



# TREM Conference

## Considerations for Imports into the USA

Washington DC, USA  
March 2010

63	64	65	66	67	68	69	70	71
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb
Lanthanum	Cerium	Praseodymium	Neodymium	Promethium	Samarium	Europium	Gadolinium	Terbium
138.90547	140.12	140.90768	144.242		150.36	151.964	157.25	158.92535
65	66	67	68	69	70	71		
Dy	Ho	Er	Tm	Yb	Lu			
Dysprosium	Holmium	Erbium	Thulium	Ytterbium	Lutetium			
162.5001	164.93032	167.259	168.9342	173.04	174.967			

Dr Steve Ward  
Managing Director & CEO

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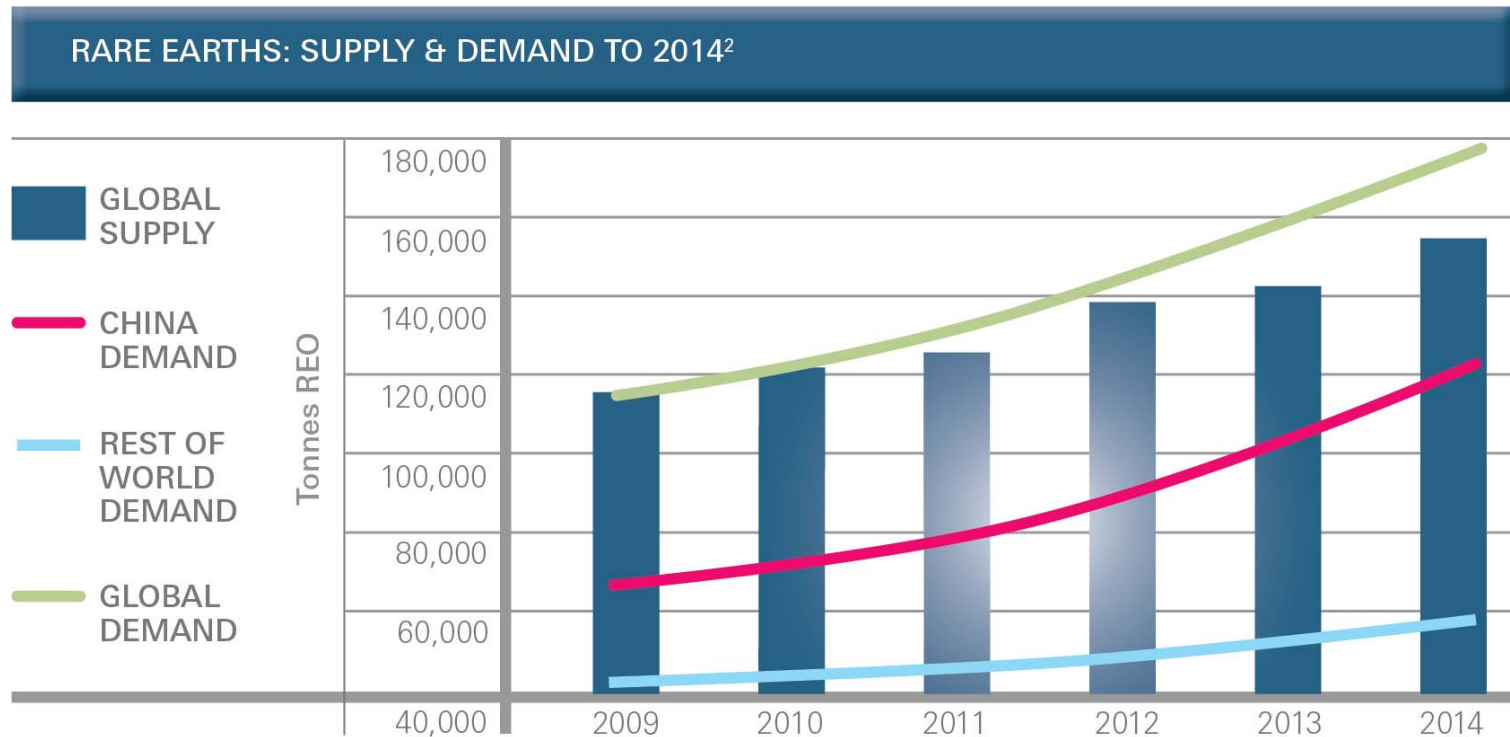
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# Rare Earths: demand growth, constrained supply



1,2: BCC Research, June 2009 Market Research Report. Rare Earths: Worldwide Markets, Applications, Technologies

Suppliers are forecast to struggle to meet demand even after new projects are taken into consideration. There are few new projects likely to come into production.

