

# Rare Earth Elements Letter

## INTERNATIONAL

*the independent information and advice bulletin for Rare Earth Elements and related investments*

---

November 2010

### ➤ Rare Earths Materials

**play key role in advanced environmental and modern technical products**

The “**REE**” Rare Earth Elements group, known as the lanthanide series, consists of 15 elements:

lanthanum (La)	terbium (Tb)
cerium (Ce)	dysprosium (Dy)
praseodymium (Pr)	holmium (Ho)
neodymium (Nd)	erbium (Er)
promethium (Pm)	thulium (Tm)
samarium (Sm)	ytterbium (Yb)
europium (Eu)	lutetium (Lu)
gadolinium (Gd)	

The elements yttrium (Y) and scandium (Sc) are also lumped in with Rare Earths because they have similar chemical properties making 17 REE's in total. In the oxide form, the group is collectively known as Rare Earths Oxides (REOs).

REE's are frequently found associated with radioactive elements, such as uranium and thorium, making mining them dangerous and subject to environmental restrictions.

Rare Earths play a key role in advanced green environmental products from energy efficient compact fluorescent light bulbs to hybrid cars, automotive catalytic converters and wind turbine generators. They are also essential in the development and manufacturing of many modern technological products from hard disc drives to flat panel displays, iPods and magnetic resonance imaging (MRI) scans.

Many defense applications, including missile guidance systems, mine detection, anti-missile defense and communication systems, also require rare earths elements.

Because of the large number of high-technology and defense applications that require rare earths, dependable, quality resources, are important to the Western economies and critical to continued manufacturing and production.

### ➤ Rare Earths prices

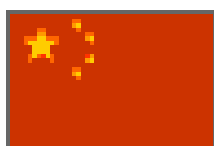
Due to the global economic slowdown which began in the fourth quarter of 2008, many industries have been experiencing inventory destocking as customers use existing inventory to preserve cash. This has caused raw material process to slump significantly at the upstream end of the supply chain.

The June 2008 Rare earths price for Lynas' average Mount Weld composition was US\$ 15.22/kg REO on a FOB basis, by June 2009 this dropped to US\$ 9.52/kg REO, a decline of 37%. In the same period the average composition price for China's Baotou Mine declined 40% from US\$ 12.67 to US\$ 7.65/kg REO.

When export quota costs, export tariff and value added tax are taken into account a Chinese company is estimated to receive less than US\$ 5.00/kg. These price levels are believed to be at the cash cost of production within China, which have increased from approximately US\$ 3.50/kg REO in 2002/03 to approximately US\$ 5.50/kg over the last five years due to higher energy, chemical reagents, labour and environmental compliance costs.

Rare Earths prices have risen strongly since the second half of 2009. Compared with the second quarter of 2009 the average Mount Wild composition increased 35% from US\$ 9.70 to US\$ 13.13/kg REO. With the reduction of the Chinese export quota recently announced prices have increased further to US\$ 50/kg REE in October 2010, having six-folded this year.

Pricing										
Rare Earth Oxide (Purity 99% min)	Price June 2001	Price June 2002	Price June 2003	Price June 2004	Price June 2005	Price June 2006	Price June 2007	Price June 2008	Price June 2009	Price change 2008 – 2009
Lanthanum Oxide	7.00	2.30	1.50	1.62	1.45	2.15	2.82	8.83	5.90	-33%
Cerium Oxide	4.00	2.25	1.68	1.62	1.37	1.65	2.63	4.38	3.80	-13%
Neodymium Oxide	11.00	4.35	4.42	5.75	6.05	11.07	31.15	32.88	14.50	-56%
Praseodymium Oxide	6.20	3.94	4.19	8.00	7.55	10.70	30.37	32.61	14.50	-56%
Samarium Oxide	9.00	2.98	2.67	2.67	2.60	2.40	3.12	4.80	4.75	-1%
Dysprosium Oxide	35.00	20.00	14.60	30.30	36.40	70.44	88.30	120.80	112.00	-7%
Europium Oxide	310.00	240.00	235.40	310.50	286.20	240.00	311.00	491.00	495.00	1%
Terbium Oxide	135.00	170.00	170.00	398.20	300.00	434.00	575.40	740.00	360.00	-51%
Av. Mt Weld Composition	7.81	3.97	3.48	4.45	4.15	5.50	11.40	15.22	9.52	-37%
Av. Baotou Composition	6.66	3.17	2.68	3.29	3.08	4.33	9.42	12.67	7.65	-40%



### ➤ China controls the world's Rare Earths industry

The strategic value of secure Rare Earth supplies has been much better and earlier understood in China than in the Western world. Already the late Chinese leader Deng Xiaoping once said "There is oil in the Middle East, there is Rare Earth in China". He foresaw the

West's growing dependence on these elements for high-tech industries and put China on course to become the world's dominant supplier today with 95% of Rare Earths production.

In 2009, the analogy to oil reserves is even more striking with Rare Earths use in zero-emission energy generation technology such as wind and solar.

However, the path that has led China to a virtual monopoly has not been without its own issues. The Chinese State-Owned Enterprises (SOE) that gained the processing technology could not protect this intellectual property.

As a result, the Chinese Rare Earths industry grew rapidly in the 1990s as many smaller Chinese enterprises set up Rare Earths processing plants. This led to intensive competition between Chinese producers which in turn drove down prices of rare Earths from the high prices associated with "specialty chemicals" to significantly lower "commodity" prices in a few short years.

Mining of rare Earths within China also grew unchecked within the provinces, especially in the south where small artisanal mining is possible. The main mine in China is the Bayan Obo Mine near Baotou in Inner Mongolia. This is controlled by a large SOE, Baotou Iron, and produced approximately 50,000 tonnes Rare Earth Oxides.

A second region is located in the Sichuan Province and is less consolidated. This region has lower value resources and mining is now underground, as opposed to open-pit mining.

Sichuan has an estimated capacity of up to 20,000 tonnes REO, and is reported being consolidated by Jiangxi Copper, which company shall invest in the required infrastructure and upgrading of processing plants.

