

# Uraniumletter INTERNATIONAL

the international independent information and advice bulletin for uranium resource investments

Special Situation – January 2011 Update

www.ggg.gl



## Greenland Minerals and Energy Ltd. (A\$ 1.15)

ASX	: GGG
H+L prices (12 months)	: A\$ 1.37 – 0.31
Net issued shares	: 304.7 million
Fully diluted	: 429.4 million
Market capitalization	: A\$ 350.4 million
Fully diluted	: A\$ 366.1 million

(at an exercise price of up to A\$ 0.50)

**Next price target: A\$ 2.00**

### Company profile

Greenland Minerals and Energy (“Greenland Minerals”) – is focussed on exploration and development of mineral projects in southern Greenland. Kvanefjeld, the Company’s flagship project, is a rare earth element and uranium deposit, hosted within the Ilimaussaq intrusive complex near the southern tip of Greenland.



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 U3O8 and 2.21 million tonnes NaF, to be the largest 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\$ 50 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.

A mine processing plant capable of treating 10.8 million tonnes per year is expected to cost US\$ 2.31 billion. Construction is scheduled to commence in 2013 and first production in 2015.

**Self-rule will unlock Greenland's rich mineral potential and have a positive impact on Greenland Mineral's operations**

With presently a zero tolerance towards uranium exploration and exploitation in Greenland recent political developments can be expected to have a positive impact on Greenland Minerals' operations and valuation. After four years of deliberations the country, with only 56,000 inhabitants, took an important step closer to full autonomy when it implemented self-rule on June 21, 2009.

On January 31, 2010, the Mineral Resource Act approved by the Government of Greenland came into effect. This step is considered to be a key milestone for Greenland on its path to self-rule.

There exists a general acceptance within Greenland that the mining industry holds the key to the country's future economic stability as it continues on its path to independence from Denmark. The new era of self-rule will witness increased potential revenue from the untapped rich mineral wealth potential in Greenland.

Denmark currently subsidizes Greenland with annual grants of more than 3 billion Krone (US\$ 560 million). Self-rule will allow Greenland to retain the first 75 million Krone (US\$ 14 million) from eventual mineral exploration revenues. Subsequent revenues will be divided between the two countries, as the subsidy from Denmark is reduced in line with revenue.

In May 2010, Greenland Minerals announced that the South Greenland Municipal Council officially supports removal of the current uranium policy of zero tolerance, and ongoing feasibility studies at Kvanefjeld.

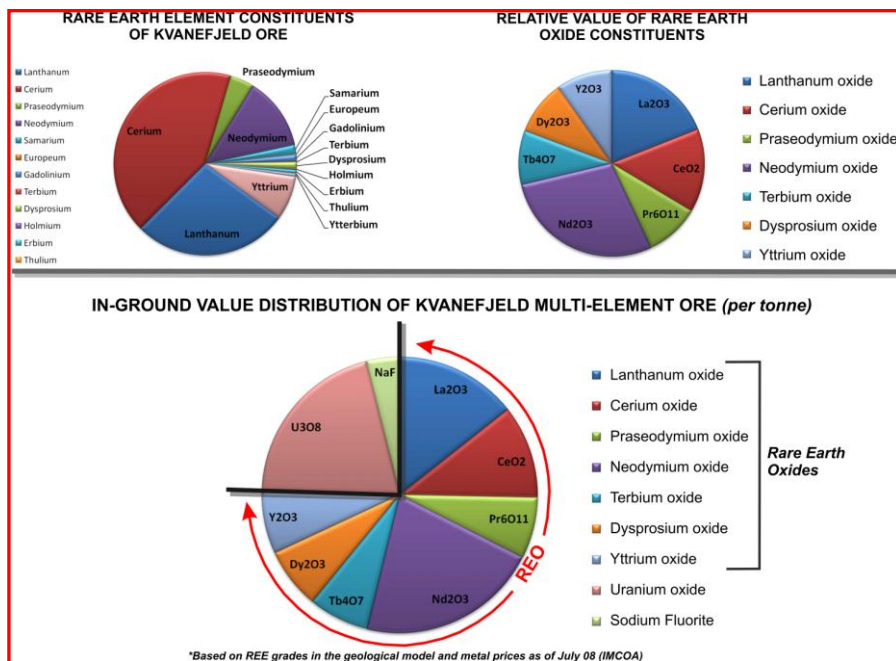
On September 10, 2010, the Company announced that the Greenland government had introduced an amendment to Standard Terms for Exploration Licences in Greenland. The amendments allow for, upon approval, the inclusion of radioactive elements as exploitable minerals for the purpose of thorough evaluation and reporting.