# USA demand and position in Industry Supply Chain

## Issues for consideration:

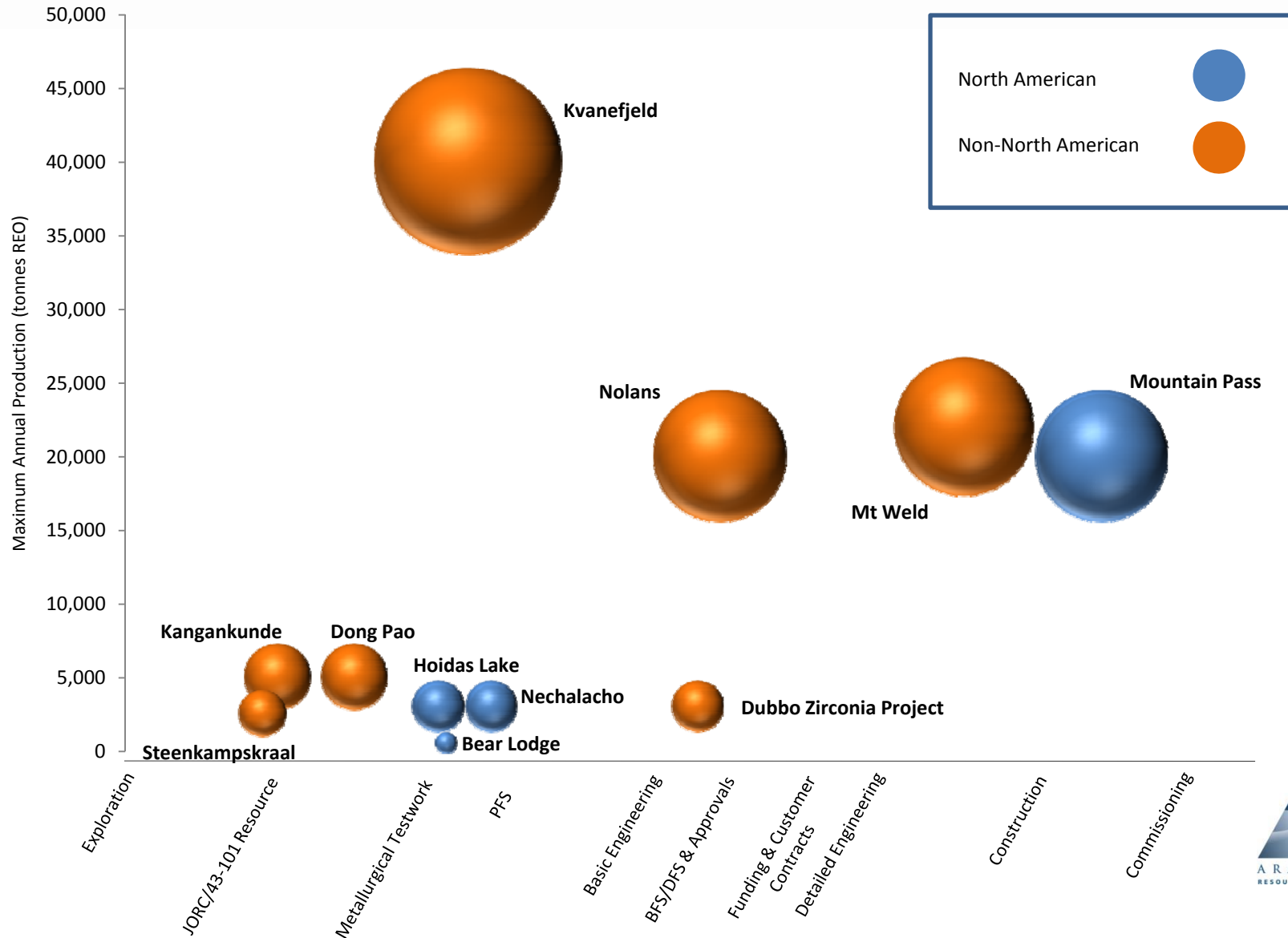
- **Future Demand – Identify needs as well as possible**
  - Market growth in each end use application
  - Longevity of each end use application – will there be technology advancements that will not require Rare Earths?
  - Substitution of Rare Earths in existing applications
  - Recycling of products
- **Where does the USA want to be in the Industry Supply Chain?**
  - Raw materials versus finished goods?



# Supply side considerations

- Rare Earth projects have a long development timeline: 10 to 15 years
- Difficult to bring Rare Earth projects into production:
  - Each ore body is different and requires development of unique technology for processing
  - Very capital intense
- There are very few new projects likely in the next 10 years – recent increased interest in Rare Earths will only come to fruition in the next decade at the earliest
- Product from some planned new projects already committed to secure financing

# Comparison of Rare Earths projects



# Summary of supply side considerations

- Demand will outstrip supply
- There are few supply opportunities this decade
- China is likely to continue to limit exports
- Small number of domestic USA supply options
- USA will need to continue to import and rebalance supply

# USA strategic materials: what works already?

- Impractical for any country to be self sufficient in all strategic materials
- What works already for the USA in terms of strategic materials imports can be a model for Rare Earths
- Suggest titanium metal is a good example. Titanium minerals from mineral sands mining have been imported into the USA successfully for many years
- Similarities to Rare Earths in that there are few suppliers
- Australia is a proven supplier country



# Assessing future suppliers

## **Points of differentiation to consider:**

- Located in a country with well established trade relations with the USA
- Sovereign risk, political stability and regulatory environment
- Scale of ore body and very long life production capability
- Technology and start up risk
- Availability of products for sale – has future production already been contracted to customers, or is it destined to part owners or partners?

# The role of the USA in future supplies

- Technical & financial assistance to promote potential sources in USA-friendly and politically stable locations
- Establishment of internationally recognized standards for Rare Earths
- Once manufacturing capabilities are re-established, provide access to USA Rare Earths supply chains

# The case for imports: a summary

- The USA will need to continue to import Rare Earths
- Rebalancing of supply will be necessary
- There will be few new supply sources this decade. Ensure future production is not already committed
- Successful imports of strategic materials can form the future model for Rare Earths