GREENLAND MINERALS LTD

ASX: GGG

July - 2019

Important Notice

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JORC Code (2012) *Competent Person Statement – Mineral Resources and Ore Reserves*

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 and Energy 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 and Energy Ltd and Mr Scott McEwing of SRK Consulting (Australasia) Pty Ltd.

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 reserves estimate was released in a Company Announcement on June 3rd, 2015. There have been no material changes to the mineral resource estimate, or ore reserves estimate since the release of these announcements.

Executive Summary

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Globally Significant

Long-life, low cost, large output of critical minerals: Progressing toward a globally significant integrated producer

Advanced Stage of Development

>10 years of sustained research and development. Permitting process advanced

Shenghe Resources

Largest shareholder is a major producer of rare earth products and supplier to international customers

>1 Billion Tonne JORC Resource

Initial 37 year mine life enabling infrastructure development. Year round shipping access

Rare Earth Prices

Strong demand outlook for magnet metals and limited new supply sets the scene for price increases

Nd, Pr, Tb and Dy

Largest projected output of key rare earth elements, economics strengthened via by-products – U, Zn

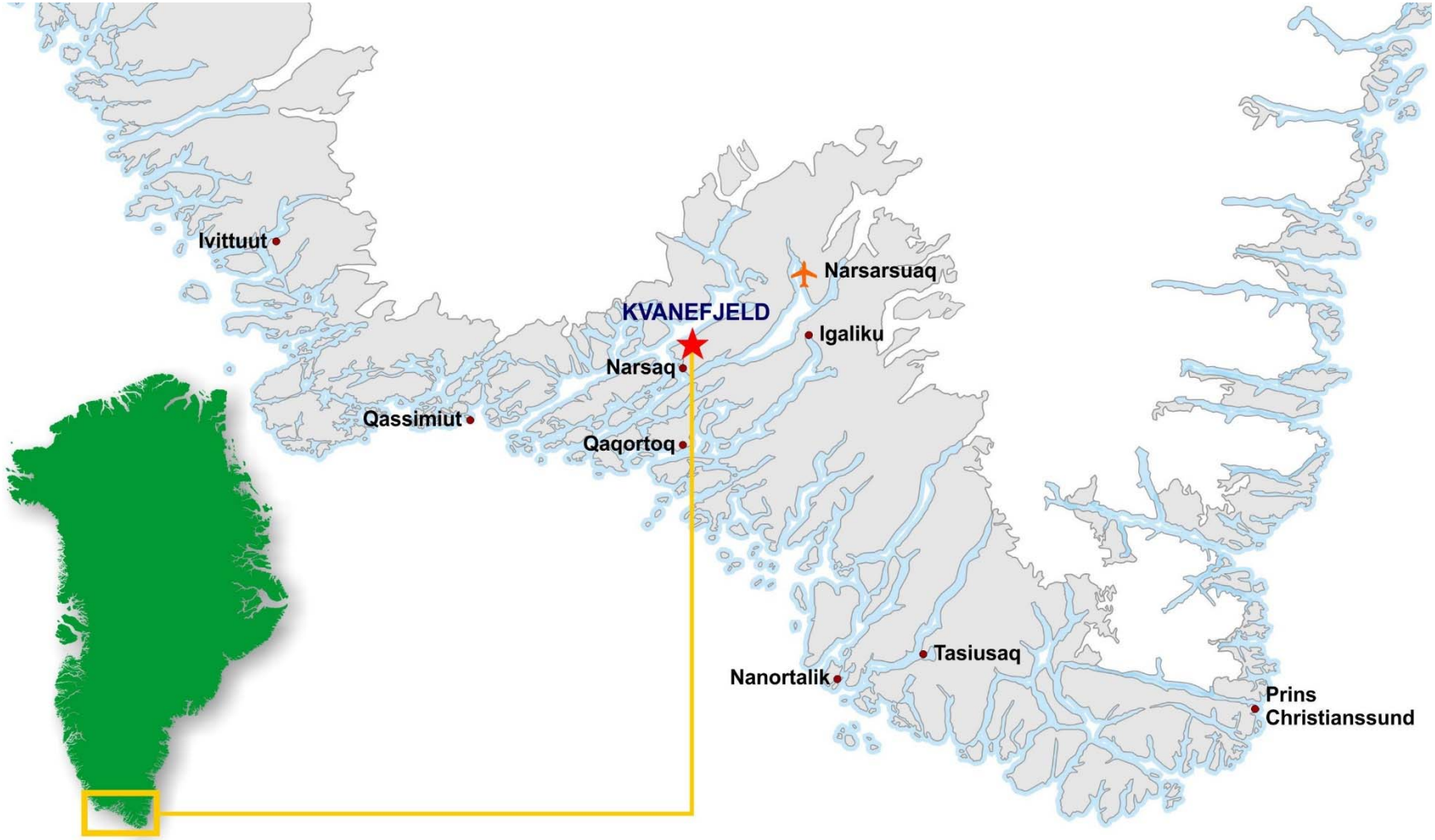
Regulatory Framework

Implemented by Greenland & Danish Governments to manage project and export of U by-products

Environmental Outcomes

Greenland set to provide critical minerals to facilitate key global agendas of electrification and energy efficiency

Kvanefjeld Project Setting



Kvanefjeld is located near existing infrastructure in southern Greenland, with year-round direct shipping access, airport nearby, and a mild climate; an optimal location

