



**Canada Rare Earth  
Corporation**

# Integrating the Process To Build the Future



**Supply • Separation Refining • Demand**

May 2016

canadarareearth.com  
TSX.V: LL



During the course of this presentations, Canada Rare Earth Corporation may make statements with regard to the company's projects, resources, business plans, business strategy, products, partners, and market position which could be construed as forward-looking. Forward-looking statements are subject to risk and uncertainties that could cause results to be materially different from expectations.

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# Vertical Integration

**Supply**

Explore, Mine,  
Concentrate

200+ companies exploring

700+ locations



Separation  
Refining

China dominates

Rest of world will separate primarily light rare earths

Canada Rare Earth Corp refineries will produce all critical rare earths



Oxides, Metals and Alloys

**Demand**

Major customers have 4 choices



Buy from China



Manufacture in China



Engineer away from rare earths



Purchase rare earths from refineries outside of China



# What Are Rare Earths?

- 17 elements used for improved performance and quality
- Found combined together in mineral deposits
- Rare earths are of little industrial value unless separated



hydrogen 1 H 1.0079																	helium 2 He 4.0026						
lithium 3 Li 6.941	beryllium 4 Be 9.0122																	boron 5 B 10.811	carbon 6 C 12.011	nitrogen 7 N 14.007	oxygen 8 O 15.999	fluorine 9 F 18.998	neon 10 Ne 20.180
sodium 11 Na 22.990	magnesium 12 Mg 24.305																	aluminum 13 Al 26.982	silicon 14 Si 28.086	phosphorus 15 P 30.974	sulfur 16 S 32.065	chlorine 17 Cl 35.453	argon 18 Ar 39.948
potassium 19 K 39.098	calcium 20 Ca 40.078	scandium 21 Sc 44.956	titanium 22 Ti 47.867	vanadium 23 V 50.942	chromium 24 Cr 51.996	manganese 25 Mn 54.938	iron 26 Fe 55.845	cobalt 27 Co 58.933	nickel 28 Ni 58.693	copper 29 Cu 63.546	zinc 30 Zn 65.38	gallium 31 Ga 69.723	germanium 32 Ge 72.64	arsenic 33 As 74.922	selecnium 34 Se 78.96	bromine 35 Br 79.904	krypton 36 Kr 83.798						
rubidium 37 Rb 85.468	strontium 38 Sr 87.62	yttrium 39 Y 88.906	zirconium 40 Zr 91.224	niobium 41 Nb 92.906	molybdenum 42 Mo 95.96	technetium 43 Tc [98]	ruthenium 44 Ru 101.07	rhodium 45 Rh 102.91	palladium 46 Pd 106.42	silver 47 Ag 107.87	cadmium 48 Cd 112.41	indium 49 In 114.82	tin 50 Sn 118.71	antimony 51 Sb 121.76	tellurium 52 Te 127.60	iodine 53 I 126.90	xenon 54 Xe 131.29						
cesium 55 Cs 132.91	barium 56 Ba 137.33	hafnium 72 Hf 178.49	tantalum 73 Ta 180.95	tungsten 74 W 183.84	rhenium 75 Re 186.21	osmium 76 Os 190.23	iridium 77 Ir 192.22	platinum 78 Pt 195.08	gold 79 Au 196.97	mercury 80 Hg 200.59	thallium 81 Tl 204.38	lead 82 Pb 207.2	bismuth 83 Bi 208.98	polonium 84 Po [209]	astatine 85 At [210]	radon 86 Rn [222]							
francium 87 Fr [223]	radium 88 Ra [226]	rutherfordium 104 Rf [261]	dubnium 105 Db [262]	seaborgium 106 Sg [266]	bohrium 107 Bh [264]	hassium 108 Hs [277]	meitnerium 109 Mt [289]	darmstadtium 110 Ds [271]	roentgenium 111 Rg [272]														

- Other rare metals
- Light rare earth elements
- Heavy rare earth elements

lanthanum 57 La 138.91	cerium 58 Ce 140.12	praseodymium 59 Pr 140.91	neodymium 60 Nd 144.24	promethium 61 Pm [145]	samarium 62 Sm 150.36	europium 63 Eu 151.96	gadolinium 64 Gd 157.25	terbium 65 Tb 158.93	dysprosium 66 Dy 162.50	holmium 67 Ho 164.93	erbium 68 Er 167.26	thulium 69 Tm 168.93	ytterbium 70 Yb 173.05	lutetium 71 Lu 174.97
actinium 89 Ac [227]	thorium 90 Th 232.04	protactinium 91 Pa 231.04	uranium 92 U 238.03	neptunium 93 Np [237]	plutonium 94 Pu [244]	americium 95 Am [243]	curium 96 Cm [247]	berkelium 97 Bk [247]	californium 98 Cf [251]	einsteinium 99 Es [252]	fermium 100 Fm [257]	mendelevium 101 Md [258]	nobelium 102 No [259]	lawrencium 103 Lr [262]



