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GreenRoc Mining plc

("GreenRoc" or the "Company")

Amitsoq Update

PEA Confirms Robust Economics for Amitsoq Graphite Project

GreenRoc Mining Plc (AIM: GROC), a company focused on the development of critical minerals projects in Greenland, is pleased to announce the extremely positive results of the Preliminary Economic Assessment ("PEA") of its 100% owned Amitsoq Graphite Project in southern Greenland ("Amitsoq") (Figure 1). The PEA was completed to internationally recognised NI 43-101 standards by SLR Consulting Ltd ("SLR"), an independent UK consulting firm with considerable global expertise in the field of mining and mineral processing, including in Greenland.

Highlights

- Pre-Tax Net Present Value at 8% discount rate (NPV_8) of US$235M with Internal Rate of Return (IRR) of 31.1%.
- After-tax NPV_8 of US$179M with IRR of 26.7%.
- Life of mine (LOM) is 22 years with potential to extend through resource expansion.
- 4-year payback period on capital from start of production.
- Average Net Revenue of US$89.8M per year throughout the 22-year LOM.
- Total gross revenue of US$2.1Bn over a 22-year LOM, with total undiscounted net pre-tax cash flow totalling US$794.7 M.
- Initial capital cost (Capex) of US$131M inclusive of 25% contingency.
- Average operating cost (Opex) of US$121 per tonne of milled ore.
- Average annual production of 77,000t of concentrate at a minimum 94% grade.
- Mine plan assumes mining from the Lower Graphite Layer (LGL) only, leaving considerable resources from the Upper Graphite Layer (UGL) available for future production expansion or extension to the LOM.

The strong economic results from the PEA provide independent validation of the Project's potential to become a globally significant producer of graphite concentrate. Simultaneously, GreenRoc continues to advance its objective of developing the processing capabilities to upgrade its future graphite concentrate production into anode material for electric vehicle ("EV") batteries, which the Company believes will add substantially to the positive economics of the Amitsoq Project.

With a substantial graphite supply deficit being forecast for the coming decades, and the risks associated with the global EV supply chain's overreliance on Chinese graphite highlighted by China's recent announcement of export restrictions on battery-grade graphite, Amitsoq is positioned to become a key source of the high purity spherical graphite required to produce anode material for the European car industry.

Stefan Bernstein, GreenRoc's CEO, commented:

"We are extremely pleased with the outcome of the PEA, which confirms robust economic figures for mining activities at Amitsoq. A pre-tax NPV of US$235M with an IRR of 31.1%, initial CAPEX of US$131M (inclusive of a conservative 25% contingency) and average Opex of US$121 per tonne of milled ore equates to a four-year payback on capital from start of production, a healthy return on investment when set against an undiscounted net pre-tax cash flow totalling US$794.7M over a 22-year life of mine.

"The mine plan set out in the PEA is relatively straightforward thanks to Amitsoq's simple ore body geometry. All of the on-site processing equipment is based on the use of standard and proven techniques, but with potential upside through the use of some new, and more efficient, processing technologies that we are currently exploring.

"The entire mining operation is planned to take place in the Lower Graphite Layer, thus reserving the Upper Graphite Layer for production expansion, or to extend the mine life. About 75% of the mined ore in the PEA is sourced in the Measured and Indicated category and, given the simple ore body geometry, we are confident that the remaining ca. 25% can be upgraded into the higher confidence resource categories.

"The proposed use of a Drift and Fill mining method, coupled with the exceptionally high grades of the Amitsoq ore, will mean that as much as 86% of the tailings will be used as backfill, with a mere 14% required to go to a tailing storage facility. This is excellent news as it will minimise the environmental impact of the mine, whilst also saving the cost of transporting tailings.

"While the PEA is based on the use of conventional diesel-generated power, we are looking into a variety of emission-free energy solutions to replace the diesel-generated power plants as soon as that is feasible.

"China's announcement in the past few days of its imminent imposition of export restrictions on Chinese battery-grade graphite provides the perfect backdrop to the release of the Amitsoq PEA and flags up the increasing strategic importance of Amitsoq to the European and North American battery supply chain. This PEA provides independent validation of our focus and determination to get the Amitsoq mine up and running in the shortest time possible while, at the same time, developing graphite anode material processing capability through our recently initiated Anode Feasibility Study in conjunction with the UK's Advanced Propulsion Centre. I am confident that the Anode Feasibility Study will, in due course, provide further upside to Amitsoq and for our investors."

