

Company Announcement, 12 November 2021

GGG seeks advice on Kvanefjeld strategy following Greenland's new uranium legislation

- **Greenland's parliament has passed new legislation banning mining of mineral resources with a uranium content of 100 parts per million (ppm) or greater in the total resource**
- **GGG's Kvanefjeld Project is a rare earths project, with an ore reserve estimate of 108 million tonnes at 1.43% rare earth oxide, that also contains 0.26% zinc, and 0.036%U₃O₈**
- **GGG is seeking advice on how new legislation may impact Kvanefjeld's proposed development strategy**
- **GGG can modify Kvanefjeld's development strategy including scenarios where uranium is not produced.**

Greenland Minerals Ltd ('GGG' or 'the Company') advises Greenland's parliament has passed new legislation concerning uranium mining on 9 November 2021, a development foreshadowed in previous ASX announcements, including the September 2021 Quarterly Report.

The new legislation prohibits preliminary investigation, exploration, and exploitation of uranium, which it defines as uranium content which occurs at 100 parts per million or greater in the total resource. The legislation also permits the Government to extend that prohibition to other unspecified radioactive elements by imposing permitted limit values on those elements. It serves to reverse initiatives, policies and legislation adopted by successive governments over the past decade.

There are no active primary uranium projects in Greenland. Therefore, the legislation is directed at the production of rare earth materials and other critical metals, where it is common for ores to contain radioactive elements including uranium and thorium. The Company is seeking clarity as to how the new legislation will effectively modify existing approvals or authorizations.

GGG's 100%-owned Kvanefjeld rare earth project is underpinned by a JORC code compliant ore reserve estimate that contains 108 million tonnes at 1.43% rare earth oxide, 0.26% zinc, and 0.036% uranium oxide. Under the currently proposed development strategy for Kvanefjeld, uranium oxide, if recovered as a by-product of rare earth production, would contribute approximately 5% of project revenues.

The Company is not aware of any technical, radiological, or health and safety reasons why the Greenland Government has selected a threshold level of 100ppm uranium for the legislation.

A comprehensive radiological assessment of the Kvanefjeld Project by independent specialist consultancy Arcadis concluded *“the Kvanefjeld Project is expected to release only small amounts of additional radioactivity to the environment and is not expected to result in an adverse effect, or significant harm, to wildlife or people that live or visit the area”*.

GGG has completed a public consultation phase of the licensing process for the Kvanefjeld Project in strict accordance with Greenland laws. Its recently submitted consultation ‘White Paper’ demonstrates that concerns raised during the consultation have been effectively addressed in the impact assessments and technical reports (see ASX Announcement dated 2 November 2021).

GGG is seeking further advice as to how the legislation may impact the proposed development strategy for Kvanefjeld, and whether modifications to the Project will be required. The proposed development strategy has been shaped by extensive stakeholder engagement. The Company has communicated with the Greenland Government to reiterate that there has always been flexibility to how Kvanefjeld can be developed, including scenarios where uranium is not produced in Greenland.

Background

Greenland Minerals commenced operating in Greenland in 2007 to explore the broader Kvanefjeld area and evaluate a multi-element mining operation. In November 2011, GGG’s exploration licence over the Kvanefjeld Project, which covers “all mineral resources except hydrocarbons, radioactive elements and hydropower resources”, was amended by the government of the time to add a conditional right for the Company to apply for an exploitation licence to include “radioactive elements”, which provided the Company with a regulatory framework to effectively evaluate a multi-element mine development. This marked an important step in the evolution of the Project, as it placed a clear emphasis on rigorous scientific evaluation regarding a decision to mine.

The granting of an exploitation licence then became dependent on establishing an environmentally and socially sustainable development scenario that is economically robust. The addition of “radioactive elements” to the exploration licence in 2011 did not affect, or qualify, the right of the Company to apply for an exploitation licence for any other mineral resources (except hydrocarbons and hydropower resources). Similarly, a denial of exploitation licence for “radioactive elements” is irrelevant to the rights which are granted by the Standard Terms for the exploration licence.

