



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

December 2010 Quarterly Report

Friday, 28th January, 2011

Highlights

- *Strong finish to 2010 with receipt of permit to fully-evaluate the Kvanefjeld multi-element project (REEs, uranium, zinc)*
- *Key studies initiated to enhance the process-flow sheet*
- *Work programs to update the resource estimate underway*
- *Initial regional drill intercepts highlight potential for significant new multi-element deposits*
- *Actively expanding the Kvanefjeld project team with increased work programs in 2011*
- *Company well-positioned for significant technical and corporate advances in 2011*

Greenland Minerals and Energy Limited



Contents

Introduction	1
December Quarter Activities	1
Permit Received for Full Evaluation of Kvanefjeld REE-U-Zn project	2
Expanding the Feasibility Program	3
Technical Update	3
Resource Development	4
Rare Earth Element and Uranium Market Updates	5
Summary	6
Tenure, Permitting and Location	7
Capital Structure	8

For personal use only

Introduction

Greenland Minerals and Energy Ltd (“GMEL” or “the Company”) is a mineral exploration and development company operating in southern Greenland. The Company is primarily focused on developing its multi-element (rare earth elements, uranium, zinc) project that is hosted within the northern Ilimaussaq Intrusive Complex. 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. Future resource drilling will focus on regional target areas where significant new resources could be defined. 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 cost-effective 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, and has maintained a policy of significantly reducing export quotas. This continues to raise serious concerns to non-Chinese consumers over the long-term stability of REE supply and pricing, at a time when REE-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.

December Quarter Activities

The December Quarter saw a strong finish to 2010 with GMEL well-positioned for significant technical and corporate advances through 2011. The Company’s profile continues to grow as was highlighted by the recent call from European Union Trade Chief Karel De Gucht for the European Union to back rare earth operations in Greenland.

Most importantly, in December GMEL received permitting from the government of Greenland to fully evaluate the Kvanefjeld multi-element project. The permit was issued in accordance with the amendment to exploration license terms that was introduced in late August 2010 which allows for projects that include radioactive elements to be fully evaluated in close consultation with Greenlandic stakeholders.

The latter half of 2010 also saw significant increases in both rare earth and uranium pricing that further strengthens the viability of the Kvanefjeld project, and reinforces pricing assumptions used in the Interim Pre-feasibility report.

Key technical studies were implemented during the December Quarter that are important to process development and establishing the best possible metallurgical flow-sheet for the project. GMEL has already established a viable base-case flow sheet for the Kvanefjeld project that was outlined in the Interim Pre-feasibility report released in early 2010. However; several areas have been identified where major enhancements can be made that will positively impact the projects economics and efficiency. These are discussed in further detail below.

In 2011, GMEL will be ramping up work programs that form part of ongoing feasibility studies. Through late 2010, the Company commenced expanding the Kvanefjeld project team to manage the increasing work programs, with further key appointments anticipated in the coming weeks.

Greenland Minerals Receives Permit for the Full Evaluation of the Kvanefjeld Project

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 projects that include uranium amongst other economic elements can proceed to development through a definitive feasibility study conducted in close cooperation with the Greenland government and stakeholder groups.

In December, in accordance with the amended license terms, GMEL received approval by the Government of Greenland to fully evaluate the Kvanefjeld multi-element project, inclusive of radioactive elements (uranium).

The permit was issued following a hearing process in Greenland that involved the National Environmental Research Institute, the Ministry for Health, the Ministry of Domestic Affairs, Nature and Environment (NNPAN) as well as the South Greenland Municipality. The permit is supplementary to the exploration license that covers Kvanefjeld and the broader northern Ilimaussaq complex (license 2010/02).

Under the evaluation permit, the Company can undertake and report on all studies that form part of assessing the feasibility of a multi-element mining project at Kvanefjeld. Critical components include the *Environmental and Social Impact Assessments*, which are to follow the guidelines established by Greenland's Bureau of Minerals and Petroleum (BMP). Further drilling programs will continue to build the resource base, and enhance the resource quality. At the

completion of the definitive feasibility study, including the environmental and social impact assessments the Company will lodge an application for an exploitation license with the BMP.

Expanding the Feasibility Program

In 2011, GMEL is ramping up studies that form part of the expanding feasibility program on the Kvanefjeld project. The Company has commenced in building the project team to manage the increasing activity levels, with further key appointments anticipated in the coming months.

In late-September, Mr Damien Krebbs was appointed as Metallurgy Manager. Damien is an experienced metallurgist with over ten years of project and technology development experience with complex hydrometallurgical circuits. Damien was previously employed at Independent Metallurgical Operations Pty Ltd where he filled the position of Process Study Manager. Previously he spent ten years with BHP Billiton in project and technology development roles. Damien is actively building a metallurgical team to ensure the development of the best possible process flow-sheet for Kvanefjeld.

