# Globe Metals & Mining

#### **Investor Update**





Africa Down Under Conference – Perth, Australia

2 September 2010

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## **Investor Highlights**

#### Kanyika Niobium Project (GBE: 100%)

- Production of ferro-niobium (FeNb) to commence in 2013 (+Ta credits)
- Updated financial forecast (Sept. 2010) confirms project economics

#### Machinga Rare Earth Project (GBE: up to 80%)

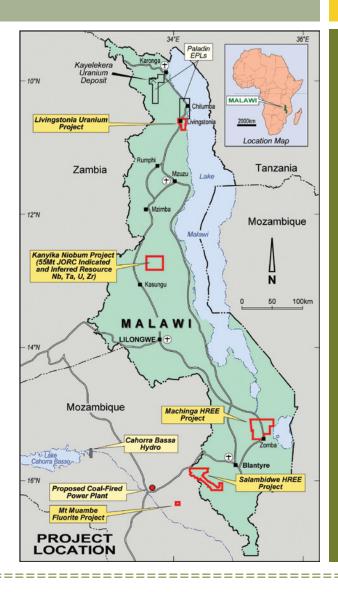
- 7 REE targets over 935sqkm EPL
- 1,500m maiden drill program underway results due mid – Sept. 2010

#### Mount Muambe Flourite Project (GBE: up to 90%)

- Ultra high-grade flourite target 6km diameter carbonatite crater
- □ 1,000m drill program to commence Sept. 2010

#### **Corporate Overview**

- 94 million shares on issue market cap. A\$17m
- □ A\$2.9m cash @ 30 June 2010

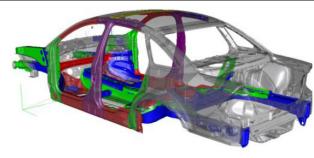




#### Niobium







#### Ford Five Hundred

 Green:
 HSLA 250

 Blue:
 HSLA 350

 Yellow:
 HSLA 550

 Red:
 DP 600

 Purple:
 Inner: Top DP600 / Bottom HSLA 250 Outer: Top DP600 / Bottom Mild Steel

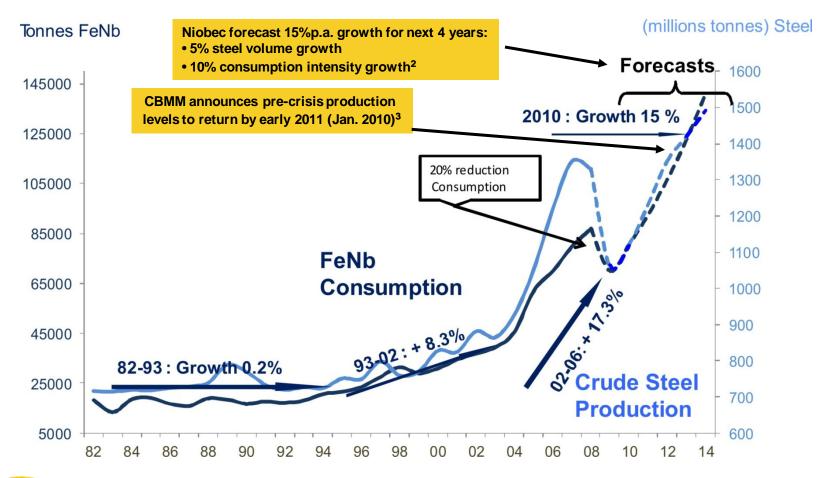




4kg of niobium used in the manufacture of a mid-sized vehicle would save 100kg of steel, which would translate into fuel savings of half a litre per 100km<sup>1</sup>

1. "Niobium Demand, Price Stays High, Despite Steel Weakness", *Mining Weekly.com*, 7 November 2008

### Niobium Market Size and Growth



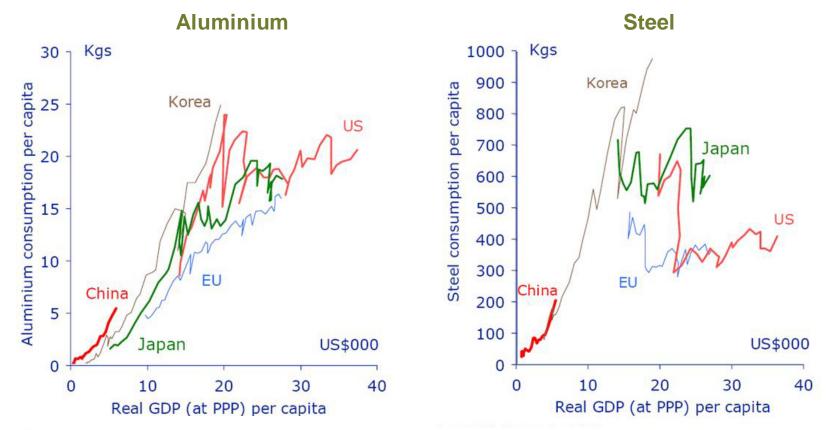
Source: 1,2. IAMGOLD, "Niobec Tour Presentation", June 2009; 3. Metal Pages, 7 January 2010.