Over the subsequent decade, leading independent international experts completed many environmental and technical studies, resulting in the Kvanefjeld impact assessments being accepted as meeting Greenland’s Guidelines for public consultation by the Government of Greenland and its independent scientific advisors in December 2020. The 38-week public consultation period concluded on 13 September 2021, and the Company has lodged its White Paper responses to all public comments with the Government.

In parallel to detailed feasibility, environmental and social studies on the Kvanefjeld Project, numerous initiatives have been undertaken by successive governments in Greenland to investigate, then establish, a legal framework to manage the production and export of uranium in Greenland. These endeavors were

primarily due to Greenland's ambitions to become a significant producer of rare earths materials, and other critical minerals where ores are also enriched in uranium.

A timeline of key developments includes:

- September 2010, the 'Standard Terms' for exploration licences in Greenland were modified to allow for the Government to approve, for use in the feasibility study of a mineral deposit, exploration that can include minerals containing radioactive elements above background
- November 2011, GGG's exploration licence amended to include radioactive materials
- October 2013, uranium zero-tolerance policy lifted
- In January 2016, Greenland and Denmark entered into an agreement on the rules for the future commercial export of uranium from Greenland
- In May 2016, Greenland parliament passed four bills to ensure that uranium mining and export meets the Kingdom of Denmark's international non-proliferation commitments.
- In June 2016, Danish parliament passed legislation that created the legal framework to allow Greenland to export uranium
- At the 60th General Conference of the International Atomic Energy Agency (IAEA) held in Vienna in September 2016, Greenland, acting on behalf of Denmark, filed documents that formalised its status as a signatory in its own right to several important international nuclear conventions essential for Greenland's participation in the global civil uranium industry
- In May 2017, IAEA Director General visits southern Greenland and Kvanefjeld Project area at the invitation of Greenland and Danish governments.

The new uranium legislation marks a shift in the Greenland Government's decade-long agenda of developing a critical minerals industry in Greenland, in alignment with Greenland's broader minerals strategy.

About the Kvanefjeld Project

The Kvanefjeld Rare Earth Project is one of the most significant and advanced emerging rare earth projects globally. The Project is unique with respect to its favourable metallurgy and forecast production profile across all commercially important rare earths. Kvanefjeld is located near existing infrastructure in southern Greenland with year-round direct shipping access to the project area. The Project has been carefully designed to minimise impacts through the consideration of the existing environment. Hydro-electricity has been positively evaluated as an option to power the project to produce low-emissions rare earth materials, in addition to providing additional power to the south Greenland grid.

Rare earth elements are critical to the electric vehicle revolution and renewable energy, as well as many other energy efficient applications. The Kvanefjeld Project is forecast to be a globally significant producer of all commercially important rare earth elements including **neodymium, praseodymium, terbium and dysprosium**, over an initial **37**-year mine life. These rare earths are used to make high powered permanent magnets that are utilised in electric vehicles and wind turbines, along with many other applications. Kvanefjeld is well-placed to meet the major surge in rare earth demand that will be generated by the transition to electric vehicles, along with growth in renewable energy.

Authorised for release by the Board of Greenland Minerals Ltd.