The southern region, which comprises of Jiangxi, Guangdong, Hunan and Fujian provinces, mine an "ionic" clay deposit. This is the third region within China producing Rare Earths and most of the "heavy" Rare Earths (europium, terbium, dysprosium and yttrium being the key heavy rare Earths) in demand globally today.

Accurate production figures are unavailable due to the artisanal mining in this region. However, estimates range from 35,000 – 55,000 tonnes REO.

The fragmented Rare Earths mining and processing industry in China suffered from inefficient extraction techniques leading to low recovery and in addition poor environmental protection compliance was prevalent across the industry.

The Chinese authorities realized the industry had to change and rationalization of the industry began in 2003 when export quotas on Rare Earths were introduced and issued to approved local operators.

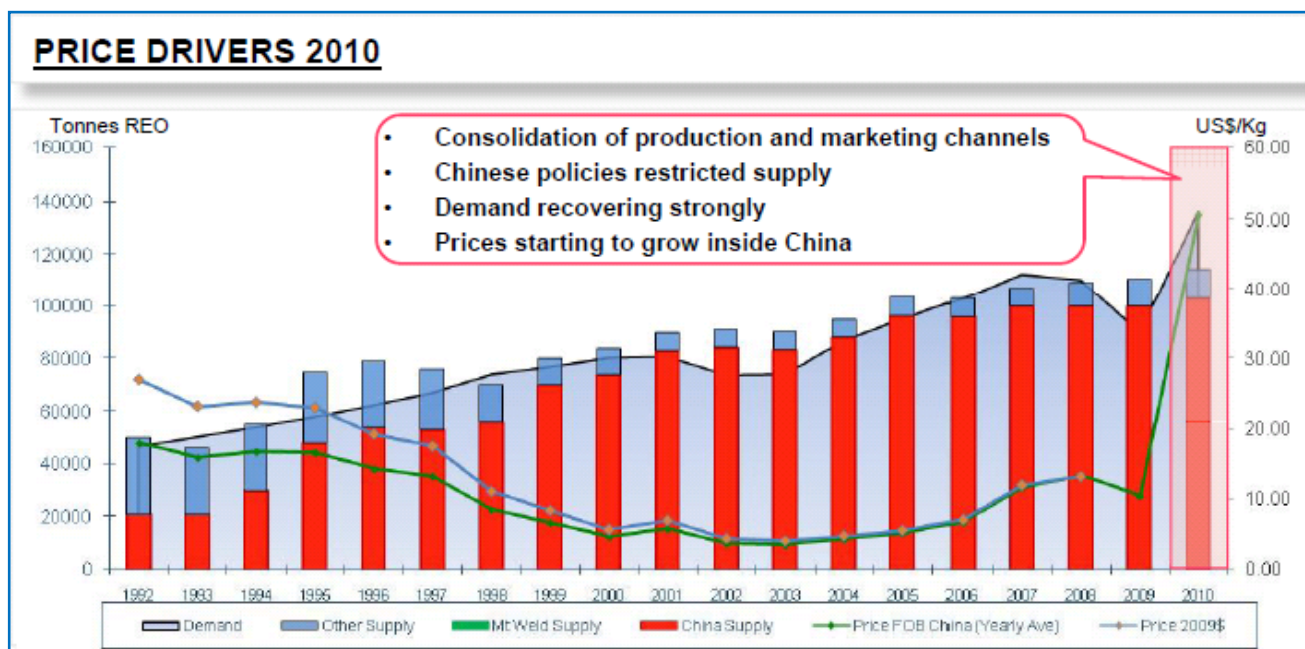
The tonnage of this export quota has been decreasing every each year. In 2006, the volume dropped to 48,000 tonnes, in 2007 to 43,574 tonnes, 2008 to 40,987 tonnes and in 2009 to 33,300 tonnes.

In addition to this export quota for local companies, foreign joint ventures secured export quotas from the Chinese Ministry of Commerce. In 2009, these quotas equaled 16,845 tonnes, giving a grand total of 50,145 tonnes.

These annually declining quotas, in conjunction with tightening of environmental regulation compliance, has led to the closure of many small processing operations.

To protect the fragile Rare Earths resources base within China over mining with low recovery processes and to enforce the environmental standards within the mining industry, the Chinese Government introduced “production quotas” in 2007.

The production quota for Rare Earths concentrates was 82,320 tonnes of REO in 2009, down 6% from 87,620 tonnes in 2008. The quota consisted of 72,300 tonnes for light rare earths from Baotou and Sichuan, down 7.9% as compared to 2008, and 10,020 tonnes for medium and heavy rare earths from the southern ionic region, up 8.87%.



Source: Lynas Corp

On July 8, 2010, the Ministry of Commerce of China released 7,976 tonnes of approved rare Earths export quota for the second half of 2010, including export quota for both foreign-invested firms (1,768 tonnes) and local firms (1,768 tonnes). The export quota is 72% less than the export quota for the second half of 2009 (28,417 tonnes).

The total export quota for 2010 of 30,259 tonnes is 40% less than the total export quota for 2009 (50,145 tonnes).

Since mid-September, China blocked shipments of raw rare earths minerals to Japan due to a diplomatic dispute, and to the United States and Europe since mid-October.

However, by the end of October the export embargo to the United States and Europe was ended.

