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# Globe Metals & Mining Limited

## Investor Update



25 July 2011

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**Competent Person:** The contents of this report relating to geology and exploration results are based on information reviewed by Dr. Julian Stephens, Member of the Australian Institute of Geoscientists and Non-Executive Director for Globe Metals & Mining. Dr Stephens has sufficient experience related to the activity being undertaken to qualify as a "Competent Person", as defined in the 2004 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and consents to the inclusion in this report of the matters reviewed by him in the form and context in which they appear.



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# 1. Investment Highlights

- ✓ Well-developed project pipeline in Africa:
  - Kanyika Niobium Project (Malawi): definitive feasibility study due Q3 2012, production 2014.
  - Mount Muambe REE-Fluorite Project (Mozambique): resource due Q1 2012.
  - Livingstonia Uranium Project (Malawi): resource announced Q1 2011.
  - Machinga and Salambidwe REE Projects (Malawi): early stage exploration/drilling 2011.
- ✓ Niobium, REEs, tantalum and fluorite are all “strategic” commodities – limited and/or constrained supply, combined with critical technology/industrial applications.
- ✓ Strategic relationship with Chinese mining group, ECE:
  - Facilitate direct access to funding sources and customers/end-users.
  - “Chinese-enabled” project development and finance is likely to be significantly smoother and quicker in the post-GFC environment than conventional financing, especially for non-LME metals.
- ✓ A\$44m cash at bank.
- ✓ Ability to pursue advanced-stage opportunities as they arise.
- ✓ Established presence in the African mining community.

*Globe completed the ECE transaction in mid-April 2011. The Company is now well placed to advance its assets and build shareholder value.*



## 2. Corporate Overview

### Board of Directors

|                 |                         |
|-----------------|-------------------------|
| Shao Yi         | Chairman                |
| Mark Sumich     | Managing Director       |
| Julian Stephens | Non-Executive Director  |
| Tian Jingbin    | Non-Executive Director  |
| William Hayden  | Non-Executive Director  |
| Jianrong Xu     | Non-Executive Director  |
| Youyu Zhang     | Non-Executive Director  |
| Peter Stephens  | Non-Executive Director  |
| David Sumich    | Non-Executive Director  |
| Bradley Wynne   | CFO & Company Secretary |

### Ownership Structure

|                        |       |
|------------------------|-------|
| ECE                    | 52.8% |
| Directors & Management | 5.0%  |
| Other Top 20           | 14.2% |
| Other                  | 28.0% |

### Management

|                 |                              |
|-----------------|------------------------------|
| Mark Sumich     | Managing Director            |
| Bradley Wynne   | CFO & Company Secretary      |
| Les Middleditch | Kanyika Project Manager      |
| David Tullberg  | Chief Geologist              |
| Skye Gilligan   | Marketing Manager            |
| Andries Kruger  | General Manager – Africa     |
| Lisungu Banda   | Senior Accountant, Malawi    |
| Michael Schultz | Regional Exploration Manager |

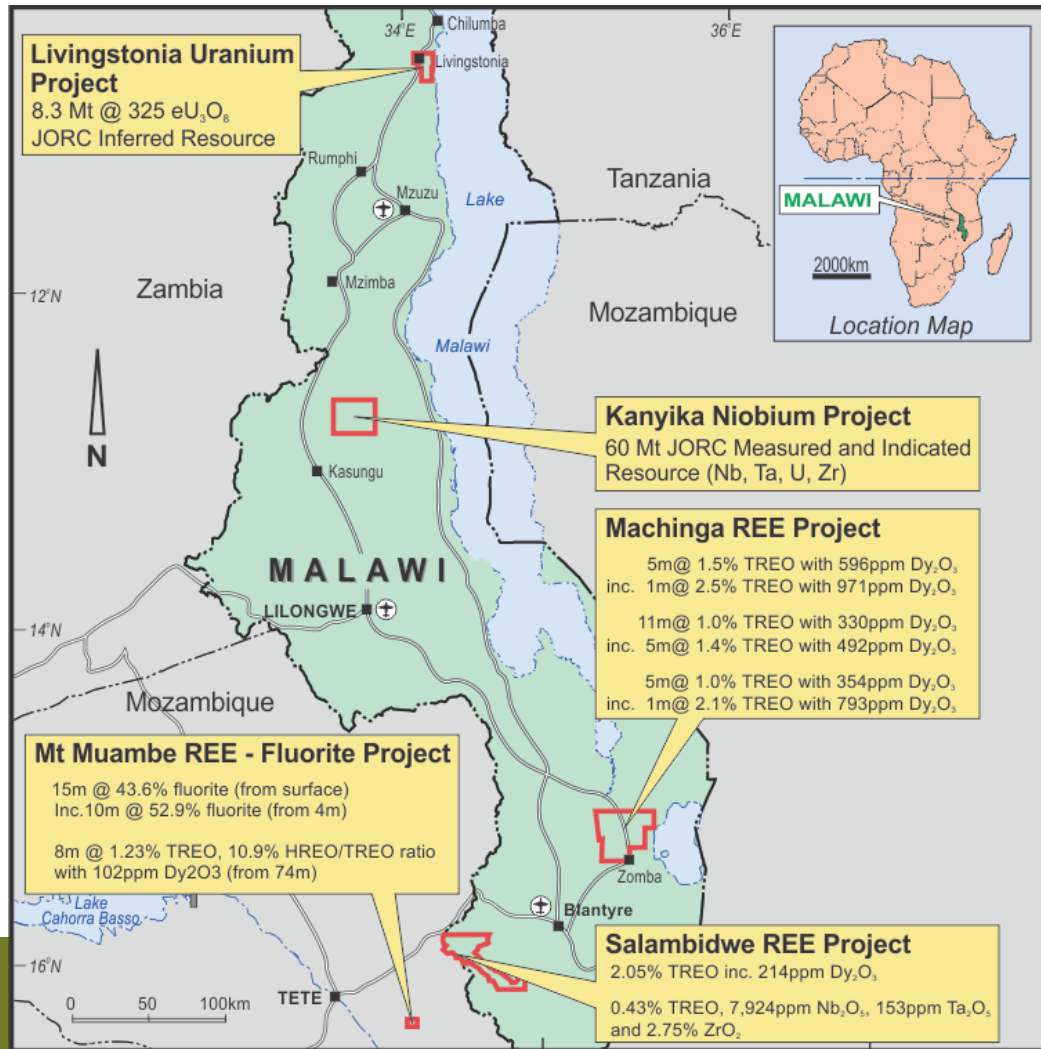
### Capital Structure (ASX :GBE)

|                                       |                 |
|---------------------------------------|-----------------|
| Ordinary shares                       | 223.8m          |
| Options and performance rights        | 7.35m           |
| Current Price                         | \$0.21          |
| Market Capitalisation (undiluted)     | \$47.0m         |
| Cash (30 June 2011)                   | \$44.1m         |
| 12 month share price range (High/Low) | \$0.51 - \$0.11 |



