Rare Earth Elements Letter

INTERNATIONAL

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

September 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)
promethimium (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.

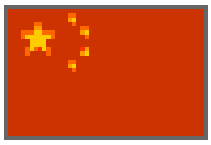
The June 2008 Rare earths price for Lynas' average Mount Weld composition was US$ 15.22/kg REO on en FOB basis, by June 2009 this dropped to US$ 9.52/kg REO, a decline of 37%.
In the same period the average composition price for China's Baotou Mine declined 40% form US$ 12.67 to US$ 7.65/kg REO.

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$ 44.83/kg as at August 30, 2010.

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 lead 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.

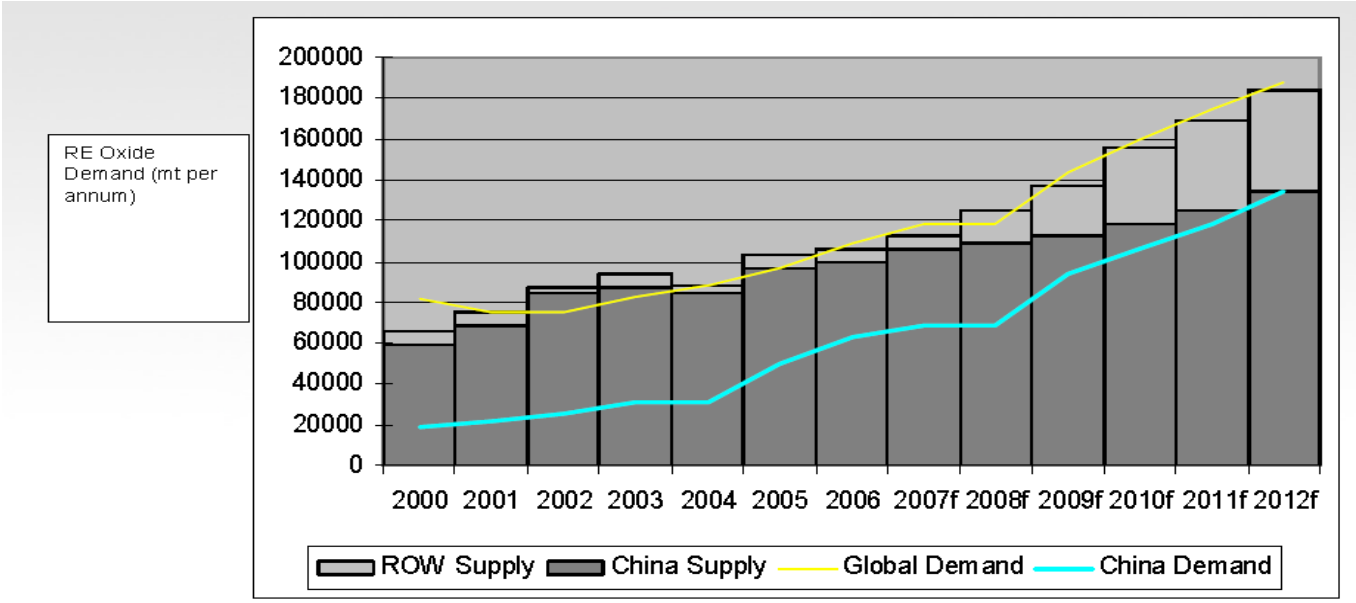
The fragmented Rare Earths mining and processing industry in China suffered from inefficient extraction techniques leading to low recovery and in addition poor environmental protection compliance was prevalent across the industry.

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%.

