

Opinion

Globe has successfully established a significant niobium resource in Malawi at a very modest cost, and initial indications are that the project will be economically viable. However, the company faces the task of securing long term contracts in an environment where existing niobium producers have the capacity to increase production, and both debt and equity are in short supply.

Investment data

ASX Code	GBE
Share price (21 Apr 2009)	\$0.175

Issued capital

FPO Shares	68.4 m
Unlisted Options	3.4m
Market Cap (fully diluted)	\$12.6m

Shareholders

Major Shareholders	
Mark Sumich (MD)	9.3%
TPG-Axon	8.9%

Top 20 Shareholders ~55%

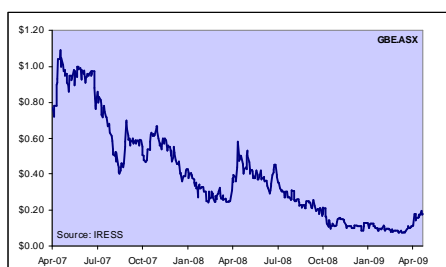
Cash Reserves

Cash Balance (31 Mar, est)	\$3.7m
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Directors

David Sumich	Chairman
Mark Sumich	Managing Director
Julian Stephens	Executive Director

Share price performance



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Developing a niobium project in Malawi

Globe Metals & Mining is an African based specialty metals and uranium resource company. Its main focus is the multi-commodity (niobium, tantalum, zircon and uranium) Kanyika Project in Central Malawi, where a maiden inferred JORC resource was announced in March 2008. Following the successful completion of a scoping study in June 2008, a pre-feasibility study was commissioned in September 2008. The company has a number of other projects, mainly uranium, in Malawi.

Increase in resources and recent progress

- Ø A 70% increase in the high grade resource at Kanyika was recently reported. The high grade resource now stands at 24Mt at a grade of 0.38% Nb₂O₅. This higher grade material is contained within an overall resource of 55.3Mt at 0.30% Nb₂O₅.
- Ø Around 35% of this resource has been upgraded to the Indicated Category, which should improve confidence levels with investors, potential partners and off-take customers. There is sufficient higher grade material available for the first ten years of mining.
- Ø In late March, the company announced that formal discussions had commenced with the Malawi Government. This included presentations to senior representatives of various government departments. Formal discussions and negotiations will recommence in June 2009 after national elections in May. The recent development and official opening of Paladin's Kayelekera uranium mine is seen as a positive.

Programme for the remainder of 2009

- Ø Metallurgical test work is a major priority. Results are due by September 2009 and should demonstrate an ability to produce FeNb.
- Ø Completion of the pre-feasibility study is due later in 2009. This should improve accuracy levels from the ±30%-50% to ±20%-25%. On-going discussions with potential partners and off-take customers, as well as discussions with the Malawi Government remain key events in 2009. The company has indicated that the December 31 cash balance of \$4.6m would be adequate to cover 2009 expenditure.

The challenges ahead

- Ø Upon successful completion of the pre-feasibility study, the next step would be a definitive or bankable feasibility study. The company has not indicated the cost but it is unlikely to be less than US\$5m. This would require some form of equity raising.
- Ø Assuming the project is viable, the company's main challenge is then to secure financing. In the current credit environment, conventional debt financing of +US\$155m would be a formidable task. It would almost certainly require Globe to secure off-take agreements for a significant proportion of niobium metal production, given that around 95% of global ferro-niobium is sold under long term contacts.
- Ø The most likely source of finance would therefore appear to be off-takers, metal trading houses or Chinese investment groups, or any combination thereof. This could be in the form of investment in Globe or through a direct investment in the project. In the absence of project finance on reasonable terms and conditions, a dilution of existing shareholders may be the preferred option.
- Ø Domination of supply by three producers, all capable of increasing production, implies potential difficulties in breaking into the niobium market without secure off-take arrangements. The flipside is that limited choice of supply could result in potential customers supporting new entrants. An absence of Chinese domestic production may further encourage new entrants.
- Ø Globe has indicated that it could be in production by 2012. Given the uncertainties in the current market, particularly relating to raising equity and debt, Lonsec is not prepared to nominate a potential production start up date for the project at this stage.