Centred on a Multi-Billion Tonne Outcropping Ore Seam

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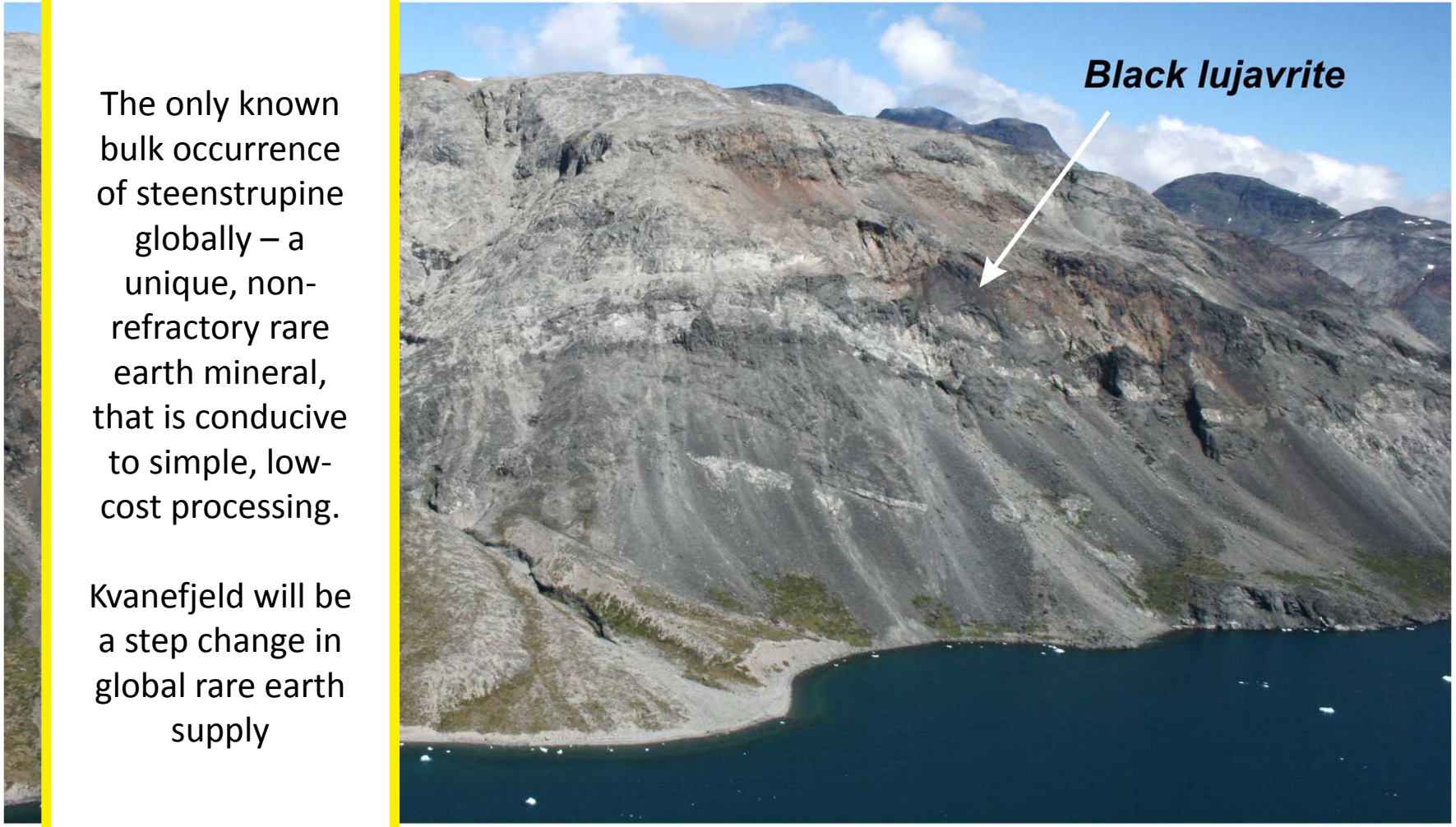
The only known bulk occurrence of steenstrupine globally – a unique, non-refractory rare earth mineral, that is conducive to simple, low-cost processing.

Kvanefjeld will be a step change in global rare earth supply



Advanced Project Status

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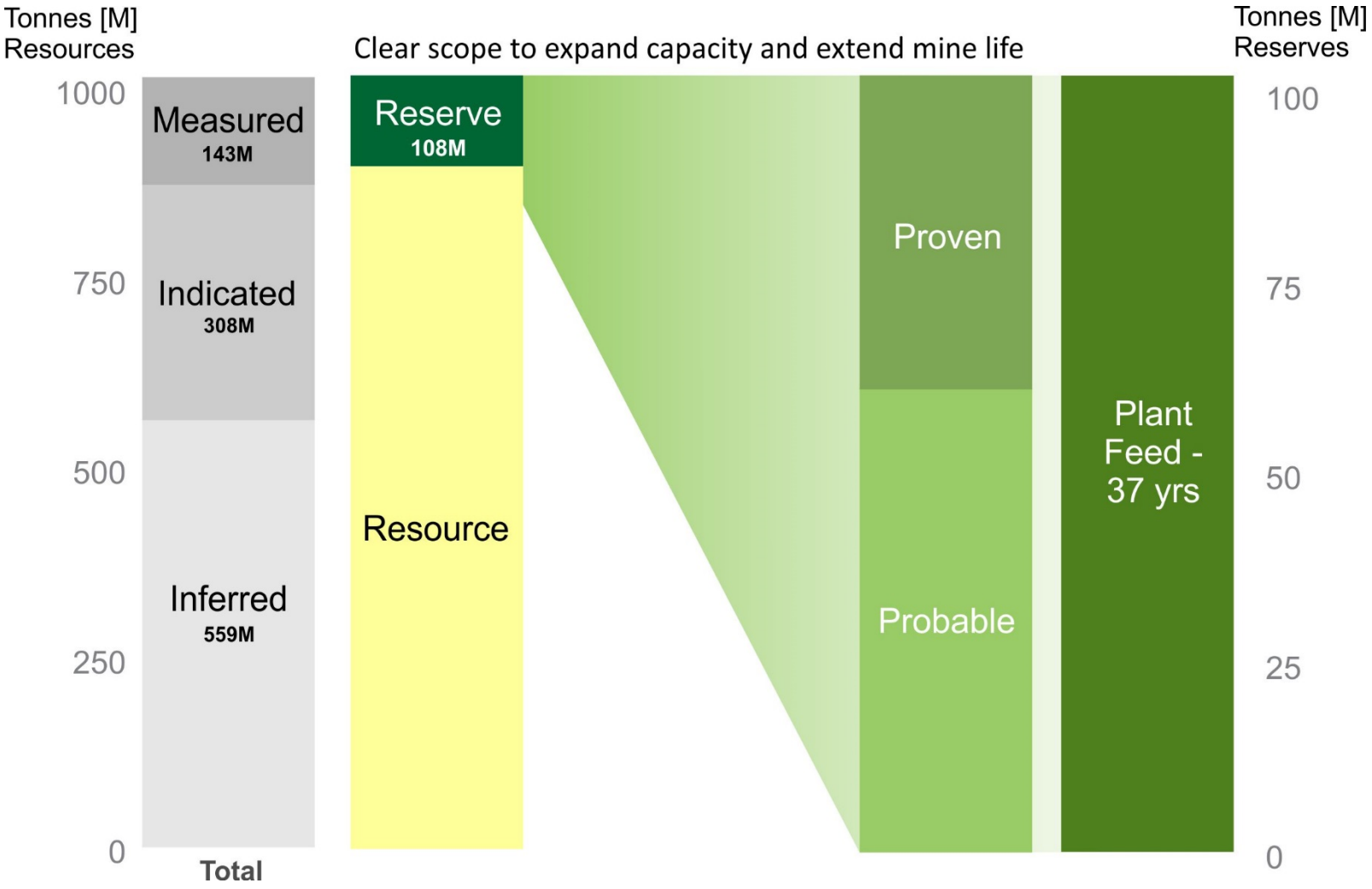
2012	2013	2014	2015	2016	2017	2018	2019
Prefeasibility Study			Feasibility Study	Updated Feasibility Study	Metallurgical optimisation guided by Shenghe		Updated operating & capital costs for optimised project
			Pilot Plant Operations			Engineering optimisation to minimise civil costs	

