Exploring the highly-prospective Ilimaussaq Intrusive Complex, favourably located near the southern tip of Greenland

457 Mt JORC compliant multi-element resource (REE, U, Zn, NaF) defined at Kvanefjeld plateau, with huge upside potential

Pre-Feasibility Study indicates potential for an economically robust, long life mine

Greenland Minerals and Energy Ltd is an mineral exploration and development company positioning itself to become the worlds premier supplier of Rare Earth Elements. The company is listed on the Australian Securities Exchange.

ASX Code: GGG, GGGO

Website: www.ggg.gl

Contact Details:

First Floor
33 Colin Street
West Perth
Western Australia, 6005

Tel: +61 8 9226 1100
Fax: +61 8 9226 2299

Enquiries: info@ggg.gl

September 2010 Quarterly Report

Thursday 28 October, 2010

Highlights

- *New amendment to exploration license terms in Greenland creates a framework for the evaluation and permitting of projects that contain uranium*
- *2010 field program completed:*
  - *Major new body of lujavrite identified at Zone 2*
  - *Resource drilling at Kvanefjeld completed*
- *Meetings continue in Greenland to update stakeholders on the Kvanefjeld project and upcoming environmental and social impact studies*
  - *Open day held at operations base in Narsaq for south Greenland residents*
- *$21M (AUD) in funding secured in early July to fund ongoing work programs on Kvanefjeld*

Introduction

Greenland Minerals and Energy Ltd ("GMEL" or "the Company") is a mineral exploration and development company actively exploring in southern Greenland. The Company is primarily focused on exploring its license area 2010/02 over the northern Ilimaussaq Intrusive Complex; a unique geological entity that is prospective for rare and specialty metals. A large JORC-compliant multi-element resource *(rare earth elements, zinc, and uranium)* has been defined at Kvanefjeld plateau, which represents just a small percentage of the broader Ilimaussaq ore field. An Interim Report on the Kvanefjeld pre-feasibility study was released in February 2010 that indicates the potential for the multi-element resources to sustain a large-scale mining operation. Information on the pre-feasibility study is available on the Company website (www.ggg.gl).

The Company's aim is to be a significant producer of metals of fundamental strategic importance and value to tomorrow's world. Rare earth elements (REEs) are now recognised as being critical to the global manufacturing base of many emerging consumer items and green technologies. However, China controls more than 95% of global REE supply, raising serious concerns to non-Chinese consumers over the long-term stability of REE supply and pricing, at a time when RE-demand continues to grow. Electricity from nuclear power continues to gain acceptance internationally as the clean base-load energy supply of the future; owing to rapidly increasing power demands coupled with concerns over carbon-based energy sources, greenhouse gas emissions and global warming. As the nuclear renaissance continues to gain momentum, the strategic importance of uranium resources will continue to emerge.

September Quarter Activities

Activities during the September quarter were dominated by the 2010 field program on the northern Ilimaussaq Complex, but important corporate and political developments have also taken place. Most significantly, a new amendment has been introduced to the *standard terms for exploration licenses* in Greenland that creates a framework for the evaluation and permitting of projects that include uranium. The Company also secured $21M (AUD) in funding in July to facilitate continued work programs on the Kvanefjeld project. Over the northern summer, the Company has continued with its stakeholder and community engagement program, and an open day was held in early August for south Greenland residents at the Company's operations base in Narsaq. The open day aimed at providing more information about the mining life cycle; from discovery, through evaluation and permitting, to mining and finally rehabilitation.

New Amendment to Exploration License Terms in Greenland

In late August, the Government of Greenland introduced an amendment to the standard terms for exploration licenses. This important development provides a clear framework in which the Company's Kvanefjeld multi-element project (rare earth elements, uranium and zinc) can proceed to development through a definitive feasibility study conducted in close cooperation with the Greenland government and stakeholder groups.