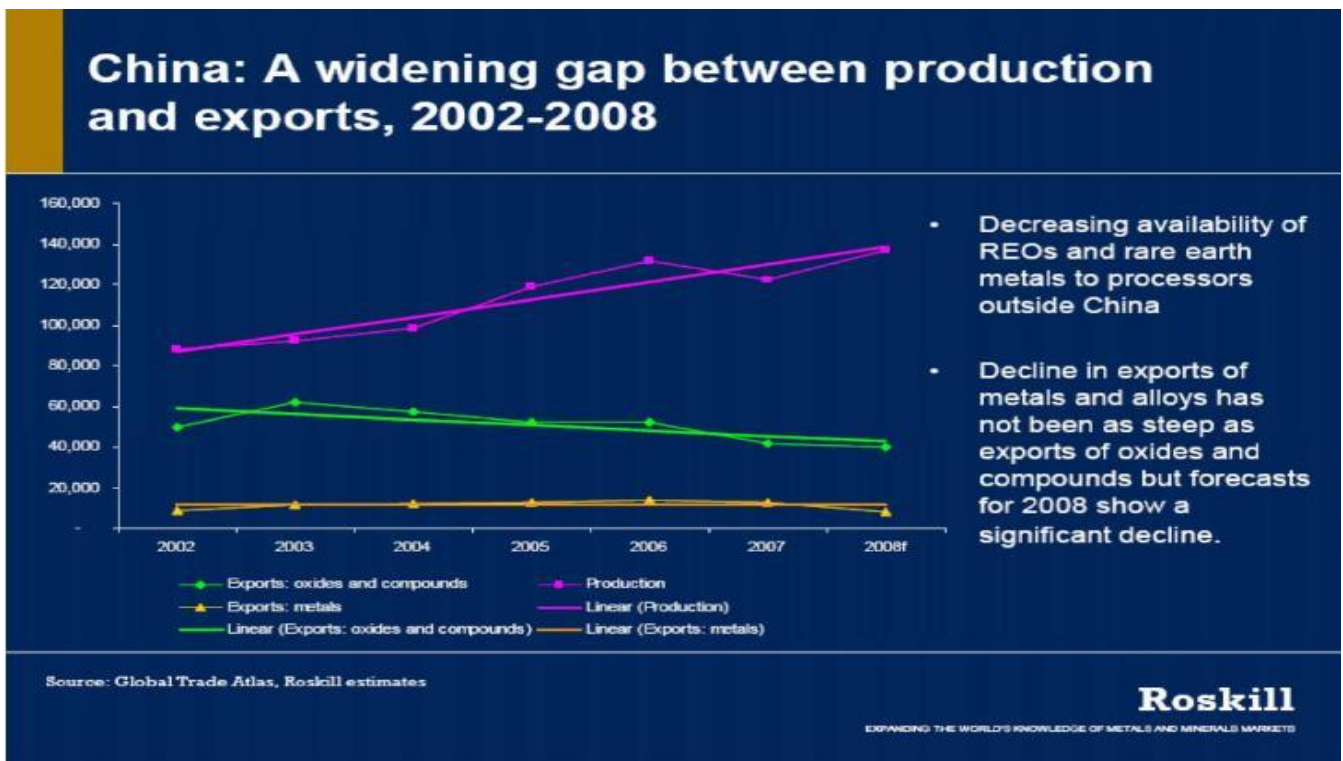
In this respect, it should be noted that from the 2010 export quota of 30,259 tonnes less than 2,000 tonnes remained to be exported by the end of September 2010.

According to Chinese rare earths industry officials the strong cut in export quotas is justified by the fact that after many years of continued growth in exports, the industry didn't receive the profit returns with the policy having been adjusted to ensure that China's resources are optimally utilized.

In 2009, the Chinese government announced that it has stopped acceptance applications for prospecting licences and mining licences for Rare Earth resources until June 30, 2010.

Both the Baotou and Sichuan regions appeared to be operating within this production quota policy, however, with the official production quota from the Chinese Ministry of Land and Resources of 10,020 tonnes per annum, the southern "ionic" clay region appears to be producing significantly above this quota level.

There are reports of continued government efforts to reduce mining in the southern ionic clay region, with MinMetals taking the lead in consolidating the mines and processing plants within Jiangxi.



➤ **Western hemisphere urged to respond to China's Rare Earths monopoly**

With China further tightening supply regulations to shore up prices, there is growing urgency to ensure own supplies in the Western hemisphere particularly for Heavy Rare Earth Elements (HREEs), indispensable for high-tech manufacturing.

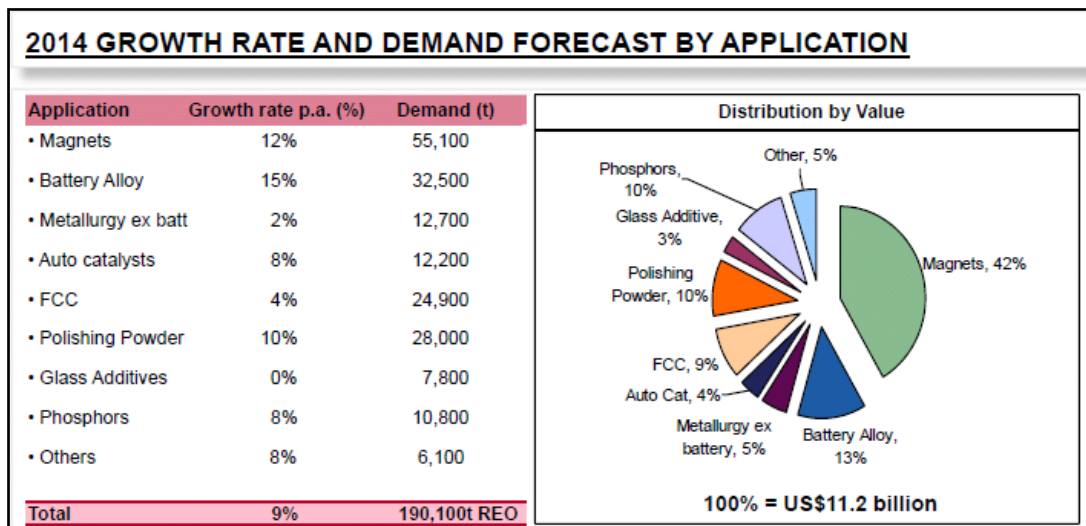
As to actually producing HREE rich ores and refining them no facilities exist today in the Western world that are extracting and/or refining HREEs to separate and justify them for high technology end uses. All such facilities today are in China.

For the **United States**, it will be necessary to develop, prove-out and construct at least one North American facility to produce the Rare Earth metals and their alloys in metallic form before anyone can make rare earths based magnets for any application.

**Molycorp Minerals** will be the first company in the western hemisphere to challenge Chinese domination in the production of REE's by reopening its Mountain Pass Mine in California with mining expected to go full scale by 2012.

**Lynas Corp.**, owing the richest deposit of Rare Earths in the world at Mount Weld in Western Australia, the first new project outside China, is expected to be the next producer with the first feed to kiln at the Lynas Advanced Material Plant in Malaysia on target for the third quarter of 2011.