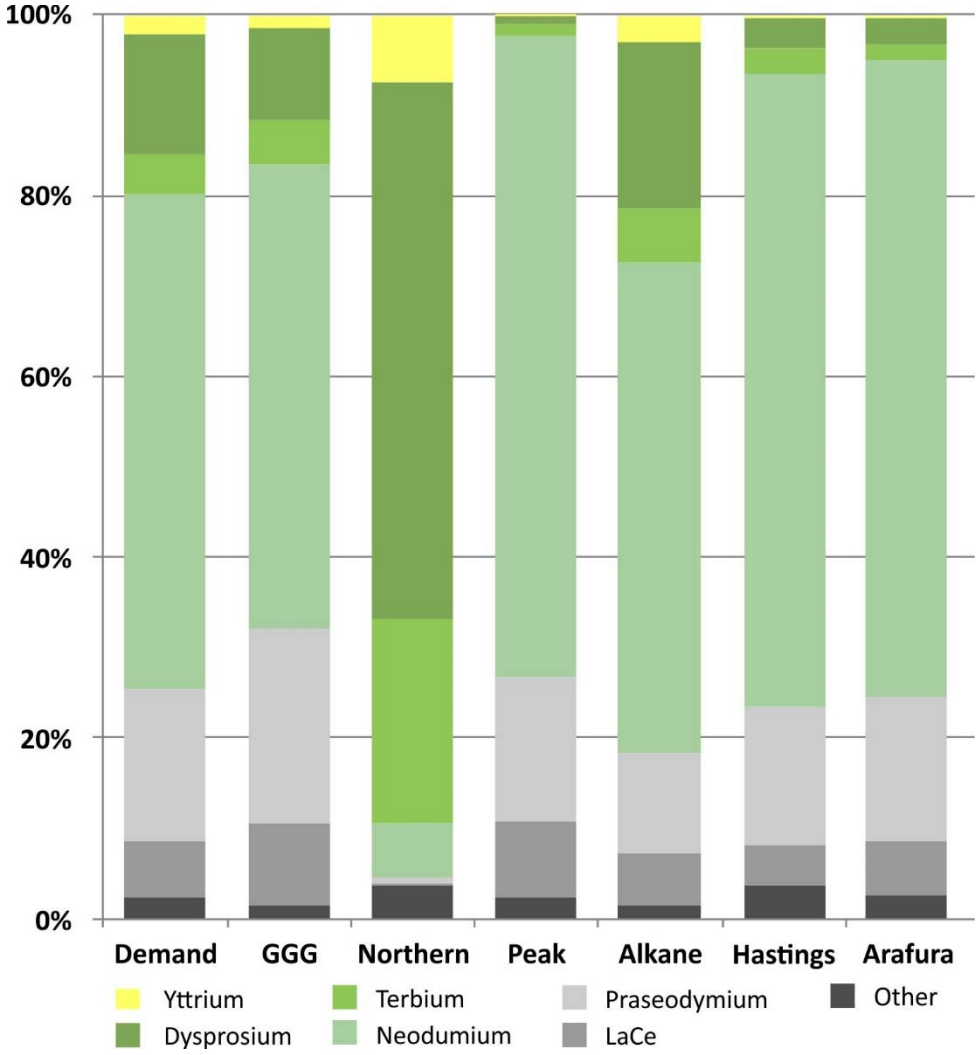
Vast Mineral Inventory

> 11Mt REO, 590Mlb's U_3O_8, 2.4Blb's Zn

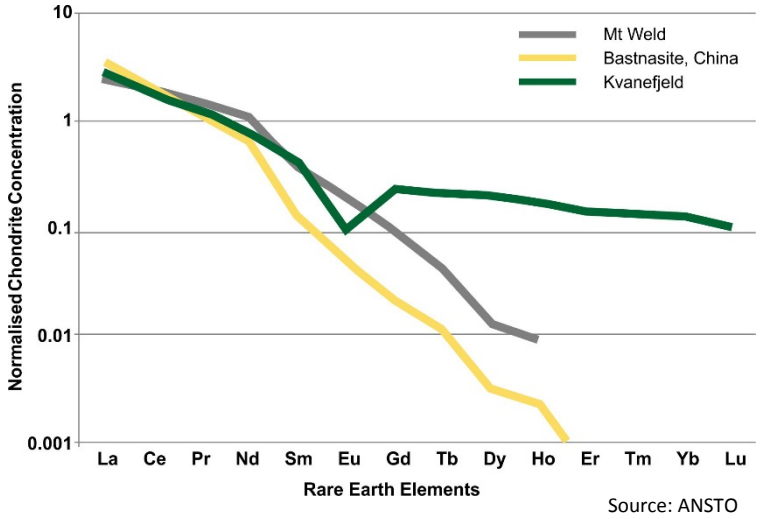


Mineral Resource Estimates and Ore Reserve Estimates are independently established by SRK Consulting

Kvanefjeld – A Complete Rare Earth Project
Nd Pr Dy Tb



Demand approximates the current rare earth market by value (volume x current price).
Projected output value distribution of select ASX-listed companies