The Kanyika Project and Niobium at a Glance

- Kanyika is described as a multi-commodity resource that is dominated by niobium. Other commodities include uranium, tantalum and zircon. Although described as multi-commodity, Lonsec believes that initially more than 90% of sales revenue will be derived from niobium, making it a niobium mine.
- Niobium supply is dominated by three mines which collectively supply more than 85% of the world's niobium needs (the remainder is largely tantalum by-product). The largest, CBMM in Brazil, alone accounts for 70% of world supply, has a 250m thick ore body, free-digging open pit operation, a grade more than 6x that of Kanyika higher grade material and reserves believed to be sufficient to supply current world demand for 500 years. In addition, it is planning to increase productive capacity by almost 80% by 2013. The other mines also have the capacity to increase production.
- Kanyika is a reasonable-sized deposit capable of supporting a +20 year mine life. The ore body appears to be robust; mineralisation appears to be well defined with strong continuity both along strike and down dip. As a result, resource definition is not seen as a major risk.
- The current high grade resource is 24.0Mt at a grade 0.38% Nb₂O₅, containing 91,170 metal tonnes. Grades of the other metals are 100 ppm U₃O₈, 174ppm Ta₂O₅ and 0.56% ZrSiO₄. This higher-grade component is contained within an overall resource of 55.3Mt at a grade of 0.30% Nb₂O₅, 80 ppm U₃O₈, 140 ppm Ta₂O₅ and 0.50% ZrSiO₄.
- The scoping study completed in June 2008 was based on annual production rates of between 3,000tpa and 4,000tpa niobium in ferro-niobium. Mining is by conventional open pit means, with low waste:ore ratios. Proposed treatment is by an established process (which will nevertheless require substantial additional test work and possibly pilot plant studies), with only ferro-niobium (containing a little tantalum) and zircon initially being recovered. The initial capital cost was estimated at between US\$156m and US\$177m, with on-going capex, over a 20-year period, of between US\$180m and US\$201m. Unit operating costs (excluding royalties) were estimated at US\$25/t. Almost 70% of these costs relate to processing. The accuracy of estimates is ±30% for mining costs and ±50% for all other items.
- Malawi is seen as one of the lower risk African countries. Major projects include Paladin's Kayelekera uranium mine, while several Australian, Canadian and UK listed companies are actively exploring.
- Niobium is a steel strengthening agent. For example, around US\$4 worth of niobium used in the manufacture of a mid-sized vehicle allows a 100kg savings in the weight of steel used. The markets for niobium products are not particularly transparent. The bulk of the niobium is sold in the form of ferro-niobium and around 95% of this is sold under long term contracts.
- The main uses of niobium are in high strength, low-alloy steel and stainless and high strength steels (bridges, buildings, car bodies, oil and gas pipelines), super alloys (jet engines, aerospace, turbines), superconductors and solid electrolytic capacitors. Main substitutes are vanadium and molybdenum for HSLA steels, titanium and tantalum for stainless/high strength steels, tantalum, molybdenum and tungsten for high temperature applications and more recently, aluminium in the automotive industry.
- Annual consumption is around 65,000t with 85% of this consumed by the steel industry – 10% of all steel products contain niobium as an additive.
- The current ferro-niobium price of around US\$47/kg is around 19% below the all time high of approximately US\$58/kg. The price was stable at around US\$16/kg from 2001 to 2007 before rising sharply in response to increased demand from the steel industry. An important guide will also be its price relative to readily available substitutes (vanadium, molybdenum, titanium, tantalum, tungsten).
- The company has appointed A & M Minerals as its marketing adviser. A & M is a London-based specialised trading company with offices in New York, Hanoi and Sao Paulo, which focuses on tantalum, niobium, tungsten and tin minerals. In February, Globe announced that it has entered into a Memorandum of Understanding (MOU) for the supply of 500t of Nb₂O₅ (which equates to 350t of niobium metal) or around 12% of planned production. Whilst this is a good start, it is not a binding agreement and is not a substitute for an offtake agreement.