# Rare Earth Applications

- Rare earths are used in an almost endless list of applications
- Unique properties make them invaluable for improved performance, efficiency and quality of the end products
- New applications are being developed in rapid succession





From a report by the American Chemistry Council in April 2014:

*“each job in the rare earth industry generates an additional 5.0 jobs elsewhere in the North American economy”*

*“the industry generates a total of \$1.9 billion in economic output in North America”*

*“The rare earth industry is supportive of \$329.6 billion in economic output in “downstream” end-market products and technologies that employ 618,800 workers (with a combined payroll of \$37.6 billion) in the United States and Canada”*

Raw Materials	Basic Rare Earth Materials	Engineered Rare Earth Materials	Components & Systems	End Market Products & Technologies
Bastnäsite Monazite Ionic Clays	Separated Rare Earth Oxides Oxylates Chlorides & Nitrates Rare Earth Mixed Oxides Rare Earth Metals	Rare Earth Alloys	Batteries	Health Care Technologies
		Magnets & Magnetic Powders	Controls	Hybrid, Electric, PHEV's & Other Vehicles
		Catalysts	Drives	HVAC and Home Appliance Systems
		Metallurgical Additives	Fabricated Metal Products	Consumer Electronics
		Polishing Powders	Lasers	Energy Efficient Lighting
		Phosphors	Motors & Generators	Communications & Electronics
		Glass Additives	Sensors	Audio Equipment
		Ceramics	Transducers	Defense Technologies
		Water Purification	Other	Other Electronics
		Chemicals	Systems & Components	Advanced Optics & Other Glass Products
				Oil Refining
				Electric Power

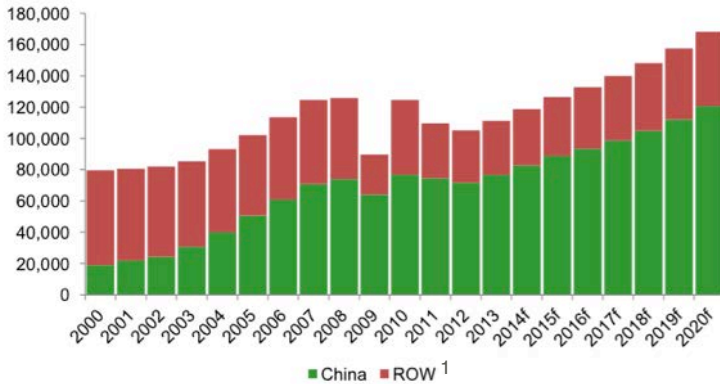


- Demand growth for rare earths is strong and increasing
- Applications will continue to be developed rapidly especially if a dependable, cost effective, high quality supply is established outside of China

## Future demand for rare earths in China and ROW<sup>1</sup>

- RE market could grow by 6%/py between 2014 and 2020, driven by China
- Global demand could reach 168,250t REO by 2020, 120,750t REO of which could be in China

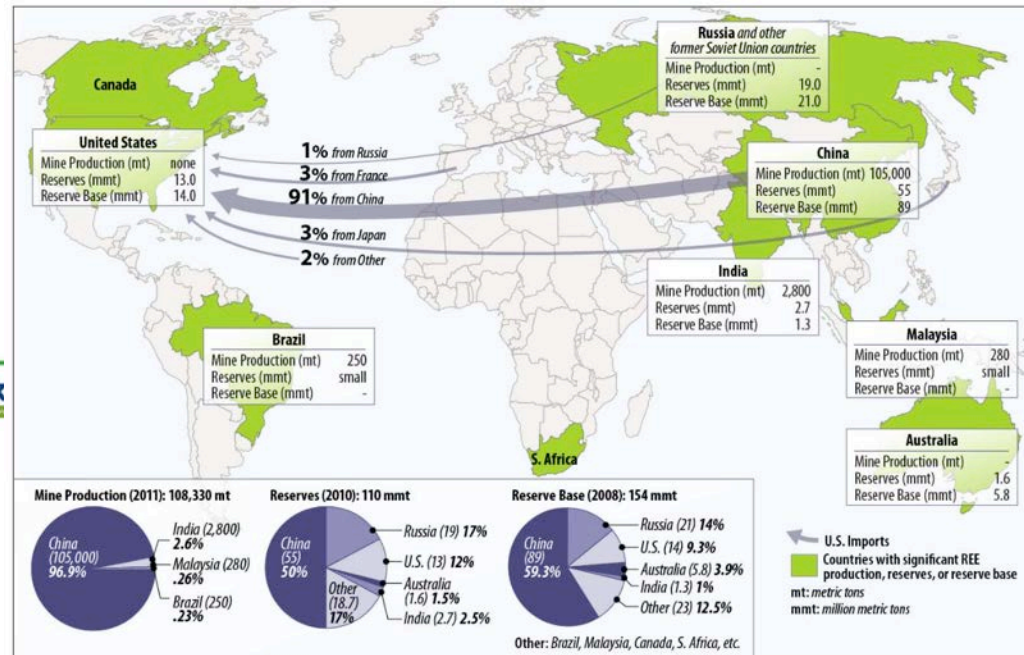
World: Demand for rare earths in China and ROW, 2000 to 2020 (t)



Source: Roskill



<sup>1</sup> Rest of World



Source: U.S. Geological Survey, Mineral Commodity Summaries, 2008-2013. (Figure created by CRS.)