The exploration and mining of minerals in Greenland is governed by the Mineral Resources Act that was approved by Greenland's parliament in December 2009. Under the Act, the Greenland Government has the right to issue exploration and exploitation licenses. The exploration license conditions are dictated by the *Standard Terms for Exploration Licenses for Minerals in Greenland*. The standard terms cover all mineral resources except radioactive elements, *unless* otherwise indicated on the license.

The new amendment allows the Bureau of Minerals and Petroleum (BMP) to approve that comprehensive feasibility studies can be undertaken on mineral projects that include radioactive elements. Within this framework, projects are considered on a case-by-case basis, at the government's discretion. GMEL has lodged an application and is working through the application process in close association with the BMP.

The 2010 Field Program

The 2010 field program in Greenland primarily involved diamond core drilling for exploration and resource definition. At Kvanefjeld, 4628m of core were drilled to increase the density of drill holes in areas that are currently classified as *inferred* resources. This aim of this program has been to generate sufficient data to aid in converting *inferred* into *indicated* resources. A new resource estimate for the Kvanefjeld project is anticipated in Q1 2011.

Figure 1. View over Tunugdliarfik fjord toward Zone 2. Thick layers of black lujavrite outcrop in the slopes, and are overlain by naujaite. The ridge top is approximately 700 m above sea level.

Exploration drilling was undertaken at Zone 2, located 6 km south of Kvanefjeld. Thirteen initial holes were completed for a total of 4710m, with several holes over 500m in length. This new multi-element prospect represents the Company's next focal point for resource development within the northern Ilimaussaq Complex. Initial results of the holes drilled at Zone 2 are expected late in 2010 to early 2011.

At Zone 2 lujavrite mostly occurs below a naujaite cap, but thick layers of lujavrite outcrop in the steep slopes that run between the ridge crest at 700m elevation, and Tunugdliarfik fjord (Figure 1). Significantly, all available geological evidence indicates that the lujavrite layer is continuous at depth from Zone 2 through to Kvanefjeld located 6 km to the NW where a JORC-compliant 457 Mt multi-element resource has been defined (see Figure 2). GMEL's strategy is to initially focus resource definition programs on the near-surface occurrences of lujavrite. Typically, the highest multi-element grades occur at the top of lujavrite sections, and with the lujavrites at Zone 2 yet to be unroofed (the full lujavrite section is preserved), good grades are expected.

