

GGG.AU

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Rare Earth Elements, Uranium, Zinc, Sodium Fluoride
Greenland
Pre-Feasibility Study
Exchanges: ASX:GGG

Greenland Minerals and Energy Ltd

A\$ 0.82

A 33% one-month gain for GGG is the result of a buoyant REE market and the Greenland's official nod to uranium exploration at the giant Kvanefjeld Project (forecast REE 43.7kt/yr, U₃O₈ 3.9kt/yr). Mid-term target A\$1.46/share, with considerable upside.

Capital Profile

Share price (A\$)	0.82
52 week range (A\$/share)	0.31 to 1.10
Number of shares (m)	270.4
Options and warrants (m)	153.9
Convertible notes (m)	0.0
Fully diluted (m)	424.3
Market capitalisation (undiluted) (A\$m)	220.4
Debt (A\$m) - Dec 10F	0.0
Enterprise value (A\$m)	220.4
Major shareholders: Quayside Services (15.3%), GCM Nominees (15.2%), Rensberg Sheppards Inv (11.7%), Citicorp Nom (9.5%), Westrip Hold. (8.6%)	
Avg monthly volume (m)	31
Cash (A\$m) - Dec 10F	10.5
Price/Cash (x)	20.9
Price/Book (x)	3.7
Listed company options:	GGGO

Investment Points

Multi-element focus at Kvanefjeld - uranium component valued in-ground (4Q10) at ~US\$17.5 billion (US\$62/lb) and REE at ~US\$146 billion (US\$30/kg).

Potential to be one of the world's largest REE and U deposits - plus economic potential NaF, Zn and Sn.

Resource includes 283mlbs U₃O₈, 4.9mt REO, 1mt Zn and 3.1mt NaF- defined over 2km x 1km; open at depth (>300m) and along strike, regional prospectivity is high.

Metallurgical studies are advanced: process flow sheet includes alkaline/carbonate pressure leach for uranium, and separate flotation and leach for REO.

Pre-feasibility study, Feb '10: processing 10.8mtpa for 23 years, producing 43.7ktpa REO and 8.6mlbspa U₃O₈. Capex is US\$2.31bn, opex US\$41/t. NPV US\$2.18bn.

Greenland Government has amended exploration licence structure to allow for investigation of uranium, signalling willingness to consider allowing uranium mining.



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Production and Financial Forecasts

Year End: December	Sep-10a	Dec-10F	2009a	2010F	2011F
Exploration and evaluation (A\$m)	2.63	0.71	10.47	6.64	6.00
Corporate (A\$m)	1.65	1.10	6	5.28	5.40
Exploration/(Expl.+ Corporate) (%)	61	39	65	56	58
Funding duration at current burn (years)			0	0.9	2.8
Shares on issue (pr end) (m shares)	250.5	270.4	226.8	270.4	424.3
Drilling - RAB (m)	0	0	0	0	0
Drilling - Other/Diamond (m)	1,000	1,000	7,000	4,000	4,000
Land holding (000 ha)	211	211	211	211	211
Tenement costs (\$k per year)	-	-	-	-	-
Capital raisings (A\$m)	6.1	6.0	6.8	13.2	31.9
Funding from JV partners (A\$m)	0	0	1	2	1.6
Cash (A\$m)	6.3	10.5	7.6	10.5	32.2
Cash backing (Ac/share)	2.5	3.9	3.4	3.9	7.6
Net asset backing (Ac/share)	21.6	21.9	20.7	21.9	20.5

* Uranium prospective properties only.

Company Comment

Overview: Greenland Minerals and Energy Limited listed on the ASX in June 2006 (ASX:GGG). It is evaluating the uranium-rich Kvanefjeld multi-element project in Greenland.

Kvanefjeld (uranium, Greenland): The project (80km²) is located on the SW tip of Greenland, at Narsaq. Within the Ilimaussaq alkaline intrusive igneous complex, it is one of the world's largest rare earth elements and uranium deposits. Other elements and minerals include zinc, tin and sodium fluoride. GGG's 61% ownership is moving to 90% with A\$10m payment, and 100% with A\$50m.

The deposit: is a flat-lying slab of disseminated mineralisation, open at depth and in three directions. Current JORC resource (Jun '09) is 457mt @ 0.028% U₃O₈ for 283mlbs, 1.07% REO for 4.91mt (includes yttrium) and 0.22% Zn for 0.99mt, with 79% of these in the Indicated category. There is also 363mt @ 0.85% NaF for 3.09mt. The resource covers 2km by 1km and extends from surface to 280m depth. **Exploration:** There is resource upside within the ~6km x 4km Ilimaussaq intrusive. Regional and resource development drilling (~11,000m from Jun '10) has intersected black lujavrite at Zone 2 (6km SE of Kvanefjeld), which is similar to mineralised rocks to the resource. Modelling suggests the lujavrite is present as a continuous layer at depth between the resource and Zone 2. **Assays expected 4Q10.**

Metallurgical and mineralogical tests are at an advanced stage. Current process flow sheet includes alkaline pressure leach (CPL) to remove uranium, recovering 84%, followed by flotation and acid leach to produce REE carbonate (rec. 34%). There is potential to improve recoveries, and to beneficiate the ore prior to the CPL circuit and reduce costs. There is also the possibility of generating a zinc concentrate (ZnS). Fluorine and thorium can both convert to insoluble compounds during CPL. A recently started mineralogical study at UBC (Uni British Columbia) should help refine the processing methodology.