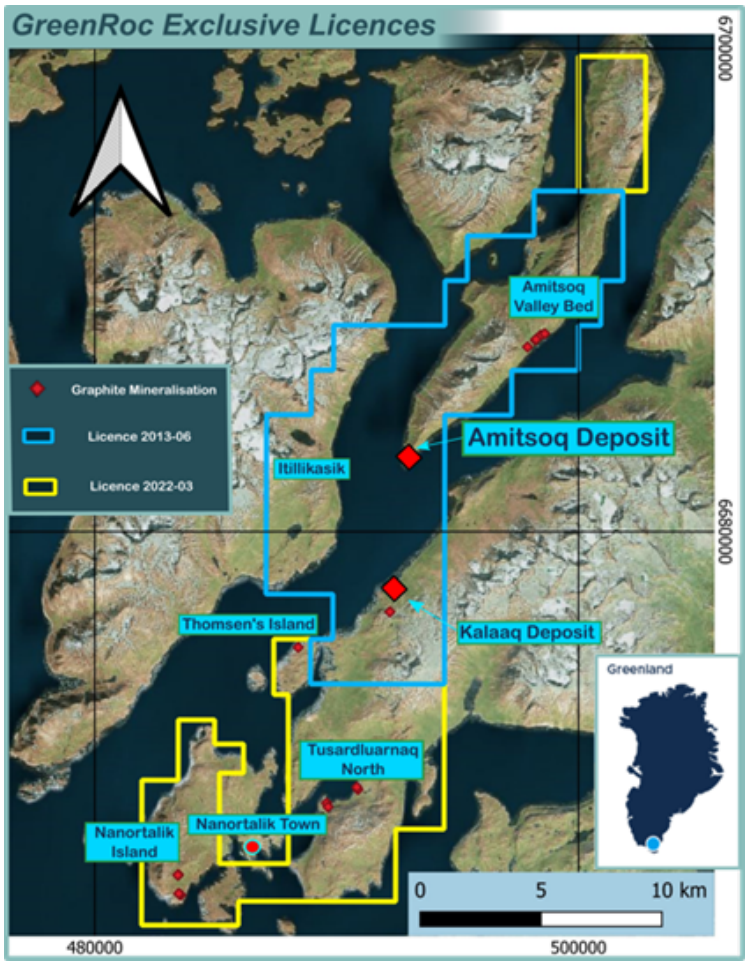


Figure 1:

Location of Amitsoq deposit, with GreenRoc's mineral exploration licences shown in blue (MEL 2013-06) and yellow (MEL 2022-03).

Details

The PEA report contains a detailed description of the ore bodies at Amitsoq and incorporates the Competent Person Report (CPR) on the resource estimate, an analysis of processing work and basic design of an on-site processing plant as well as mine plan, workforce needs, capital cost (Capex) and operating costs (Opex) and a discounted cash flow (DCF) model.

Mine Plan

The mine plan is based on 22 years of production with the full mining rate of 400,000t per annum reached after two years of ramp-up.

The total mined inventory is 8.26Mt of ore with an average of 21.3% graphite (Cg). This is based on the mining resource category given in Table 1 showing that the higher resource categories (Measured and Indicated) account for about 75% of the mine mass. Cut-off grades are calculated at 18.7% Cg. The higher grades of 21.3% Cg versus the average grade of 20.41% reported as average in the global resource estimate of January 2023 reflect that all mining takes place in the LGL, where higher average grades have been recorded to date than those in the UGL.

The fact that the mine design in the PEA assumes production from the LGL only and is modelled on a total mining inventory of 8.26Mt compared to a total January 2023 global resource estimate of 23.05Mt, is indicative that there is significant potential for future production expansion and/or extension to the LOM at Amitsoq.

Table 1: LGL Mining Inventory by Mineral Resource Category

Mineral Resource Category	Tonnage (Mt)	Grade (Cg%)
Measured	1.09	21.9
Indicated	5.08	21.1
Inferred	2.10	21.5
Total	**8.26**	**21.3**

The proposed mining method is Drift and Fill, which requires backfill as the working platform. One central spiralling decline will provide access to all mining levels from the deepest level of 320m below sea level to the highest at 10m above sea level. The mining will be completed using a fleet of diesel-powered, electro-hydraulic drill jumbos, bolters, load-haul-dump machines, and underground fitted trucks.

Mine Design

The underground workforce will be comprised of three crews on a four-week on, two-week off roster. The on-shift workforce at Amitsoq will total 45 persons (so, 135 workers in total across the three crews) and mine support and administrative staff at the nearby town of Nanortalik will total a further 19 persons per shift (for a total of 37 personnel).

Mined ore will be transported to a processing plant on site, crushed by a conventional three-stage crushing circuit and then ground by ball mills to produce a slurry with optimum size distribution for concentration in flotation units. The final filter-pressed concentrate product will have a minimum content of 94% graphite. It will be stored in 1t bulk bags before transportation to Nanortalik town for later shipment to the designated overseas port of destination.