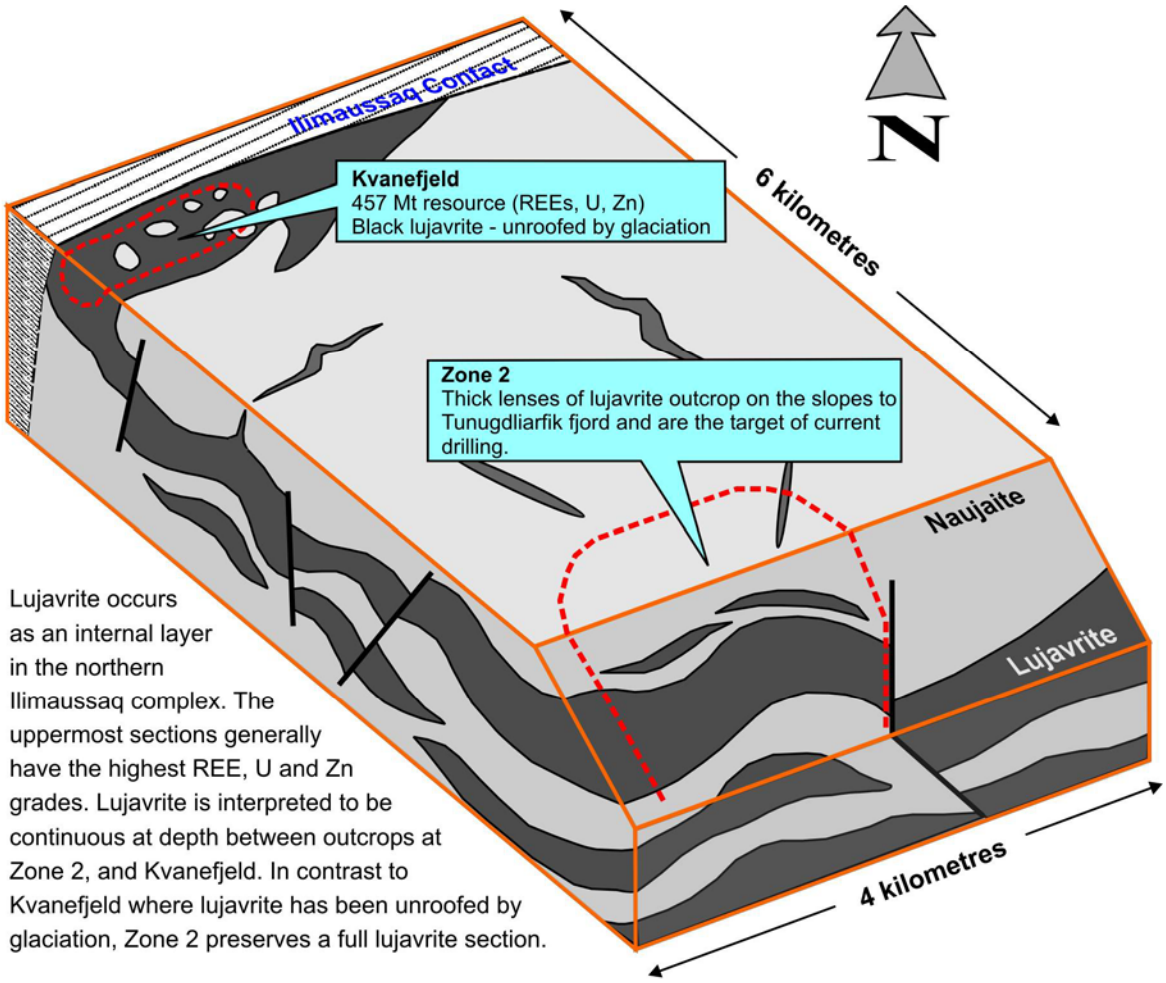

Figure 2. Block diagram across the northern Ilimaussaq Complex illustrating the relationship between Kvanefjeld and Zone 2.

The seven holes drilled so far have intersected lujavrite across a strike length of approximately 1km. The lujavrite layers are sub-horizonatal, and are commonly greater than 50 m in thickness, sometimes greater than 100m (Figure 3). Most holes have been drilled on the west side of a fault where lujavrite has been intersected from near the top of the hole. On the east side of the fault, the lujavrite sequence appears to be down-dropped and is overlain by a thicker layer of naujaite (Figure 3). Samples will be shipped from Greenland at the completion of the 2010 field season, and assay results are expected in the fourth quarter of 2010.