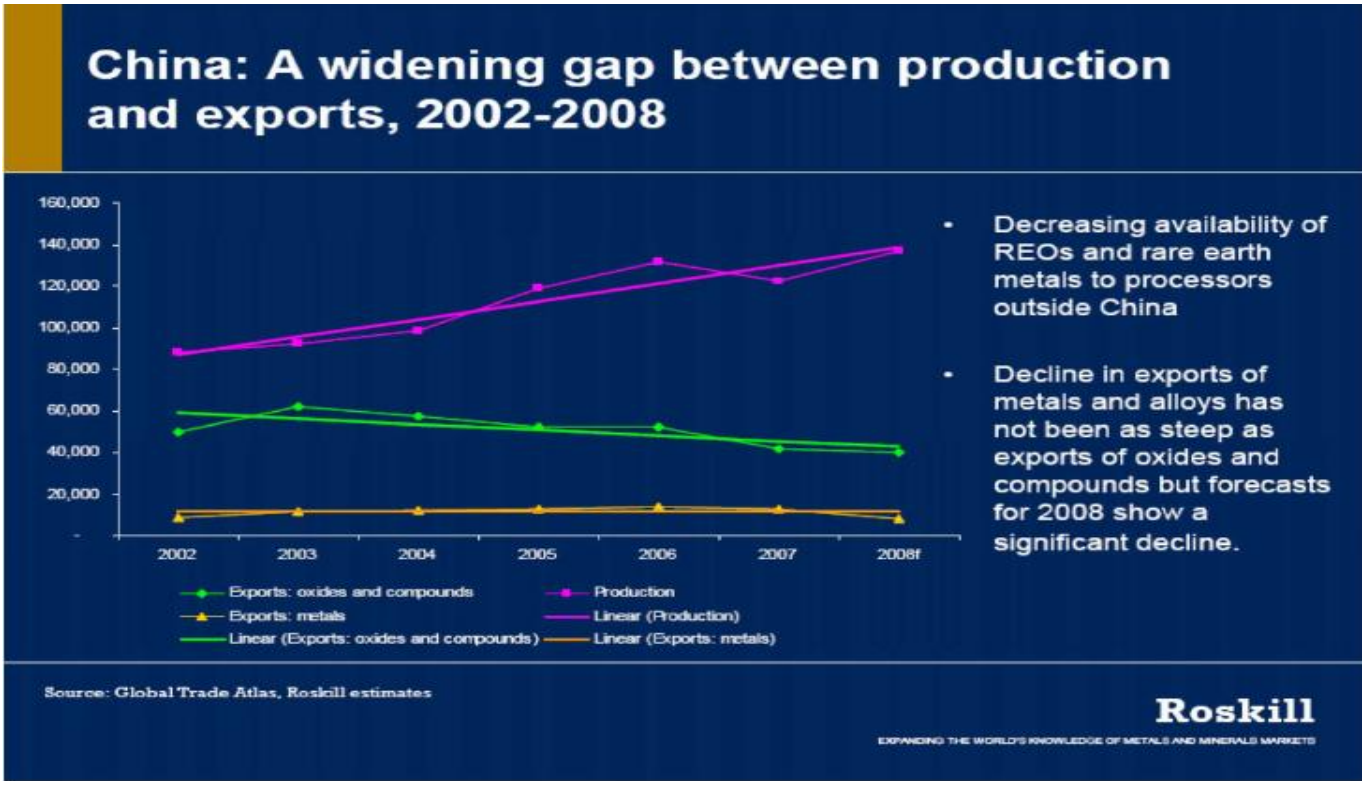


On July 8, 2010, the Ministry of Commerce of China released 7,976 tonnes of approved rare Earths export quota for the second half of 2010, including export quota for both foreign-invested firms (1,768 tonnes) and local firms (1,768 tonnes). The export quota is 72% less than the export quota for the second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

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 de profit returns with the policy having been adjusted to ensure that China's resources are optimally utilized.

In 2009, the Chinese government announced that is has stopped acceptation 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 Earth's 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.

Great Western Minerals. (GWG – TSX.V), an integrated rare earth ducer, 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) based in Colorado (US) 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. 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 if 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 Mountt 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	30/08/10
Lanthanum Oxide	25.50%	3.44	8.71	4.88	6.08	7.49	35.00
Cerium Oxide	46.74%	3.04	4.56	3.88	4.46	6.42	35.00
Neodymium Oxide	18.50%	30.24	31.90	19.12	27.56	33.20	63.00
Praseodymium Oxide	5.32%	29.05	29.48	18.03	26.13	33.07	61.50
Samarium Oxide	2.27%	3.60	5.20	3.40	3.40	3.40	30.40
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	620.00
Av. Mt Weld Composition		**11.59**	**14.87**	**10.32**	**13.13**	**16.02**	**44.83**

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.

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 oxyde (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$ 40 billion.