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#### Steel Growth

#### Metal consumption and GDP per capita, 1965-2005





### Niobium Key Facts

- >90% niobium consumed by the steel industry (as FeNb)
- Niobium a micro-alloyer; standard addition of 3.5 5.0 grams/tonne to molten steel acts as a grain refiner, encouraging the formation of a micro-structure that adds toughness, corrosion resistance, tensile strength, formability, and strength
  - Increasing "consumption intensity" of niobium in steel:

"The growth in consumption of niobium...has resulted from both the overall growth in total steel consumption and a shift from mild steels to higher quality steels, which often contain niobium. Worldwide, in 2008 the unit consumption of niobium in steel was around **55-60g/t** of steel produced. In the most **highly developed countries the figure was 100g/t** or more, whereas in **China only around 40g/t** were consumed. There would appear, therefore, to be significant potential for the increased use of niobium in this end-use market."

"In 2008, ferro-niobium was used in about 10% of total steel production. There is good potential for that figure to grow, perhaps to as much as 20%, as higher-quality steels continue to replace mild steel in a number of applications." (Roskill)

- FeNb price historically very stable benefits suppliers and consumers
- FeNb a small % cost input to steel mills
- Globe's production of 3,000tpa niobium to represent 3-4% market share (or 4 months of one year's growth in market size)

#### "The best substitute for steel is better steel"

## Kanyika Niobium Project

21Mt High-Grade (3,000ppm cut-off)					
Category	Mt	Nb <sub>2</sub> O <sub>5</sub>	Ta <sub>2</sub> O <sub>5</sub>	U <sub>3</sub> O <sub>8</sub>	
Measured	3	5,400	250	160	
Indicated	7	4,400	200	110	
Inferred	11	3,600	160	90	
Total	21	4,100	180	110	

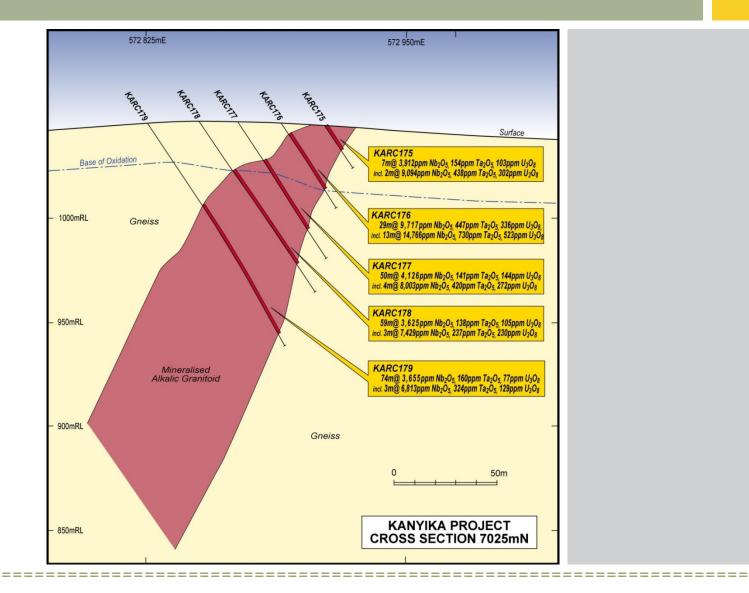
Updated JORC resource estimate released June 2010 - total 60Mt: 5Mt Measured, 18Mt Indicated and 37Mt Inferred (@ 1,500ppm Nb<sub>2</sub>O<sub>5</sub> cut-off)

- Grade targeted for first ~7 years mining 4,700ppm Nb<sub>2</sub>O<sub>5</sub>
- 100-110Mt exploration target (incl. 40-50Mt high grade @ 3,700-4,000ppm)
- Production: 3,000tpa Nb (70-85% revenue); and 192tpa Ta<sub>2</sub>O<sub>5</sub> (15-30%)
- 1.5-2.5Mtpa mill feed; open cut with low strip ratio
- Project currently in feasibility stage
- Commencement of production scheduled for 2013
- >20 years mine life potential



Clause 18 of the JORC Code requires inclusion of a statement that the potential quantity and grade of the Exploration Target (excluding that portion already drilled and classified into JORC Indicated and Inferred Resource categories) is conceptual in nature, that there has been insufficient exploration to define additional Mineral Resources and that it is uncertain if further exploration will result in the determination of any additional Mineral Resources.