<b>2014 FORECAST SUPPLY ASSUMPTIONS</b>		
<b>SUPPLY SOURCES</b>		<b>KEY UNDERLYING ASSUMPTIONS</b>
• Baotou	60,000t	• Baotou – 10% production increase 2010 / 2014
• Sichuan	20,000t	• Sichuan – full production quota to be utilised
• Ionic Clay Regions	30,000t	• Ionic Clay – 2010 reduced from 2008 reported levels due to news reports. 2014 reduced to double current production quota (conservative estimate, could be lower)
• Recycling in China	4,000t	• Mountain Pass – full production (20,000tpa) achieved
<b>China Total</b>	<b>114,000t</b>	• Recycling – 20% Nd, Pr & Dy recycled from previous year's magnet production (~30% SWARF losses)
• Mount Weld	22,000t	
• Mountain Pass	20,000t	
• Others (India & Russia)	12,000t	
• Recycling outside China	1,800t	
<b>Outside China Total</b>	<b>55,800t</b>	
<b>Grand Total</b>	<b>169,800t</b>	



Source: Lynas Corp



**Great Western Minerals** (GWG – TSX.V), an integrated rare earth producer, has a facility capable of producing rare earth metal alloys for battery production (nickel metal hydride) production in Michigan (US) and a facility producing samarium cobalt and neodymium iron boron magnet “alloys” in the UK.

GWG holds an option with respect to the former Rare Earths producing **Steenkampsgraal Mine** in South Africa, as well as seven Rare Earth exploration and development properties in North America and plans to bring the Steenkampsgraal mine back to production.



**Molycorp Minerals** (MCP – NYSE) will be the first company in the western hemisphere to challenge Chinese dominance in the production of Rare Earths metals by reopening its **Mountain Pass Mine**, California at rebuilding costs of approximately US\$ 530 million. Since having discovered

rare Earth mineralization (bastinasite) in

1949 at Mountain Pass and production having begun in 1952, the Company produced about 40% of global Rare Earths in 1990. However, in 1998 separation activity suspended due to inability to continue using off-site wastewater evaporation facilities followed by final mining and milling campaigns of bastinasite are compiled and mill tailings impoundment are being closed after 30 years of service.

In 2007, the extraction circuit for neodymium/praseodymium restarted for the first time since 1998, with production having commenced in the fourth quarter.

On September 30, 2009, privately held Molycorp Minerals, successor of Molycorp Inc a wholly owned subsidiary of Chevron, acquired the Mountain Pass facility from Chevron Mining, as a foundation to build an integrated rare earth products and technology company.

With processing of stockpiled bastinasite having begun in 2009, mining of fresh bastinasite is planned to begin in 2011 and to go full scale by 2012.

Molycorp is presenting the Mountain Pass Mine, a superior Rare Earth ore body both in quality (high-grade) and quantity, containing the most abundant Rare Earth deposit in the Western hemisphere. The Mine is expected to produce high quality REO's including cerium, lanthanum, neodymium, praseodymium and europium.

In June 2010, Molycorp signed a Letter of Intent with **Neo Material Technologies** (NEM – TSX) of Canada, a global producer of neodymium-iron-boron magnetic powders and rare-earth based engineered materials and applications to cooperate in the rare earth “Mine to Magnets” supply chain to their mutual benefit.



**Lynas Corp.** (LYL – ASX) owns the richest deposit of Rare Earths in the world at **Mount Weld** in Western Australia. A feasibility study has been completed on the Mount Weld Deposit and all Australian approvals required for Project development have been received.

A comprehensive evaluation of the Deposit has been completed by independent specialists Hellman and Schofield, resulting in a substantial upgrade in the resource to 7.7 million tonnes at 12% for 917,000 tonnes REO.

Due to the high ore grades the ore production level is forecast to be relatively small, for example: production of 10,500 tonnes REO in the first year of operations will require 120,000 tonnes of ore to be processed. With current demand at 95,000 tonnes per annum the Mount Weld production will represent approximately 11% of the global market.

Based on the proposed ore treatment options current reserves were calculated by Australian Mine Design and Development as 2.1 million tonnes @ 15.5% REO containing 321,000 tonnes REO.

This is about 35% of the available resources.

Lynas confidently expects that further ore processing studies and inclusion of lower grade ore will result in a mine life in excess of 20 years.

In November 2009, Lynas completed a A\$ 450 million capital raising to enable the completion of construction of the Concentration Plant at Mount Weld and Advanced Materials Plant to process the Mount weld concentrate through the final Rare Earth oxides (REOs) in the Gebeng Industrial Estate, Kuantan, Pahang, Malaysia. Mobilization of construction activities on both the Mount Weld site and Gebeng site occurred in April 2010.

Rare Earth Oxide	Mt Weld Distribution	2007	2008	2009	Q1 2010	Q2 2010	08/11/10
Lanthanum Oxide	25.50%	3.44	8.71	4.88	6.08	7.49	53.00
Cerium Oxide	46.74%	3.04	4.56	3.88	4.46	6.42	53.00
Neodymium Oxide	18.50%	30.24	31.90	19.12	27.56	33.20	80.00
Praseodymium Oxide	5.32%	29.05	29.48	18.03	26.13	33.07	76.00
Samarium Oxide	2.27%	3.60	5.20	3.40	3.40	3.40	32.40
Dysprosium Oxide	0.124%	89.10	118.49	115.67	156.50	200.50	286.00
Europium Oxide	0.443%	323.90	481.92	492.92	512.40	529.80	605.00
Terbium Oxide	0.068%	590.40	720.77	361.67	478.90	538.50	615.00
Av. Mt Weld Composition		11.59	14.87	10.32	13.13	16.02	61.96

Note: Mt Weld distribution totals 98.9%, the balance is made up of Gadolinium, Holmium, Erbium and Yttrium oxides.

Regular pricing information is not available for these metals.



**Frontier Rare Earths** (FRO – TSX) - Luxemburg based Frontier Rare Earths raised Cdn\$ 60 million in an IPO by issuing 17.65 million units consisting of one share and half a warrant for Cdn\$ 3.40 each, representing a 19.8% interest based on 89.08 million shares outstanding, valuing the Company at Cdn\$ 302.9 million.