Greenland Mineral's application under these regulations has been approved.

The environmental impact of the Kvanefjeld Project and the safety of Greenlanders, particularly of the town of Narsaq (proximity of the Project 8 km), remains Greenland Mineral's primary focus.

The Company has engaged world leaders in their field Coffey Environmental and the Danish group Oribital, who performed the Danish Government's Feasibility Study in the 1980s.

These results have formed a key component of the Prefeasibility Study completed in December 2009.



Pie charts illustrating the constituent proportions of the REO resource at Kvanefjeld (top left), the relative value of the REO constituents (top right), and the relative value of all commodities of economic interest in the Kvanefjeld deposit (base).

In June 2009, Greenland Minerals reported an increase of the estimated Kvanefjeld resource within a 457 million tonne ore body to be: 4.91 million tonnes of total REO (an increase of 88%), 0.99 million tonnes of zinc (Zn), 0.12 million tonnes (283 million pounds) of U3O8 (an increase of 27%) and 3.09 million tonnes of NaF (an increase of 40%).

79% of the total new REO, U3O8, Zn and NaF mineral resource estimate, being prepared by Hellman and Schofield, are in the Indicated category, with the balance in the Inferred category, whereas all previous resources were all in the Inferred category.

In June 2010, Greenland Minerals commenced a 2010 field program including 10,000 metres of drilling has commenced, which will take three months and has two objectives:

- ▶ Firstly, to infill drill the Inferred resource at Kvanefjeld in order to convert this into Indicated resources.
- ▶ Secondly, to drill a regional target where initial investigations indicate the potential for another multi element resource of a similar scale to Kvanefjeld at an area now termed "Zone 2".

Results from the 2010 exploration program will be finalized and announced in early 2011.

### **Overview of projects**

#### ➤ **Kvanefjeld Multi-Element Project, southwest Greenland**

On 21 May 2007, Greenland Minerals announced it had entered into a transaction by which a wholly-owned subsidiary will acquire an initial 61% interest in a multi-element joint venture project in southwest Greenland (Kvanefjeld Project) which includes a significant resource of Uranium. The Company has options to take its subsidiary's interest to 100%.

Greenland Minerals will acquire its interest in the Project by acquiring 100% of the shares in Chahood under the Chahood share sale deed. Chahood holds a 21% joint venture interest under the Joint Venture Agreement. Additionally, the Company becomes bound as a party to the Joint Venture Agreement with Chahood and Westrip by a deed of assumption.

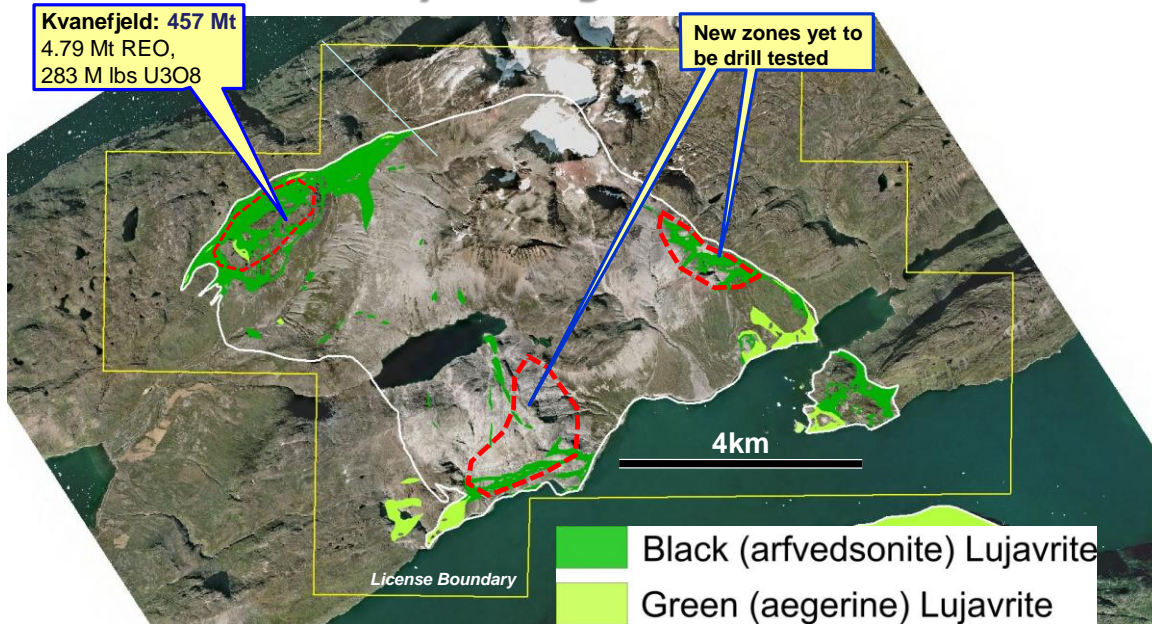
By the issuance of various considerations to Westrip, Chahood (which will be a 100% subsidiary of the Company) will acquire a further 40% joint venture interest. As at the 1<sup>st</sup> August, Chahood will therefore hold a 61% joint venture interest under the Joint Venture Agreement for a consideration of: A\$ 1.0 million cash reimbursement and 35 million shares in order to acquire all the share capital in Chahood with its 21% joint venture interest; A\$ 2.0 million cash payments and 30 million shares to Westrip in order for Chahood to acquire a further 40% joint venture interest; and an additional A\$ 2.0 million cash payment and 10 million shares to Westrip in the case of a uranium milestone event being satisfied.