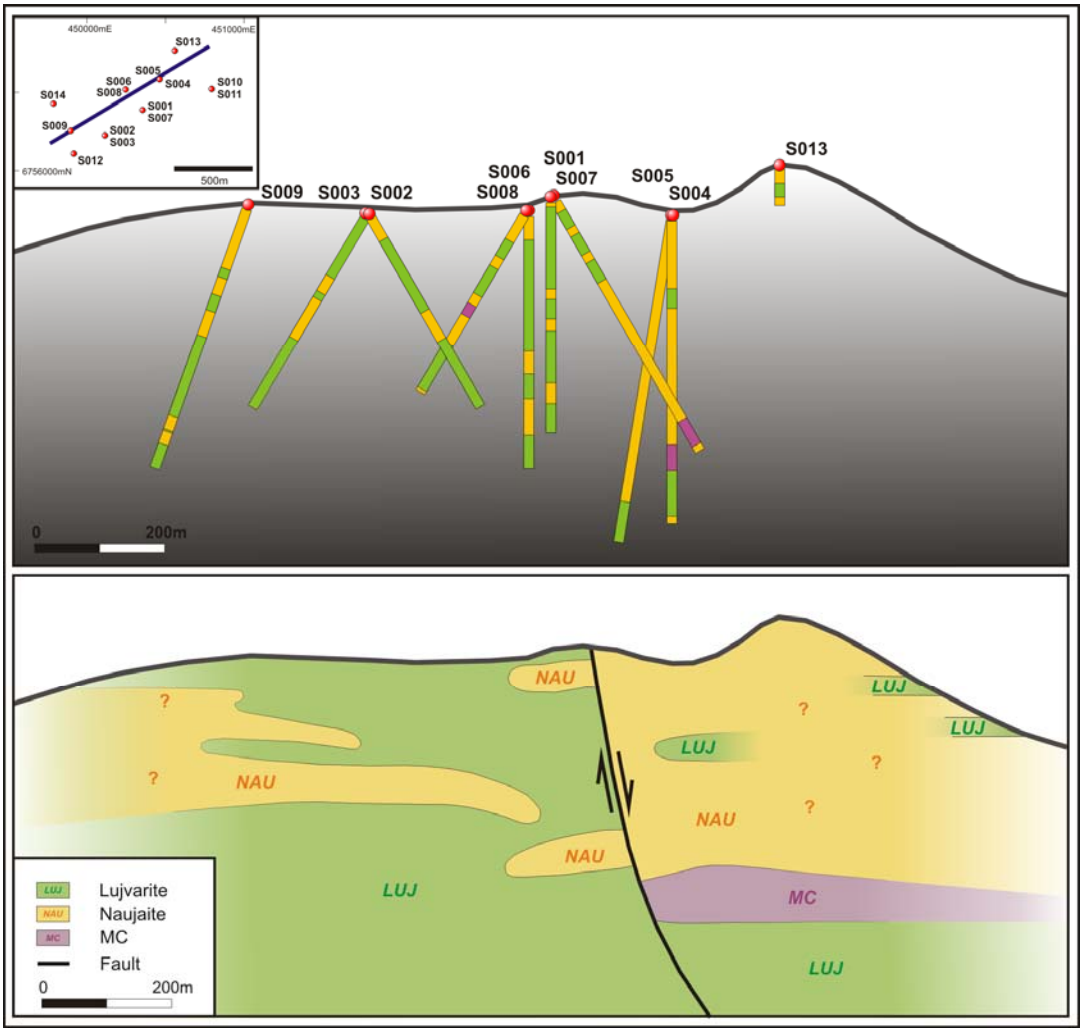

Figure 3. A pseudo-drill section across the initial holes drilled at Zone 2 (top), with a schematic geological interpretation below. The section is oriented WSW-ENE. The geological interpretation is enhanced by the extensive outcrops in the slopes to Tunugliarfik fjord. A fault drops the lujavrite sequence to the east, but the lujavrite section remains open to the north, east, west and at depth.

Community and Stakeholder Relations

Through 2010, GMEL has been conducting presentations to stakeholder and community groups, with the aim of providing factual information about the Kvanefjeld project as well as providing a forum for members of the public to discuss any issues associated with the project. The meetings continue to provide a great opportunity to build the dialogue between GMEL and Greenlandic stakeholders, and in particular, discuss upcoming environmental and social impact studies and the definitive feasibility process.

Open Day

On August 8th, GMEL held an open day at the company's operations base in Narsaq, south Greenland. The open day provided an opportunity for residents of Narsaq and nearby settlements to learn more about the work programs that are underway on the Kvanefjeld project, as well as learning about the mining life-cycle in general.

Figure 4. The GMEL operations base in Narsaq transformed into a display centre for the open day. Hundreds of south Greenland residents visited the open day to learn more about the Kvanefjeld project and the mining life cycle in general.

Consultants to GMEL from Orbicon (environmental) and Grontmij/Carl Bro (social) presented on the environmental and social impact assessment process, and the heads of Greenland's mining and trade schools discussed available courses with visitors. The open day was well attended with hundreds of south Greenland residents visiting through the course of the day.