### Kanyika Section





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### **Updated Financial Forecast**

- Completed September 2010, incorporating new JORC resource
- Confirms positive economics and project viability:
  - □ US\$187 NPV (@ 10% discount rate)
  - IRR 27%
  - □ Capex. US\$155m (+ US\$31m contingency)
  - Capital payback period 3 years (including yr.1 production ramp-up to name plate volumes)
  - Annual revenue US\$170m

#### Key assumptions:

- Fixed 3,000tpa niobium metal output, plus tantalum credits
- □ Same "deal" with Government of Malawi as Paladin/Kayelekera: 15% GoM project equity for fiscal trade-offs incl. VAT and fuel excise exemption and income tax and royalty reductions
- □ FeNb price of US\$44.5/kg ctd. metal (current spot China "60-B")
- □ Ta<sub>2</sub>O<sub>5</sub> price US\$180/kg (current spot US\$230/kg)
- □ Blended diesel/hydro power @ \$0.21/kwh (12-14MW)
- Uranium revenue and expense excluded



### **Project Upside**

Price: FeNb historically stable, with incremental rises. Major producers planning significant capacity expansion to meet growing demand, which must be funded.

#### Products:

- Within existing flowsheet: niobium oxide
- □ Additional potential products: high-grade magnetite, zircon, uranium and feldspar

#### Power:

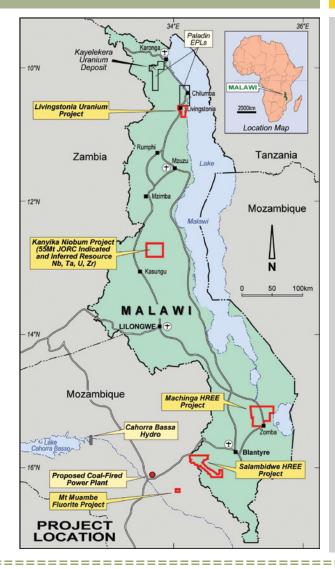
- Reduction in total usage
- □ Access to reliable grid power (via Mozambique interconnector or Malawi hydro expansion)
- **Capex**: third party estimates for downstream refinery built in China less US\$20m
- Process Flowsheet: major opportunity from optimisation program to significantly improve recoveries and reduce operating costs
- **Exploration**: additional high-grade material (~4,000ppm Nb<sub>2</sub>O<sub>5</sub>) from within the identified exploration target will further enhance economic returns
- **Pit Optimisation**: existing financial forecast does **NOT** include fully optimised pits, maximising the mining of high-grade material in the initial years



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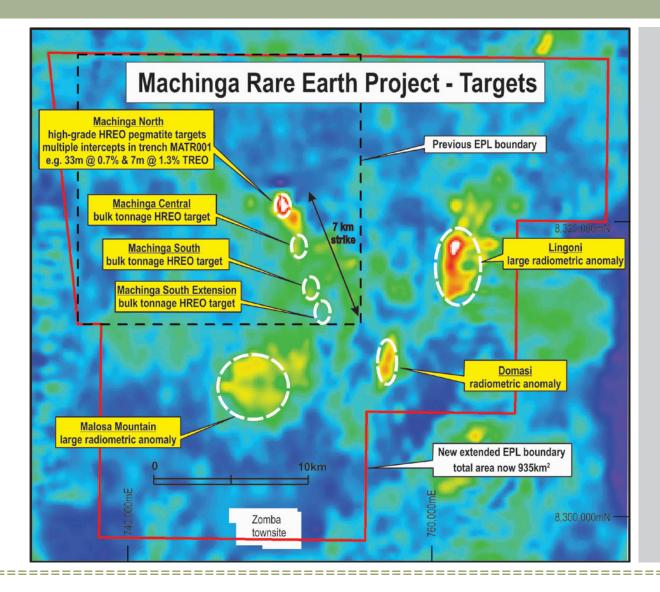
## Machinga Rare Earth Project