In June 2008, the Joint Committee of the Bureau of Mines and Petroleum of Greenland approved the transfer of Exploration Licence 2005/28 to the Company's subsidiary.

**With the Kvanefjeld Project being the largest undeveloped multi-element occurrences of uranium, and rare earths in the world**, the Project has been the subject of numerous published scientific papers written by bodies that include the Danish Atomic Energy Agency (now called R.I.S.O), various Greenland government agencies and many independent scientific researchers since 1959, including the International Atomic Energy Agency.

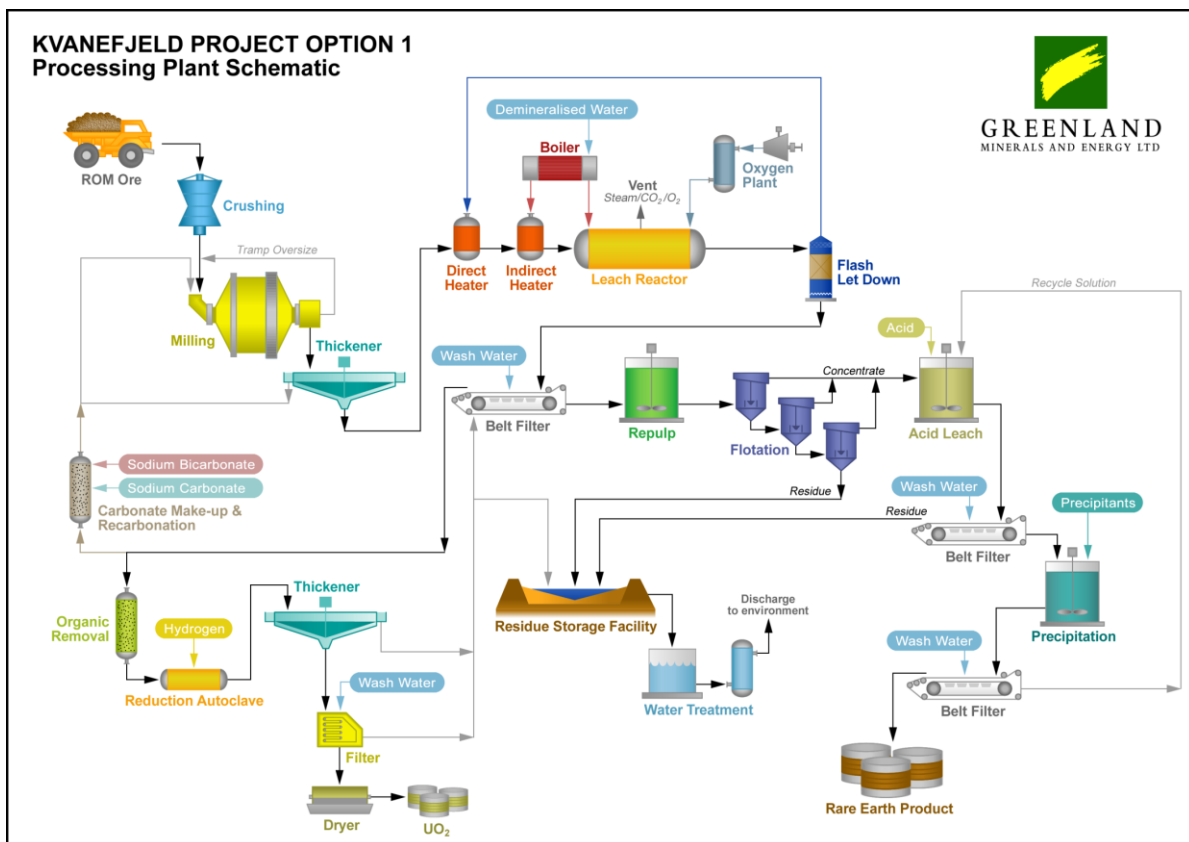
# Ilimaussaq Intrusive Complex

## Key Geological Units



### Process flow sheet – base case scenario:

1- alkaline pressure leach uranium extraction; 2 - concentrate REE minerals; 3 - extract REEs with dilute HCl wash



