningonia, Myuna Rocks (shallow air core drilling program), Lindville (sediment sampling program for lithium) and Split Rocks (auger sampling program), with lithium suite elements identified from the explorations.

Bunningonia, located in the south-east Yilgarn and held 90% by St George and 10% by Amperex, saw encouraging exploration results revealing a noteworthy lithium anomaly, up to 145 ppm Li<sub>2</sub>O along with promising gold and pathfinder element trends. The results confirmed lithium anomalies as well as elevated levels of cesium and rubidium. A maiden air core drilling program has now been planned for 2025 to test for economic mineralisation.

### **Mt Alexander Project**

The Mt Alexander Project is St George Mining's flagship exploration venture in Western Australia's goldfields targeting nickel-copper-PGEs, gold, and lithium. The project's lithium potential has been significantly enhanced following the identification of over 500 pegmatite outcrops, with recent soil sampling defining multiple kilometer-scale lithium anomalies including the 2.7km Jailbreak East prospect.

A comprehensive lag sample survey across tenements has validated the project's gold potential by testing for extensions of the Bottle Creek gold mineralized trend. This approach identified significant gold anomalism reaching 110ppb, accompanied by critical pathfinder elements including arsenic (2,500ppb), molybdenum (10,500ppb), palladium (10,000ppb), and silver (2,500ppb). The survey's success had led to a planned 2,000m aircore drilling program for Q2 2025, targeting 60 drill holes across strong magnetic features.

### **Ajana Project**

The Ajana Project represents St George Mining's breakthrough base metals discovery in Western Australia's historically underexplored Northampton Mineral Field, where the company achieved a significant "blind discovery" of high-grade zinc, lead, and silver mineralization beneath shallow cover. During Q3 2023, St George's maiden drilling program comprising 12 RC holes and 4 diamond holes delivered exceptional results, with standout intersections including 5m @ 1.23% Zn+Pb and 7.2g/t Ag from 57m.

The discovery spans two major targets within a 25km-long magnetic anomaly complex, suggesting substantial district-scale potential for large-scale mineral deposits.

- The Perseverant Prospect, covering the northern extent of this magnetic feature, returned multiple high-grade intersections across a 2.2km by 2.5km area, with eight of twelve RC holes intersecting significant base metal mineralization.
- The Catalina Prospect, characterized by a 2km-long magnetic anomaly interpreted as a mafic intrusion, demonstrated intense hematite alteration over 52m in a diamond hole, indicating proximity to substantial sulfide mineralization systems. This geological setting provides direct analogies to successful Western Australian base metal deposits including Galena Mining's Abra deposit (33Mt @ 7.1% Pb, 17g/t Ag) and Rumble Resources' Earahedy deposit (94Mt @ 3.1% Zn+Pb).

The source of the 25km magnetic anomaly remains unexplained by current drilling, indicating potential for much larger mineralization at depth.

### **Paterson Project**

The Paterson Project represents St George Mining's take into one of Australia's most prospective copper-gold provinces, where the company's maiden diamond drilling campaign has confirmed the potential for significant mineralization within proven geological settings. Located in Western Australia's East Pilbara region, the project encompasses 35km of prospective stratigraphy with direct geological analogies to major regional discoveries including Rio Tinto's Winu deposit (608Mt at 0.49% CuEq) and the Haviron project.

SGQ's drilling program successfully intersected chalcopyrite (copper sulfide) and metasediments across multiple diamond holes, confirming the presence of lithologies known to host major copper-gold deposits throughout the Paterson Province. The program revealed active mineralizing processes and structural complexity favourable for large-scale copper-gold systems, such as stratiform-hosted sulfide accumulations throughout the project area, demonstrating strong potential for orogenic gold mineralization.

## 11. Risks

St George Mining (ASX: SGQ) faces a range of market, commodity, regulatory, financial, operational, and jurisdictional risks that could materially impact the Araxá niobium-REE project and the company's investment thesis.

### Execution and Development Risks

**Granting of Authorisations:** Two mining concession applications and one exploration permit remain pending. Delays or onerous conditions in grant of an Environmental Licence (LP), Installation Licence (LI) or Operations Licence (LO) could defer exploration and development.

**Land Access and Community:** All tenements lie on private land owned by CODEMIG and CBMM; new access agreements are required for drilling and mining. Failure to secure timely land-use approvals or comply with municipal preservation-zone restrictions may interrupt operations.

### Regulatory and Political Risks

**Environmental Approvals:** Portions of Araxá are designated as water-resource and vegetation preservation zones, requiring additional clearances. There is no guarantee approvals will be granted on acceptable terms, potentially limiting orebody conversion.

**Policy Volatility:** Although Brazil and Minas Gerais are pro-mining, shifting state or federal environmental regulations, ANM resolutions or heritage mandates could impose unexpected conditions or delays.

### Financial and Capital Risks

**Capital Raising and Dilution:** With ~A\$5 million cash at April 2025 and ongoing drilling, SGQ must secure further equity or debt to fund exploration, met-work, pilot plant and permitting. Any equity raise will dilute current shareholders; debt may carry restrictive covenants.

