

# Rare Earth Elements Letter

## INTERNATIONAL

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

**BREAKING NEWS— December 2011**

[www.ggg.gl](http://www.ggg.gl)



### **Greenland Minerals and Energy Ltd. (A\$ 0.60)**

ASX	: GGG
OTC.US	: GDLNF
H+L prices (12 months)	: A\$ 1.41 – 0.42
Net issued shares	: 410.4 million
Fully diluted	: 417.4 million
Market capitalization	: A\$ 248.3 million

**Next price target: A\$ 1.50**

## **BREAKING NEWS**

### **Greenland Government introduces uranium licensing framework for Kvanefjeld Multi-Element Project**

Greenland Minerals and Energy (“GMEL”) has announced that the government of Greenland has amended the terms of the Company’s exploration licence that covers the **Kvanefjeld Multi-Element Project** such that it is now inclusive of uranium.

Exploration licence EL 2010/02 covers the northern Illimaussaq complex and includes the 100%-owned world-class Kvanefjeld resource, along with the emerging satellite deposits Zones 2 and 3. Under the licensing framework in Greenland, the licence maintains the right to apply for an exploitation (mining) licence for all exploitable elements listed on the exploration licence.

Importantly, EL 2010/02 now includes radioactive materials, providing the Company with the clear right to apply for the exploitation of radioactive elements along with all other exploitable elements. The granting for an exploitation licence will be dependent on establishing an environmentally and socially sustainable development scenario that is economically robust.

The amendment comes approximately one year after the Government of Greenland issued GMEL with an evaluation permit to allow for comprehensive feasibility studies to be conducted on a mineral deposit that includes uranium.

Through the first half of 2011, the Company conducted impact assessments. These terms were approved by the government in July 2011, and both the EIA and SIA are progressing on schedule.

► GMEL expects to lodge an application for the exploitation of Kvanefjeld at the end of 2012.

Kvanefjeld is a project of international strategic significance; through the production of uranium oxide, Kvanefjeld can become a cost-effective cornerstone producer of critical REEs; the REEs essential to energy efficient technologies and that are forecast to be in short supply for many years to come.

The Kvanefjeld resource in its own right includes the world's largest JORC-code compliant resource of REEs, as well as a global top ten uranium resource. With the first resource estimates for Zone 2 and 3 slated for the first quarter of 2012, the project's overall resource base will increase substantially, further consolidating the northern Illimaussaq Complex as a prolific ore-field of genuine global significance.

On March 23, 2011, Greenland Minerals announced a new JORC-compliant resource estimate being prepared by SRK Consulting which showed an increase of 162 million tonnes to a total resource of 619 million tonnes and an increase of the Indicated resource of 72 million tonnes to 437 million tonnes (at a 150 ppm U3O8 cut-off).

The significant improvements in the new estimate can be attributed to further drilling at Kvanefjeld undertaken during the 2009 and 2010 field seasons, the generation of a new geological model and the development by GMEL in conjunction with SRK of a methodology to domain the unique multi-element resource.

On October 29, 2011, Greenland announced a technical breakthrough in the beneficiation of the REE-uranium minerals proposed to be mined at Kvanefjeld. That offers the potential to effectively increase the ore grades by more than 10 times through a simple beneficiation step.

A final go forward flow sheet comparing the base case study and a new alternative scenario through trade-off studies, is expected late in the first quarter of 2012.

The Company's environment and social impact assessments are on track to be completed by late 2012.

**The DFS process should be drawing to close in the late second quarter of 2013.**

Table 1. Statement of Identified Mineral Resources, Kvanefjeld Multi-Element Project, March 2011.