Rare Earth Elements Garner International Attention

Throughout the September quarter there has been increasing coverage on REEs in the international press, owing to supply concerns over this strategically important metal group. China, that currently controls greater than 95% of global REE supply, has continued to cut REE export quotas as it consolidates its industry and looks to prioritise its burgeoning domestic RE requirements. This has prompted concern from the governments of many industrialised countries that have relied on a steady REE supply from China for the last twenty years. With short supply looming, and demand for REEs steadily on the increase, prices of these metals are increasingly rapidly, with many seeing price increases of several hundred percent this year. As China phases out its role as the world's supplier of REEs, a major change in the dynamics of the RE market is coming.

$21M (AUD) Secured to Fund Ongoing Work Programs

On July 8th, GMEL announced that it had secured $21M (AUD) to finance ongoing feasibility and development programs on the Kvanefjeld multi-element project (rare earth elements, uranium, and zinc). The funds have been secured through a $6M (AUD) equity raising and the establishment of a $15 M (AUD) equity facility. The $6M was raised via the issue of 17,647,060 shares at $0.34 to sophisticated and institutional investors, and takes the Company's cash reserves to more than $9 M, which is more than sufficient to cover this year's work programs. In addition, an equity facility has been established with US-based YA Global Investments (Yorkville) that provides GMEL with the option to draw down on a $15M facility at any time over the next five years. The facility provides the Company with a secure and flexible funding option to accelerate work programs in the future.

Under the terms of the facility the Company may, at its sole discretion, issue shares to YA Global at any time over the next 60 months, up to a total of $15,000,000 pursuant to the terms of the transaction document. The Company may draw down a maximum of $250,000 in any 10 day trading period unless otherwise agreed by both parties.

Shares issued to YA Global will be priced at the lowest daily volume weighted average price (VWAP) of the company's shares traded on each of the 10 trading days which follow an advance

notice by GGG. A commission of 5% will be payable by the company to YA Global at the time of issue.

Managed by US-Based Yorkville Advisors LLC, the YA Global group of funds has a solid reputation in the US and UK financial markets and a rapidly growing reputation in Australia for innovative structured financing instruments and equity participation agreements. To date, the YA Global Group has made available in excess of over $500,000,000.00 for over 30 ASX-listed companies.

In the period since the last quarterly report until 27 October 2010 a further 6,357,204 options were exercised, raising a further $1,271,440.80.

Tenure, Permitting and Project Location

Tenure

Greenland Minerals and Energy Ltd (ABN 85 118 463 004) is a company listed on the Australian Securities Exchange. The Company is conducting exploration of EL2010/2 in accordance with a joint venture agreement. The Company currently controls 61% of the license (with options to move to 100%). The Company, through its subsidiary, is also the operator of the project.

The tenement is classified as being for the exploration of minerals. The project hosts significant multi-element mineralisation within the Ilimaussaq Intrusive Complex.

Historically the Kvanefjeld deposit, which comprises just a small portion of the Ilimaussaq Complex, was investigated by the Danish Authorities. The project has received significant past exploration in the form of drilling, geophysics, geochemistry, an exploratory adit and numerous and varying metallurgical test work and technical papers.

Permitting

Currently there is a zero-tolerance toward uranium mining of any kind in Greenland. However Greenland Minerals and Energy have been fully permitted in all their exploration activities at Kvanefjeld to date by the Bureau of Minerals and Petroleum. The Company is exploring for, and evaluating, specialty metal resources in the northern Ilimaussaq Intrusive Complex. Mineral resources that have been identified by the Company to date are multi-element, or polymetallic, in nature and are inclusive of uranium-bearing minerals.

The Company conducts its work programs with the understanding that under the current regulations multi-element deposits such as those defined at Kvanefjeld to date cannot be exploited. The Company is working closely with the relevant authorities to define acceptable development scenarios.

Location

The exploration lease covers an area of 80km^2 in Nakkaalaaq North on the southwest coast of Greenland. The project is located around 46° 00'W and 60 55'N.