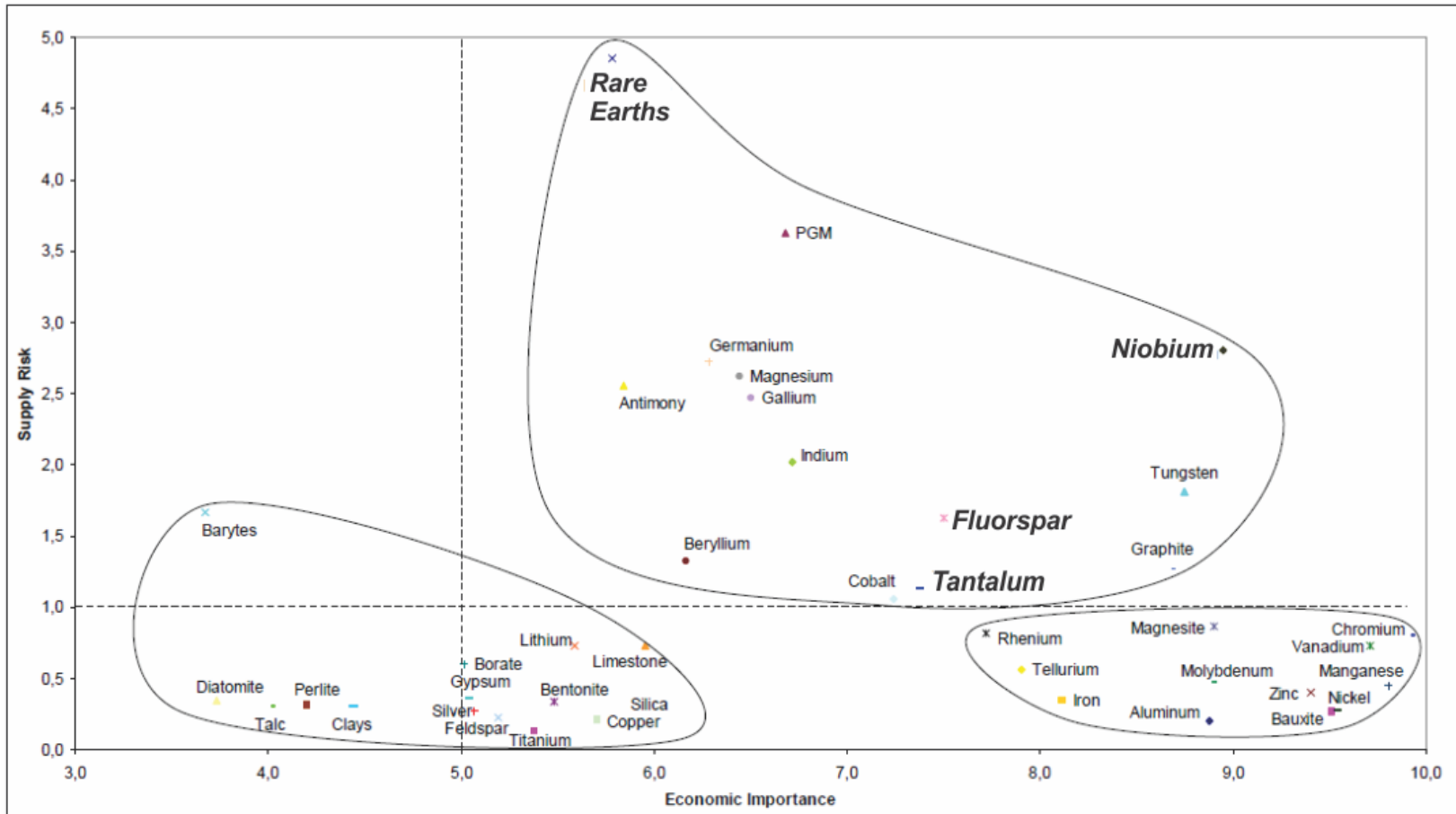
# 3. Project Locations

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# 4. Commodity Overview

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*The four key commodities most relevant to Globe – niobium, REEs, tantalum and fluorspar – have been classified by the EU as “critical”, based upon a combination of supply risk and economic importance.*

European Commission, “Critical Raw Material for the EU”, June 2010: [http://ec.europa.eu/enterprise/policies/raw-materials/documents/index\\_en.htm](http://ec.europa.eu/enterprise/policies/raw-materials/documents/index_en.htm)

**www.globemetalsandmining.com.au ASX:GBE**



## 4a. Niobium

- Applications: >90% niobium consumed by the steel industry as ferro-niobium (FeNb).
- Properties: niobium is a micro-alloyer; acts as a grain refiner, encouraging the formation of a micro-structure that adds toughness, corrosion resistance, tensile strength and strength.
- Market size and growth: approx. 60,000tpa (metal); >10%p.a. growth.
- Explanation for growth: 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.”* (Roskill). Global unit consumption has increased from 40g/t in 2000 to 63g/t currently (IAMGOLD).
- Price: long-term price forecast to be US\$45/kg.
- Price Stability: FeNb price historically very stable, to benefit of suppliers and customers.
- Substitutability: *“Niobium represents a small percentage of the raw material cost of steel making, but adds significant value by improving strength, durability, weight and flexibility. Substitutes, such as ferro-vanadium, have inferior physical characteristics and comparatively higher prices with generally lower added-value, mitigating the risk of substitution.”* (IAMGOLD, May 2011).
- Market share: Globe’s production of 3,000tpa niobium represents 3-4% market share, or 4-6 months of one year’s growth in market size.

*Long-term price forecast from IAMGOLD; Avalon Rare Metals used price of US\$55/kg in recent pre-feasibility study.*

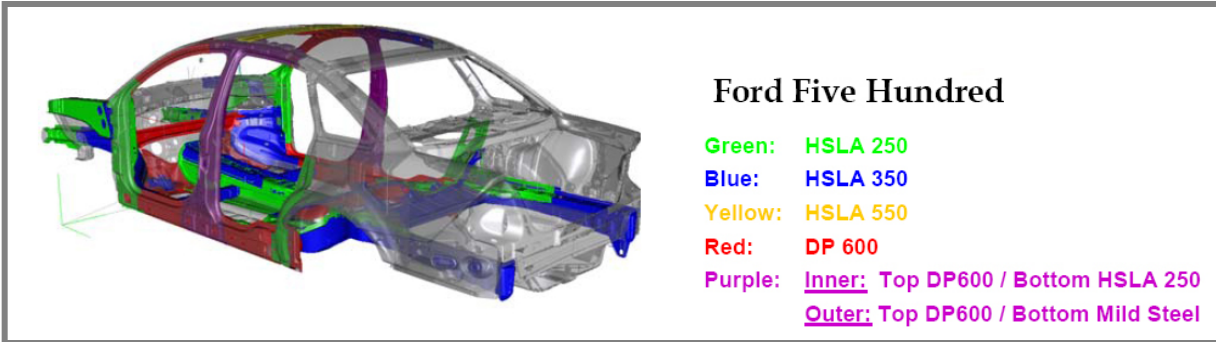
*The best substitute for steel is better steel.*