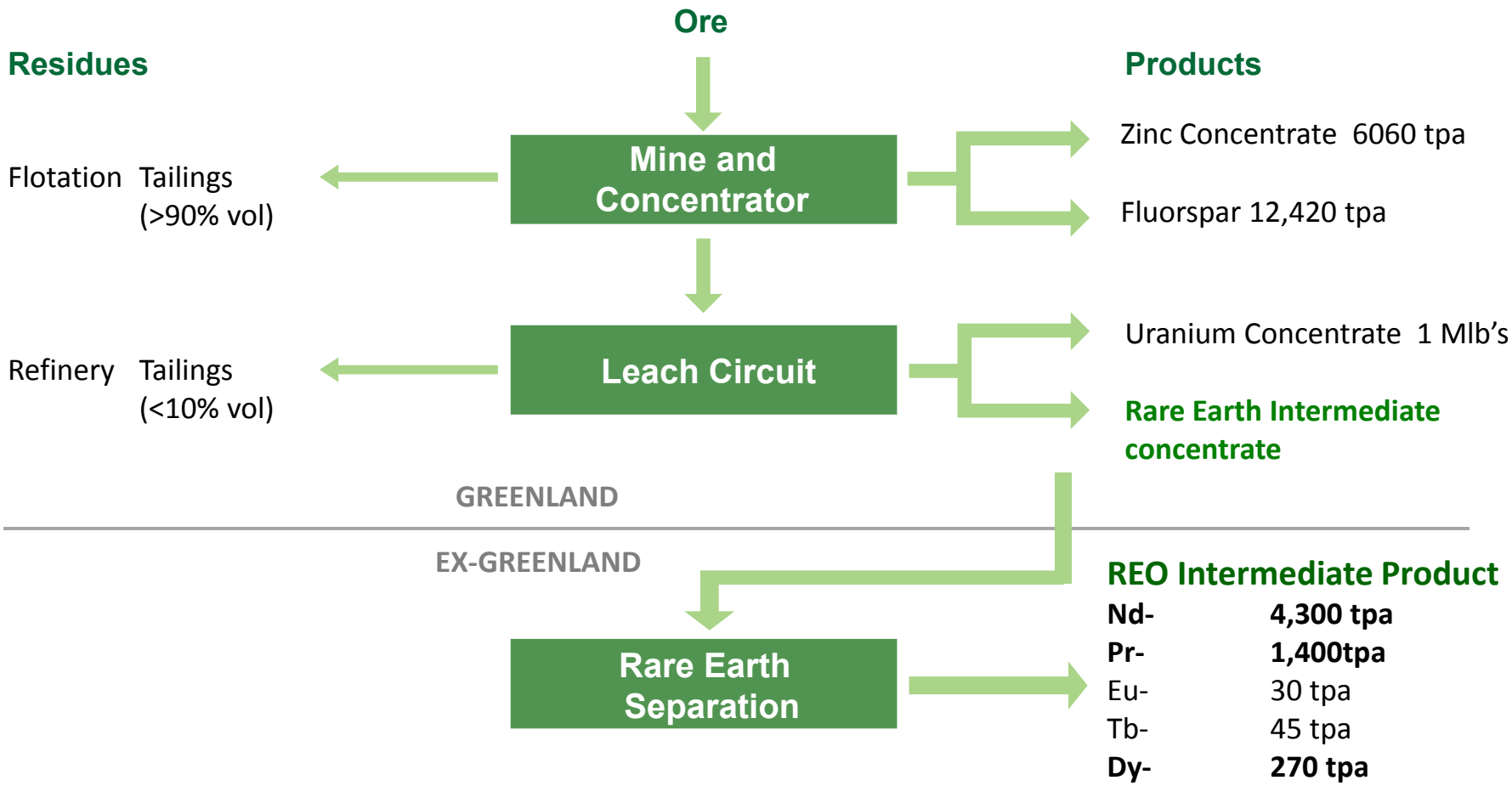


Source: ANSTO

Rare earth plot highlighting the enrichment across the rare earth spectrum. Kvanefjeld is compared to Mt Weld, and typical bastnasite.

Kvanefjeld's enrichment across the RE spectrum creates a strong alignment with RE market, through exposure to Nd, Pr, Dy and Tb: a complete RE project.

Process Flowsheet



Classification (JORC 2012)	Inventory (Mt)	REO (ppm)	U_3O_8 (ppm)	Zn (ppm)
Proven	43	14,700	352	2,700
Probable	64	14,000	368	2,500
Total	**108**	**14,300**	**362**	**2,600**

37 Year Mine Reserves at Kvanefjeld Deposit
(~10% of resource base)

JORC 2012: 1.01 BT through 3 deposits contains **11.13 Mt REO, 593 Mlbs U_3O_8, 2.42 Mt zinc**

Metallurgical Optimisation

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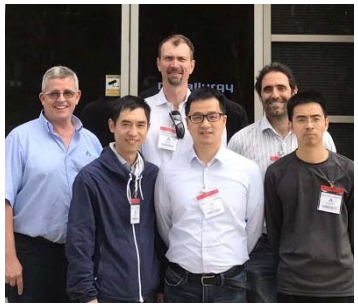

Test work programs conducted in both China and Australia

Flotation improvements generate a higher-grade, low-volume RE mineral concentrate

SHENGHE → **TEST WORK** → **IMPROVEMENTS** → **FLOTATION** → **CIRCUIT**

Guided by Shenghe, draws on world-leading rare earth processing technology

Major improvements developed to both flotation and refinery circuits

Single stage atmospheric leach circuit (refinery circuit)

RESULTS

Improved recoveries, 40% reduction in annual operating costs

Unit costs of <US$4/kg of REO, net of by-product credits

(lowest of undeveloped REE projects in ASX-listed companies)

Engineering Optimisation

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A team of leading international engineering firms visited Kvanefjeld in August 2018 for collaborative onsite surveys/studies

⬇

Nuna Logistics, Tetra Tech, PDN Engineers, China-CCC

Follow-up studies have resulted in a **44% reduction** in civil construction costs to US $175M – including indirect costs and contingencies

Major reductions in civil construction costs accompany cost reductions achieved through metallurgical optimisation to reduce overall capital costs substantially

Optimised Feasibility Study

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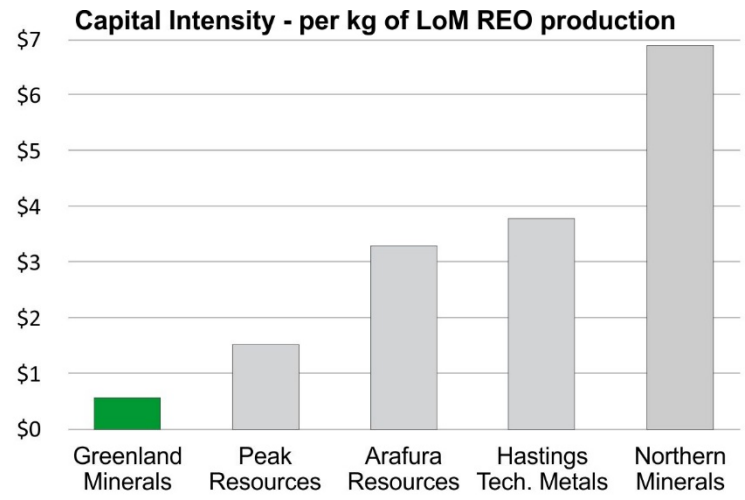
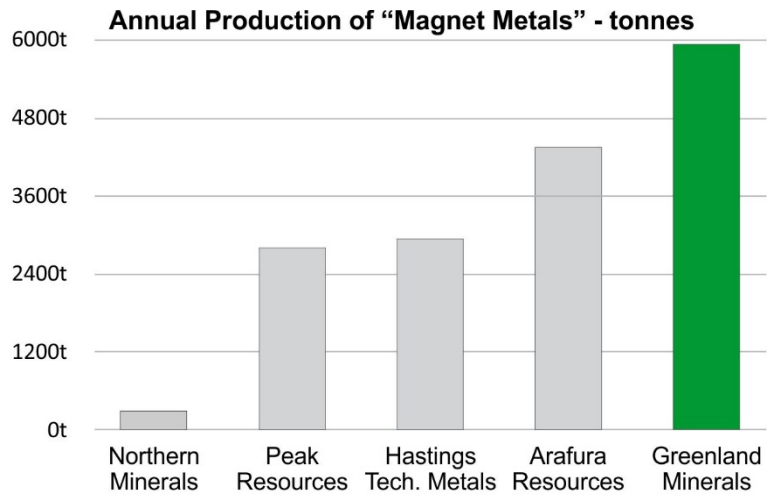
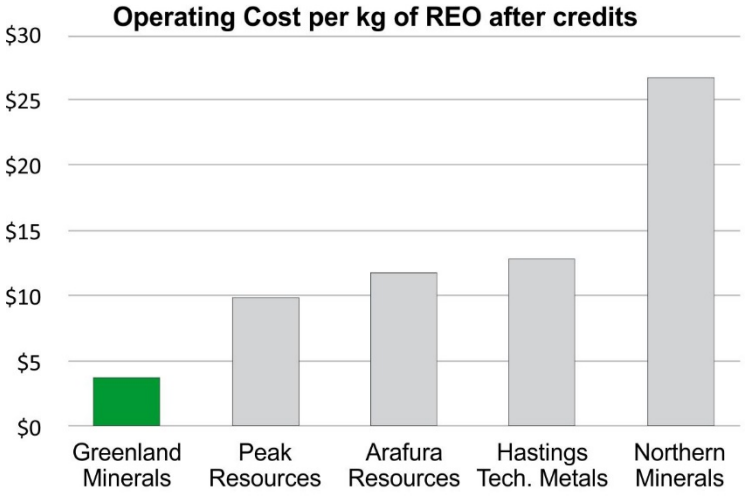
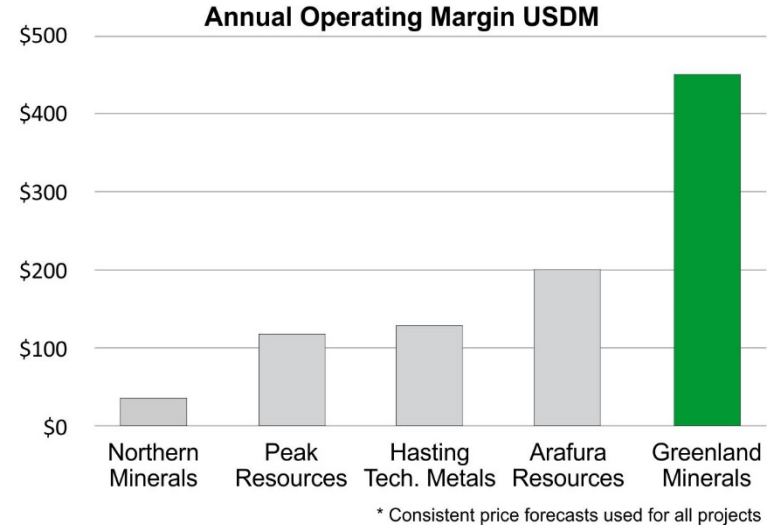
- Capital costs reduced to US$505M (inclusive of 15% contingency on direct and indirect costs)
- Rare earth production of 32,100t/a REO in intermediate product
- Inclusive of 5,692 t NdPr oxide, 270 t Dy oxide, 44t Tb oxide
- Initial 37 year mine life based on 108 Mt ore reserve
- Simplest flow sheet of emerging RE projects – low technical risk
- Lowest operating costs and capital intensity of emerging RE projects