**Cash Burn:** A cash runway under 12 months exposes SGQ to liquidity risk unless funding is arranged or spending curtailed.

### Operational and Technical Risks

**Exploration Uncertainty:** Only ~10% of the Araxá tenement has been drilled. Further drilling may not extend high-grade zones or convert Inferred resources to Indicated/Measured categories, jeopardizing mine planning and economics.

**Metallurgical and Process Risk:** While geology parallels CBMM's adjacent operation, SGQ's metallurgical recoveries for both niobium and TREO remain untested at scale. Pilot-plant outcomes may differ from expectations, affecting capital and operating costs.

### Market and Commodity Risks

**Niobium Price Volatility:** Global niobium pricing is tightly controlled, 80% by CBMM. Price fluctuations or substitution by vanadium or tantalum could erode project margins and offtake appetite.

**REE Market Dynamics:** TREO markets are subject to Chinese export quotas, downstream processing bottlenecks and rapidly evolving magnet-grade supply chains. Demand forecasts may shift, impacting TREO valuation.

## Jurisdictional and Geopolitical Risks

**Foreign Ownership Constraints:** Brazilian law caps foreign mining ownership at 70%. While SGQ holds 100% of Araxá, future joint ventures or financing structures could be constrained by local-ownership requirements.

**Infrastructure and Supply Chain:** Although Araxá benefits from existing roads, rail links and renewable power, regional equipment imports, port congestion and competition for skilled labour may delay construction or ramp-up.

### Evolution Capital Pty Ltd

Level 8, 143 Macquarie Street Sydney, NSW 2000

Tel: +61283792960

[www.eveq.com](http://www.eveq.com)

## Disclaimer & Disclosures

Evolution Capital Pty Ltd (ACN 652 397 263) is a corporate Authorised Representative (number 1293314) of Evolution Capital Securities Pty Ltd (ACN 669 773 979), the holder of Australian Financial Services Licence number 551094. The information contained in this report is only intended for the use of those persons who satisfy the Wholesale definition, pursuant to Section 761G and Section 761GA of the Corporations Act 2001 (Cth) ("the Act"). Persons accessing this information should consider whether they are wholesale clients in accordance with the Act before relying on any information contained. Any financial product advice provided in this report is general in nature. Any content in this report does not take into account the objectives, financial situation or needs of any person, or purport to be comprehensive or constitute investment advice and should not be relied upon as such. You should consult a professional adviser to help you form your own opinion of the information and on whether the information is suitable for your individual objectives and needs as an investor. It is important to note that Evolution Capital, or its agents or representatives, engaged and received a financial benefit by the company that is the subject of the research report. The financial benefit may have included a monetary payment or certain services including (but not limited to) corporate advisory, capital raising and underwriting. In addition, the agent or representative drafting the advice may have received certain assistance from the company in preparing the research report. Notwithstanding this arrangement, Evolution Capital confirms that the views, opinions and analysis are an accurate and truthful representation of its views on the subject matter covered. Evolution Capital has used its best endeavours to ensure that any remuneration received by it, or by an agent or representative, has not impacted the views, opinions or recommendations set out in this research report. The content of this report does not constitute an offer by any representative of Evolution Capital to buy or sell any financial products or services. Accordingly, reliance should not be placed solely on the content of this report as the basis for making an investment, financial or other decision.

Recipients should not act on any report or recommendation issued by Evolution Capital without first consulting a professional advisor in order to ascertain whether the recommendation (if any) is appropriate, having regard to their investment objectives, financial situation and particular needs. Any opinions expressed are subject to change without notice and may not be updated by Evolution Capital. Evolution Capital believes the information contained in this report is correct. All information, opinions, conclusions and estimates that are provided are included with due care to their accuracy; however, no representation or warranty is made as to their accuracy, completeness, or reliability. Evolution Capital disclaims all liability and responsibility for any direct or indirect loss, or damage, which may be incurred by any recipient through any information, omission, error, or inaccuracy contained within this report. The views expressed in this report are those of the representative who wrote or authorised the report and no part of the compensation received by the representative is directly related to the inclusion of specific recommendations or opinions. Evolution Capital and / or its associates may hold interests in the entities mentioned in any posted report or recommendation. Evolution Capital, or its representatives, may have relationships with the companies mentioned in this report – for example, acting as corporate advisor, dealer, broker, or holder of principal positions. Evolution Capital and / or its representatives may also transact in those securities mentioned in the report, in a manner not consistent with recommendations made in the report. Any recommendations or opinions stated in this report are done so based on assumptions made by Evolution Capital. The information provided in this report and on which it is based may include projections and / or estimates which constitute forward-looking statements. These expressed beliefs of future performance, events, results, or returns may not eventuate and as such no guarantee of these future scenarios is given or implied by Evolution Capital. Any forward-looking statements are subject to uncertainties and risks that may mean those forecasts made by Evolution Capital are materially different to actual events. As such, past performance is not an indicator of future performance.