# 4a. Niobium

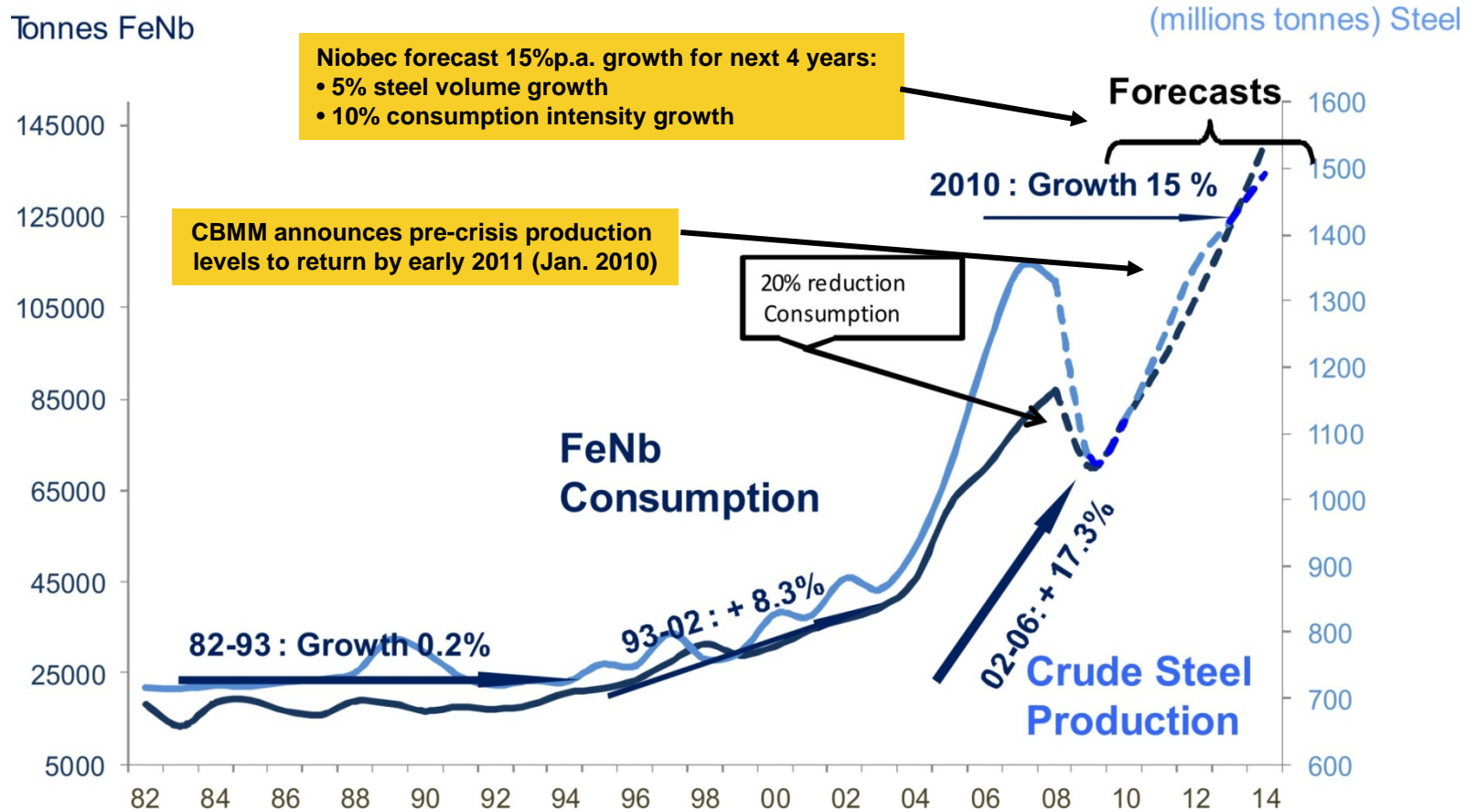
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*4kg of niobium used in the manufacture of a mid-sized vehicle would save 100kg of steel, which would translate into fuel savings of half a litre per 100km.*



# 4a. Niobium



*For the last 20 years, niobium consumption has grown at 2x the rate of steel consumption, despite niobium being used almost entirely in steel.*



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## 4b. REE Market & Prices

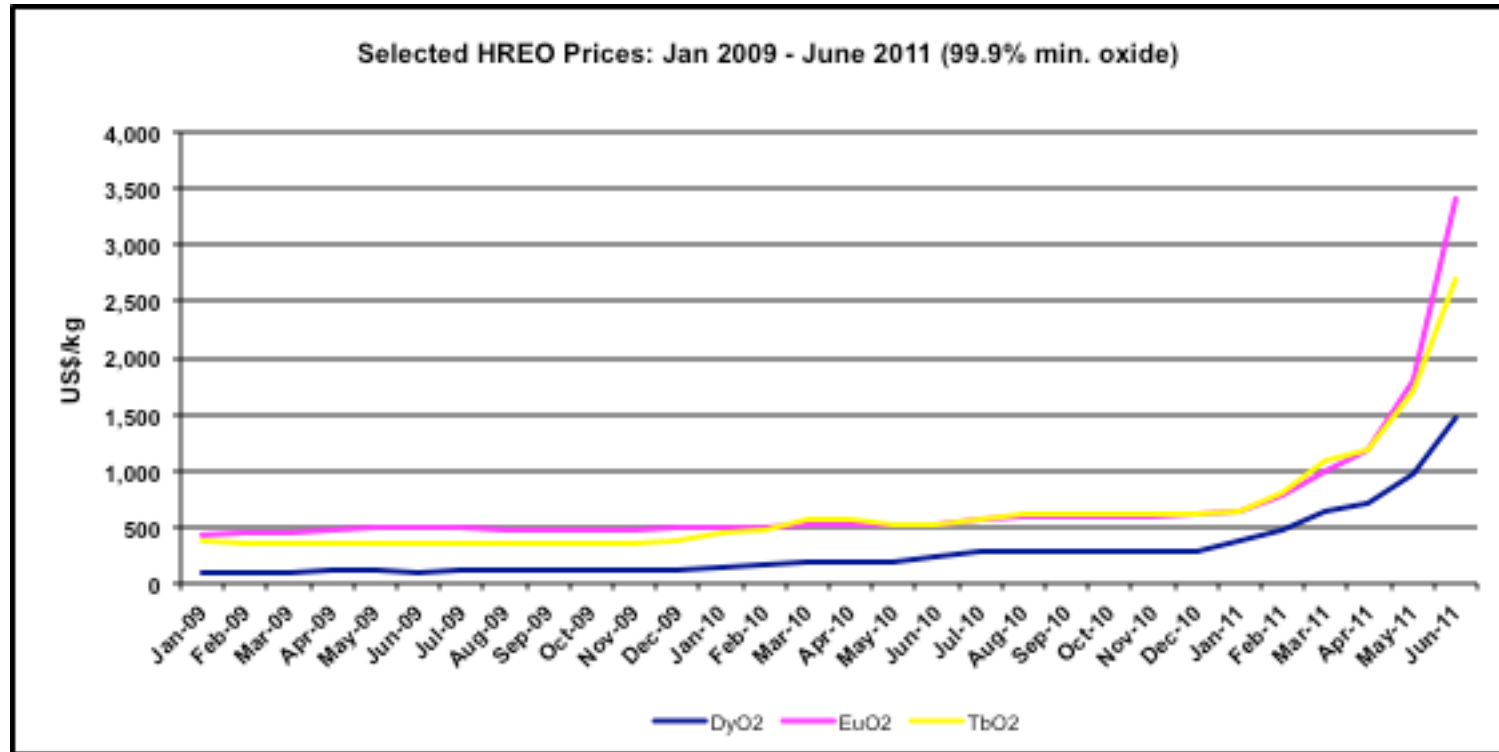
- Current market size is 115,000tpa total rare earth oxide (TREO) production.
- Forecast market growth of 60% through to 2015.
- Primary demand drivers include growth in advanced and green-related technologies such as hybrid cars, consumer electronics and wind turbines.
- Secondary/consequential demand arising from stockpiling by US and China, among others.
- Supply currently constrained by structural changes in primary market (China >95% production) – reducing export quotas, environmental clean-up, industry consolidation, stockpiling (especially heavy REOs) and prevention of illegal production and exports.
- Over the medium to long term, key REEs are dysprosium, terbium, europium (HREOs) and neodymium and praeosodymium (light REOs) – based on forecast demand and supply (including likely new production), even China will be an importer of HREOs by 2015, notwithstanding that it is the only current producer.
- Globe has an “open source” policy in relation to any future REO production.