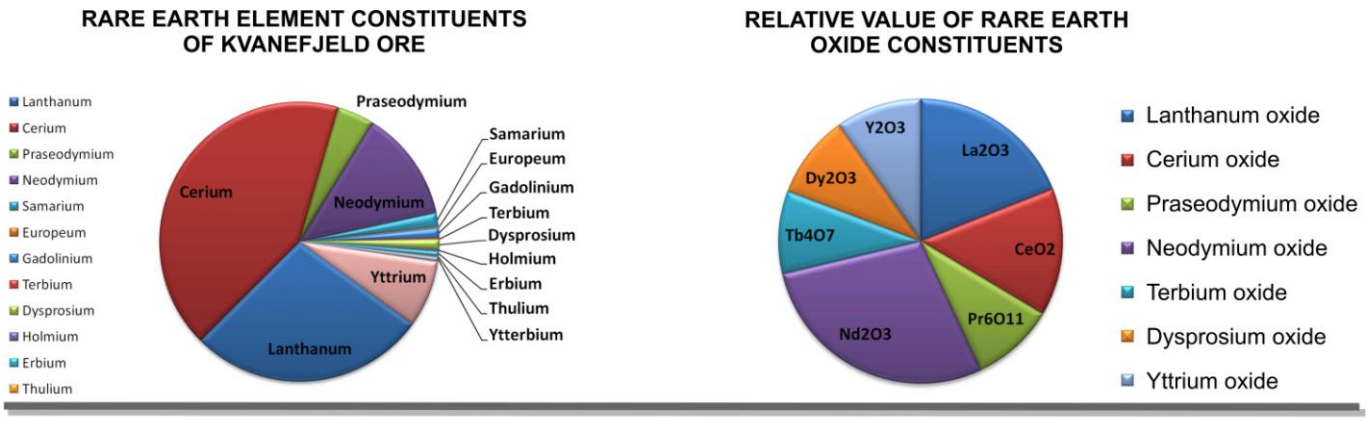
In 2009, Greenland Minerals' focus has shifted from exploration and resource definition to the requirements of a Pre-Feasibility Study on the Kvanefjeld Project, the results of which were released on February 1, 2010, and provide a Net Present Value (NPV) of US$ 2.18 billion and calculated a free cash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

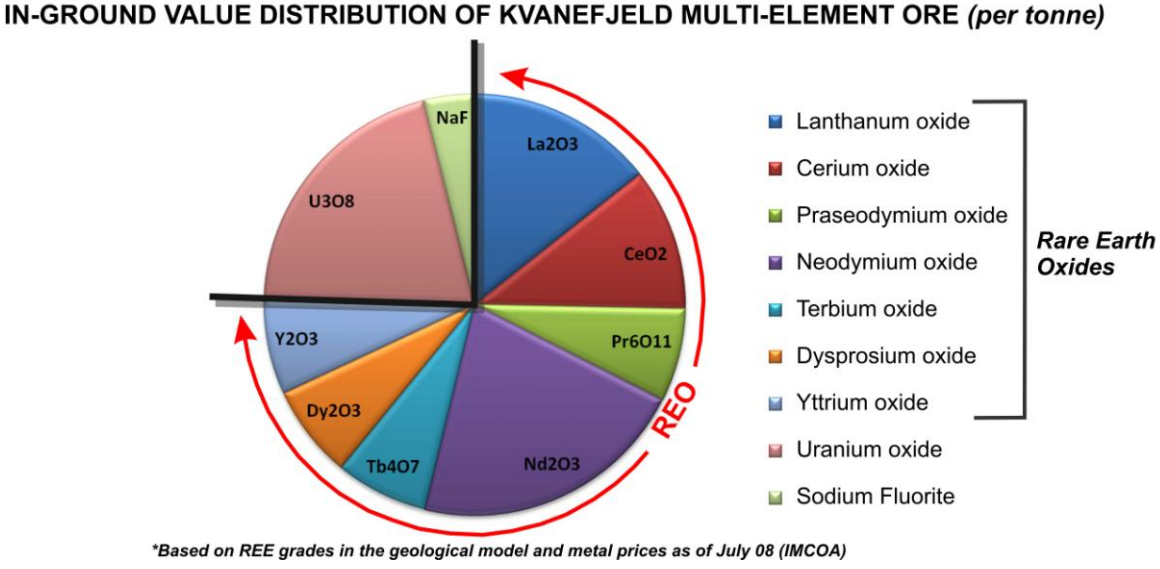
Mining studies indicate a large open-pit with low waste strip ratio and the highest grades presenting near-surface.
Total life mine production is 293.3 million tonnes at an average mine grade of 314 ppm U3O8 and 1.01% TRE.