Background

Globe Metals & Mining Limited (GBE, formerly Globe Uranium Limited) listed on the ASX in December 2005. Initially seeking uranium in Africa, and particularly in Malawi, the company had significant initial exploration success although it soon became apparent that the company's flagship project, the Kanyika project in central Malawi, was a multi-commodity deposit with niobium as the dominant mineral. After a successful drilling programme, the company announced a maiden inferred resource in March 2008 and immediately commissioned Coffey Mining to complete a scoping study. The results of this study, released in June 2008, concluded that the operation was potentially viable and a pre-feasibility study was commissioned in September 2008. This PFS, together with further metallurgical test work, is expected to be completed during calendar 2009. It will be followed by a full feasibility study, which, if successful, would lead to initial production by 2012.

The company also has a number of other uranium prospects in Malawi, which it manages from its regional exploration office in Lilongwe, Malawi.

Geology and Mineral Resource Estimates

From information to date, the mineralisation appears to be well defined and continuity, both along strike and down dip, does not appear to be a problem.

The current JORC-compliant indicated and inferred resource is 55.3Mt containing 166,000t of Nb₂O₅, 4,430t of U₃O₈, 7,750t of Ta₂O₅ and 276,600t of zircon. Grades for the individual minerals are 3,000ppm (0.30%) Nb₂O₅, 80ppm for uranium, 140ppm for tantalum and 5,000ppm (0.50%) for zircon. Contained within this resource is a near-surface, higher grade component of 24.0Mt at a Nb₂O₅ grade of 0.38% (plus higher uranium, tantalum and zircon grades) containing 91,170t of Nb₂O₅.

Due to the fairly robust nature of the ore body, the effects of dilution when converting resources should be minimised.

Scoping Study

The scoping study completed by Coffey Mining Pty Ltd considered two levels of production of contained niobium metal (Nb) in a ferro-niobium alloy (FeNb), being 3,000t/year and 4,000t/year. This involved treatment rates of between 1.7Mtpa and 3.5Mtpa over a twenty year period. A head grade of 2,500ppm (0.25%) Nb₂O₅ (roughly equivalent to the resource grade) was used for all cases. Metallurgical recovery rates were based on test work performed by SGS (Lakefield, Canada) and averaged 65.9% for tantalum, 72.9% for niobium and 85% for zircon, all to the concentrate stage, with a further 10% loss in downstream metal recovery.

The study was carried out with an order of accuracy of ±30% for mining costs and ±50% for all other items.

Mining

As most of the large tonnage operation is near surface, material would be mined by conventional open pit methods – drill and blast followed by load and haul. The company has indicated that bench configuration and mobile equipment would be standard. In addition, the strip (waste:ore ratio) of between 0.5 and 0.9 is very low, which should ensure that overall mining costs are relatively low. Cost estimation is subject to less uncertainty than in other areas; Lonsec is therefore comfortable with the mining risks of the project.

