



Company Announcement: *Thursday February 23rd, 2012*

KVANEFJELD PROJECT – MAJOR TECHNICAL BREAKTHROUGH:

ATMOSPHERIC LEACHING EXTRACTS 90-95% OF URANIUM AND HEAVY RARE EARTHS

Greenland Minerals and Energy Limited (“GMEL” or “the Company”) is pleased to provide an update on metallurgical developments that continue to enhance the Kvanefjeld multi-element project (rare earth elements, uranium, zinc). Kvanefjeld is recognised as one of the world’s largest resources of rare earth elements and uranium, and is favourably located near existing infrastructure in southern Greenland.

In June 2011, GMEL announced that it had identified a means to effectively beneficiate the Kvanefjeld REE-U mineralisation utilising froth flotation. This method was then piloted successfully under continuous operation to produce bulk mineral concentrates (announced October, 2011). Hydro-metallurgical leach studies on the mineral concentrates have now been completed.

Key outcomes:

- Beneficiation through froth flotation has now been well-tested, and reveals industry-leading upgrade ratios from ore to mineral concentrate representing <15% of the original mass
- Leach studies on the mineral concentrates demonstrate that the REE-uranium bearing minerals are highly amenable to conventional acid leach/solvent extraction
- Mineral concentrates can be leached under atmospheric conditions to yield extractions of **90-95%** for **uranium** and **heavy REEs**
- Favourable leach solution chemistry allows for the generation of both heavy and light rare earth products
- Major advances in beneficiation and atmospheric leaching allow for the development of an enhanced, efficient flowsheet utilising conventional methods with low technical risk
- Developments eliminate the need for whole-of-ore pressure leaching and significantly reduce the scale of leach circuits, leading to a substantial reduction in capital expenditure
- The Company is looking to finalise its preferred flowsheet and development scenario through Q1 2012, before finalising pre-feasibility work on the Kvanefjeld project



Background

Greenland Minerals and Energy Limited ('GMEL' or 'the Company') has been advancing the Kvanefjeld project, located favourably in southern Greenland, since 2007. A large, outcropping multi-element resource of REEs, uranium and zinc has been defined at Kvanefjeld, with attention now focused on delineating resources at the high-grade satellite deposits Zones 2 and 3.

In parallel with resource development, the Company has been conducting comprehensive metallurgical and process development studies to optimise the Kvanefjeld processing route. A base-case flow sheet was established, as outlined in the Interim Pre-Feasibility Report on Kvanefjeld, released to the ASX in January 2010. The study drew upon extensive historical metallurgical studies generated by Danish Government research agencies, as well as initial studies conducted by GMEL through 2008 and 2009. The 2010 study clearly demonstrated that Kvanefjeld could be developed as a large-scale, long-life and cost effective producer of uranium and rare earth concentrates.

Through 2010 and 2011 focused metallurgical studies continued to advance processing alternatives. Breakthroughs in both mineral beneficiation and hydrometallurgical leaching have firmed up multiple flowsheet options, with trade off studies currently underway to establish the most robust scenario.

In 2011 GMEL commenced environmental and social impact assessments on the Kvanefjeld project, following an extensive phase of stakeholder engagement in Greenland. These studies are scheduled for completion in late 2012, and form key components of an exploitation (mining) license application. Infrastructure studies are also well-advanced. Engineering studies and stakeholder workshops have identified potential locations for key infrastructure items including port, processing plant, accommodation village and tailings storage facilities. Mining studies support a conventional open-pit operation, with a low-strip ratio (1:1) over life-of-mine.

TECHNICAL EVOLUTION

- In Q1 2010, GMEL released an Interim Pre-Feasibility report on the Kvanefjeld project. The study drew upon extensive historical metallurgical studies generated by Danish Government research agencies, as well as initial studies conducted by GMEL through 2008 and 2009. The 2010 study clearly demonstrated that Kvanefjeld could be developed as a large-scale, long-life and cost effective producer of uranium and rare earth concentrates.
- In 2011, GMEL released a new mineral resource estimate for Kvanefjeld that saw an increase in overall tonnage, and the definition of high grade domains through the upper level of the resource. This allowed for an improvement in both REO and U_3O_8 grades in the mine schedule.
- Improvements were also made in REO recoveries in the base-case flowsheet that formed the basis of the Interim Pre-Feasibility report.