*Globe has two REE projects – Mount Muambe in Mozambique and Machinga in Malawi – and by the end of 2011, the Company will know the full extent of their REE potential.*



# 4b. REE Market & Prices

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*Prices of these critical HREO's have increased 5x in 2011.*



## 4c. Fluorite Market & Prices

- Current market size approx. 5.5 – 6Mtpa.
- China >50% production, largest consumer.
- Acid grade fluorspar (>97% purity) accounts for 65-70% production; balance metallurgical grade (<97%).
- Current acid grade China spot price approx. US\$600/tonne, up from US\$500/tonne.
- Chinese demand and other (usual) factors driving higher prices – environmental concerns/production restrictions, export restrictions, industry consolidation.
- Comparable African fluorspar operations:
  - Vergenoeg Mine, South Africa – 22.5% CaF<sub>2</sub> (fluorspar).
  - Witkop Mine, South Africa – 8-12% CaF<sub>2</sub>.
  - Okorusu Mine, Namibia – 50% CaF<sub>2</sub>.

*Fluorite could be the primary commodity at Mount Muambe, and REEs the credits; or vice versa. Indicative fluorite grades are approx. 40%.*





# 5a. Kanyika Niobium Project

## Resource:

| 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                            |
| <b>Total</b>                       | <b>21</b> | <b>4,100</b>                   | <b>180</b>                     | <b>110</b>                    |

- 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). (see appendix 1 for full resource)
- 100-110Mt exploration target (incl. 40-50Mt high grade @ 3,700-4,000ppm).

## Production Profile:

- Grade targeted for first ~7 years mining 4,700ppm Nb<sub>2</sub>O<sub>5</sub>.
- 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.
- >20 years mine life potential.
- Project currently in feasibility stage – due for completion Q3 2012.
- Commencement of production scheduled for 2014.

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.

# 5a. Kanyika Niobium Project

- Financial model – last update September 2010.
- Strong project economics:
  - 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.
  - Significant potential upside – see Appendix 2.
- Key assumptions:
  - Fixed 3,000tpa niobium metal output, plus tantalum credits.
  - Same terms 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.

*Globe still has work to do to complete the DFS, including metallurgy; the Project economics remain very attractive.*

# 5a. Kanyika Niobium Project

## Project – Current Activity:

- Drilling: 18 hydrogeological, 8 pit geotechnical (diamond), 4 metallurgical (diamond) and 5 sterilisation hole program about to commence.
- Relocation: work commenced on the relocation policy framework, under the guidance of the Malawian Environmental Affairs Department.
- Metallurgy:
  - Facility established in Modderfontein, Johannesburg – testwork and pilot program.
  - Testwork programs underway with Ammtec in Burnie (Tasmania) and Perth (Western Australia).
- Access Road: Romana Engineers, Malawi, engaged to complete engineering study.
- Tailings Storage Facility: Jones & Wagner have made their initial recommendations.
- Power: feasibility study with Mota-Engil ongoing (diesel/hydro/blend).
- Environmental Impact Assessment: commenced, using Synergistics, Johannesburg.
- Community Relations: visit to Kayelekera with senior representatives of the local Traditional Authority, to assess impact of large-scale western mining operations.
- Mining Study: Coffey Mining selected to carry out this work.

*Post completion of the ECE transaction, the pace of activity on the DFS has accelerated.*



## 5b. Mount Muambe REE-Fluorite Project

- ✓ Project highly prospective for REEs and fluorite.
- ✓ Highlights to date include:
  - 8m RC drilling @ 1.23% total rare earth oxide (TREO).
  - Rock chips 4.16%, 3.64%, 3.04% and 3.01% TREO.
  - 8m RC drilling @ 47.6% fluorite (from surface) and 15m @ 41.1% fluorite (from 18m, same hole).
- ✓ JORC resource estimate (fluorite, possibly REE credits) targeted for Q4 2011/Q1 2012.
- ✓ Results to date demonstrate potential for economic fluorite deposit.
- ✓ Strong Project upside – REE potential at Muambe, especially HREOs, is currently underexplored.
- ✓ 3 km diameter crater; significant size and tonnage potential; largely unexplored to date.

*Mount Muambe has been significantly advanced by Globe since it was acquired in Q4 2009, the entry costs were low and the potential upside is enormous.*