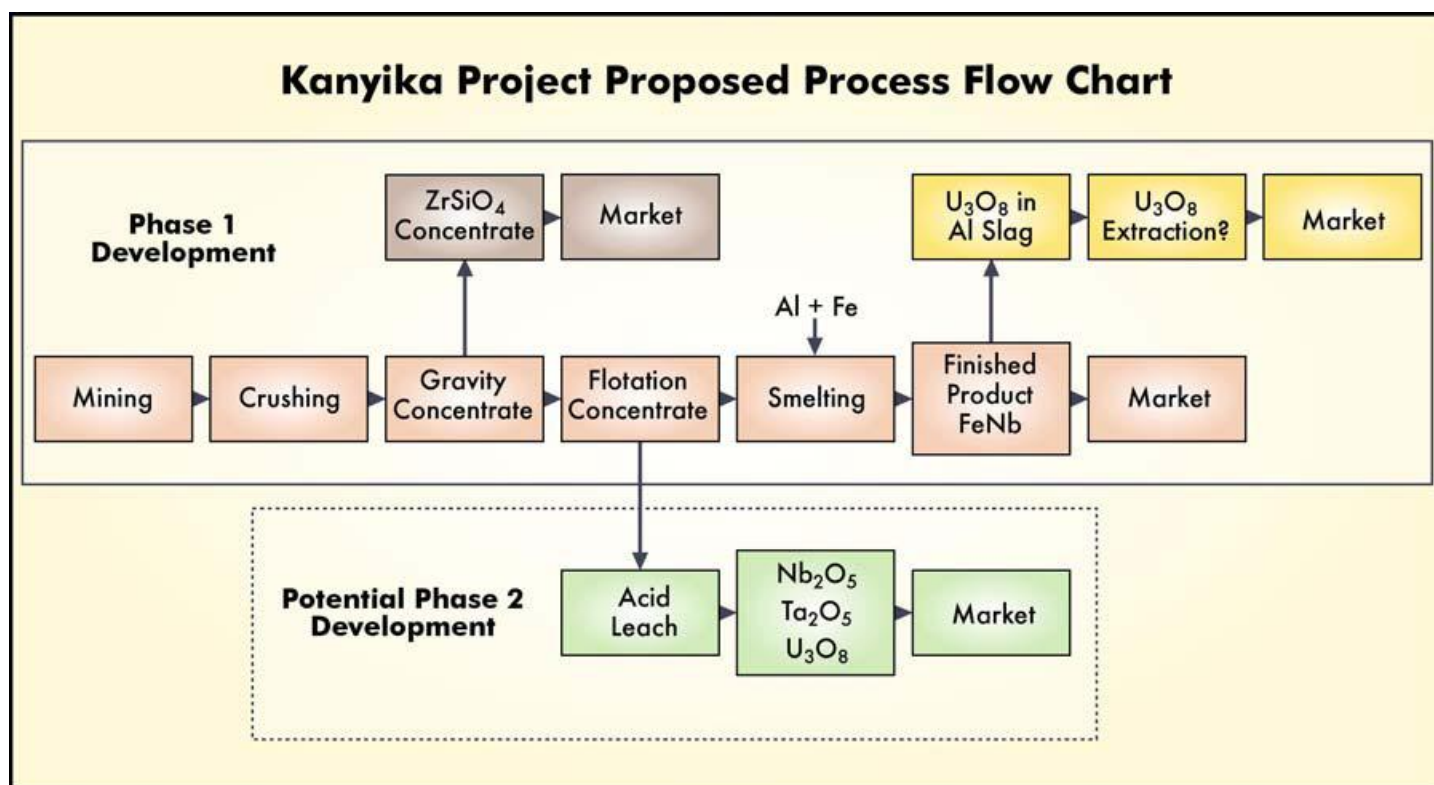
Production will also be subject to the granting of a mining lease, although this is unlikely to be a problem given that Paladin's Kayelekera uranium mine in Malawi has been successfully developed.

Processing

The schematic process flowchart is shown below. Based on the Initial Phase 1 flowchart, the main stages of processing are:

1. crushing
2. gravity concentration to remove some of the gangue minerals as well as producing a zircon concentrate
3. flotation to produce a pyrochlore concentrate containing approximately 25% niobium oxide and around 1% of tantalum oxides

4. smelting, whereby aluminium and iron are added (in a process known as aluminothermic reduction) to produce ferro-niobium, with lesser amounts of tantalum. The uranium separates into an alumina-dominant slag - no uranium recovery is envisaged initially.



Source: *Globe Metals & Mining June Quarter 2008 Activities Report*

In its initial phase (on which the scoping study is based), only ferro-niobium (containing some tantalum) and zircon would be produced. The potential Phase 2 development would incur considerable additional costs.

Producing niobium pentoxide (Nb₂O₅) concentrates and converting to ferro-niobium through the aluminothermic reduction smelting process is an established process, which has been successfully used at both Catalão in Brazil and the Niobec Mine in Quebec, Canada since 1993.

In terms of metallurgical recovery, the scoping study has suggested 72.9% to the concentrate stage followed by 90% downstream recovery or an overall recovery around 65%. While metallurgical recoveries are largely dependent on the mineralogy of the individual ore body, this recovery appears to be roughly in line with the recovery at Niobec, which ranges between 60% and 64%. However, according to the expected niobium metal production in the scoping study, back-calculated overall recovery is around 70%.