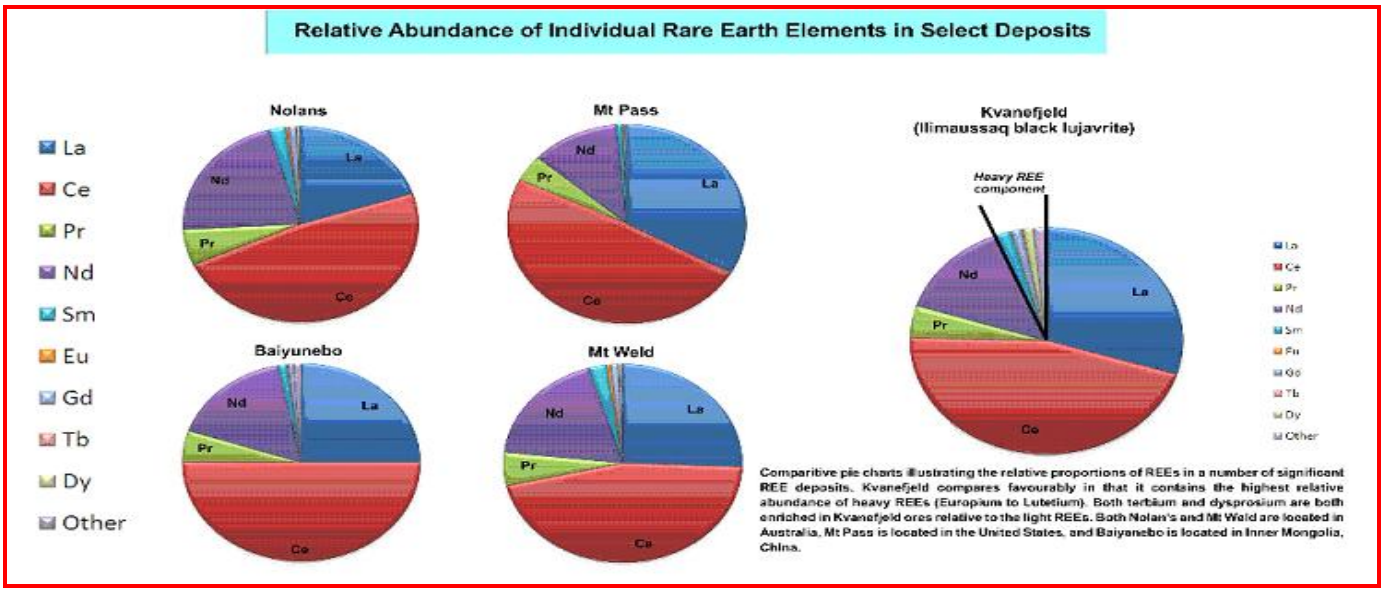
At a processing rate of 10.8 million tones per annum, nominal forecast production is equivalent to 43,729 tonnes of REO and 3,895 tonnes of U3O8.
At this level of production Kvanefjeld could potentially supply >20% of the global Rare Earth demand of 2015/2016.