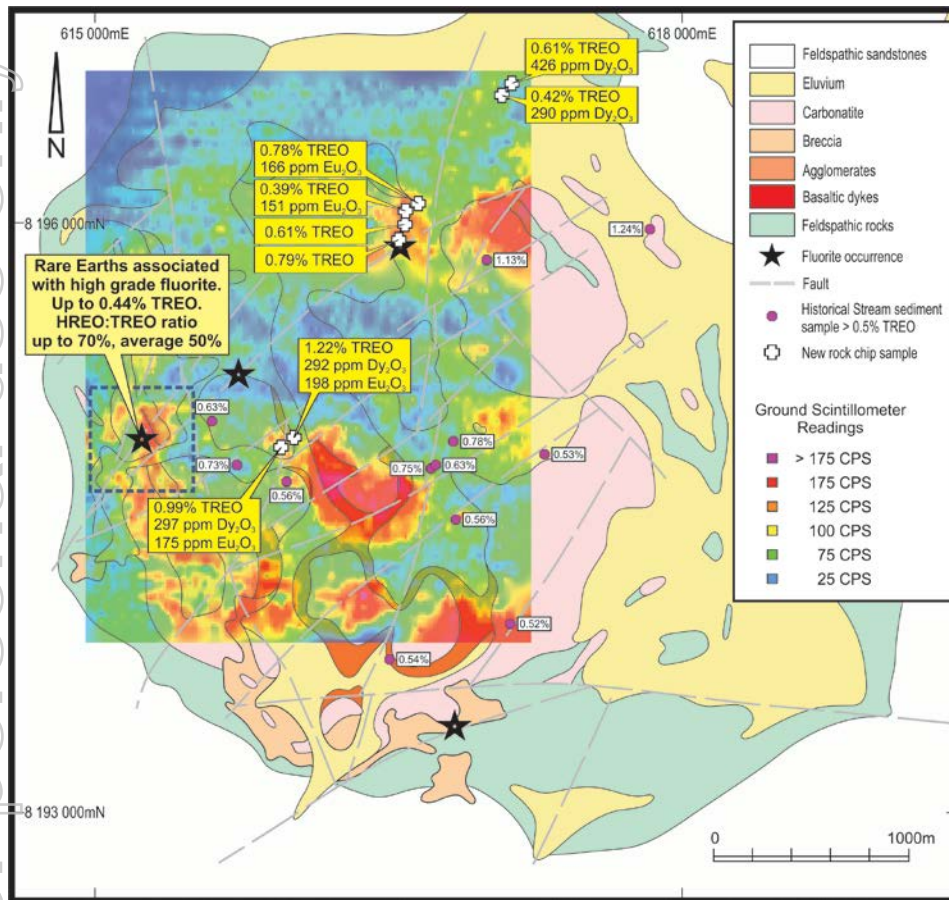
## 5b. Mount Muambe REE-Fluorite Project

- ✓ 12,000m drilling program planned during 2011 – commenced in March.
- ✓ Exploration budget of A\$3m for 2011.
- ✓ Significant ongoing news flow from drilling results.
- ✓ Strong cash position will enable the Company to realise the Project's potential.
- ✓ Excellent access to rail, road and power infrastructure; 80km from Tete, Mozambique.
- ✓ Technical and administrative team in-country based in Tete and on-site.
- ✓ Mozambique being positively “re-rated” as a mining jurisdiction.
- ✓ Globe can earn up to 90% of project; 20% currently held.

*Globe's strong cash position will ensure that the Project's full potential is realised via well-funded and thorough exploration.*



# 5b. Mount Muambe REE-Fluorite Project



- Project originally acquired in late 2009 based upon high-grade fluorite @ surface - >60%.
- Correlation established between radiometric anomalism and REE mineralisation.
- Only one third of the prospective area has been covered by a ground radiometric grid.
- Exploration to date has been focussed on fluorite, with coincidental testing for REEs.
- Mount Muambe now considered to be highly prospective for REEs with significant potential for zones of HREO-enriched mineralisation.
- High-value commodities dysprosium and europium appear to be the dominant HREOs at Mount Muambe.

*The correlation between radiometric anomalism and REE mineralisation is a useful pathfinder to guide Globe's 2011 REE-focussed exploration at Mount Muambe.*



## 5b. Mount Muambe REE-Fluorite Project

- March 2011 – numerous very high grade near surface fluorite drill intersections from 14 hole RC program:
  - MURC001 – 15m @ 43.6% fluorite (from surface) including 10m @ 52.9% fluorite (from 4m).
  - MURC011 – 8m @ 47.6% fluorite (from surface) and 15m @ 41.1% fluorite (from 18m).
- Fluorite mineralisation is interpreted to occur in multiple, sub-horizontal, stacked zones (e.g. MURC011).
- Numerous associated zones of REE mineralisation in three holes analysed with significant dysprosium and locally high HREO ratios:
  - MURC001 – 8m @ 1.23% TREO, 10.9% HREO:TREO ratio, 102ppm Dy<sub>2</sub>O<sub>3</sub>.
  - MURC011 – 11m @ 0.39% TREO, 38.4% HREO:TREO, 104ppm Dy<sub>2</sub>O<sub>3</sub>.

*The maiden drill program demonstrated high grade fluorite occurs at depth. A provisional geological model is one of multiple, stacked zones each of significant width.*