- Globe earning up to 80% from Resource Star Ltd (ASX: RSL)
- 7 REE targets over 935sqkm EPL
- 1,500m maiden drill program underway results due mid-Sept. 2010
- China dominates REE production: >95%
- China continually reducing export quotas to protect domestic demand
- High ratio of HREO: TREO (up to 34%) HREO prices up to 100x LREO prices
- Main HREO is dysprosium
- Significant niobium and tantalum values
- Eudialyte identified as main REE mineral common HREO ore mineral
- Malawi one of the few recognised REE provinces





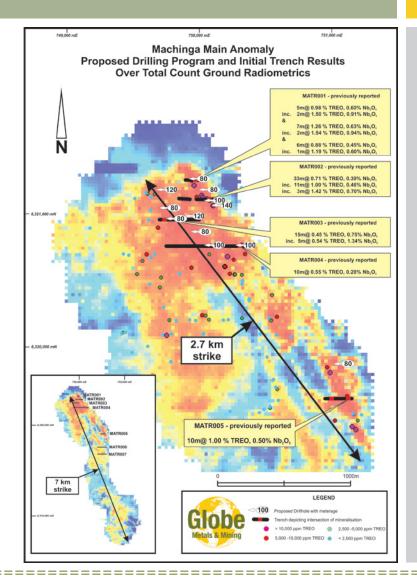
### Machinga Targets





## Machinga Trench Results

- 7m @ 1.26% TREO & 0.63% Nb<sub>2</sub>O<sub>5</sub> (T1)
- 33m @ 0.71% TREO & 0.40% Nb<sub>2</sub>O<sub>5</sub> (T2)
   Inc.11m @ 1.00% TREO & 0.46% Nb<sub>2</sub>O<sub>5</sub>
- 10m @ 1.00% TREO & 0.50% Nb<sub>2</sub>O<sub>5</sub> (T5)
- 15m @ 0.45% TREO & 0.75 Nb<sub>2</sub>O<sub>5</sub>(T3)
   Inc. 5m @ 0.54% TREO & 1.34% Nb<sub>2</sub>O<sub>5</sub>
- First 5 trenches in Machinga North 2.7km strike length





### Heavy Rare Earths

"...the most important of all the rare earths are the magnet metals – the big four: neodymium and praeseodymium (light REEs) and dysprosium and terbium (heavy REEs). These four metals, in varying proportions, make up the critical materials in 90% of rare earth permanent magnets made and used today."

"... in Beijing...at the Chinese Society for Rare Earths 6th Annual Rare Earths' Summit stated that a goal of the next two five-year plans, to be completed in 2020, was to have 330 GW of wind-turbine-generated electricity installed by that time...I will estimate that at most it would be one thousand tons of terbium and **three thousand tons of dysprosium**.

As to electric and hybrid cars, they require neodymium, dysprosium and terbium for the magnets in the rare earth permanent magnet electric motors – both that drive them and that power their accessories... The real issue for the future of rare earth utilization and therefore of mining, is the continued growth of the use and need for the heavy rare earths, terbium and dysprosium. These "heavy rare earths" are believed by the Chinese to be in short supply domestically. China today is the world's only producer of heavy rare earths ...China believes that its own domestic supply of the heavy rare earths has between five and 30 years remaining at present levels of use."

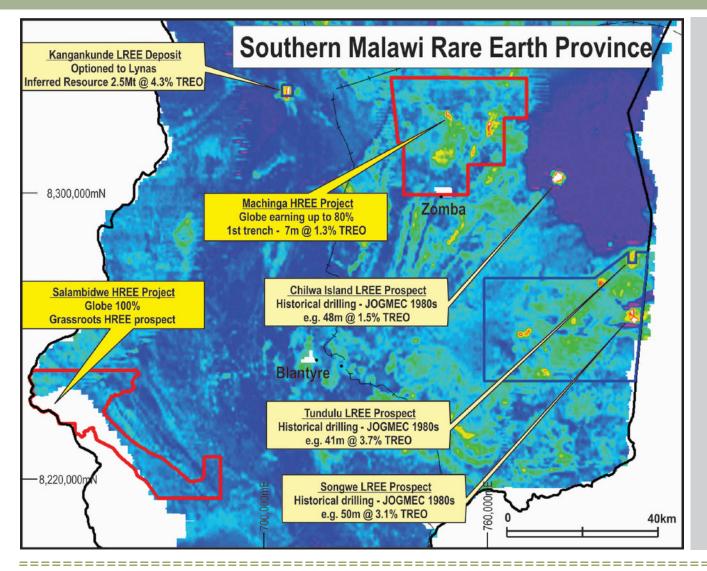
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Prices for dysprosium oxide, the most economically important HREO at Machinga, have risen dramatically over the past 12 months to ~US\$290/kg