## Strengths

Unique capability of separating the entire range (light and heavy) of commercially traded rare earths, coupled with extensive industry knowledge and experience from one of the world's top rare earths refiners

## Weaknesses

We are a small company working amongst major customer organizations, financing companies and numerous federal and state governments

As is common in the industry, our separation process entails the use of acids (similar to the oil refining industry) and certain radioactive materials (for which there are international standards for handling)

## Opportunities

200+ major international manufacturing companies are seeking a supply of separated rare earths outside of China, where an oligopoly dominated by six companies currently exists

Sources of rare earth ore exist/have been identified outside of China BUT very few outside of China have the capability of refining and separating the concentrate

Capital costs, operating costs and operations are serious questions for those without experience

## Threats

China could move more aggressively into the rest of the world acquiring the best rare earth properties





## Vision

To be the leading producer of refined rare earth products outside of China within 5 years.

## Strategy

- Organic growth with M&A activities
- Collaborate with key customers
- Collaborate with **capable & proven** partners
- Industry **proven** separation and refining technologies
- Produce **full range** of rare earth products
- Target **stable** geopolitical locations
- Commit to **sustainability** as a core value
- Leading environmental protection processes



## CREC Resources

Mata Azul  
Property  
portfolio

## Concentrate

Monazite  
Mineral Sands  
Partner RE  
Mines

## Alternative Sources

Light Refinery  
Recycling  
Spot Market

### Factors:

- Skewed to Critical REEs
- Timing
- Consistency
- Long Term Engagement

## CREC Refineries

- Globally strategic sites
- Full Spectrum of Critical Elements (heavies and lights)
- Custom designed to meet customer specifications and concentrate attributes
- Modular expansion

## CREC Sales

- Strategic customers
- Long term contracts
- 50-70% of output

## Other Channels

- Spot Market
- Trading



# Prospective Projects and Alliances

Mineral Resources/ Concentrate Sources	Monazite Pretreatment (Hydrometallurgy)	Rare Earth Separation Facilities	Rare Earth Direct Downstream Processing	Rare Earth Secondary Downstream Processing
	Hunan China	Ganzhou Zhanhai Hunan China	China	Europe Alloy Production
Mata Azul (Brazil)	Mata Azul (Brazil)	Mata Azul (Brazil)		
Monazite Traders	Laos	Laos	Laos Metal Making	
Ionic Clay	The Americas	JV SE Asia	SE Asia	SE Asia
Heavy Mineral Sands		TBD SE Asia		
Tin Tailings	Middle East	Middle East	Middle East	Middle East



Prospective        In Place



**Tracy A Moore – CEO & President, Director**

Corporate finance experience in 20 countries

**Peter Shearing – COO & Director**

Broad international experience at the executive level in the electronics and high-tech manufacturing

**Gordon J. Fretwell – Director, Secretary & Legal Counsel**

Multiple clients and directorships in the exploration and mining industry

**Bill Purcell – Director**

Background in downstream oil industry

**Christopher F. Goodman – Director**

Commodity trading and international business development experience

**Salil Dhaumya – Chief Financial Officer**

Extensive experience in the resource sector

**Li Family – Advisors, capability partners, and major shareholders**

The Li family business owns and operates the premier rare earth engineering and design company, as well as a refinery, in China

**Wencai Zhu– Advisor**

An experienced chemical engineer with multiple patents and publications relating to rare earth processing. General Manager of a major refinery in China

**Mike Phillipoff – Advisor**

Experienced in large-scale project management

**Bob Schafer – Advisor**

Global exploration/mining experience

**John Treleaven – Advisor**

Experienced in domestic and foreign government relations



The Canada Rare Earth Corp team has unparalleled experience and skills in the rare earth industry.

- Successful track record of designing, building and operating rare earth separation plants inside and/or outside of China
- Proven capability and technology for the separation of ALL critical rare earth products

The foundation for Canada Rare Earth to fulfill its vertical integration strategy includes:

- Identifying and securing optimal sources of rare earth concentrate
- Design, build and operation of Canada Rare Earth full spectrum refineries
- Customer engagement and sales support
- Access to and supply from affiliate refineries



	Directors and Sr. Management	Other	Basic and Fully Diluted
Issued Shares	36,373,017 (22%)	130,567,124	166,940,141
Options (shares) Range: 5¢-37¢ Average: 9¢	20,100,000	4,925,000	25,025,000
Total (shares)	56,473,017 (29%)	135,492,124	191,965,141

Trading Prices:  
52 Week high/low      4.5¢-2¢

Market Capitalization: \$5,008,000



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