Pre-Feasibility Study (updated January 2010): Calls for open cut mining and 10.8mtpa processing, for 43.7kt REO and 3.9kt (8.6mlbs) U₃O₈. Total capital cost is US\$2.31bn including contingency. Operating costs are US\$3.83/t mining, US\$23.55/t for the CPL uranium circuit (US\$29.61/lb at head grade 365ppm U₃O₈), which includes some of the REO flowsheet, and a further US\$13.62/t for the REO circuit (US\$3.36/kg at head grade 1.19% REO). Construction is scheduled for 2013 and production for 2015. The study places mid-point NPV (10% disc) at US\$2.18bn (pre-tax). Base commodity prices are US\$80/lb U₃O₈ (current LT contract price is ~US\$62/lb) and US\$13/kg REO (which could now be +US\$30/kg). Break even U₃O₈ is US\$37.47/lb. A **Definitive Feasibility Study** could start in mid 2011 if approved by the Greenland Government.

Corporate: GGG raised working capital in 2Q10, placing A\$6m in equity at A\$0.34/share, and has organised a further A\$15m equity facility that can be drawn down when needed over the next 5 years.

Investment Comment: An NPV of US\$2.18bn for a PFS-stage project, even pre tax, compared to the market cap of A\$220m suggests GGG is undervalued. The gap is due to investor uncertainty, over Greenland's attitude to uranium mining, the metallurgical process and the large capex. In Sep '10, the Greenland Government amended the Standard Terms for Exploration Licences to include radioactive elements as exploitable minerals for the purpose of evaluation and reporting. This allows further development of Kvanefjeld and signals the Government's willingness to talk about uranium mining – the next positive sign would be approval to start a DFS in mid 2011. As the share price chart shows, this news and the strong rare earths market have been well received by investors. Assuming GGG raises 50% of project capex at A\$2/share, pre-tax NPV is **A\$1.46/share**: a likely mid-term price target if the DFS goes ahead and good progress continues with the flowsheet and Kvanefjeld exploration.

Reserves and Resources/Mineralised Material

Code for reporting mineral resources - Australian: (JORC)

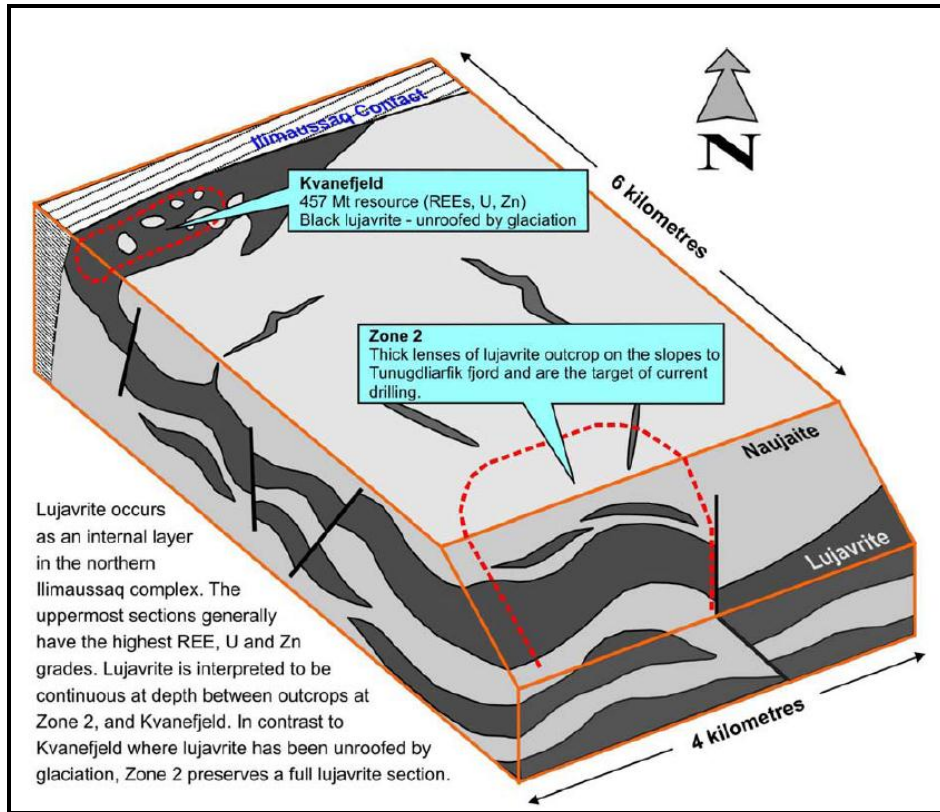
Uranium	Classification	Project	Ore	TREO	Cut Off	TREO	TREO	TREO Eqty
U ₃ O ₈		Equity	Mt	%	ppm U ₃ O ₈	Kt	Mlb	Kt
Reserves						0.0	0.0	0.0
Resources								
Kvanefjeld*	Indicated, inferred	61%	457	1.07	150	4,890	10,780	2,983
Mineralised Material (est., non compliant with JORC)						0.0	0.0	0.0