- Major beneficiation breakthroughs were achieved in 2011, with the establishment of a flotation method to concentrate the bulk of REOs and uranium into <15% of the original mass. The flotation circuit was scaled up and successfully piloted in Q3 2011. This development opened up a number of alternate flowsheet options to the base-case scenario. By removing the non-economic minerals from the ore, conventional acid leaching methods can be considered along with alkaline leaching methods. Leach circuits can also be significantly downsized.

LEACHING OF FLOTATION CONCENTRATES

The beneficiation stage was piloted in Q3 2011, and importantly produced bulk mineral concentrates for metallurgical leach studies. These studies have now been completed with very positive results.

Controlled atmospheric leaching of the mineral concentrate in tanks produces extractions of 90-95% for both uranium and heavy REOs; the two main value drivers to the Kvanefjeld project. Light REOs are also recovered, but at a slightly lower level of extraction.

Following leaching, uranium and REOs can be recovered from pregnant leach solutions with commercially proven solvent extraction and ion exchange techniques.

The ability to achieve high extractions of uranium and heavy REOs using conventional acid solutions under atmospheric conditions is another critical breakthrough in establishing a cost-competitive, efficient flowsheet with low-technical risk. The synergies in leaching uranium and heavy REOs with a single leach circuit are anticipated to improve the economic metrics of the project significantly.

ESTABLISHMENT OF AN ENHANCED FLOWSHEET

The beneficiation and leaching developments form the basis of a flowsheet which consists of sequential froth flotation to firstly concentrate sphalerite (zinc sulphide), and then REE-uranium phospho-silicate minerals, which are then leached using conventional acid solutions under atmospheric conditions (Figure 1). This enhanced flowsheet is designed to produce uranium oxide, a heavy rare earth concentrate, light rare earth concentrate, and zinc concentrate (sphalerite). The Company views this scenario as a logical first phase of a staged development program.

The enhanced flowsheet represents an efficient and scalable development option. Its development reflects the 'mineral-driven' approach that the Company has taken throughout its metallurgical studies. The beneficiation-step provides a highly effective means of concentrating the dominant REE-uranium mineral group, from which uranium and REEs can then be simply and efficiently leached. The leach solution chemistry allows for the production of both heavy and light REE concentrates.

The Kvanefjeld project offers the potential for multiple product streams and revenue drivers. GMEL is primarily focused on optimising the project towards uranium and heavy REO production, which then provides greater flexibility in the marketing and pricing of light REE products.