## 5b. Mount Muambe REE-Fluorite Project

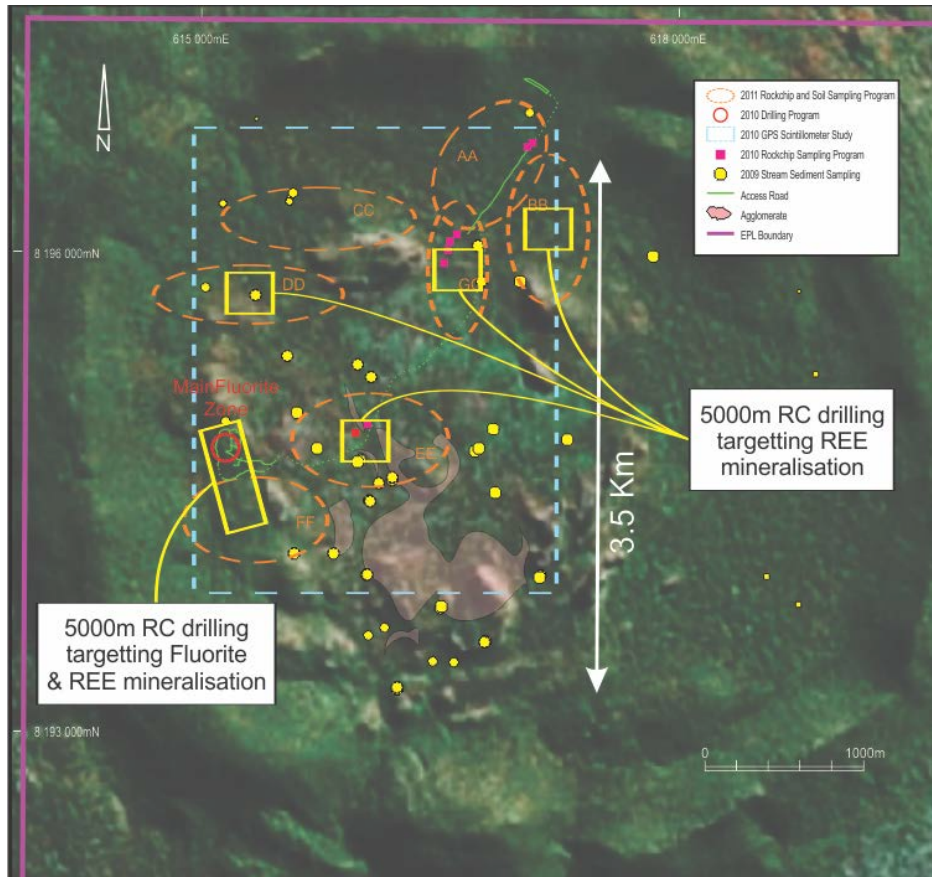
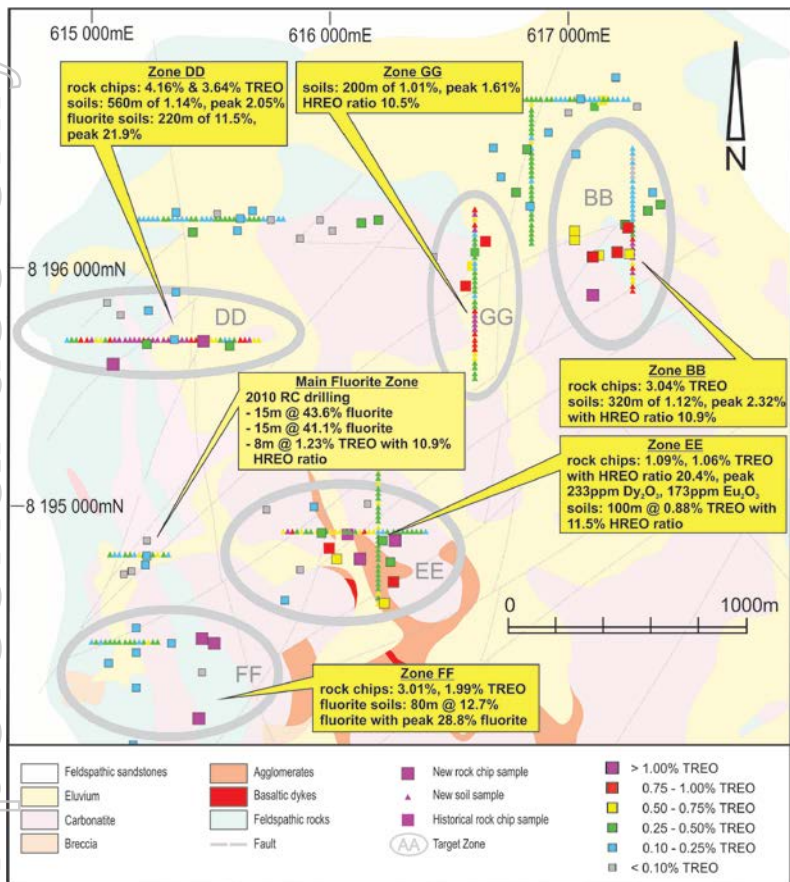
- May 2011 – substantial orientation rock chip and soil sampling program identified widespread REE mineralisation in at least five different zones.
- LREO-enriched rock chip samples include:
  - 4.16% TREO, 3.64% TREO, 3.04% TREO and 3.01% TREO.
- HREO-enriched rock chip samples with significant dysprosium and europium values:
  - 1.09% TREO with 20.4% HREO:TREO ratio and 230ppm Dy<sub>2</sub>O<sub>3</sub> and 169ppm Eu<sub>2</sub>O<sub>3</sub>.
  - 1.06% TREO with 20.5% HREO:TREO ratio and 233ppm Dy<sub>2</sub>O<sub>3</sub> and 173ppm Eu<sub>2</sub>O<sub>3</sub>.
- Substantial zones of REE soil anomalism including:
  - 560m width, 29 samples averaging 1.01% TREO, peak value 2.05% TREO.
  - 320m width, 17 samples averaging 1.12% TREO, peak value 2.32% TREO.
- Large new fluorite zones discovered. Over 2km of strike length of fluorite mineralisation/anomalism now confirmed.

*Globe's first REE-focussed exploration program was extremely successful, identifying numerous REE zones, to be drilled during 2011.*





# 5b. Mount Muambe REE-Fluorite Project



*The Company is very excited by the 2011 drill program at Mount Muambe. A steady flow of drilling results will be released over the course of the year.*



## 5c. Machinga REE Project

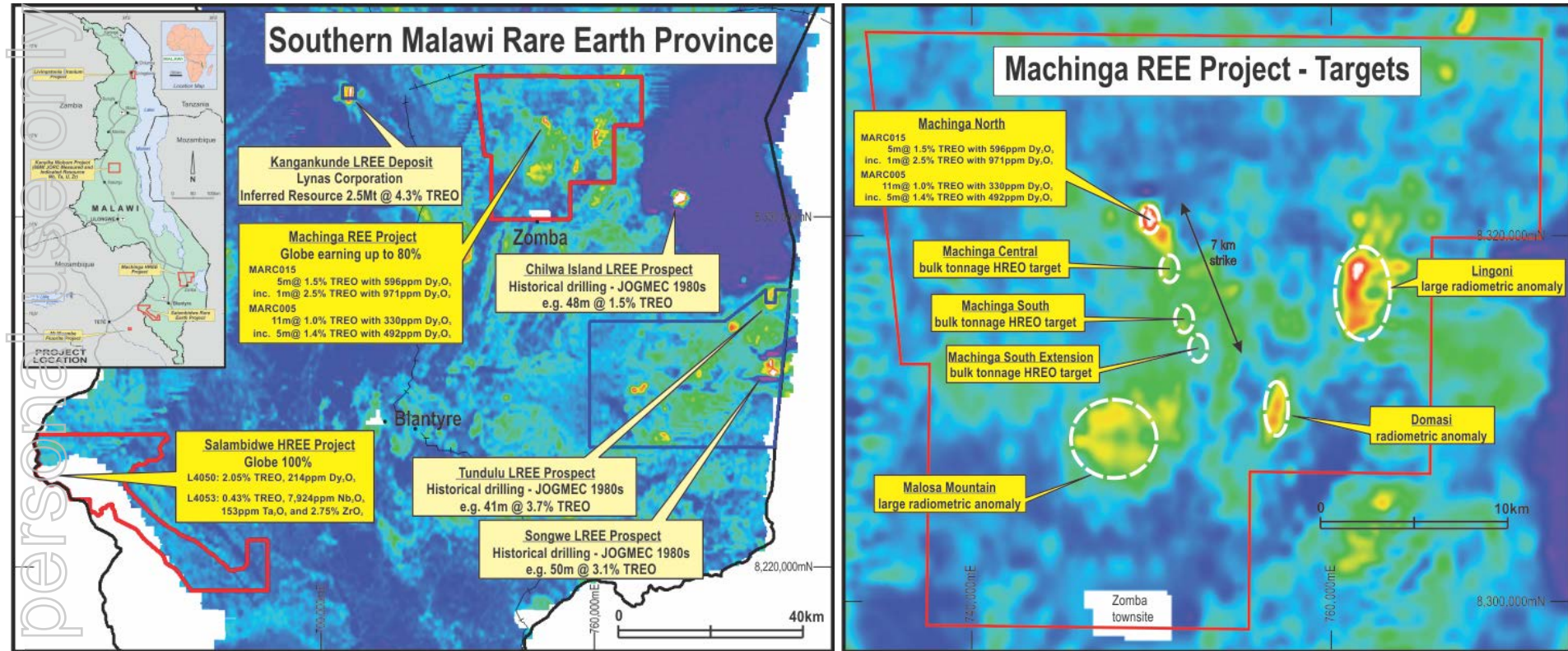
- ✓ Project highly prospective for high-grade HREOs and Nb-Ta-Zr.
- ✓ Machinga North drilling highlights to date include:
  - MARC005: 11m @ 1.0% TREO with 330ppm Dy<sub>2</sub>O<sub>3</sub> (from 12m).  
Inc.: 4m @ 1.4% TREO with 492ppm Dy<sub>2</sub>O<sub>3</sub> (from 19m).
  - MARC015: 5m @ 1.5% TREO with 596ppm Dy<sub>2</sub>O<sub>3</sub> (from 26m).  
Inc.: 1m @ 2.5% TREO with 971ppm Dy<sub>2</sub>O<sub>3</sub> (from 27m).
- ✓ Very high ratio of HREO:TREO, peak 39%, average 32%.
- ✓ 7km radiometric anomaly registering a 2.7 by 0.3km main target zone.
- ✓ Machinga North is just one of seven targets within the EPL; enormous potential to confirm a significant economic REE deposit.
- ✓ Southern Malawi is a proven region for hosting economic REE deposits.
- ✓ 5,000m drilling program planned for 2011; budget A\$500,000.
- ✓ Globe can earn up to 80% of project; 20% currently held.