Optimised Project Emphasized Global Significance



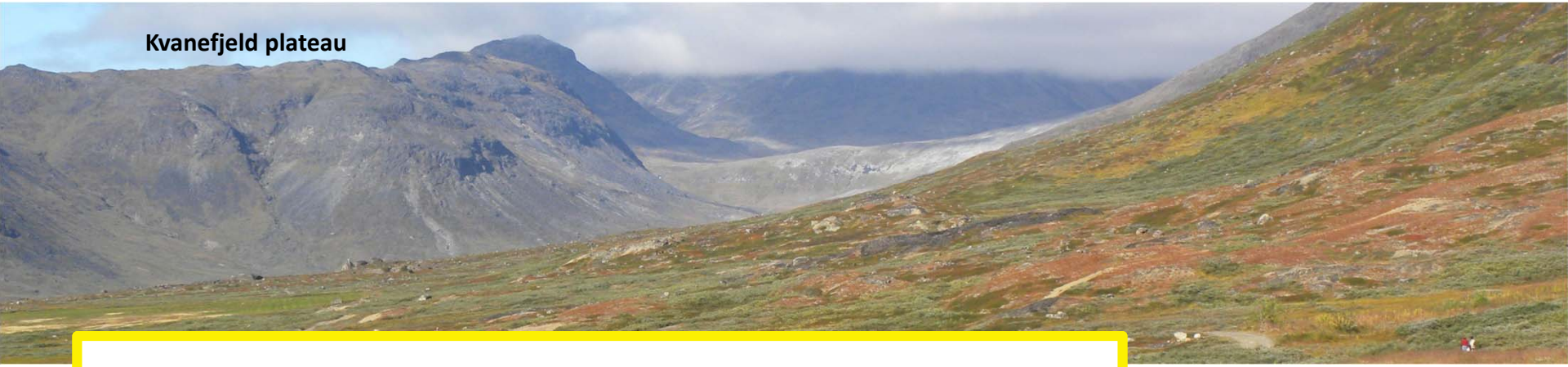






Sources – Publicly available information, ASX announcements, Company websites

Permitting Strategy and Status



Project Permitting - Underway Since 2015

2016 - detailed reviews of impact assessments

2017 - address recommendations and guidance from government and advisory groups

2018 - Finalise additional data, updated reports, public consultation, establish clear project timeline

Q2 2019 – Updated impact assessments lodged in Greenlandic, Danish and English

Thorough and rigorous approach to impact assessments:

Environmental Impact Assessment

GHD (International), Orbicon (Denmark/Greenland), Arcadis, Danish Hydraulic Institute, Environmental Resource Management, DTU, Blue Water Shipping, Wood Group

Social Impact Assessment

Shared Resources (International), NIRAS (Denmark)

Regulatory Framework & Permitting Process

IAEA Director General visits Kvanefjeld – May 2017

Jakob Rohmann Hard (Chief of Protocol, Foreign Department, Greenland), Liselotte Plesner (Danish Ambassador, Vienna), Nuka Møller (Greenland Business), Jørn Skov Nielsen (Deputy Minister, Industry Trade and Labour, Greenland), Kim Kielsen (Greenland Premier), John Mair (MD, GMEL), Yukiya Amano (Director General, IAEA)

- The Governments of Greenland and Denmark have worked to establish a regulatory framework to manage the production and export of uranium from Greenland
- In September 2016, Greenland formalised status as signatory to IAEA conventions
- Enabling legislation passed by both respective parliaments to implement safeguards and export controls in accordance with IAEA and EURATOM
- Routine site inspection conducted by IAEA in August 2018, with all in good order

Community

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Kvanefjeld Project is located in Kommune Kujalleq (Southern Greenland Municipality), behind the town of Narsaq

Over 10 years of stakeholder engagement in the local community, including important input into project 'Terms of Reference', approved in 2015

In March 2019 MoU entered with municipality and local business council to negotiate a participation agreement to cover community involvement and capacity development

Stakeholder meetings with specialist consultants and company representatives conducted in June, presentation of impact assessments to municipality

Rare Earth Value Chain Integration – Path to Market

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- Working with major shareholder to integrate Kvanefjeld with rare separation capacity and international customer network
- Shenghe is one of the largest, and fastest growing rare earth companies globally
- Major supplier to international end-user industries – high purity metals and oxides
- Commercial agreement entered into in 2018 addressing off-take, development strategy
- Aiming to jointly develop Kvanefjeld as a new cornerstone to international rare earth supply

盛和资源
SHENGHE RESOURCES

Shenghe founder Mr Wang Quangen, and John Mair, October 2017 Shenghe HQ, Chengdu

Rare Earth Demand is Linked To Important Global Agendas

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"China to establish timeline to phase out combustion engine vehicles"

The electrification movement is underway. Rare earth permanent magnets create electric motors with greater torque, efficiency and range

"UK, France to ban petrol and diesel vehicles by 2040..."

"Volvo to go electric..."

"New electric London taxi launches..."