Product Sales and Markets

In the initial years, Globe would be selling ferro-niobium (with some tantalum) and zircon. As the spot market accounts for only about 5% of ferro-niobium sales, it would be absolutely imperative for Globe to procure offtake agreements for the bulk of its sales before development of the Kanyika deposit begins. The company has recently announced that it had signed a Memorandum of Understanding (MOA) with a potential customer being “an in-principle desire to purchase from Globe Metals & Mining on a long-term contract basis 500t/year Nb₂O₅”. Whilst this is a start, it only represents between 12% and 17% of Globe’s potential annual production.

There are currently only three producers of niobium of any significance: Companhia Brasileira de Metalurgiã e Mineracao (CBMM) and Anglo American Brasil Mineração Catalão (Catalão) both in Brazil and the previously-mentioned Niobec mine in Canada (for details, see Appendix 1: What is Niobium?). CBMM is the largest by a considerable margin and has become much bigger in the past few years. From 45,000tpa FeNb in 2004, plant capacity reached 84,000t in 2008 and is set to rise to 100,000t in 2009 and to 150,000t by 2013. The company has a 60 to 70 percent market share. Production at both Catalão and Niobec are also expected to increase. Apart from these existing producers, there is little other than Kanyika on the production horizon.

Prices

Like tantalum, the pricing of niobium (also referred to as columbium), both on a spot or contract basis, is not particularly transparent. Access to daily or weekly spot prices is not readily available except on a subscription basis. Quoted prices are for niobium oxide (Nb_2O_5) and ferro-niobium (FeNb). A vast range of value-added niobium products, including pure niobium, are also produced.

The benchmark price for Brazilian ferro-niobium actually rose by between 5% and 12% from the previous quarter to US\$43-US\$46/kg contained Nb in the December 2008 quarter. Prices for the March 2009 quarter appear to be 2% to 11% higher. However, some niobium products fell sharply. Columbite, a form of raw niobium product containing a minimum of 50% Nb_2O_5 and min 5% Ta₂O₅, fell from US\$20/lb combined Nb/Ta pentoxide) to US\$10/lb over the course of the quarter.

The relatively stable price of niobium tends to differentiate it from other potential substitutes but the price stability is largely due to the fact that the largest supplier effectively controls the market and that the niobium is mainly sold on a contract basis.

Capital Cost

Scoping study capital cost estimates ranged from US\$156m to US\$177m for the 3,000t/year and 4,000t/year of niobium metal cases respectively. It must be stressed that with the exception of mining, all costs are to an accuracy of $\pm 50\%$. In addition, ongoing capital cost expenditure, over a 20-year period, is expected to range between US\$180m and US\$201m. This would apparently cover processing plant upgrades, should the company pursue the Phase 2 Development Option producing niobium, tantalum and uranium oxides. Based on a 20-year mine life and annual treatment rate of 1.7Mt, initial capital would add approximately US\$5 to the unit cost/tonne treated.

Operating Cost

The unit operating cost estimate for the 1.7Mtpa treatment option is marginally below US\$25/t treated. Almost 70% (US\$17.18/t milled) of these are related to processing, which probably means the lowest confidence in estimates. Power (US\$6.60/t milled) is the single largest cost. Unit processing costs do not appear to benefit significantly from economies of scale, a 2.7x increase in treatment capacity resulting in only a 20% reduction in unit costs.

Appendix 1: What is Niobium?

Summary

- Ten percent of all steel products contain niobium as an additive, around 85% of all niobium is used in the steel industry and world consumption has grown by 20% per annum over the past five years.
- Supply is dominated by three mines which collectively supply more than 85% of niobium products.
- Principal uses are in high strength, low-alloy steels (HSLA), super alloys, superconductors and solid electrolytic capacitors. The main substitutes are vanadium and molybdenum for HSLA, titanium and tantalum for stainless and high strength steels and ceramics, tantalum, molybdenum and tungsten for high temperature applications.