The Kvanefjeld Project is the subject of licence interests granted by the Greenland Government. An initial exploration Licence (2005/17) has been divided into 2 further licence areas. The first licence is a northern licence area of 80 km<sup>2</sup> which covers the joint venture area. The second licence is a southern area of 47 km<sup>2</sup>. The Company has the rights to all minerals bar niobium and tantalum on the southern license and also has off take agreements in place for all rare earth oxides from both license areas.

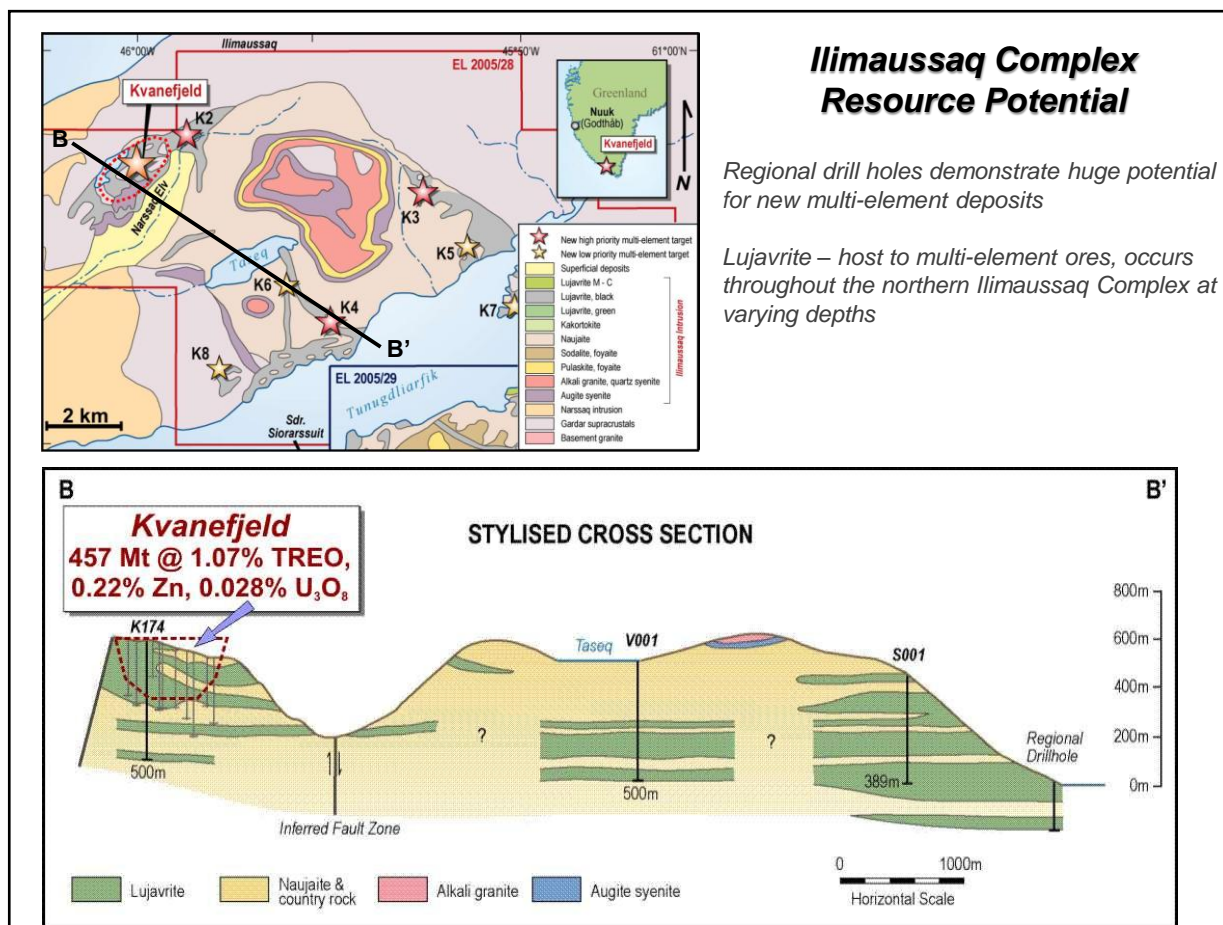
In regards to title it is not currently possible to receive a mineral licence for the exploitation of uranium. Therefore both exploration licences do not include uranium as a primary commodity. The Company is not prevented from exploring for uranium as part of its multi-element exploration program.