GMEL also expects to announce the appointment of key contracts for upcoming environmental, social and technical studies in the coming weeks.

Technical Update

In early 2010, GMEL released an Interim Report on the Kvanefjeld multi-element project. The study demonstrated that the Company had identified a viable process flow-sheet to cost-effectively produce both a rare earth and uranium concentrate. The Company has since focussed on areas where it can significantly enhance the project. Work programs are now underway to further improve the resource model and the mine schedule, as well as enhancing the flow-sheet.

A number of technical studies commenced in the December Quarter that could yield important flow sheet advances. A mineralogical study is now underway at the Mineral Deposit Research Unit (MDRU) located at the University of British Columbia (UBC). Dr Henrik Friis, an expert mineralogist with past experience studying the rocks and minerals of the Ilimaussaq Complex leads the study, which forms an important component of GMEL's resource development, and metallurgical programs. Understanding mineralogical variation is critical to any rare metal project, owing to the mineralogical influence on processing. Data generated from mineralogical studies are integrated directly with resource and metallurgical studies.

As GMEL has advanced the understanding of the ores at Kvanefjeld, a number of new opportunities have emerged to significantly improve the beneficiation of resources. New work programs are now underway with SGS Lakefield in Ontario, Canada, and with Optimet Laboratories in Adelaide, Australia, that specifically focus on aspects of beneficiation. Significant advances in concentrating the economic minerals prior to leaching could result in smaller and more efficient leach circuits. This will serve to reduce both capital and operating costs. Important outcomes from these studies will be reported over the coming months.

GMEL has also been investigating the extraction of sphalerite (zinc sulphide) to produce a zinc concentrate with Optimet Laboratories. Initial results have proved positive. Removal of sphalerite not only results in generating another product, but the removal of sulphide also results in downstream benefits to the leach circuits.

Resource Development

Through 2010, GMEL has been developing methods to domain the resources by geochemical and mineralogical characteristics. The Company has been working with SRK Consulting on refining the geological model, and establishing domains that will allow for an improved, higher quality resource estimate. A new resource estimate for Kvanefjeld should be completed toward the end of Q1 2011.

Future resource definition will focus on regional target areas where significant new resources could be defined. On January 18th, GMEL released the first intercepts available from the regional target areas. The results confirm that extensive multi-element mineralisation is present at several locations within the broader project area (northern Ilimaussaq Complex) and that mineralisation occurs as far as 7km from where resources have been defined at Kvanefjeld. Key intercepts include:

Zone 2 - 116m @ 1.2% TREO, 440 ppm U₃O₈, 0.34% Zn

Zone 3 - 116m @ 1.3% TREO, 363 ppm U₃O₈, 0.35% Zn

TREO = All elements of the lanthanide series plus yttrium

Results from the 2010 drill program will be available in the coming weeks. As reported by GMEL in mid-2010, much of the drilling was focussed on Zone 2 where substantial intervals of lujavrite were encountered. The grade and continuity of mineralisation intersected by the first hole at Zone 2 was extremely encouraging (see above intercept).

Rare Earth Element and Uranium Market Update

Rare earth prices increased dramatically in 2010, with the value of some individual REEs rising by several hundred percent. The surge in REE prices has largely been due to further restrictions in Chinese export quotas that are creating imminent short supply to the rest of the world. In late-December 2010, China's commerce ministry announced a further 35% reduction in REE exports for the first half of 2011. With China currently controlling greater than 95% of global REE supply, a continued program of reducing export quotas is having a massive impact on global REE supply and pricing. In order to meet the rapidly emerging void in supply, a new generation of REE-producing mines is needed, outside China. Many market commentators are now predicting that the long term pricing for a basic (light-REE dominant) RE-concentrate will be around \$25/kg (USD). Significantly, GMEL has used a price of only \$13.50/kg (USD) in its base-case financial evaluation of the Kvanefjeld project.

Through the latter half of 2010 the uranium spot price also increased substantially. In June 2010 the uranium spot price hovered below \$45/lb U_3O_8 (USD), but by the end of 2010 prices had risen above \$60/lb. As of January 17th, the spot price was at \$68/lb U_3O_8 . This rapid surge in price is attributed to both supply pressures that may come to effect in a couple of years, as well as the significant nuclear energy expansion programs that China and India are leading. In particular, the Chinese buying activity in the nuclear fuel market is creating greater competition for supply. In GMEL's financial evaluation of the Kvanefjeld project, a uranium price of \$80/lb U_3O_8 had been estimated for 2015. The recent price increases serve to support this estimate, with many market commentators now estimating a price range of \$60-\$80/lb U_3O_8 through 2011.

Summary

The December Quarter saw GMEL finish 2010 strongly after receiving permitting from the Greenland Government to fully evaluate the Kvanefjeld project, and with REE prices continuing to rise owing to imminent short supply.