Metal	Production (t)	Metal	Production (t)
Iron ore	2,300,000,000	Bismuth	7,300
Raw steel	1,100,000,000	Praseodymium	6,150
Pig iron	860,000,000	Gold	2,350
Aluminum	36,900,000	Dysprosium	2,000
Chromium	23,000,000	Selenium	1,500
Copper	15,800,000	Samarium	1,364
Zinc	11,100,000	Zirconium	1,230
Manganese	9,600,000	Gadolinium	744
Boron	4,500,000	Indium	600
Lead	3,900,000	Terbium	450
Nickel	1,430,000	Europium	272
Magnesium	570,000	Palladium	195
Strontium	420,000	Palatium	178
Tin	307,000	Germanium	140
Molybdenum	200,000	Gallium	78
Antimony	187,000	Rhenium	52
Cerium (REE)	62,992	Rhodium	30
Cobalt	62,000	Hafnium	25
Niobium	62,000	Tantalum	0
Tungsten	58,000	Holmium	Unknown
Vanadium	54,000	Erbium	Unknown
Uranium	35,332	Thulium	Unknown
Lanthanum	32,860	Ytterbium	Unknown
Silver	21,400	Lutetium	Unknown
Neodymium	19,096	Tellurium	Unknown
Cadmium	18,800	Scandium	Unknown
Lithium	18,000	Thorium	Unknown
Yttrium	8,900		

Sources: Jack Lifton, "North America Doesn't Need China's Rare Earths", The Gold Report, August 2010; Jack Lifton "The Green Revolution in China", Resouce Investor, August 2010

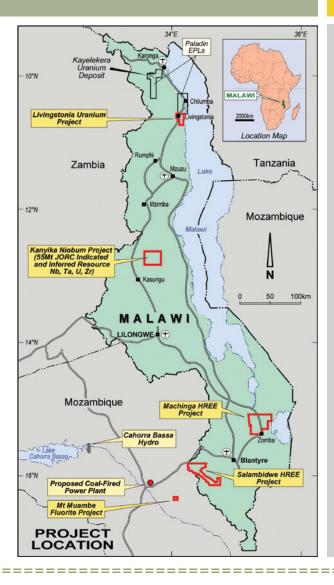
### Southern Malawi REE Province





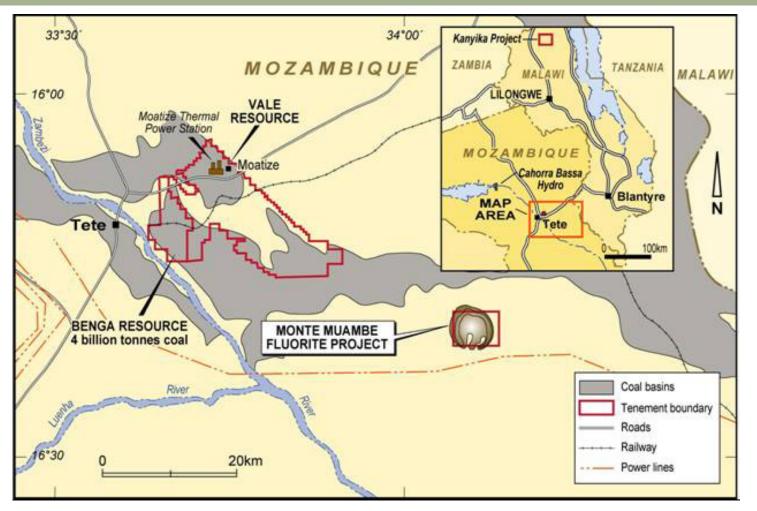
### Mount Muambe Flourite Project

- Globe earning up to 90%
- Very high-grade flourite potential:
  - Peak rock chip grade > 71% CaF<sub>2</sub>
  - Average grade of 26 samples 56% CaF<sub>2</sub>
- Maiden 1,000m drill program to commence Sept. 2010
- Area serviced by major power, road and rail infrastructure
- Historical metallurgical work demonstrates that concentrates of >97% CaF<sub>2</sub> can be produced
- Project area also prospective for REE, Nb and Ta
- China the largest producer and consumer of flourite seeking to protect its supply for domestic demand





### **Project Location**



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