**Trading of the shares of Frontier Rare Earths will start November 17, 2010.**

Frontier's main asset is the Zandkopsdrift Rare Earth prospect in the Namaqualand region of **South Africa's** Northern Cape province.

The Project has an Indicated resource of about 22.92 million tonnes, containing 532,000 tonnes of total rare earth oxides (TREO) at an average grade of 2.32% and an additional Inferred resource of 20.81 million tonnes, containing 415,000 tons of TREO at an average grade of 1.99%, applying a 1% grade cut-off.

Frontier has plans to complete a pre-feasibility study on the Project by the end of 2011, a bankable feasibility study in 2012 and start producing REE's by the end of 2012.

The Company has satisfied South Africa's black economic empowerment requirements by selling 26% of its local subsidiary that holds the prospecting right.



**Greenland Minerals and Energy** (GGG – ASX) has secured to acquire 61%, with options to acquire up to 100% of the **Kvanefjeld Project** on the southwest tip of Greenland

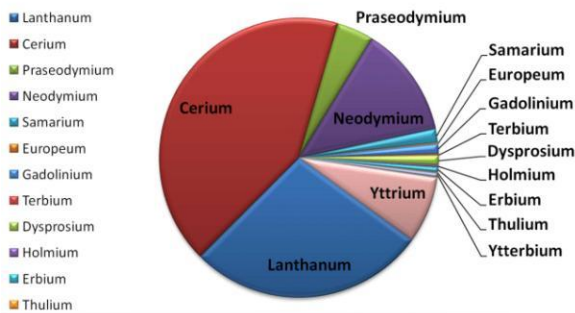
and is recognized as the world's largest undeveloped multi-element occurrence of rare earth oxides, sodium fluoride and uranium.

In June 2009, Greenland Minerals and Energy released an updated resource statement confirming Kvanefjeld, at a total 4.91 million tonnes REO, including 0.12 million tonnes or 283 million pounds of uranium oxide (U3O8) and 2.21 million tonnes of sodium fluoride (NaF), to be the largest undeveloped rare earth resource in the world.

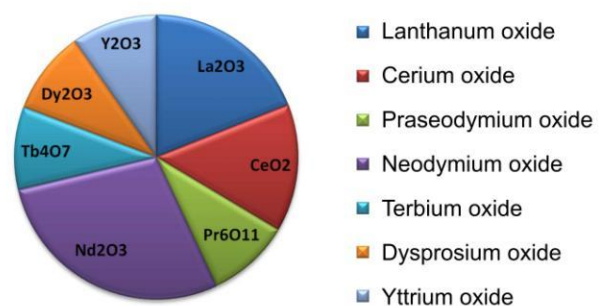
Early indications are that uranium represents approximately a quarter of the total in ground value of the Kvanefjeld Deposit, to be estimated at more than US\$ 50 billion.

In 2009, Greenland Minerals' focus has shifted from exploration and resource definition to the requirements of a Pre-Feasibility Study on the Kvanefjeld Project, the results of which were released on February 1, 2010, and provide a Net Present Value (NPV) of US\$ 2.18 billion and calculated a free cash flow of US\$ 8.9 billion over the 23-year mining period, if developed.

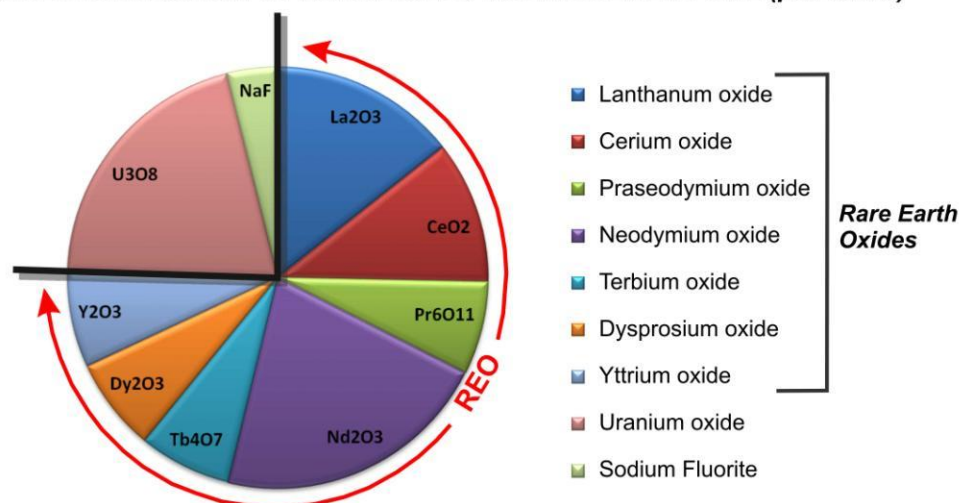
**RARE EARTH ELEMENT CONSTITUENTS OF KVANEFJELD ORE**



**RELATIVE VALUE OF RARE EARTH OXIDE CONSTITUENTS**



**IN-GROUND VALUE DISTRIBUTION OF KVANEFJELD MULTI-ELEMENT ORE (per tonne)**



*\*Based on REE grades in the geological model and metal prices as of July 08 (IMCOA)*

Mining studies indicate a large open-pit with low waste strip ratio and the highest grades presenting near-surface.

Total life mine production is 293.3 million tonnes at an average mine grade of 314 ppm U3O8 and 1.01% TRE.

A mine processing plant capable of treating 10.8 million tonnes per year is expected to cost US\$ 2.31 billion. Construction is scheduled to commence in 2013.

Nominal forecast annual production is equivalent to 43,729 tonnes of REO and 3,895 tonnes of U<sub>3</sub>O<sub>8</sub>. At this level of production Kvanefjeld could potentially supply >20% of the global Rare Earth demand of 2015/2016.