Tailings from the processing plant will primarily be used for backfill in the mine. With an annual nominal mining rate of 400,000t, ca. 3.8M m^3 of tailings will be produced throughout the life of the mine (LOM), of which ca. 3.3M m^3 will be used as backfill with ca. 0.5M m^3 remaining for surface storage. A number of options have been considered for the storage of the relatively modest volume of tailings, including both dry-stack and wet storage facility in a nearby dead (not life-supporting) lake. Transport to the storage facility is planned to take place on barges.

Project infrastructure

Most of the infrastructure required to run the mine will be situated at the mine site. In addition to the processing plant, backfill paste plant, workshops and storage space, the infrastructure will include a T-shaped pier for accommodating ships, accommodation for day and night shifts, a catering and recreation complex (for a total of up to 110 people at any given time), freshwater treatment for water supply based on reverse osmosis, wastewater treatment, tailings load-out area, power generation plant, short-term fuel storage and an emergency treatment medical facility.

Electric power for the mine, process plants, and infrastructure on the island will be produced from diesel-fuelled generator sets. The estimated power demand for the island is 11 MW. Five operating 2500 kVA generators plus one stand-by unit will provide the power. Electric power for the tailings area will be provided from a small 300 kW diesel generator. At the same time, the Company is investigating the means to transition to zero-carbon electricity generation as soon as it is feasible to do so.

The main fuel depot will be located at the nearby town of Nanortalik (20km from the mine), where warehouse and office space will be rented partly, or wholly, using existing structures for marshalling, storage and administrative purposes. Nanortalik harbour, which has ice-free conditions through the winter, will be the base for the shipping of graphite concentrate to the designated ports of destination, which are expected to be either northern Europe (4-5 days of shipping) or North-East America (5-7 days of shipping).

Project Economics

Initial Capex (for construction and commissioning) amounts to a total of US$131M which includes 25% contingency of US$26M (Table 2).

Operating costs amount to US$111/t milled ore and break down into mining costs of US$53.9/t, processing costs of US$24.5/t and general & administration (G&A) (supporting costs (transport, backfill paste etc) of US$32.7/t (see Table 3), plus US$10/t to cover shipping of concentrate to port of destination for a total of US$121/t.

Total gross revenue amounts to US$2.1Bn over a 22-year LOM, with the total undiscounted net pre-tax cash flow (i.e., total revenues less total Capex, Opex and other costs and charges) totalling US$794.7M. This is based on an average basket graphite price of US$1250/t of 94% concentrate, based on the forecast average for 2028-2033 published by Fastmarket in May 2023.

This results in a pre-Tax Net Present Value at an 8% discount rate (NPV8) of US$235M with an Internal Rate of Return (IRR) of 31.1%. The after-tax NPV8 is US$179M with an IRR of 26.7% (see Table 4, which also gives the NPV at 6% and 10% discount rates).

Table 2: Specification of Capital Costs

Capital Cost		Value (US$ '000)
Direct Cost		
Mining		$30,528
Processing		$37,214
Infrastructure		$23,371
Total Direct Cost		**$91,113**
Other Costs		
EPCM / Owners / Indirect Cost	15%	$13,667
Subtotal Costs		**$104,779**
Contingency	25%	$26,195
Initial Capital Cost		**$130,974**
Sustaining		$127,893
Reclamation and closure		$5,000
Total Capital Cost		**$263,867**

Table 3: Specification of Operating Costs

Operating Cost per tonne mined		Value (US$)
Mining		$53.91
Processing		$24.47
G&A		$32.65
Total operating cost per tonne		**$111.03**

Table 4. Amitsoq project economic performance with varying discount rates at 6, 8, and 10%. The After-Tax NPV and IRR includes 2.5% royalties to the Greenland Government.

	Discount rate	Units	Value
Pre-Tax IRR		%	31.1%
Pre-tax NPV at 6% discounting	6.0%	US$ '000	$314,441
Pre-tax NPV at 8% discounting	8.0%	US$ '000	$235,308
Pre-tax NPV at 10% discounting	10.0%	US$ '000	$177,115
After-Tax IRR		%	26.7%
After-tax NPV at 6% discounting	6.0%	US$ '000	$243,663
After-tax NPV at 8% discounting	8.0%	US$ '000	$179,353
After-tax NPV at 10% discounting	10.0%	US$ '000	$132,224

Forthcoming work activities

In the light of the resoundingly positive independent economic assessment provided by the PEA, GreenRoc remains committed to pushing forward the Amitsoq graphite project to production as fast as possible.

A large bulk ore-sample of 10-20t will be collected from the old underground workings at the Amitsoq mine and shipped to independent processing laboratories in Europe. This will enable further design processing parameters to be determined and provide material both for pilot-scale active anode material processing and for ongoing analysis by interested offtake and strategic partners.