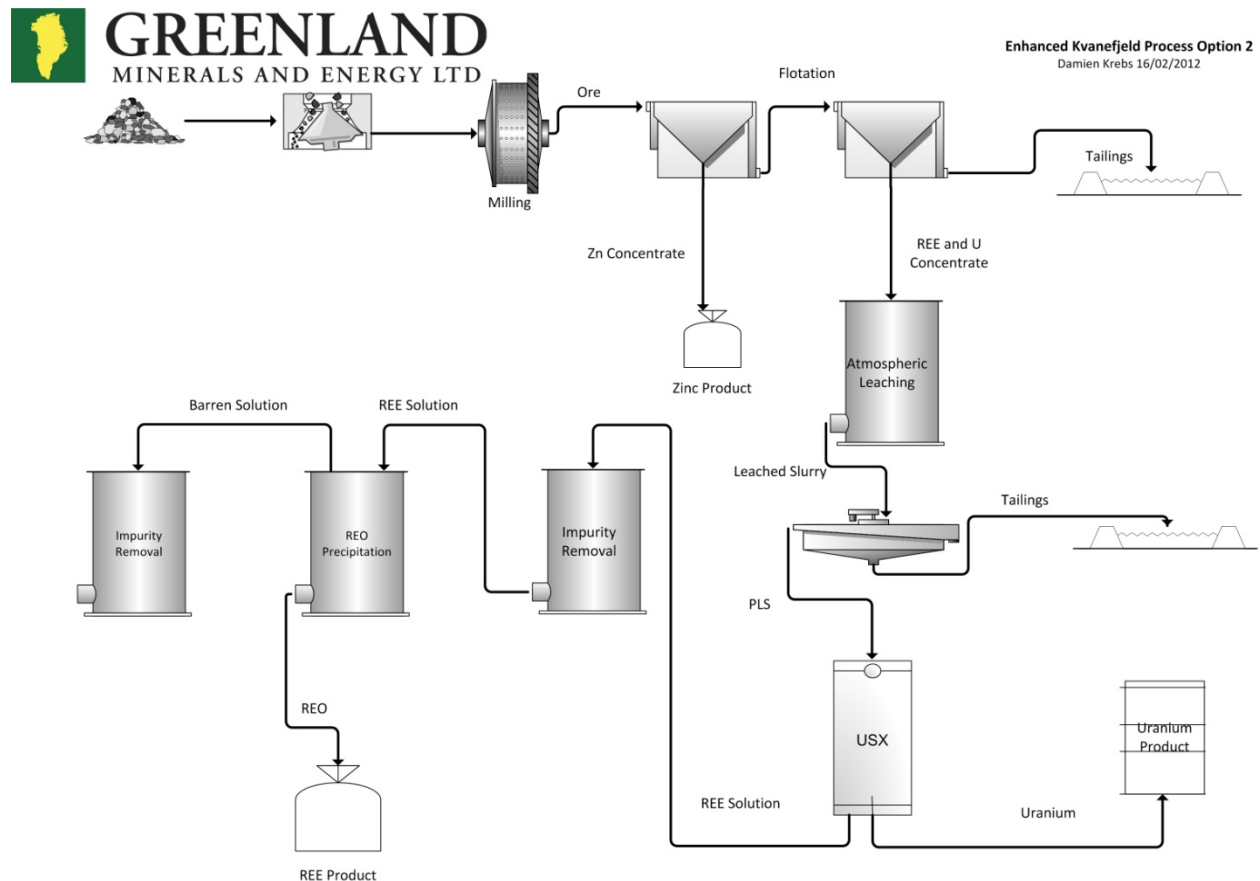


Figure 1. A conceptual representation of the enhanced Kvanefjeld process flowsheet. Flotation produces a zinc concentrate, then a uranium- and REE-rich mineral concentrate that is leached using conventional acid solutions under atmospheric conditions. Uranium is recovered by solvent extraction prior to a stage of impurity removal before REOs are recovered. The majority of ore feed (gangue minerals) is stored as untreated flotation tailings, with only a small proportion (economic minerals) treated chemically to leach uranium and REOs.

In contrast to the base-case that featured an alkaline pressure leach circuit (uranium extraction) then an acid leach circuit (REO extraction), the enhanced flowsheet features a single leach circuit to extract both uranium and rare earths. That single leach circuit delivers high extraction rates from the flotation concentrate for both uranium and heavy REEs under atmospheric conditions. The leach circuit will also

be of significantly smaller scale than those in the base-case as it will be treating a higher-grade mineral concentrate that represents <15% of the original ore mass.

As part of a staged development program future increases in uranium and rare earth output can be readily achieved through ramping-up mine throughput. This will be facilitated by expansion of the project's global resource base following the imminent release of initial resource estimates for the Zones 2 and 3 satellite deposits.

The Company is extremely pleased with the technical developments that have been achieved by the in-house process development team in conjunction with external consultants, and is looking forward to finalising the pre-feasibility program in the coming months.

Yours faithfully,



Roderick McIlree
Managing Director
Greenland Minerals and Energy Ltd

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

Cut-off (U ₃ O ₈ ppm) ¹	Multi-Element Resources, Classification, Tonnage and Grade									Contained Metal				
	Classification	M tonnes Mt	TREO ² ppm	U ₃ O ₈ ppm	LREO ppm	HREO ppm	REO ppm	Y ₂ O ₃ ppm	Zn ppm	TREO Mt	HREO Mt	Y ₂ O ₃ Mt	U ₃ O ₈ M lbs	Zn 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

¹There 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.

²Total 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.

ABOUT GREENLAND MINERALS AND ENERGY LTD.

Greenland Minerals and Energy Ltd (ASX – GGG) is an exploration and development company focused on developing high-quality mineral projects in 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:

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Greenland Minerals and Energy Ltd will continue to advance the Kvanefjeld 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, geological interpretations, appropriateness of cut-off grades, and reasonable expectation of potential viability of quoted rare earth element, uranium, and zinc resources is based on information compiled by Jeremy Whybrow. Mr Whybrow is a director of the Company and a Member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Whybrow has sufficient experience 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 by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Whybrow consents to the reporting of this information in the form and context in which it appears.

The geological model and geostatistical estimation for the Kvanefjeld deposit were prepared by Robin Simpson of SRK Consulting. Mr Simpson is a Member of the Australian Institute of Geoscientists (AIG), and has sufficient experience 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 by the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Simpson consents to the reporting of information relating to the geological model and geostatistical estimation in the form and context in which it appears.