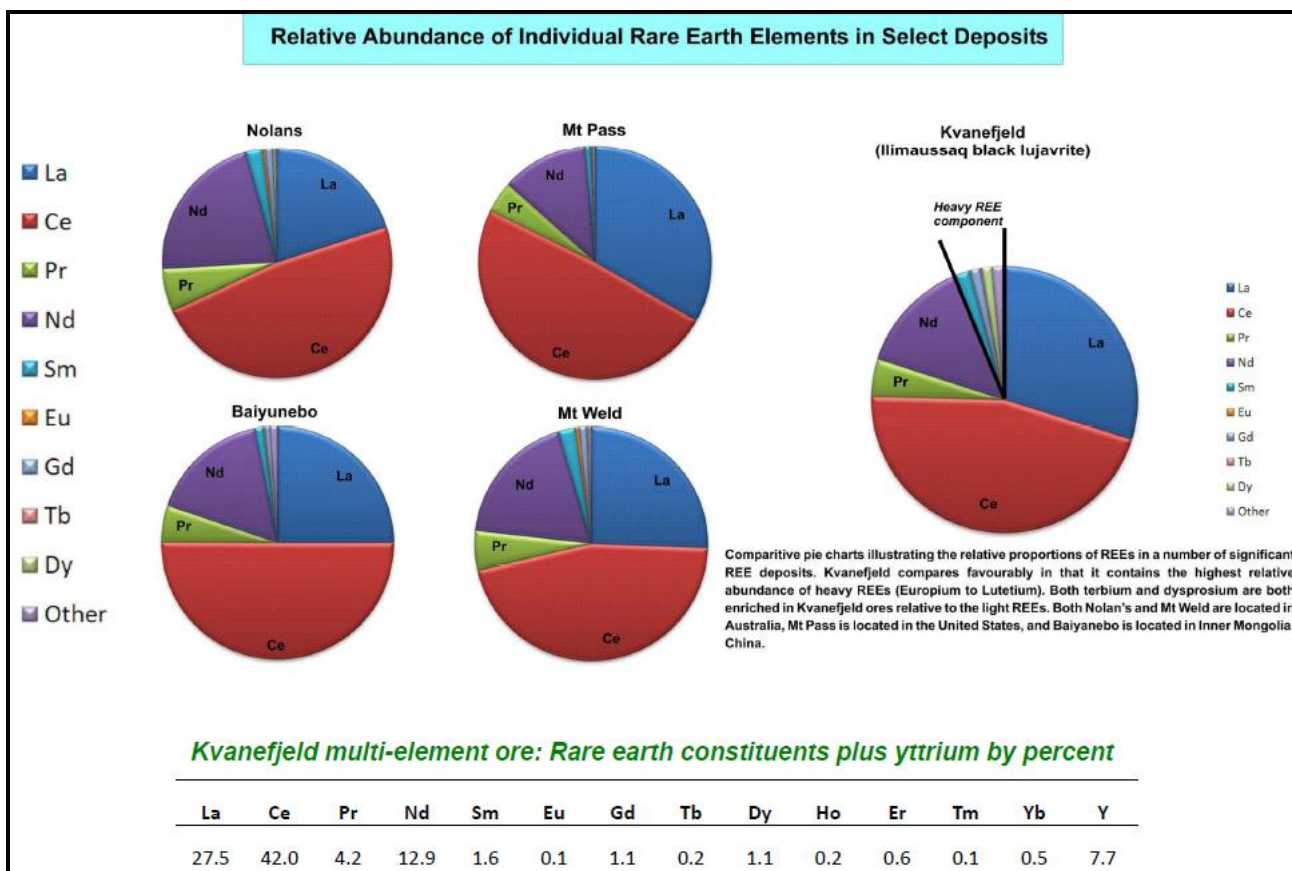
On May 26, 2010, Greenland Minerals announced that the South Greenland Municipal Council officially supports removal of the current uranium policy of zero tolerance, and on ongoing feasibility studies at Kvanefjeld. The Company aims to commence these work programs in 2011 and work through the definitive feasibility process in close consultation with Greenlandic stakeholders.

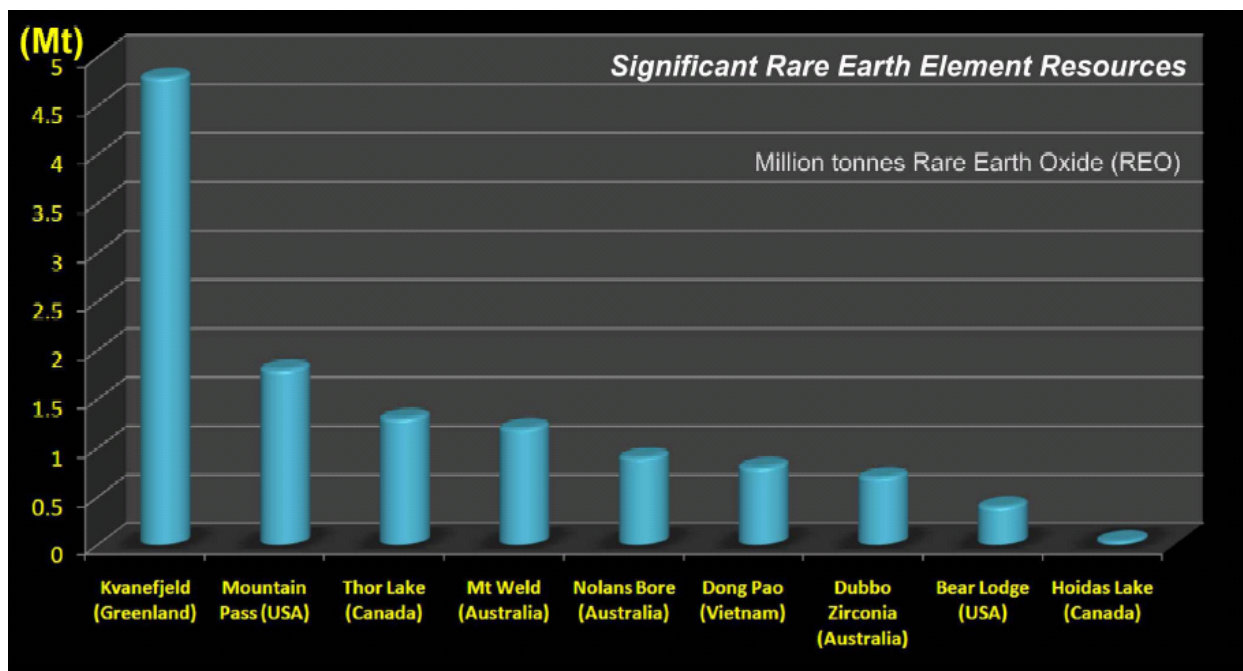
Greenland's labor union (SIK) has backed a change from the current uranium policy to a by-product ruling with a uranium concentration of 0.1%.