*Also uranium (283mlbs contained @ 0.028%), Zn (0.99mt contained @ 0.22%) and NaF (3.09mt contained @ 0.85% NaF).

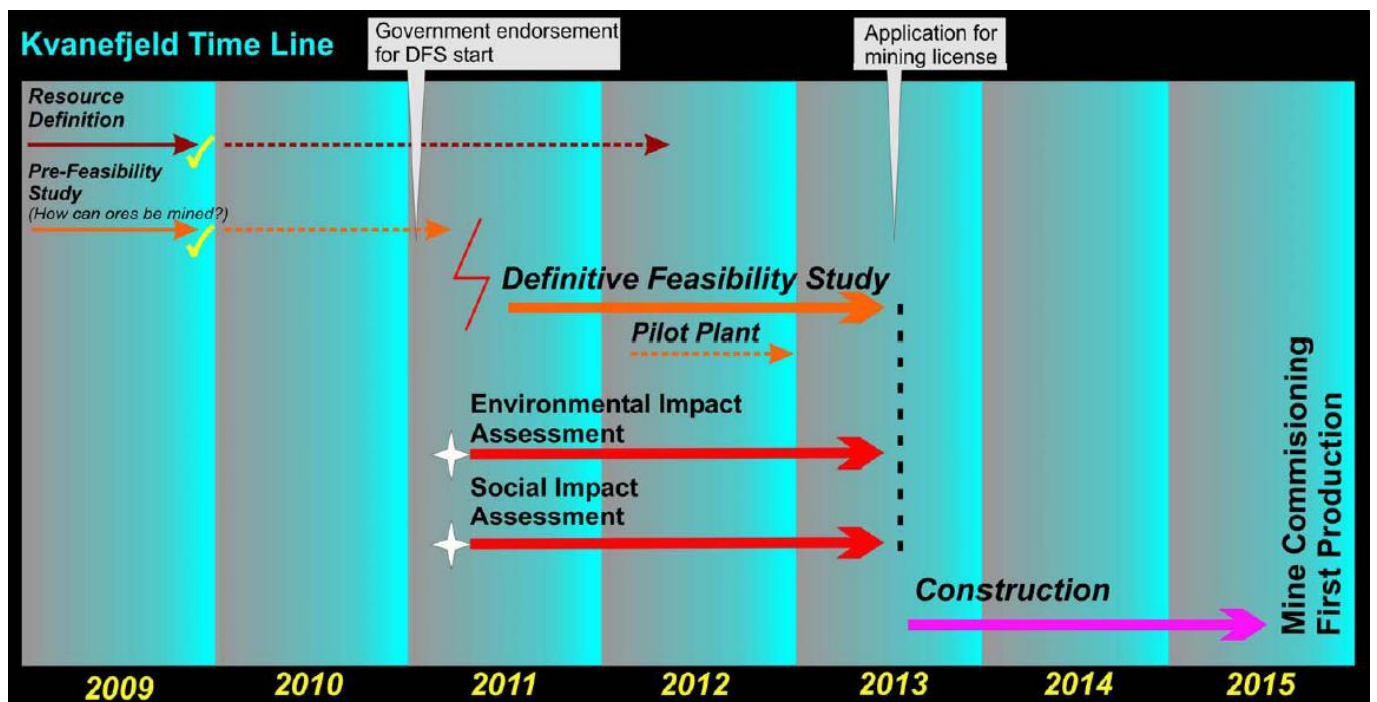
Key Projects

Project	Ownership/Option	Metal	JV Partner	Target Type	Process Route	Project Status	Location
Kvanefjeld	61%/100%	U, REO	Westrip	Igneous	na	Advanced Expl	Greenland

Block section showing exploration potential at the Kvanefjeld Deposit, southern Greenland: there is potential to extend the current resource (incl .283mlbs U₃O₈ and 4.9mt of rare earth oxides). Mineralised lujavrite may form a continuous layer at depth that reaches the resource.



Development schedule for Kvanefjeld: The updated PFS is expected in 2Q11, after which Greenland Gov't could give permission for a DFS including pilot and demonstration level processing plants. Production is possible in 2015.



Disclosure and Disclaimer

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