Uses

- High-strength low-alloy steels (HSLA) and stainless steels. Ferro-niobium is used as an additive for HSLA and stainless steel for bridges, buildings, oil and gas pipelines, car and truck bodies, tool steels and railroad tracks. The niobium imparts a doubling of strength and toughness.
- Super-alloys: Used in jet engine components, the aerospace industry, turbines and heat resisting and combustion equipment.
- Superconductors: niobium-titanium and niobium-tin alloys are used for building superconducting magnets for MRI (medical diagnostics) and particle physics research equipment.
- Solid electrolytic capacitors: a relatively new application, used in high cost electronic applications (e.g. notebooks, automotive, flat-panel TVs) to improve reliability, mainly replacing traditional aluminium applications, and potentially as an alternative to tantalum capacitors in the future.
- Other applications include use as an additive to glass to attain a higher refractive index for corrective optical lenses, anodized for use in jewellery, medical devices such as pacemakers, surface acoustic wave filters and coating on glass for computer screens.

Substitutes are:

- Ø HSLA steels: vanadium and molybdenum.
- Ø Stainless and high strength steels: titanium and tantalum.
- Ø High temperature applications: ceramics, tantalum, molybdenum and tungsten.
- Ø More recently, niobium-alloy steels for the automotive industry (which constitute a significant proportion of consumption), have come under pressure from aluminium as the move to make lighter motor vehicles intensifies.

Supply

Three mining operations currently produce more than 85% of the world's niobium products. Most of the output is in the form of ferro-niobium. Detailed supply details are not readily accessible. The table below gives some indication of ferro-niobium and niobium metal production over the past two years.

By far the largest producer (accounting for two thirds of world production) is the mine located near the city of Araxa, Minas Gerais, Brazil, which is owned and operated by privately-owned Companhia Brasileira de Metalurgia e Mineração (CBMM). CBMM has continuously expanded its production capacity over the past few years. Installed capacity to manufacture ferro-niobium increased from 45,000t in 2004 to the current 70,000t. A further expansion will be conducted in 2008 to reach 90,000t of ferro-niobium (or around 54,000t of niobium oxide, Nb₂O₅). The open pit ore is up to 250m thick, is free digging and has an average grade of between 2.5% and 3.0% Nb₂O₅. The reserves are believed to be sufficient to supply current world demand for 500 years.

Another mine in Brazil is owned and operated by Anglo American Brasil Mineração Catalão (Catalão), a subsidiary of Anglo American plc. This deposit is reported to contain 18Mt of ore at a grade of 1.34%, containing around 240,000t of niobium oxide. The plant has a capacity in excess of 1Mtpa, with the ability to produce around 14,000tpa of pyroclure concentrate, 7,500t of FeNb containing 4,800t of Nb metal.

The third major producer is the Niobec Mine in Quebec, Canada. The mine produces niobium oxide concentrate, which is converted on site into a standard grade ferro-niobium grading 66% niobium. Production in 2007 was 4,300t, which amounts to approximately 7% of world production. Sales revenue totalled US\$107.8m, the realised price increasing by 38%. The operation contributed operating cash flow of US\$48.9m and the capital expenditure was US\$20.4m. Ore reserves are believed to total around 18,000t.