On September 20, 2010, Greenland Minerals announced that the Greenland government has introduced an amendment to Standard Terms of Exploration licences in Greenland. The amendments allow for, upon application, approval, the inclusion of radioactive elements as exploitable minerals for the purpose of thorough evaluation and reporting.

Greenland Minerals' application under these regulations has been approved.

In early July 2010, Greenland Minerals formalized a A\$ 6 million capital raising and established an A\$15 million equity facility that provides the Company with a further A\$ 21 million to fund ongoing work programs on the Kvanefjeld Project.





**Alkane Resources** (ALK – ASX) is a multi commodity explorer and miner, focused on the Central West of New South Wales, Australia, about 400 kilometres northwest of Sydney

Alkane's **Dubbo Zirconia Project (DZP)**, developments located 30 kilometres south of the large regional centre of Dubbo is one of the world's most advanced zirconium, niobium, yttrium and rare earth productions and is based upon a world class reserve.

A Demonstration Pilot Plant (DPP) has been operating at the laboratory facilities of ANSTO Minerals at Lucas Heights south of Sydney since May 2008 and to date has recovered 1,300 kg of zirconium chemicals and nearly 300 kg of niobium concentrate.

The DPP is currently operating for short periods to trial engineering and process innovations and check specific aspect of the flow sheet for production development.

Laboratory scale testing processed to recover **yttrium** and **heavy rare earths (HREE = gadolinium, terbium, dysprosium and erbium)** has been operating within the DPP and about 20 kilograms of filter cake recovered to date. This filter cake has to be further processed to produce a marketable YHREE product and the program to achieve this has commenced

The yttrium and rare earth distribution in the DPZ ore deposit is unusual, having about 25% in the "heavy" category, which is very different to the standard distribution of about 95% light and 5% heavy.

Alkane's light earth program has taken second priority to the yttrium-heavy rare earth recovery and zirconium-zirconia development, but now has increased in importance and it is anticipated that the LREE circuit will be added to the DPP in the December quarter of this year.

The DPP operation has confirmed the process flow sheet and is providing engineering data for capital and operating cost estimates, and continues to generate substantial product for market evaluation. Data from the DPP and Letters of Intent from future customers will be incorporated in the current DFS which should be completed early 2011.

Depending upon financing and Development Consent from the New South Wales State government, the DPZ could be in production late 2012 or early 2013.



**Canadian International Minerals** (CIN – ASX) which became listed on the TSX Venture Exchange on September 29, 2010, is a junior resource company focused on the exploration, discovery and development of deposits of rare metals and minerals in demand for technologies related to renewable energy, hybrid vehicles, clean air and carbon emission reduction.

The Company's flagship property is the **Carbo Rare Earth Project** located in British Columbia, Canada, which encompasses a series of Niobium and Rare Earth Element (REE) bearing carbonatite and alkaline intrusions. The Property consists of four claims which straddle and directly adjoin Spectrum Mining's property. In late October 2009, this company reported significant rare earth element mineralization on claims contiguous to the Carbo Property.

Highlights included a 48.64 metre interval which averaged 3.55% REE, a 72 metre interval that averaged 2.92% REE and a 144 metre interval that averaged 2.20% REE in three widely separated drill holes.

In late October 2009, **Spectrum Mining**, a private company, reported significant rare earth mineralization on claims contiguous to the Carbo Property. Highlights include a 48.64 metre interval which averaged 3.55% REE, a 72 metre interval that averaged 2.92% REE and a 144 metre interval that averaged 2.20% REE in three widely separated drill holes.

Mineral analysis on 2009 drill core has indicated that the primary REEs are contained in coarse grained monazite and a bastnesite-synchistite parasite mineral.

The Carbo claims straddle and directly adjoin Spectrum's property, with the reported drilling approximately 2 kilometres from a Carbo carbonite showing which hosts analogous mineralization.

In August 2010, Canadian International Minerals announced that a permit to conduct a 1,000 metre diamond drill program on the Carbo Project has been issued by the B.C. Ministry of Energy, Mines and Petroleum Resources.

On October 20, 2010, the Company announced that it had commenced a minimum 1,000-metre diamond drill program which is designed to drill at least 12 diamond drill holes from up to 6 drill sites.

Drilling targets have been selected based on the results from a recently completed high resolution Aeroquest radiometric-Mag survey (50 metre line spacing) and closely spaced auger soil geochemical sampling (25 metre grid).

Expansion of the 1,000 metre drilling program will be dependent on results and weather conditions.

The 100%-owned Solar claim group, consisting of 7 claims totalling 1,779 hectares, are located approximately 2 km northeast of the town of Golden, British Columbia. The claims cover 5-6 km of favourable Mount Wilson Formation which consists of fine grained white quartzites up to 500 metres wide. They host two operating silica mines including the Moberly Mine, owned by Heemskerk Consolidated, an Australian listed mining house.

The Company's Solar claims directly adjoin the Moberly Mine which has been in continuous production since 1980, and has recently completed an expansion and upgrading of production and processing.

The privately owned Hunt Mine is located approximately 12 km to the south of the Solar claim.

Both mines have stripped metallurgical grade silica to a ferrosilicon refinery in Washington State during the 1980-90s.

Silicon exploration in the Golden area is relatively simple as the formations are continuous and in strata that are easily recognisable. The topography of the claim group is moderate for the region and is accessible by existing roads.

An exploration program consisting of geological mapping and sampling has been completed on the Solar and Silicon projects. Twenty eight large rock samples are currently being processed for potential as metallurgical grade silica (> 99.7%). Assays are pending.