-ENDS-

Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off	Classification	M tonnes	TREO ²	U ₃ O ₈	LREO	HREO	REO	Y ₂ O ₃	Zn	TREO	HREO	Y ₂ O ₃	U ₃ O ₈	Zn
(U ₃ O ₈ ppm) ¹		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	Mt
Kvanefjeld - February 2015														
150	Measured	143	12,100	303	10,700	432	11,100	978	2,370	1.72	0.06	0.14	95.21	0.34
150	Indicated	308	11,100	253	9,800	411	10,200	899	2,290	3.42	0.13	0.28	171.97	0.71
150	Inferred	222	10,000	205	8,800	365	9,200	793	2,180	2.22	0.08	0.18	100.45	0.48
150	Total	673	10,900	248	9,600	400	10,000	881	2,270	7.34	0.27	0.59	368.02	1.53
200	Measured	111	12,900	341	11,400	454	11,800	1,048	2,460	1.43	0.05	0.12	83.19	0.27
200	Indicated	172	12,300	318	10,900	416	11,300	970	2,510	2.11	0.07	0.17	120.44	0.43
200	Inferred	86	10,900	256	9,700	339	10,000	804	2,500	0.94	0.03	0.07	48.55	0.22
200	Total	368	12,100	310	10,700	409	11,200	955	2,490	4.46	0.15	0.35	251.83	0.92
250	Measured	93	13,300	363	11,800	474	12,200	1,105	2,480	1.24	0.04	0.10	74.56	0.23
250	Indicated	134	12,800	345	11,300	437	11,700	1,027	2,520	1.72	0.06	0.14	101.92	0.34
250	Inferred	34	12,000	306	10,800	356	11,100	869	2,650	0.41	0.01	0.03	22.91	0.09
250	Total	261	12,900	346	11,400	440	11,800	1,034	2,520	3.37	0.11	0.27	199.18	0.66
300	Measured	78	13,700	379	12,000	493	12,500	1,153	2,500	1.07	0.04	0.09	65.39	0.20
300	Indicated	100	13,300	368	11,700	465	12,200	1,095	2,540	1.34	0.05	0.11	81.52	0.26
300	Inferred	15	13,200	353	11,800	391	12,200	955	2,620	0.20	0.01	0.01	11.96	0.04
300	Total	194	13,400	371	11,900	471	12,300	1,107	2,530	2.60	0.09	0.21	158.77	0.49
350	Measured	54	14,100	403	12,400	518	12,900	1,219	2,550	0.76	0.03	0.07	47.59	0.14
350	Indicated	63	13,900	394	12,200	505	12,700	1,191	2,580	0.87	0.03	0.07	54.30	0.16
350	Inferred	6	13,900	392	12,500	424	12,900	1,037	2,650	0.09	0.00	0.01	5.51	0.02
350	Total	122	14,000	398	12,300	506	12,800	1,195	2,570	1.71	0.06	0.15	107.45	0.31

Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off (U ₃ O ₈ ppm) ¹	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
Sørensen - March 2012														
150	Inferred	242	11,000	304	9,700	398	10,100	895	2,602	2.67	0.10	0.22	162.18	0.63
200	Inferred	186	11,600	344	10,200	399	10,600	932	2,802	2.15	0.07	0.17	141.28	0.52
250	Inferred	148	11,800	375	10,500	407	10,900	961	2,932	1.75	0.06	0.14	122.55	0.43
300	Inferred	119	12,100	400	10,700	414	11,100	983	3,023	1.44	0.05	0.12	105.23	0.36
350	Inferred	92	12,400	422	11,000	422	11,400	1,004	3,080	1.14	0.04	0.09	85.48	0.28
Zone 3 - May 2012														
150	Inferred	95	11,600	300	10,200	396	10,600	971	2,768	1.11	0.04	0.09	63.00	0.26
200	Inferred	89	11,700	310	10,300	400	10,700	989	2,806	1.03	0.04	0.09	60.00	0.25
250	Inferred	71	11,900	330	10,500	410	10,900	1,026	2,902	0.84	0.03	0.07	51.00	0.20
300	Inferred	47	12,400	358	10,900	433	11,300	1,087	3,008	0.58	0.02	0.05	37.00	0.14
350	Inferred	24	13,000	392	11,400	471	11,900	1,184	3,043	0.31	0.01	0.03	21.00	0.07
All Deposits – Grand Total														
150	Measured	143	12,100	303	10,700	432	11,100	978	2,370	1.72	0.06	0.14	95.21	0.34
150	Indicated	308	11,100	253	9,800	411	10,200	899	2,290	3.42	0.13	0.28	171.97	0.71
150	Inferred	559	10,700	264	9,400	384	9,800	867	2,463	6.00	0.22	0.49	325.66	1.38
150	Grand Total	1010	11,000	266	9,700	399	10,100	893	2,397	11.14	0.40	0.90	592.84	2.42

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.