In addition, key technical programs were initiated that address process and resource development and could lead to significant enhancements to the project in 2011. The most important of these are studies that further investigate mineral beneficiation. GMEL looks forward to updating the market on key findings, as well as announcing new studies critical to the feasibility program.

All work programs are in alignment with the Company's continued aim of developing a multi-element mining operation on the northern Ilimaussaq Complex that is a long-life, cost-effective producer of rare earth concentrates, uranium and zinc. GMEL is well-positioned for significant technical and further corporate developments in 2011.

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 EL2005/28 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

Greenland Minerals and Energy Limited is permitted to fully evaluate the Kvanefjeld multi-element project. Under the evaluation permit, the Company can undertake and report on all studies that form part of assessing the feasibility of a multi-element mining project at Kvanefjeld. Critical components include the *Environmental and Social Impact Assessments*, which are to follow the guidelines established by Greenland's Bureau of Minerals and Petroleum (BMP).

Location

The exploration lease covers an area of 80km² 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) 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.

Capital Structure

<u>Total Ordinary shares:</u>	<u>306,134,747</u>
<i>Quoted</i> options exercisable 20c:	85,140,917
Unquoted unvested directors options exercisable 20c:	19,800,000
Unquoted options exercisable 50c:	5,400,000
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 McIlree

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, Uranium, Zinc), 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 multi-element mining operation. For further information on Greenland Minerals and Energy visit <http://www.ggg.gl> or contact:

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

Greenland Minerals and Energy Ltd is aware of and respects the Greenlandic government's stance on uranium exploration and development in Greenland – which is currently a zero tolerance approach. However, a new amendment has been introduced to the standard terms for exploration licenses in Greenland that creates a framework for the evaluation of projects that include uranium amongst other economic elements. Within this framework the Company is permitted to fully evaluate the Kvanefjeld project, inclusive of radioactive elements.

The Kvanefjeld Project is recognised as the world's largest undeveloped JORC-compliant resource of rare earth oxides (REO), in a multi-element deposit that is also enriched in 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 continued community discussions 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.

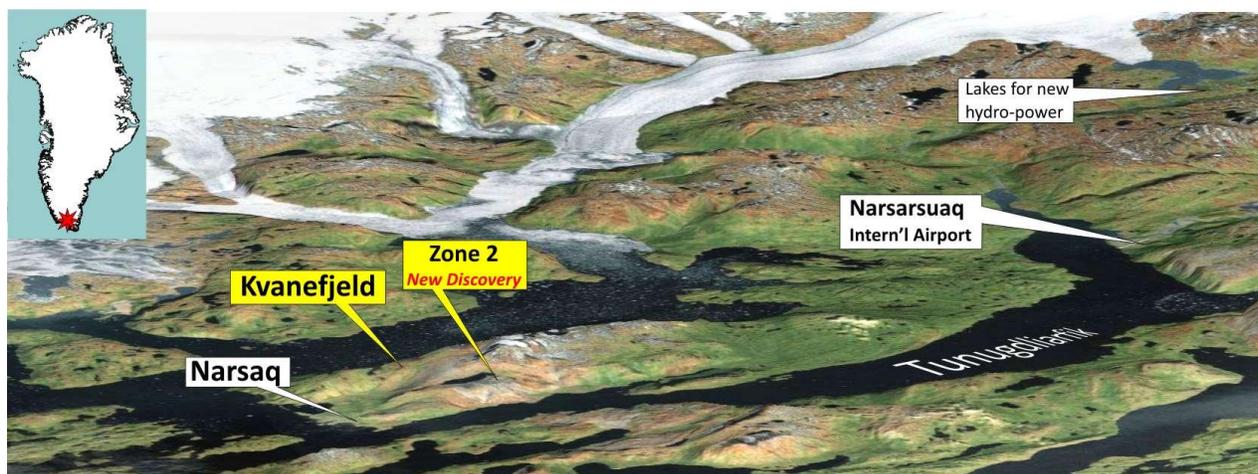
Jeremy Whybrow has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, 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.

Appendix 1.

Kvanefjeld Multi-Element Resource Statement, June, 2009

At U ₃ O ₈ % cutoff grades ¹	Tonnes (million)	U ₃ O ₈ % ²	U ₃ O ₈ lb/t	TREO% ³	Zn%	Resource category
0.015	365	0.028	0.62	1.06	0.22	Indicated
	92	0.027	0.59	1.12	0.22	Inferred
	457	0.028	0.62	1.07	0.22	TOTAL
0.020	276	0.032	0.70	1.13	0.23	Indicated
	63	0.031	0.69	1.21	0.24	Inferred
	339	0.032	0.70	1.14	0.23	TOTAL
0.025	207	0.035	0.77	1.20	0.23	Indicated
	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. U₃O₈ 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.



View over the broader geography of GMEL's multi-element project on the northern Ilimaussaq Complex. The fjord system is open to the north Atlantic shipping lanes all year round. The distance from Narsaq to Narsarsuaq International Airport is 45km.