A Phase III drilling programme is planned for 2024, which will provide further expected upgrades to the graphite resource as well as key geotechnical data to feed into the Pre-Feasibility Study (PFS) which is planned to commence in H2, 2024. The PFS will build upon the PEA by undertaking detailed engineering in order to optimise mine and processing design and further constraining the mining inventory, capital and operating cost estimates and other economic design parameters.

2024 will also see the completion of the Environmental and Social Impact Assessments for Amitsoq and the submission of an application for an Exploitation Licence, further key milestones in the route to commercial production.

Lastly, in parallel with the development work at the Amitsoq graphite mine, GreenRoc is conducting a Feasibility Study on a graphite anode material processing plant, using specialist subcontractors Benchmark Mineral Intelligence, ProGraphite, SLR and Decision Risk Analytics and supported by a £250k grant from the Advanced Propulsion Centre (see RNS Oct 9, 2023). The Feasibility Study is planned to be concluded in Q2, 2024.

This announcement contains inside information for the purposes of the UK Market Abuse Regulation and the Directors of the Company are responsible for the release of this announcement.

Forward Looking Statements

This announcement contains forward-looking statements relating to expected or anticipated future events and anticipated results that are forward-looking in nature and, as a result, are subject to certain risks and uncertainties, such as general economic, market and business conditions, competition for qualified staff, the regulatory process and actions, technical

issues, new legislation, uncertainties resulting from potential delays or changes in plans, uncertainties resulting from working in a new political jurisdiction, uncertainties regarding the results of exploration, uncertainties regarding the timing and granting of prospecting rights, uncertainties regarding the timing and granting of regulatory and other third party consents and approvals, uncertainties regarding the Company's or any third party's ability to execute and implement future plans, and the occurrence of unexpected events.

Actual results achieved may vary from the information provided herein as a result of numerous known and unknown risks and uncertainties and other factors.

Competent Person Declaration

The independent Competent Person for the disclosure of the results of the Amitsoq Project Preliminary Economic Assessment (PEA) is Mr Bryan Pullman, P.Eng. of SLR Consulting Limited. Mr Pullman has reviewed and approved the technical content of this news release insofar as it reflects the PEA, in the form and context in which it appears. Mr Pullman completed a site visit to the Amitsoq Project on 27 May 2023 and visited locations relevant to the Project including the underground workings, and potential process plant, and other infrastructure sites within the licence area.

****ENDS****

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About GreenRoc

GreenRoc Mining plc is an AIM-quoted company which is developing mining projects in Greenland in critical, high-demand and high-value minerals.

Key points about Amitsoq:

- *Greenroc Mining plc holds the Amitsoq exclusive exploration licence MEL2013_06 of a total of 72.52km2 in the South of Greenland.*
- *The combined resource estimate given above has been achieved after two drilling phases.*
- *Several samples have been extracted for the purpose of testing the quality of the Amitsoq graphite.*
- *Independent micronisation and spheronisation test work has proven that Amitsoq graphite can be easily upgraded to high-grade anode-quality graphite, otherwise known as high purity spherical graphite or cSPG, a key raw material in the manufacturing of EVs.*
- *In GreenRoc's test work programmes, Amitsoq spheronised graphite has achieved higher than 99.95% purity with relatively little energy input and processing and using the milder alkaline purification method compared to the industry standard hydrofluoric acid, boding well for future production costs and sustainability commitments.*

- *Significant further upside exists at Amitsoq as the Amitsoq Island Deposit is open in at least two directions with potential for considerable further expansion via the similarly high-grade Kalaaq Mainland Deposit as well as a series of other high-grade targets on GreenRoc's licence package.*
- *The deposit was in small-scale production about 100 years ago, and there remains considerable underground mine development in place from that time, which will be of considerable benefit to GreenRoc in the mine construction phase.*
- *Following a detailed evaluation process, the European Raw Materials Alliance has expressed its support of GreenRoc and its Amitsoq graphite project, stating that "GreenRoc's graphite resource is of global importance and, together with the Company's strategy, will enable the European Union to achieve a certain level of independence for the electrical vehicle supply chain. ERMA has approved the Amitsoq Graphite project and will engage to support its development and financing to produce these critical raw materials for the benefit of the European Union goals." (see RNS dated 8 February 2023).*
- *On 9 October 2023, GreenRoc was awarded a grant of approximately £250,000 by the Automotive Transformation Fund in the UK to part-finance a feasibility study into the establishment of a graphite spheronisation processing plant in the UK to produce active anode material from graphite concentrate delivered from GreenRoc's Amitsoq Graphite Project.*

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