However, following the recent political developments, it is now apparent that Greenland's government is in favour of legislating by-product exploitation of uranium from multi-element deposits, when they gain control of their mineral rights in mid 2009. This removes a significant amount of political risk from the Project, and will see it advance into the feasibility phase.

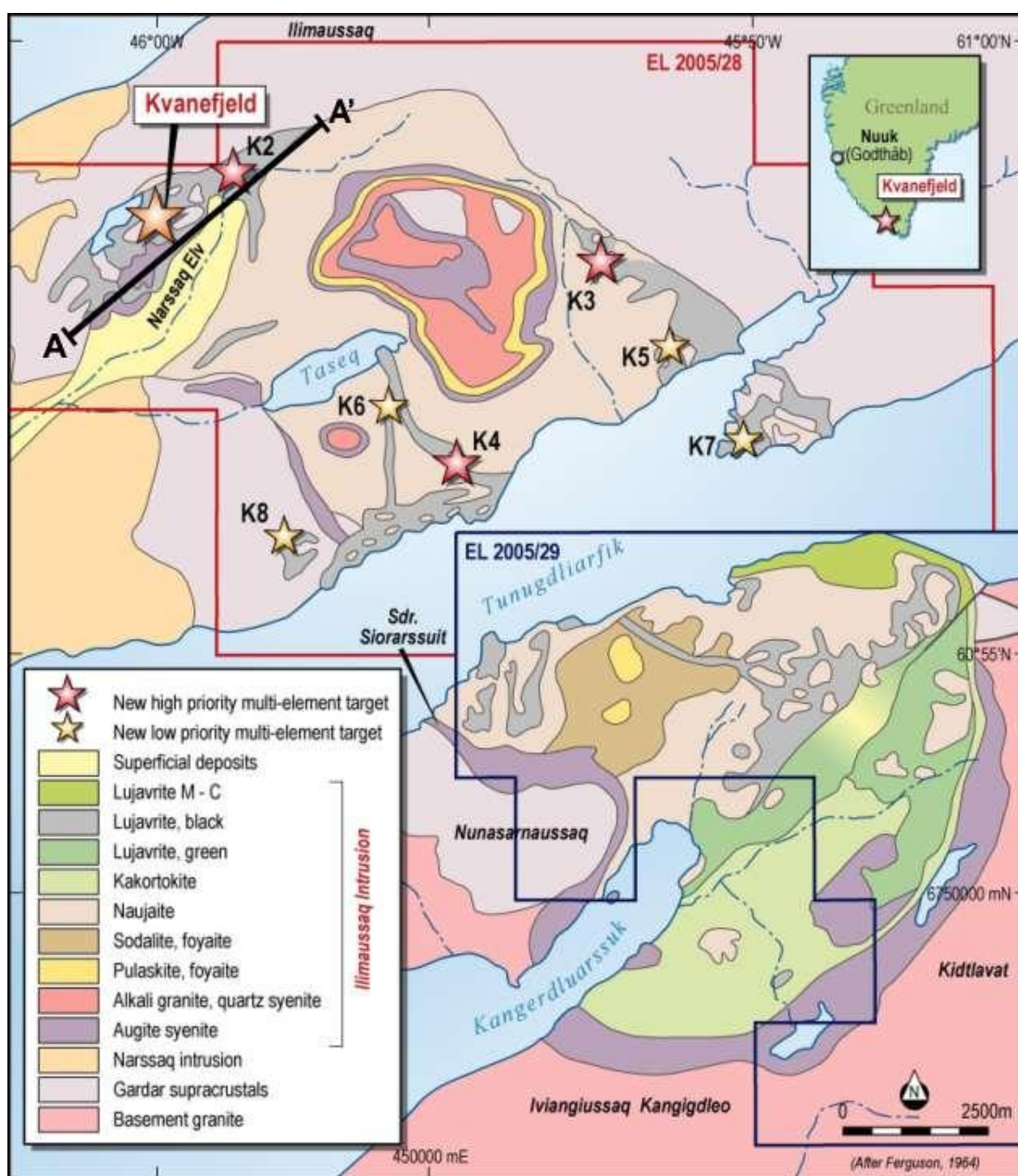
The project area has been initially explored by the Danish Atomic Energy Agency which completed 11,852 metres of diamond drilling, completed a feasibility study with pit optimisations and sites for tailings and waste being allocated.