## Overview of major Rare Earths and Lithium companies

October 29, 2010	<i>Trading symbol</i>		<i>Share price</i>	<i>12 months prices</i>		<i>Net shares issued</i>	<i>Market cap.</i>
				<i>H</i>	<i>L</i>	<i>million</i>	<i>million</i>
<b>Rare Earths:</b>							
			<b>US\$</b>	<b>US\$</b>	<b>US\$</b>		<b>US\$</b>
Molycorp Minerals	MCP	NYSE	35.40	40.90	12.10	82.3	2,913.4
			<b>Cdn\$</b>	<b>Cdn\$</b>	<b>Cdn\$</b>		<b>Cdn\$</b>
Avalon Rare Metals	AVL	TSX	4.40	4.99	1.89	92.3	406.1
Rare Element Resources	RES	TSX.V	11.04	14.43	1.94	32.4	357.7
Frontier Rare Earths	FRO	RSX	3.40 x	-	-	89.1	302.9
Quest Rare Minerals	QRM	TSX.V	4.70	5.72	1.74	54.3	255.2
Great Western Minerals	GWG	TSX.V	0.44	0.49	0.15	354.0	155.8
Stans Energy	RUU	TSX.V	0.67	0.83	0.05	126.5	84.8
Commerce Resources	CCE	TSX.V	0.59	0.69	0.21	130.6	77.1
Hudson Resources	HUD	TSX.V	1.29	1.67	0.44	59.5	76.8
Tasman Metals	TSM	TSX.V	1.83	2.33	0.40	25.3	46.3
Ucore Rare Metals	UCU	TSX.V	0.52	0.74	0.20	87.2	45.3
Midland Exploration	MD	TSX.V	1.80	2.00	1.15	22.2	40.0
Pele Mountain Resources x	GEM	TSX.V	0.28	0.36	0.09	118.9	33.3
Rare Earth Metals	RA	TSX.V	0.38	0.68	0.14	67.9	25.8
Eagle Plains Resources	EPL	TSX.V	0.19	0.25	0.11	78.4	14.9
Quantum Rare Earth Development	QRE	TSX.V	0.51	0.64	0.22	26.4	13.5
Bolero Resources	BRU	TSX.V	0.42	0.69	0.16	29.9	12.6
Paget Minerals	PGS	TSX.V	0.28	0.36	0.10	38.0	10.6
<b>Canadian International Minerals *</b>	CIN	TSX.V	0.23	0.29	0.13	38.1	8.8
Bon Terra Resources	BTR	TSX.V	0.13	0.26	0.08	35.9	4.7
Electric Metals	EMI	TSX.V	0.15	0.36	0.06	29.4	4.4
<b>Int. Montoro Resources *</b>	IMT	TSX.V	0.09	0.11	0.03	45.9	4.1
Alix Resources	AIX	TSX.V	0.21	1.50	0.15	12.3	2.6
Kirrin Resources	KYM	TSX.V	0.09	0.16	0.04	22.8	2.1
			<b>A\$</b>	<b>A\$</b>	<b>A\$</b>		<b>A\$</b>
Lynas	LYC	ASX	1.47	1.79	0.38	1,657.0	2,435.8
Arafura Resources	ARU	ASX	1.39	1.79	0.38	291.3	404.9
<b>Alkane Resources * xx</b>	ALK	ASX	0.78	1.19	0.23	249.0	194.2
<b>Greenland Minerals and Energy * xxx</b>	GGG	ASX	0.75	1.10	0.31	256.3	192.2
Northern Uranium x	NTU	ASX	0.39	0.50	0.06	163.8	63.9
Globe Metals and Mining x	GBE	ASX	0.44	0.51	0.12	94.2	41.4
Metallica Minerals	MLM	ASX	0.31	0.37	0.20	125.1	38.8
Gippsland	GIP	ASX	0.05	0.09	0.03	626.3	31.3
<b>Ram Resources *</b>	RMR	ASX	0.03	0.06	0.01	541.8	16.3

x based upon IPO of Cdn\$ 60 million offering 17.65 million units for Cdn\$ 3.40 each; listing as at November 17, 2010

x also uranium assets

xx also major gold assets in Australia

xxx also major uranium assets

\* featured as Special Situation

October 29, 2010	Trading symbol		Share price	12 months prices		Net shares issued million	Market cap. million
				H	L		
<b>Lithium:</b>			<b>Cdn\$</b>	<b>Cdn\$</b>	<b>Cdn\$</b>		<b>Cdn\$</b>
Talison Lithium	TLH	TSX	5.00	5.70	3.10	88.2	441.0
Lithium Americas Corp.	LAC	TSX	1.71	2.30	1.04	73.7	126.0
Canada Lithium	CLQ	TSX	0.83	0.86	0.36	151.7	125.9
Western Lithium Canada	WLC	TSX.V	1.03	2.49	0.69	76.0	78.3
Lithium One	LI	TSX.V	1.10	1.73	0.73	47.3	52.0
TNR Gold (Int. Lithium) x	TNR	TSX.V	0.20	0.38	0.15	123.0	24.6
Nemaska Exploration	NMX	TSX.V	0.38	0.60	0.26	42.6	16.2
Rock Tech Lithium	RCK	TSX.V	0.35	0.39	0.08	31.9	11.2
Dios Exploration	DOS	TSX.V	0.27	0.38	0.16	34.3	9.3
Sirios Resources	SOI	TSX.V	0.07	0.10	0.04	92.1	6.4
Pan American Lithium	PL	TSX.V	0.22	0.82	0.14	29.1	6.4
x also copper assets							
			<b>US\$</b>	<b>US\$</b>	<b>US\$</b>		<b>US\$</b>
American Lithium Minerals	AMLM	OTCBB	0.41	2.30	0.40	54.4	22.3
LI 3 Energy	LIEG	OTCBB	0.15	1.12	0.03	70.6	10.6
			<b>A\$</b>	<b>A\$</b>	<b>A\$</b>		<b>A\$</b>
Galaxy Resources	GXY	ASX	1.47	1.80	0.90	190.6	280.2
Orocobre x	ORE	ASX	2.43	3.00	1.00	91.2	221.6
x also lithium-potash resources							