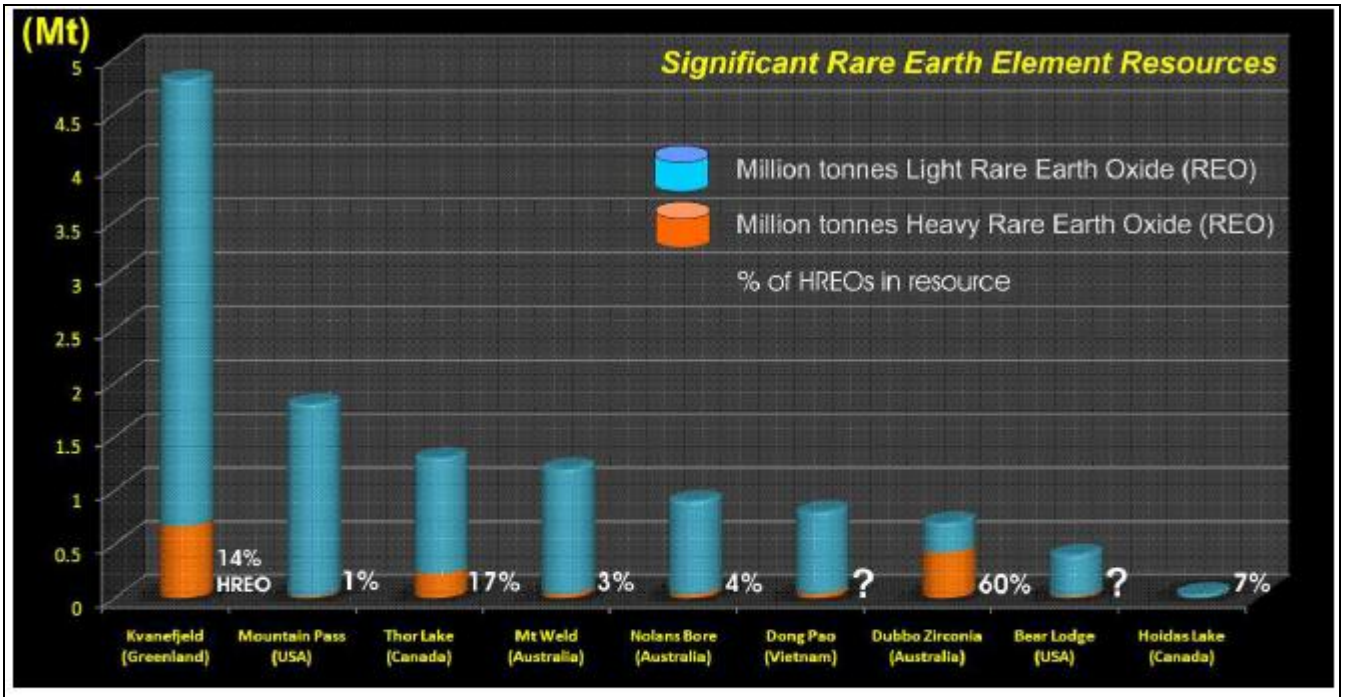
On May 26, 2010, Greenland Minerals announced that the South Greenland Municipal Council officially supports removal of the current uranium policy of zero tolerance, and on ongoing feasibility studies at Kvanefjeld. The Company aims to commence these work programs in 2011 and work through the definitive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

In early July 2010, Greenland Minerals formalised 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.









A comparison of known REE resources that are compliant by Australian JORC standards, or Canadian National Instrument 43-101 standards. Kvanefjeld is significant in terms of size, as well as the ores being relatively rich in the high-demand heavy REEs. The Bayanebo iron-REE deposit in China is also very large, but JORC or NI 43 101 resource estimates are unknown.