"Every Jaguar Land Rover model line will be electrified from 2020"

"Volkswagen plans to leapfrog Tesla in electric car race..."

"India aiming for all-electric car fleet by 2030..."

Sources – UBS, IEA, IRENA, Manufacturer announcements and websites.

Clean Energy Initiatives Driving Major RE Demand Growth

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Sources - ADAMAS, IEA, IRENA, Wind energy association's websites

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Successful development of Kvanefjeld will see Greenland become a major contributor to global rare earth supply

Rare earths are critical to the global agenda of slowing climate change through the roll out of electric cars, renewable energy and energy efficient technologies

An opportunity for Greenland to participate through the provision of critical materials, with jobs, growth and economic benefit to Greenland society

Corporate Snapshot

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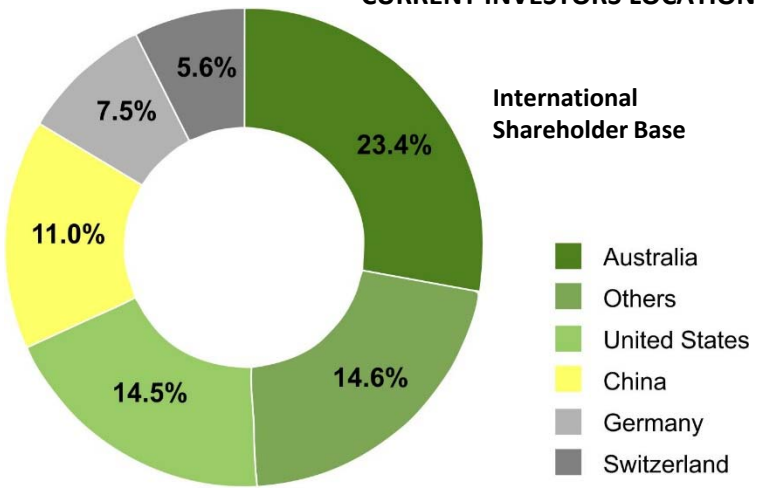
CURRENT INVESTORS LOCATION



Board

Non-Executive Chairman	Tony Ho
Managing Director	Dr John Mair
Non-Executive Director	Simon Cato
Non-Executive Director	Xiaolei Guo

Top Shareholders

Shenghe Resources Holdings	125M shares
Tracor Limited	53M shares

Capital Structure

Shares outstanding	1133M
Market capitalization	**A$158M** (@14 cents)

Kvanefjeld Project Ownership - 100%

Kvanefjeld Project Overview

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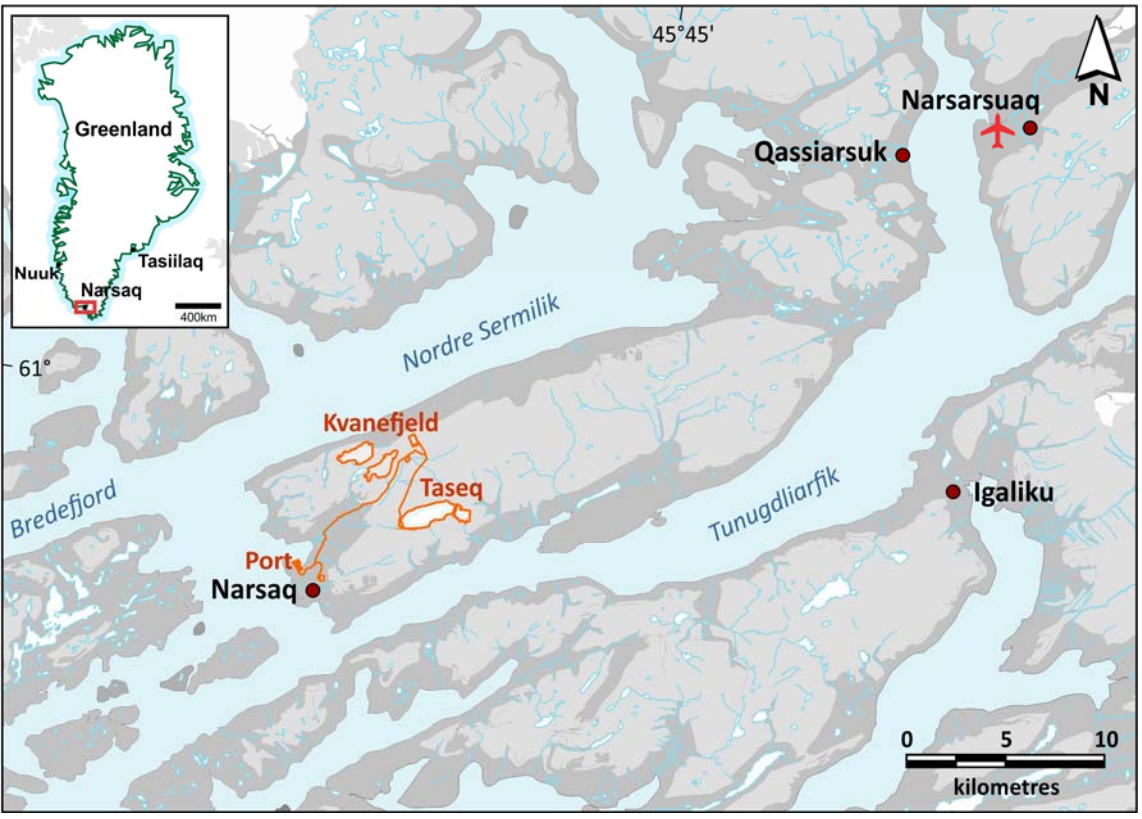
- >1 billion tonne multi-element resource, largest REO inventory under JORC code
- Initial 37 year mine life, scope for significant extension, expansion
- Close to existing infrastructure with year round shipping access
- Simple configuration and processing, low technical risk
- Globally significant supplier of **Nd, Pr, Dy, Tb**, with U, Zn by-product credits
- Highly competitive economic metrics – long life, lowest cost quartile production
- Major shareholder is a fully-integrated RE producer with international focus

Appendix

Kvanefjeld Project – Location and Access



- The Kvanefjeld Project area is favourably located in southern Greenland
- Narsarsuaq international airport is located 35km away, 4h 50m flight from Copenhagen
- Project area features year-round direct shipping access, via deep water fjords that lead directly to the North Atlantic Ocean
- Climatically – mildest part of Greenland with average temperate ranging from -2 to +10°c
- Narsaq town, located approximately 8-10km from project area

Narsaq Peninsula – Southern Greenland

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The footprint of proposed operations is largely restricted to the Kvanefjeld plateau, Narsaq valley, and Taseq basin.

Rocks of the Illimaussaq Complex are strongly enriched in rare elements and have been actively dispersed into the surrounding environment by erosional processes, thereby strongly influencing the natural (baseline) chemistry.

Taseq Basin is underlain by impermeable crystalline rocks (naujaite), and owing to the influence of the unusual rock chemistry, contained water is naturally enriched in a range of elements, is non-potable, and is devoid of life.