On top of this Greenland Minerals has contracted the services of the project manager of this feasibility study and thereby gained access to over 10 years worth of metallurgy, engineering and mining studies that will save the company significant time in the future.

In 2007, approximately A\$ 5 million was spent on more than 10,000 metres of diamond drilling for 43 holes as well as detailed radiometric and magnetic surveys were completed at Kvanefjeld, which is the single largest exploration program ever in Greenland. This is particularly significant given the Company only fully acquired the Project on the 28<sup>th</sup> August 2007.



In 2008, a total of 19,334 metres of diamond core were drilled. This included work targeting resource category upgrade, drilling to increase inventory and drilling a number of new multi-element targets. Exploration has also identified major additional concentrations of other commodities; specifically rare earth elements. With uranium expected to account for approximately 30% of the total in ground value, this is significant when it comes to the approval of the exploitation of uranium as a by-product.



The Kvanefjeld Deposit extends from surface to greater than 250 metres (the current extent of drilling), and remains open in three directions. The Deposit is also known to contain zinc and lithium.

Greenland Minerals had identified 7 new exploration targets that are highly prospective for multi-element mineralization, located in close proximity to the Company's Kvanefjeld Deposit. The targets have been identified by geological mapping and ground-based radiometric surveys carried out in June 2008.

Three high priority targets were drill tested in the 2008 field season with very positive results. Whilst all assays remain outstanding, large intervals of lujavrite, the same rock that hosts U-REO mineralization at Kvanefjeld, were intercepted. This is considered as an extremely encouraging development, as it provides a clear indication that there is scope to increase the overall resource base of the Project substantially.

Greenland Minerals recently received 11,000 metres of core and historical feasibility information from the Danish authorities used for their studies study (1978-1985). This information is valued at US\$ 30 million in today's US dollars.

In December 2009, GGG announced that it had received drafts of component reports for the "base case" mining scenario of the Kvanefjeld Multi-Element Project. The "base case" is built around the process flow sheet that was announced in the Company's September Quarterly Activities report.

On February 1, 2010, Greenland Minerals announced the interim results of its Pre-Feasibility Study into the Kvanefjeld Project, which provides a Net Present Value of US\$ 2.18 billion and calculated a free cash flow of US\$ 8.9 billion over the 23-year mine life, if developed.

At a processing rate of 10.8 million tonnes per annum, nominal forecast production is equivalent to 43,729 tonnes of Rare Earth Oxide (REO) and 3,895 tonnes of U<sub>3</sub>O<sub>8</sub>.

**At this level of production Kvanefjeld could potentially supply > 20% of the global rare earth demand as of 2015/2016.**

Un-gear'd capital costs are calculated at US\$ 2.31 billion and construction commencing in 2013 with production commencing in 2015.

Average operating costs are calculated at 7.50/t of ore treated, and rare earth carbonate prices of US\$ 13 kg and an uranium price of US\$ 80, growing annually at 5%.

Based on these financial evaluations the Kvanefjeld Project could repay the capital costs of a mining operation in just over 5 years, including 2 years of construction.

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## Management

**Mr. Michael Hutchinson, BSc (Geology and Geography), Non-Executive Chairman**, has had a distinguished career as a longstanding director of the London Metals Exchange, and has served as a board member on numerous publically listed companies involved in the minerals industry. Mr Hutchinson is also the current Chairman of RBS Sempra Metals, and Wogen PLC. Mr Hutchinson brings a wealth of experience to the board, and his visibility in global financial markets will benefit the Company immensely as it advances its Greenland projects.

**Mr. Roderick McIlree, BSc (Mineral Exploration and Mining Geology, Grad Dip, Mineral Economics), MAusIMM, Managing Director**, commenced a career in the mining industry where he worked for major mining companies both domestically and internationally, gaining experience in mineral exploration and in all facets of mining.

Mr. McIlree moved to the finance sector in 2000 and worked as an analyst and advisor for broking houses active in capital markets. He has experience in international capital raisings having initiated several successful mining companies with assets both domestically and overseas. Mr. McIlree was instrumental in sourcing the Kvanefjeld Project for the Company. He is also an executive director of Convergent Minerals.

**Mr. Simon Cato, B.A., MSDIA, Executive Director**, has over 20 years capital markets experience in both broking and regulatory roles. He has been employed by the ASX in Sidney and in Perth in the Company's department which oversees the activities of listed companies. As a broker he has also been involved in the underwriting of a number of initial public offers and has been through the process of an initial public offer listing in a dual role of broker and director. Mr. Cato is also director of Altera Capital, Sofcom, Bentley International and Convergent Minerals.