Kvanefjeld Ore Reserves Estimate – April 2015

Class	Inventory (Mt)	TREO (ppm)	LREO (ppm)	HREO (ppm)	Y ₂ O ₃ (ppm)	U ₃ O ₈ (ppm)	Zn (ppm)
Proven	43	14,700	13,000	500	1,113	352	2,700
Probable	64	14,000	12,500	490	1,122	368	2,500
Total	108	14,300	12,700	495	1,118	362	2,600

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ABOUT GREENLAND MINERALS LTD.

Greenland Minerals Ltd (ASX: GGG) is an exploration and development company focused on the development of the world-class Kvanefjeld Rare Earth Project. A comprehensive feasibility study was completed in 2015 and updated following pilot plant operations in 2016. The studies demonstrated the unique and highly advantageous strengths of the Kvanefjeld Project and outlined the potential for Kvanefjeld to be developed as a long-life, low cost, and large-scale producer of rare earth elements; key enablers to the electrification of transport systems.

Since 2017 GML has worked closely with major shareholder Shenghe Resources Holding Co Ltd, a leader in rare earth processing, to develop Kvanefjeld as a cornerstone of future rare earth supply. In 2017-18, GML undertook technical work programs with Shenghe Resources Holding Co Ltd that improved the metallurgical performance and simplified the development strategy and infrastructure footprint in Greenland, with optimised Feasibility Study outcomes announced in mid-2019. This defined a significantly enhanced project cost-structure and a direct alignment with downstream processing.

An exploitation (mining) license application for the initial development strategy was reviewed by the Greenland Government through 2016 -2020 and was formally accepted as meeting Greenland Guidelines in late 2020. Fulfilment of the Guidelines means that all aspects of the Kvanefjeld Project are based on international environmental standards and the principles of 'Best Available Technology' and 'Best Environmental Practice'. Statutory public consultation for the project commenced in December 2020.

Greenland Minerals 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 stakeholder discussions on the social and economic benefits associated with the development of the Kvanefjeld Project.

For Further Information Contact:

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Competent Person Statement – Mineral Resources Ore Reserves and Metallurgy

The information in this report that relates to Mineral Resources is based on information compiled by Mr Robin Simpson, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Simpson is employed by SRK Consulting (UK) Ltd ("SRK") and was engaged by Greenland Minerals Ltd on the basis of SRK's normal professional daily rates. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence. Mr Simpson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Robin Simpson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in the statement that relates to the Ore Reserves Estimate is based on work completed or accepted by Mr Damien Krebs of Greenland Minerals Ltd and Mr Scott McEwing of SRK Consulting (Australasia) Pty Ltd. The information in this report that relates to metallurgy is based on information compiled by Damien Krebs.

Damien Krebs is a Member of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the type of metallurgy and scale of project under consideration, and to the activity he is undertaking, to qualify as Competent Persons in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 edition). The Competent Persons consent to the inclusion of such information in this report in the form and context in which it appears.

Scott McEwing is a Fellow and Chartered Professional of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as Competent Persons in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 edition). The Competent Persons consent to the inclusion of such information in this report in the form and context in which it appears.

The mineral resource estimate for the Kvanefjeld Project was updated and released in a Company Announcement on February 12th, 2015. The ore reserve estimate was released in a Company Announcement on June 3rd, 2015. There have been no material changes to the resource estimate, or ore reserve since the release of these announcements.