Kvanefjeld Project – Geology – Geography

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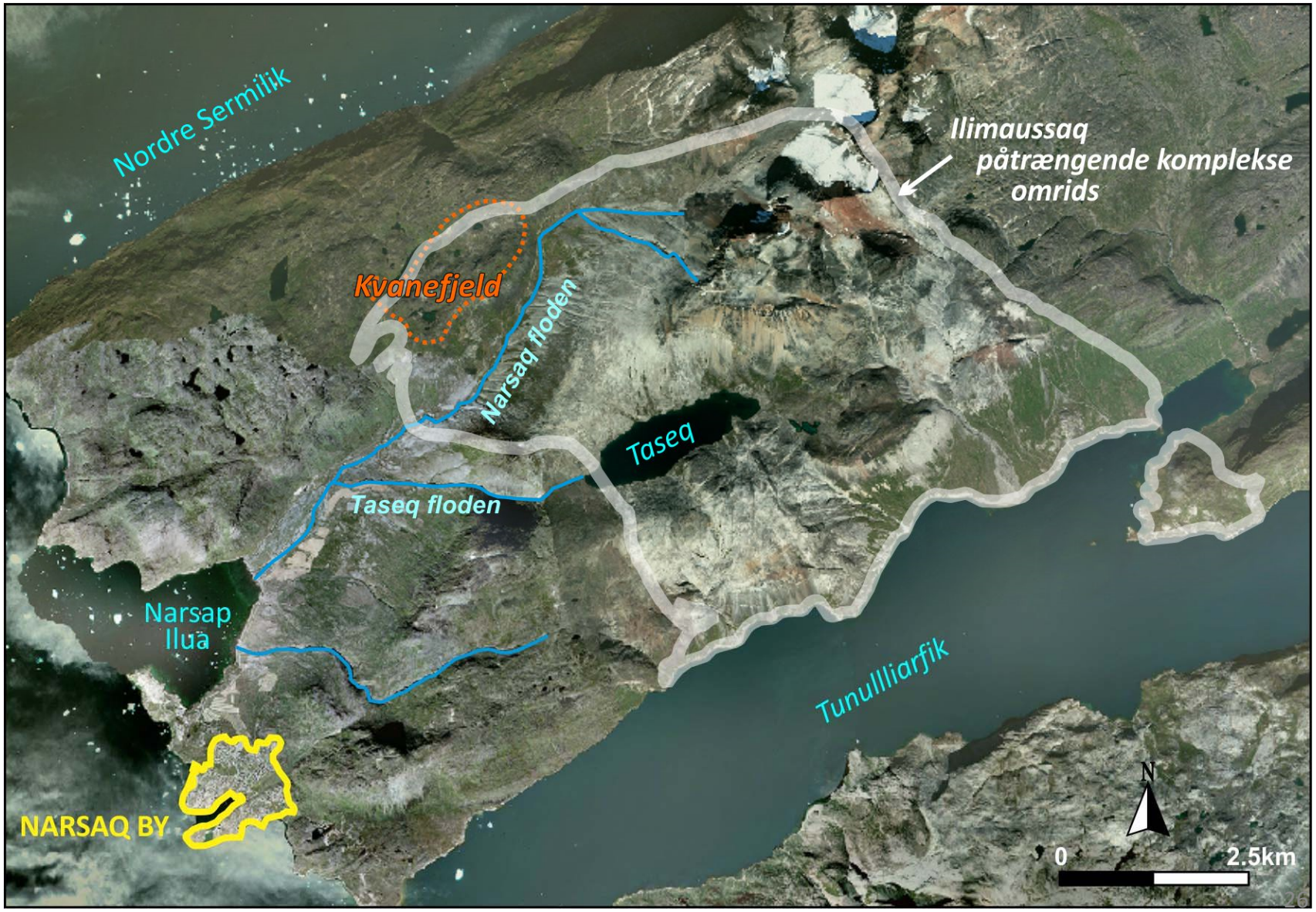

Kvanefjeld Project – Key Infrastructure

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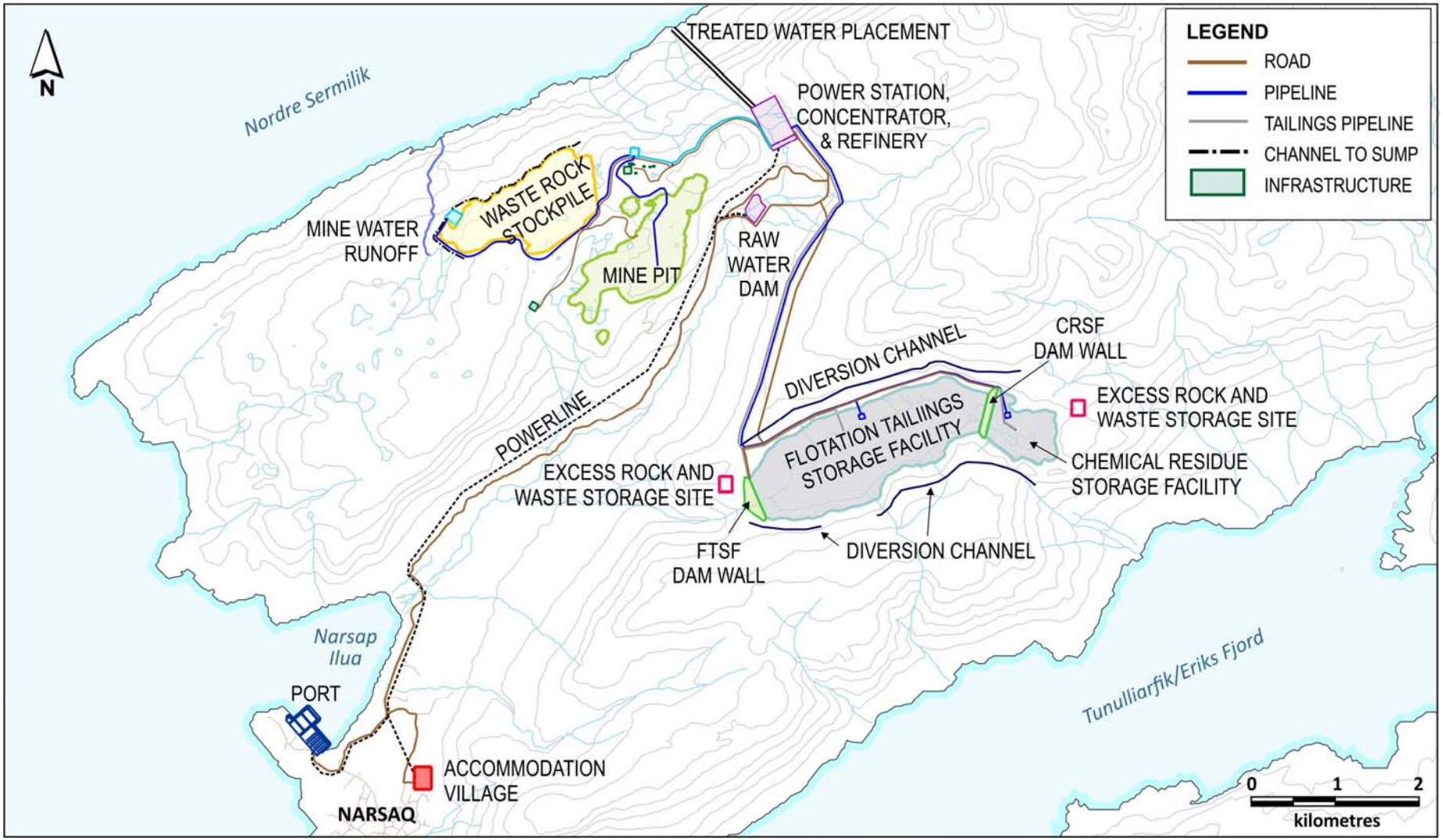