*Machinga is in the right location, and initial results confirm the potential of the Project.*





# 5c. Machinga REE Project

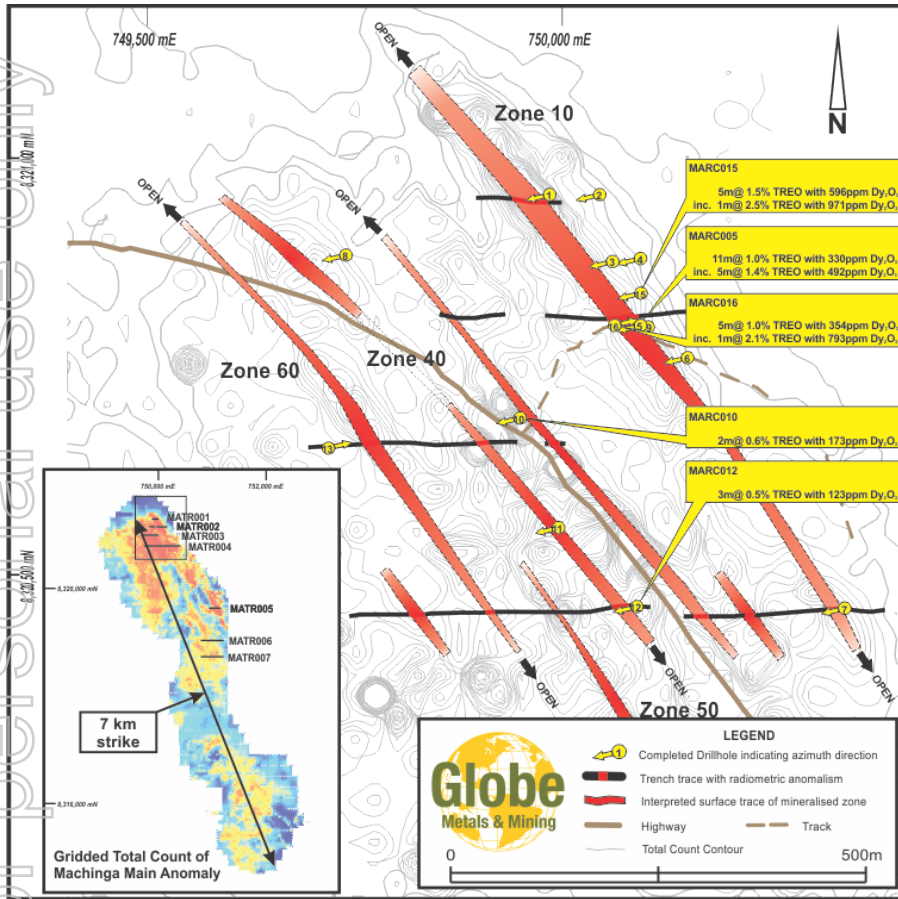


*Machinga North is just one of seven targets within the concession. Southern Malawi is clearly prospective for REEs, and radiometric anomalism is the known pathfinder.*





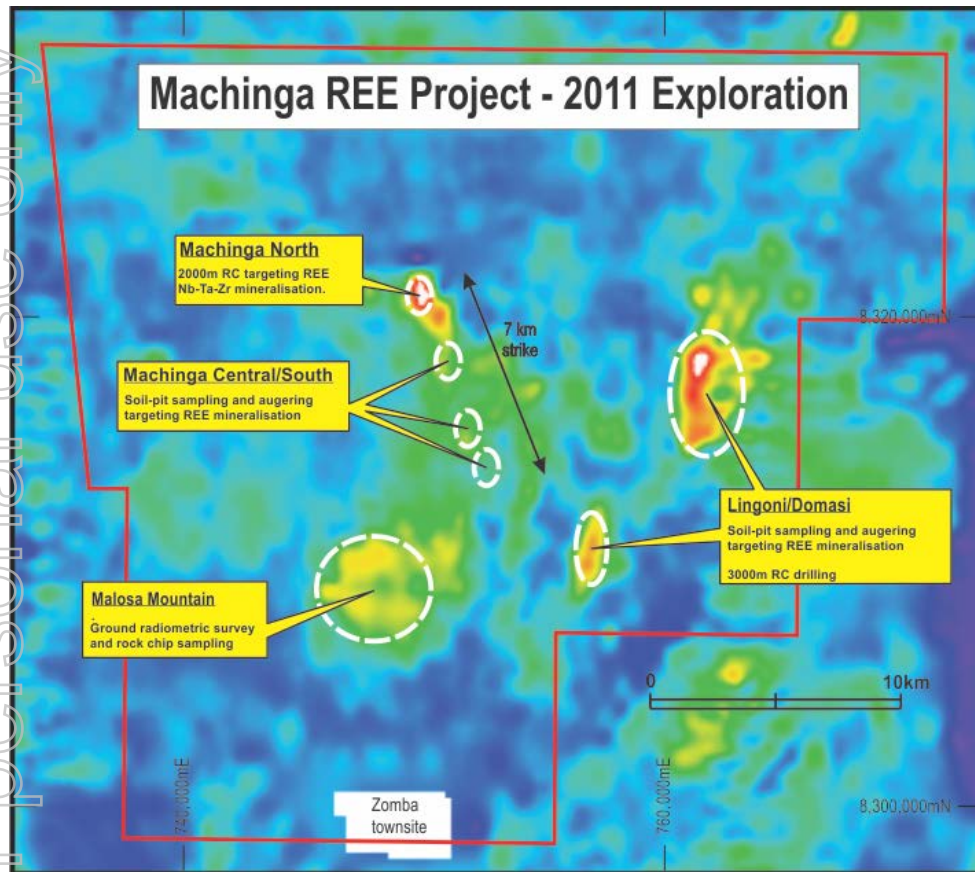
# 5c. Machinga REE Project



- Drilling program comprised 16 RC holes for a total of 1,688m.
- Designed to test four of at least seven parallel zones of surface REO – Nb- Ta – Zr mineralisation identified in Globe’s trenching program.
- Zone 10 has the highest TREO grades and HREO:TREO ratios.
- Very high heavy rare earth ratio (HREO:TREO), averaging 33% with a peak of 39%.
- High-value commodities Dysprosium (Dy), Thulium (Tm), Ytterbium (Yb) and Lutetium (Lu) occur in high grades.
- Ratios (to TREO) of these heaviest three rare earth elements (Tm, Yb and Lu) in Zone 10 are amongst some of the highest reported in the world.
- Reconnaissance exploration on Lingoni and Domasi targets was undertaken.