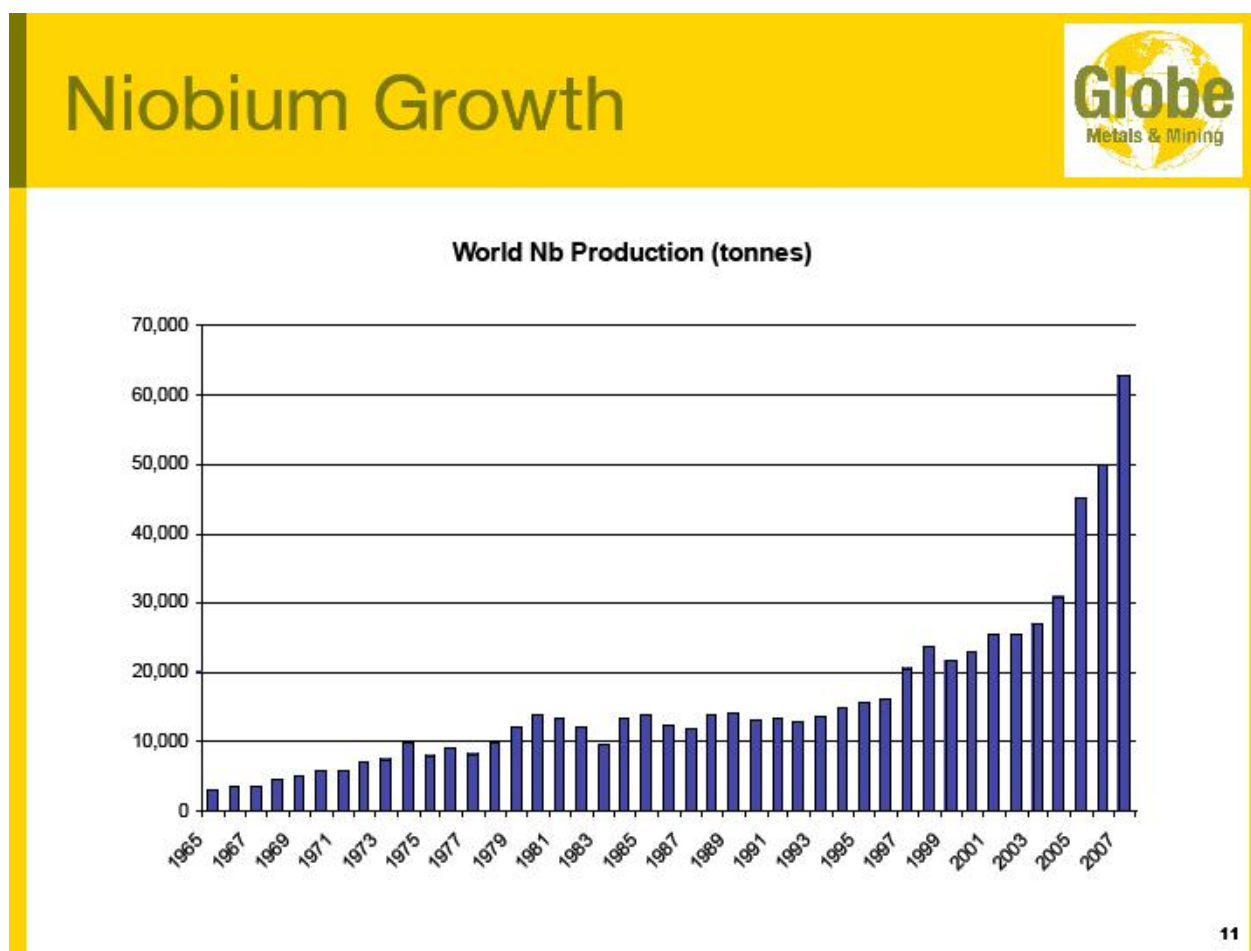
Niobium is also produced as a by-product of tantalum.

World Niobium Supply

	Ferro-niobium (FeNb) - t		Niobium (Nb) - t	
	2006	2008E	2006	2008E
CBMM	55,640	72,000	40,729	51,720
Catalão	7,340	7,580	4,845	5,000
Niobec	6,300	6,515	4,175	4,300
Other			5,528	6,780
Total	69,280	86,095	55,277	67,800

Source: DNPM, IamGold, Tantalum-Niobium International Study Centre, Roskill Metals & Minerals, Lonsec estimates.

Demand



Source: Globe Metals & Mining

- By the end of 2007, niobium consumption had grown by an average of 20% per annum over the previous five years.
- The position for 2008 is currently not clear. In Q4 2008, there was a significant drop in traded volumes as a result of the global financial crisis, spot price volatility and diminished demand. This forced many operators to supply from existing inventories. Withdrawal of previously available credit has impaired restocking and permanent casualties within the supply chain are inevitable as a result of the upheaval.

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Date Prepared: 23 April 2009
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