Process Advantage – the Seismic Shift

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- Viability of a rare earth project is more dependant on metallurgical performance than grade
- REE's occur locked within minerals
- The RE minerals in most deposits are *highly refractory* (vault like), and difficult to crack
- In contrast, the unique minerals at Kvanefjeld are *non-refractory*
- This allows simpler processing, leading to lower production costs

Photomicrograph – steenstrupine grain surrounded by amphibole and feldspar in lujavrite ore

- Steenstrupine is the main RE mineral at Kvanefjeld, and contains ~25 -30% REO
- It is enriched across all key rare earths including Nd, Pr, Dy, Tb
- Can be effectively concentrated with conventional froth flotation (multiple successful pilot plant operations)
- Both REE's and U can be readily leached in acidic solutions under atmospheric conditions (pilot plant proven)
- Detailed mineralogical studies conducted through MDRU, University of British Columbia

Statement of Identified Mineral Resources (JORC – Code Compliant 2012)

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Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off	**Classification**	**M tonnes**	**TREO[2]**	**U_3O_8**	**LREO**	**HREO**	**REO**	**Y_2O_3**	**Zn**	**TREO**	**HREO**	**Y_2O_3**	**U_3O_8**	**Zn**
(U_3O_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**	0.34
150	**Indicated**	308	11,100	253	9,800	411	10,200	899	2,290	**3.42**	0.13	0.28	**172**	0.71
150	**Inferred**	222	10,000	205	8,800	365	9,200	793	2,180	**2.22**	0.08	0.18	**100**	0.48
150	**Grand Total**	673	10,900	248	9,600	400	10,000	881	2,270	**7.34**	0.27	0.59	**368**	1.53
200	**Measured**	111	12,900	341	11,400	454	11,800	1,048	2,460	**1.43**	0.05	0.12	**83**	0.27
200	**Indicated**	172	12,300	318	10,900	416	11,300	970	2,510	**2.11**	0.07	0.17	**120**	0.43
200	**Inferred**	86	10,900	256	9,700	339	10,000	804	2,500	**0.94**	0.03	0.07	**49**	0.22
200	**Grand Total**	368	12,100	310	10,700	409	11,200	955	2,490	**4.46**	0.15	0.35	**252**	0.92
250	**Measured**	93	13,300	363	11,800	474	12,200	1,105	2,480	**1.24**	0.04	0.10	**75**	0.23
250	**Indicated**	134	12,800	345	11,300	437	11,700	1,027	2,520	**1.72**	0.06	0.14	**102**	0.34
250	**Inferred**	34	12,000	306	10,800	356	11,100	869	2,650	**0.41**	0.01	0.03	**23**	0.09
250	**Grand Total**	261	12,900	346	11,400	440	11,800	1,034	2,520	**3.37**	0.11	0.27	**199**	0.66
300	**Measured**	78	13,700	379	12,000	493	12,500	1,153	2,500	**1.07**	0.04	0.09	**65**	0.20
300	**Indicated**	100	13,300	368	11,700	465	12,200	1,095	2,540	**1.34**	0.05	0.11	**82**	0.26
300	**Inferred**	15	13,200	353	11,800	391	12,200	955	2,620	**0.20**	0.01	0.01	**12**	0.04
300	**Grand Total**	194	13,400	371	11,900	471	12,300	1,107	2,530	**2.60**	0.09	0.21	**159**	0.49
350	**Measured**	54	14,100	403	12,400	518	12,900	1,219	2,550	**0.76**	0.03	0.07	**48**	0.14
350	**Indicated**	63	13,900	394	12,200	505	12,700	1,191	2,580	**0.87**	0.03	0.07	**54**	0.16
350	**Inferred**	6	13,900	392	12,500	424	12,900	1,037	2,650	**0.09**	0.00	0.01	**6**	0.02
350	**Grand Total**	122	14,000	398	12,300	506	12,800	1,195	2,570	**1.71**	0.06	0.15	**107**	0.31

Independently Prepared by SRK Consulting

Statement of Identified Mineral Resources (JORC – Code Compliant 2012)

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Multi-Element Resources Classification, Tonnage and Grade										Contained Metal				
Cut-off	**Classification**	**M tonnes**	**TREO[2]**	**U_3O_8**	**LREO**	**HREO**	**REO**	**Y_2O_3**	**Zn**	**TREO**	**HREO**	**Y_2O_3**	**U_3O_8**	**Zn**
(U_3O_8 ppm)[1]		Mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Mt	Mt	Mt	M lbs	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**	0.63
200	**Inferred**	186	11,600	344	10,200	399	10,600	932	2,802	**2.15**	0.07	0.17	**141**	0.52
250	**Inferred**	148	11,800	375	10,500	407	10,900	961	2,932	**1.75**	0.06	0.14	**123**	0.43
300	**Inferred**	119	12,100	400	10,700	414	11,100	983	3,023	**1.44**	0.05	0.12	**105**	0.36
350	**Inferred**	92	12,400	422	11,000	422	11,400	1,004	3,080	**1.14**	0.04	0.09	**85**	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**	0.26
200	**Inferred**	89	11,700	310	10,300	400	10,700	989	2,806	**1.03**	0.04	0.09	**60**	0.25
250	**Inferred**	71	11,900	330	10,500	410	10,900	1,026	2,902	**0.84**	0.03	0.07	**51**	0.20
300	**Inferred**	47	12,400	358	10,900	433	11,300	1,087	3,008	**0.58**	0.02	0.05	**37**	0.14
350	**Inferred**	24	13,000	392	11,400	471	11,900	1,184	3,043	**0.31**	0.01	0.03	**21**	0.07
Project Total														
150	**Measured**	143	12,100	303	10,700	432	11,100	978	2,370	**1.72**	0.06	0.14	**95**	0.34
150	**Indicated**	308	11,100	253	9,800	411	10,200	899	2,290	**3.42**	0.13	0.28	**172**	0.71
150	**Inferred**	559	10,700	264	9,400	384	9,800	867	2,463	**6.00**	0.22	0.49	**326**	1.38
150	**Grand Total**	1010	11,000	266	9,700	399	10,100	893	2,397	**11.14**	0.40	0.90	**593**	2.42

[1]There is greater coverage of assays for uranium than other elements owing to historic spectral assays. U_3O_8 has therefore been used to define the cutoff grades to maximise the confidence in the resource calculations.

[2]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.

Independently Prepared by SRK Consulting