Overview of major Rare Earths and Lithium companies

August 31, 2010	*Trading symbol*		*Share price*	*12 months prices* H	L	*Net shares issued million*	*Market cap. million*
Rare Earths:							
			US$	***US$***	***US$***		***US$***
Molycorp Minerals	MCP	NYSE	16.75	17.72	12.1	81.3	1,361.8
			Cdn$	***Cdn$***	***Cdn$***		***Cdn$***
Avalon Rare Metals	AVL	TSX	3.14	4.24	1.89	79.1	248.4
Rare Element Resources	RES	TSX.V	4.68	5.06	1.94	32.1	150.2
Quest Rare Minerals	QRM	TSX.V	3.51	4.26	1.13	42.6	149.5
Great Western Minerals	GWG	TSX.V	0.30	0.46	0.15	242.7	72.8
Commerce Resources	CCE	TSX.V	0.35	0.82	0.21	130.6	45.7
Ucore Rare Metals	UCU	TSX.V	0.45	1.00	0.20	87.2	39.2
Hudson Resources	HUD	TSX.V	0.64	1.67	0.33	59.5	38.1
Tasman Metals	TSM	TSX.V	1.24	1.50	0.40	25.3	31.4
Midland Exploration	MD	TSX.V	1.42	1.54	0.79	22.0	31.2
Stans Energy	RUU	TSX.V	0.24	0.52	0.02	126.5	30.4
Rare Earth Metals	RA	TSX.V	0.36	0.68	0.14	67.9	24.4
Eagle Plains Resources	EPL	TSX.V	0.14	0.26	0.11	78.4	11.0
Quantum Rare Earth Development	QRE	TSX.V	0.27	0.64	0.18	26.4	7.1
Paget Minerals	PGS	TSX.V	0.16	0.36	0.10	38.0	6.1
Bon Terra Resources	BTR	TSX.V	0.13	0.52	0.08	35.9	4.7
Bolero Resources	BRU	TSX.V	0.17	0.69	0.16	23.6	4.0
Electric Metals	EMI	TSX.V	0.11	0.50	0.06	29.4	3.2
Canadian International Minerals	CIN	CNDX	0.09	0.16	0.06	32.3	2.9
Int. Montoro Resources	IMT	TSX.V	0.04	0.11	0.03	45.9	1.8
Alix Resources	AIX	TSX.V	0.17	1.50	0.15	5.3	0.9
			A$	**A$**	**A$**		**A$**
Lynas	LYC	ASX	0.98	1.07	0.38	1656.2	1,623.1
Arafura Resources	ARU	ASX	0.73	1.28	0.38	290.6	212.1
Alkane Resources * x	ALK	ASX	0.45	0.54	0.23	249.0	112.1
Greenland Minerals and Energy * xx *	GGG	ASX	**0.42**	0.94	0.30	249.9	105.0
Metallica Minerals	MLM	ASX	0.25	0.33	0.20	125.1	31.3
Gippsland	GOP	ASX	0.05	0.09	0.03	544.6	27.2
Globe Metals and Mining xxx	GBE	ASX	0.21	0.38	0.12	94.2	19.8
Ram Resources *	RMR	ASX	0.02	0.06	0.01	284.2	5.7

** share price as at July 30, 2010*

x *also major gold assets in Australia* ***xx*** *also major uranium assets* ***xxx*** *also uranium assets*

**** featured as Special Situation***

August 31, 2010	*Trading symbol*		*Share price*	*12 months prices* H	L	*Net shares issued million*	*Market cap. million*
Lithium:			***Cdn$***	***Cdn$***	***Cdn$***		***Cdn$***
Canada Lithium	CLQ	TSX.V	0.58	0.74	0.36	149.8	86.9
Lithium Americas Corp.	LAC	TSX	1.14	1.87	1.04	73.5	83.8
Western Lithium Canada	WLC	TSX.V	0.76	2.49	0.69	76.0	57.8
Lithium One	LI	TSX.V	1.08	1.78	0.73	47.1	50.9
TNR Gold (Int. Lithium) x	TNR	TSX.V	0.22	0.38	0.18	123.0	27.1
Nemaska Exploration	NMX	TSX.V	0.38	0.60	0.26	42.6	16.2
Dios Exploration	DOS	TSX.V	0.30	0.38	0.16	33.0	9.9
Pan American Lithium	PL	TSX.V	0.18	0.82	0.14	29.1	5.2
Sirios Resources	SOI	TSX.V	0.05	0.10	0.05	92.1	4.6
Rock Tech Lithium	RCK	TSX.V	0.13	0.45	0.08	31.9	4.1
Salares Lithium xx *	LIT	TSX.V	**0.62**	1.22	0.46	36.1	22.4
			US$	***US$***	***US$***		***US$***
American Lithium Minerals	AMLM	OTCBB	0.56	2.99	0.49	54.4	30.5
LI 3 Energy	LIEG	OTCBB	0.32	1.12	0.03	70.6	22.6
			A$	**A$**	**A$**		**A$**
Galaxy Resources	GXY	ASX	1.03	2.40	0.90	190.6	196.3
Orocobre x	ORE	ASX	1.88	3.00	1.00	91.1	171.3

** share price as atJuly 15, 2010*

x *also copper assets*

xx *merger with Talison Minerals announced to create world's largest lithum producer (Salares 20% - Talison 80%)*

x *also lithium-potash resources*