**Mr. Jeremy Whybrow, B.Sc (Mineral Exploration and Mining Geology), G.Dip (Mineral Economics), MAusIMM, Exploration Director**, has over 12 years of experience in the mining industry, both domestically and internationally. He has worked for companies such as Sons of Gwalia, PacMin, Teck Australia, Mount Edon Gold Mines, and Croesus Mining.

Previously, Mr. Whybrow has worked internationally in China, Africa and the Philippines, as well as numerous localities in Australia. He is also an executive director of Convergent Minerals.

**Mr. Tony Ho, B.Comm, CA, FAICD, FCIS, Non-Executive Director**, is an experienced company director having held executive directors and chief-financial officer roles with a number of publicly listed companies. He was executive director of McArthur Yates & Co. retiring from that position in April 2002. Prior to joining the Company, Mr. Ho was a partner of Cox Johnston & Co. Chartered Accountants, which has since merged with Ernst & Young.

## Management team

**Mr. Shaun Bunn, Chief Operating Officer**, has 26 years experience in exploration, mining, processing and project development. An effective leader and team player, he has a successful track record in project development and operational management. Mr. Bunn has substantial international business exposure, having co founded a mining company on the London Alternative Investment Market (AIM), and established a new mining venture in North Africa. He has recent experience in capital raisings, investor relations and marketing.

**Dr. John Mair, General Manager**, BSc (Honours), PhD (Geology), MAusIMM, MSEG, brings strong technical expertise to the management team. He has extensive experience in exploration having previously worked in the remote environments of British Columbia, Yukon Territory and Alaska, places which share many exploration challenges within Greenland.

His role for the Company includes providing technical input to the Kvanefjeld Project in the areas of resource development, and feasibility studies. In addition, in conjunction with the Managing Director, Dr. Mair presents on the company's technical activities.

**Mr. Ole Ramlau-Hansen, Managing Director** of Greenland Minerals and Energy AIS, the Greenland subsidiary, has had a long and distinguished career in Greenland having lived there for more than 25 years. He was responsible for the construction of the first tertiary level business school in Greenland and has been involved in many of the major companies in Greenland, including Royal Greenland, where he built the company over 13 years into the largest fishing group in the world from a loss making state run enterprise. Mr. Ramlau-Hansen has managed the Government divestment (privatizations) of several major companies including the KNI Group, Greenland Ship Yards and the state-run Tannery Group of companies.

**Mr. Damian Krebs, Metallurgy Manager** for the Kvanefjeld Project, is an experienced metallurgist with over 10 years of project and technology development experience with complex hydrometallurgical circuits. He was previously employed at Independent Metallurgical operations Pty, where he filled the position of Process Study Manager. During this time he worked on a number of metallurgical studies for nickel/cobalt and uranium projects for various clients. Previously, he spent 10 years with BHP Billiton in projects in technology development roles.

## **Finance**

In early July 2010, Greenland Minerals formalized a A\$ 6 million capital raising and established a A\$ 15 million equity facility that provides the Company with a further A\$ 21 million to fund ongoing work programs on the Kvanefjeld Project.

An amount of A\$ 6 million was raised through the issue of 17.65 million shares at A\$ 0.34, which took the Company's cash reserves to more than A\$ 9 million. This is more than sufficient to cover this year's work program.

In addition, an equity facility has been established with US-based YA Global Investments that provides Greenland Minerals with the option to draw down on a \$ 15 million facility at any time over the next 5 years. 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 million.

## **Investment recommendation:**

Greenland Minerals has secured to acquire 61%, with options to acquire up to 100% of the Kvanefjeld Project on the southwest tip of Greenland and is recognised as the largest undeveloped multi-element occurrences of rare earth oxides (beryllium and lithium), sodium fluoride and uranium in the world.

Particularly since having further increased and upgraded in size in June 2009, the Kvanefjeld Project, with an estimated JORC compliant resource of 120,000 tonnes U<sub>3</sub>O<sub>8</sub> grading 283 ppm, containing 223 million pounds of U<sub>3</sub>O<sub>8</sub> (192 million pounds at 350 ppm), can be compared with Rio Tinto's producing Rössing Uranium Mine in Namibia containing a current 174,000 tonnes Mine resource grading 300 ppm for 470 million pounds of U<sub>3</sub>O<sub>8</sub>.

Actually, apart from the Kvanefjeld Project being the world's largest REO project, Greenland Minerals owns one of the world's top-5 uranium deposits. The present U<sub>3</sub>O<sub>8</sub> resource represents a value of less than US\$ 1.00 per pound (fully diluted), compared with average resource valuations in the uranium sector between US\$ 3 to US\$ 5 per pound U<sub>3</sub>O<sub>8</sub>.