Cut-off (U <sub>3</sub> O <sub>8</sub> ppm) <sup>1</sup>	Classification	Multi-Element Resources, Classification, Tonnage and Grade								Contained Metal				
		M tonnes	TREO <sup>2</sup>	U <sub>3</sub> O <sub>8</sub>	LREO	HREO	REO	Y <sub>2</sub> O <sub>3</sub>	Zn	TREO	HREO	Y <sub>2</sub> O <sub>3</sub>	U <sub>3</sub> O <sub>8</sub>	Zn
		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
150	Indicated	437	10929	274	9626	402	10029	900	2212	4.77	0.18	0.39	263	0.97
150	Inferred	182	9763	216	8630	356	8986	776	2134	1.78	0.06	0.14	86	0.39
150	Grand Total	619	10585	257	9333	389	9721	864	2189	6.55	0.24	0.53	350	1.36
200	Indicated	291	11849	325	10452	419	10871	978	2343	3.45	0.12	0.28	208	0.68
200	Inferred	79	11086	275	9932	343	10275	811	2478	0.88	0.03	0.06	48	0.20
200	Grand Total	370	11686	314	10341	403	10743	942	2372	4.32	0.15	0.35	256	0.88
250	Indicated	231	12312	352	10950	443	11281	1032	2363	2.84	0.10	0.24	178	0.55
250	Inferred	41	11251	324	10929	366	10426	825	2598	0.46	0.02	0.03	29	0.11
250	Grand Total	272	12152	347	10947	431	11152	1001	2398	3.30	0.12	0.27	208	0.65
300	Indicated	177	13013	374	11437	469	11906	1107	2414	2.30	0.08	0.20	146	0.43
300	Inferred	24	13120	362	11763	396	12158	962	2671	0.31	0.01	0.02	19	0.06
300	Grand Total	200	13025	373	11475	460	11935	1090	2444	2.61	0.09	0.22	164	0.49
350	Indicated	111	13735	404	12040	503	12543	1192	2487	1.52	0.06	0.13	98	0.27
350	Inferred	12	13729	403	12239	436	12675	1054	2826	0.16	0.01	0.01	10	0.03
350	Grand Total	122	13735	404	12059	497	12556	1179	2519	1.68	0.06	0.14	108	0.31

<sup>1</sup>There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U<sub>3</sub>O<sub>8</sub> has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.

<sup>2</sup>Total Rare Earth Oxide (TREO) refers to the rare earth elements in the lanthanide series plus yttrium.

Note: Figures quoted may not sum due to rounding.

The Kvanefjeld Project is favourable located near existing infrastructure in southern Greenland. Deep water fjords provide direct shipping access to the project area, and an international airport is located approximately 35 km away. A nearby lake system has been positively evaluated for a hydro-electric scheme to power the Kvanefjeld Project.

Kvanefjeld was the subject of twenty years of historic research and development by Danish research agencies that investigated uranium production, providing a solid foundation of high-quality technical data. Following successful piloting of the Project in the late 1970s and early 1980s the project was mothballed as the uranium price slumped to historic lows.

Since 2007, GMEL has been the majority owner and operator of the Project, taking a multi-element approach with the delineation of REE resources in addition to uranium, and feasibility studies to investigate their cost-effective production.

Combined, the historic and recent work programs account for approximately US\$ 100 million of direct investment into the Project.

GMEL outlined an initial development for Kvanefjeld in an interim pre-feasibility report released in the first quarter of 2010 which considered an operation with large-scale production of uranium oxide and mixed rare earth concentrate. The report provides a Net Present Value of US\$ 2.18 billion and has calculated a free cash flow of US\$ 8.9 billion over the 23-year mine life of the Project, if developed.

Focused research and development has since defined alternate development scenarios that involve an efficient mineral concentrate; a significant advantage over the circuit to extract uranium and heavy REEs from the mineral concentrate. Light REEs would then be recovered from the residue at an independent, demand-driven rate, mitigating market risk associated with bulk light-REE production.

This approach would see the project's economics underpinned by uranium and heavy REE- production , with flexible, cost-effective light REE production capacity.

#### **Investment recommendation:**

With the Greenland government having introduced the uranium licensing framework for the Kvanefjeld Multi-Element Project, this, apart from the Company based on a current resource of 619 million tonnes, being recognized as the world's largest undeveloped multi-element occurrences of rare earth oxides, uranium and zinc, this now officially underpins GMEL's position as one of the world's top-5 uranium deposits.

With the Company's environmental and social impact assessments being on track to be completed by late 2012 and the Definitive Feasibility Study process expected to close in the late second quarter of 2013, GMEL has the potential to become the Western world's largest REE producer by 2016.

Our next share price target is A\$ 1.50.