*The majority of drill holes in Zone 10 intersected REO mineralisation near surface at depths between 10m and 50m.*

## 5c. Machinga REE Project



### July 2011 – Lingoni:

- Drill targeting using soil sampling and pitting radiometric anomalies focussing on HREO and Nb-Ta-Zr mineralisation.

### August 2011 – Machinga North:

- Commence 2000m RC drill program on the 6 known zones – strike and dip extensions to Zone 10 and 60 the main priority.

### September 2011 – Machinga Central/South:

- Drill targeting using soil sampling and pitting radiometric anomalies focussing on HREO and Nb-Ta-Zr mineralisation.

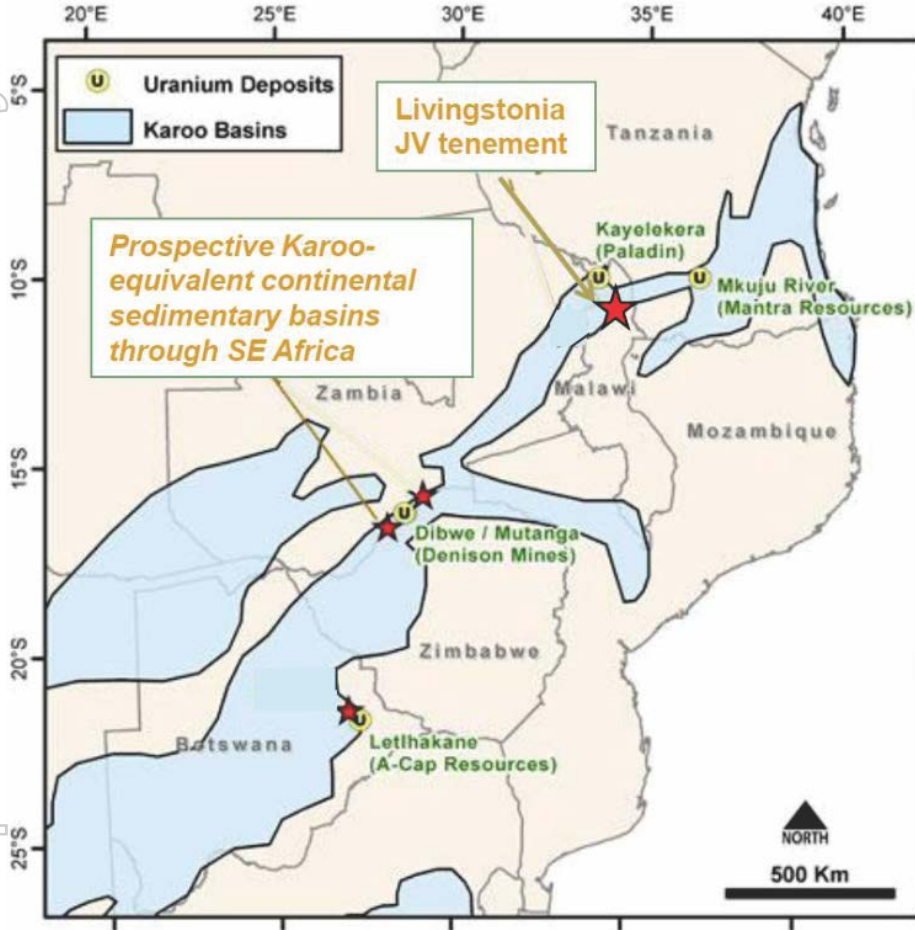
### October 2011 – Lingoni:

- Commence 3000m RC drill program on the targets identified in the soil sampling and pitting programs.

*The Company is very excited by the 2011 drill program and regional exploration at Machinga. A steady flow of results will be released over the remainder of the year.*

# 5d. Livingstonia Uranium Project

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- Inferred JORC resource estimate of 6.0Mlb @ 325ppm  $eU_3O_8$ .
- Farmout to Resource Star Limited (ASX:RSL).
- RSL currently have 20% interest and Globe 80%.
- RSL can earn total 51% by spending US\$3.25m over four years.
- RSL can earn total 80% interest by producing inferred JORC resource estimate of 10,000 tonnes  $U_3O_8$ ; currently 2,700 tonnes.
- Farmout on Livingstonia with RSL was in exchange for farmin by Globe on Machinga, on similar terms.

*Resource Star has advanced Livingstonia since it farmed in on the Project; its proximity to Paladin Energy's Kayelekera Uranium Mine creates some interesting opportunities.*



# Contacts

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# Appendix 1 – Kanyika Mineral Resource Estimate

**Table 1: Mineral Resource Estimates for Kanyika (1,500 ppm Nb<sub>2</sub>O<sub>5</sub> lower cut).**

| Category     | Million Tonnes | Nb <sub>2</sub> O <sub>5</sub> ppm | Ta <sub>2</sub> O <sub>5</sub> ppm | U <sub>3</sub> O <sub>8</sub> ppm | ZrSiO <sub>4</sub> ppm |
|--------------|----------------|------------------------------------|------------------------------------|-----------------------------------|------------------------|
| Measured     | 5              | 3,900                              | 180                                | 110                               | 5,300                  |
| Indicated    | 18             | 3,100                              | 140                                | 80                                | 4,800                  |
| Inferred     | 37             | 2,700                              | 130                                | 80                                | 5,100                  |
| <b>Total</b> | <b>60</b>      | <b>2,900</b>                       | <b>140</b>                         | <b>90</b>                         | <b>5,000</b>           |

**Table 2: Mineral Resource Estimates for Kanyika (3,000 ppm Nb<sub>2</sub>O<sub>5</sub> lower cut).**

| Category     | Million Tonnes | Nb <sub>2</sub> O <sub>5</sub> ppm | Ta <sub>2</sub> O <sub>5</sub> ppm | U <sub>3</sub> O <sub>8</sub> ppm | ZrSiO <sub>4</sub> ppm |
|--------------|----------------|------------------------------------|------------------------------------|-----------------------------------|------------------------|
| Measured     | 3              | 5,400                              | 250                                | 160                               | 6,600                  |
| Indicated    | 7              | 4,400                              | 200                                | 110                               | 5,900                  |
| Inferred     | 11             | 3,600                              | 160                                | 90                                | 5,600                  |
| <b>Total</b> | <b>21</b>      | <b>4,100</b>                       | <b>180</b>                         | <b>110</b>                        | <b>5,800</b>           |

# Appendix 2 – Kanyika Niobium Project

## Project – Potential 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.

*During the DFS, many of these areas of potential upside to the Project will be examined.*