The town of Narsaq is located approximately 7 kilometres to the south west of the license area. Narsaq is connected to Narsarsuaq International Airport by commercial helicopter flights operated by Air Greenland. Local transport between settlements is either by boat or by helicopter.

The Company has office facilities in Narsaq where storage, maintenance, core processing, and exploration activities are managed. This office supports the operational camp located on the Kvanefjeld Plateau above the town where the operational staff are housed.

Access to the Kvanefjeld plateau (at approximately 600m asl) where exploration activities are focussed is generally gained by helicopter assistance from the operations base located on the edge of the town of Narsaq. It is possible to access the base of the plateau by vehicle and then up to the plateau by a track.

Statement of identified mineral resources, Kvanefjeld multi-element project, Greenland

At U_3O_8% cutoff grades[1]	Tonnes (million)	U_3O_8%[2]	U_3O_8 lb/t	TREO%[3]	Zn%	Resource category
	365	0.028	0.62	1.06	0.22	Indicated
0.015	92	0.027	0.59	1.12	0.22	Inferred
	457	**0.028**	**0.62**	**1.07**	**0.22**	**TOTAL**
	276	0.032	0.70	1.13	0.23	Indicated
0.020	63	0.031	0.69	1.21	0.24	Inferred
	339	**0.032**	**0.70**	**1.14**	**0.23**	**TOTAL**
	207	0.035	0.77	1.20	0.23	Indicated
0.025	43	0.036	0.78	1.31	0.25	Inferred
	250	**0.035**	**0.77**	**1.22**	**0.24**	**TOTAL**

1- There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U_3O_8 has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.

***2-** Additional decimal places do not imply an added level of precision.*

***3-** 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.

Capital Structure *(as at 27 October 2010)*

Total Ordinary shares:	**256,262,512**
Quoted options exercisable 20c:	132,113,151
Unquoted options exercisable 10c:	750,000
Unquoted unvested directors options exercisable 20c:	19,800,000
Unquoted options exercisable 20c:	1,000,000
Unquoted options exercisable 50c:	5,750,000
Unquoted options exercisable 1.00:	6,250,000
Unquoted options exercisable 1.50:	2,388,840

Please visit the company's website at www.ggg.gl where recent news articles, commentary, and company reports can be viewed.

Yours faithfully,

Roderick McIllree

Managing Director

Greenland Minerals and Energy Ltd

ABOUT GREENLAND MINERALS AND ENERGY LTD.

Greenland Minerals and Energy Ltd (ASX – GGG) is an exploration and development company focused on unlocking the mineral riches of southern Greenland. The Company's flagship project is the Kvanefjeld multi-element deposit (Rare Earth Elements, Zinc, Uranium), that is rapidly emerging as a premier specialty metals project. An interim report on pre-feasibility studies has demonstrated the potential for a large-scale mining operation. For further information on Greenland Minerals and Energy visit http://www.ggg.gl or contact:

Roderick Mcillree,	David Tasker (Australia)	Laurence Read (UK)
Managing Director	Professional PR	Threadneedle PR
+61 8 92261100	+61 (0) 89388 0944	+44 (0)20 7653 9855

Greenland Minerals and Energy Ltd is aware of and respects the Greenlandic government stance on uranium exploration and development in Greenland – which is currently a zero tolerance approach to the exploration and exploitation of uranium. However a new amendment has been introduced to the standard terms for exploration licenses in Greenland that creates a framework for the evaluation and permitting of projects that include uranium.

The Company is currently advancing the Kvanefjeld Project, recognised as the world's largest undeveloped JORC compliant resource of rare earth oxides (REO), in a multi-element deposit that is inclusive of uranium and zinc.

Greenland Minerals will continue to advance this world class project in a manner that is in accord with both Greenlandic Government and local community expectations, and looks forward to being part of the community discussion on the social and economic benefits associated with the development of the Kvanefjeld Project.

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Jeremy Whybrow, who is a Member of The Australasian Institute of Mining and Metallurgy.

Jeremy Whybrow is a director of the company.

Jeremy Whybrow has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Jeremy Whybrow consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.