The Company's focus in 2009 has shifted from resource development to metallurgical test work and other aspects of a pre-feasibility study scheduled which was completed by the end of December 2009.

On February 1, 2010, the Company announced the interim results of its Pre-Feasibility Study into the Kvanefjeld Project, which 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.

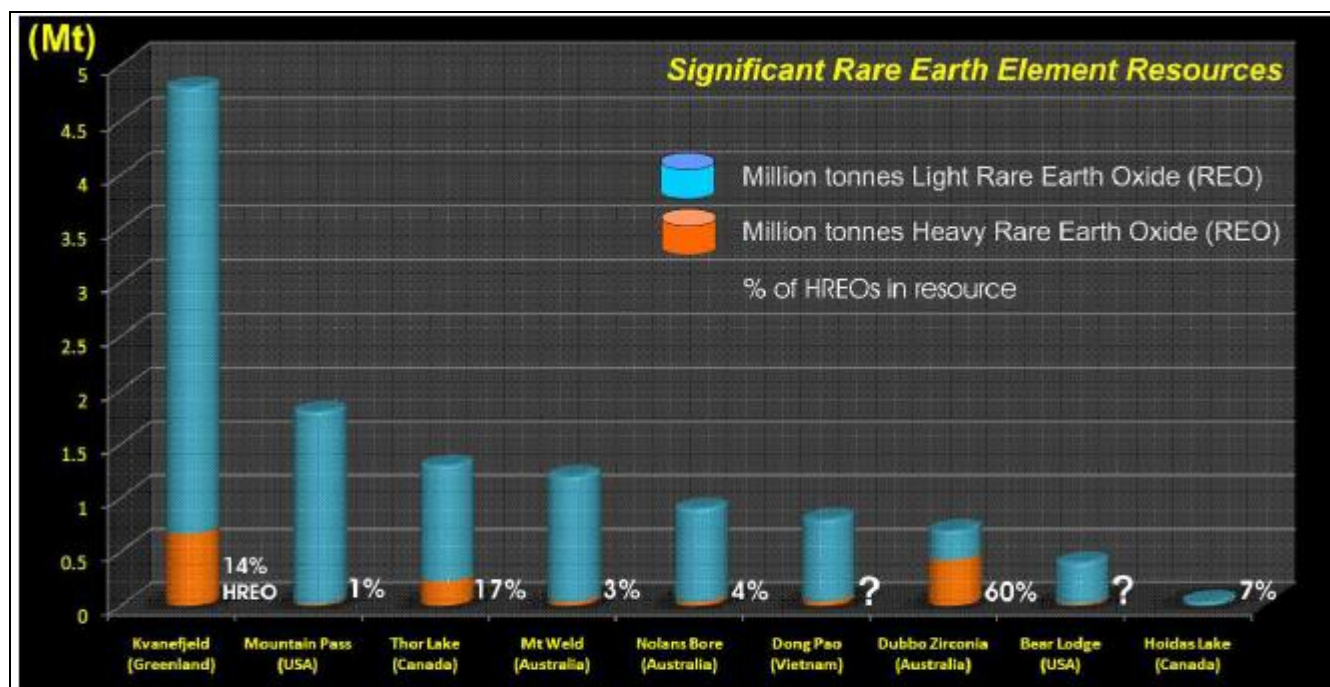
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Early indications are that uranium represents approximately a quarter of the total in the ground value of the Kvanefjeld Project, to be estimated at more than US\$ 50 billion.

With the recent positive political developments in Greenland, having activated self-rule in June 2009 and getting 100% control of its mineral rights, the future is looking very positive for Greenland Minerals. This has been underpinned by the introduced amendments by the government announced in September 2010 to allow for the exploitation of radioactive elements and continued development of the Kvanefjeld Project.

With the cleared geopolitical climate in Greenland having paved the way for Greenland Minerals' Kvanefjeld Project to emerge to one of the world's top-5 REE and uranium deposits, the Company's share price has more than tripled since the announcement and has confirmed our expectations of a significant increase of the Company's market valuation.

Also considering China currently controlling 95% of the world's REE supply and curtaining its export quotas as much as 40% last year and to be continued in 2011, which have resulted in REE prices having sevenfolded in 2010, we still view the shares of Greenland Minerals strongly undervalued and increase our next price objective from A\$ 1.60 to A\$ 2.00.



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.

Relative Abundance of Individual Rare Earth Elements in Select Deposits

