ASX Release

10 October 2023

Siviour BAM Project Update

Preparation continues for an accelerated commencement of the Graphite Concentrate Operation

- Renascor continues to accelerate the development of its Graphite Concentrate operation, the upstream portion of its planned Battery Anode Material (**BAM**) graphite mine and manufacturing operation in South Australia, with value engineering and design work being undertaken in preparation for the detailed design, procurement and construction phase.
- Current work programs include flotation locked cycle tests to validate optimisations to the process flowsheet, geotechnical assessments for the desalination facility and detailed design on non-process infrastructure, with final tendering underway for front-end engineering design of the mineral process plant and the desalination facility.
- The planned Graphite Concentrate operation is in the advanced stages of development, with Renascor having obtained its primary mining approvals with the award of the Program for Environment Protection and Rehabilitation[1] and completed a Definitive Feasibility Study (**DFS**) level assessment in the recently announced BAM Study[2].
- The BAM Study estimates that Renascor can deliver a globally competitive gross operating cost for Purified Spherical Graphite of US$1,782 per tonne over the first 10 years and US$1,846 per tonne over LOM, including Graphite Concentrate operating costs of US$405 per tonne over first 10 years and US$472 per tonne over LOM[3].
- The graphite market continues to grow, with Benchmark Mineral Intelligence predicting an increase in battery demand of 300% by 2028 and policy initiatives such as the US Inflation Reduction Act incentivizing the growth of non-Chinese graphite supply chains to meet the new demand.
- The commencement of the more detailed engineering and design included in the post-DFS work packages, together with Renascor's previously announced long-lead procurement of non-process infrastructure[4], is part of Renascor's strategy to accelerate the upstream development to permit Renascor's new supply to enter the market in alignment with forecasted near-term shortages of Graphite Concentrates.

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Renascor Resources Limited (ASX: RNU) (**Renascor**) is pleased to provide an update on activities currently underway that are designed to accelerate the construction of the upstream operation for its proposed vertically integrated graphite mine and manufacturing operation in South Australia.

The planned Graphite Concentrate operation is in the advanced stages of development, having obtained its primary mining approvals with the award of the Program for Environment Protection and Rehabilitation[5] and having completed a DFS-level assessment in the recently announced BAM Study[6].

Work programs are now focused on advancing engineering designs in preparation for the detailed design, procurement and construction phase of the Graphite Concentrate operation.

Current work includes finalisation of the design for the process flow sheet for the mineral process plant. This follows recently completed value engineering programs aimed at optimising the production of high-value Graphite by reducing reagent consumption and creating operating cost savings. Renascor is currently completing further flotation locked-cycle tests to confirm the optimised design prior to the commencement of the more detailed front-end engineering design (**FEED**) phase.

Additional upstream work programs include advanced engineering programs for the desalination facility and other non-process infrastructure. Geotechnical assessments have recently been completed to permit the commencement of FEED for the desalination plant and pipeline, with detailed design work having commenced for mine dewatering and road upgrades and engineering design for the power connection expected to commence next month.

The FEED scope for the mineral process plant has been updated to incorporate the modifications to the flow sheet from the value engineering programs, with final tendering currently underway for FEED for the mineral process plant and the desalination facility.

Renascor is concurrently advancing downstream programs, including optimisations to the purification and water treatment circuit and further engineering design work for power and non-process infrastructure.

The commencement of the more detailed engineering and design included in the post-DFS work packages, together with Renascor's previously announced long-lead procurement of non-process infrastructure[7], is part of Renascor's strategy[8] to accelerate the upstream development to permit Renascor's new supply to enter the market in alignment with forecasted near-term shortages of Graphite Concentrates. Subsequently, Renascor plans to commence a downstream operation to produce Purified Spherical Graphite. This phased development plan is designed to align with graphite market demand and to reduce execution risk prior to investment in the downstream facility.

Commenting on the planned accelerated commencement of the Graphite Concentrate operation, Managing Director David Christensen said:

> *"The growth of the lithium-ion battery and anode markets continues to put pressure on the graphite market to meet increasing demand. While aggressive competition amongst Chinese synthetic graphite producers has led to downward pressure on graphite prices in recent months, the long-term graphite demand trend continues to support the need for large, low-cost graphite mines like Siviour.*

Renascor expects positive growth for natural graphite to be supported, in particular, as graphite supply chains move outside of China to supply the North American and European markets.

Our current work programs are aimed at preparing Renascor to advance quickly into the detailed design, procurement and construction phase to meet expected shortfalls as the graphite market continues its transition from an industrial to a battery mineral."

Graphite Market

The graphite market is currently experiencing significant growth primarily due to an increase in the demand for graphite in lithium-ion battery anodes, with Benchmark Mineral Intelligence predicting an increase in battery-related demand of 300% by 2028 and with further accelerated demand through 2032. See Figure 1.

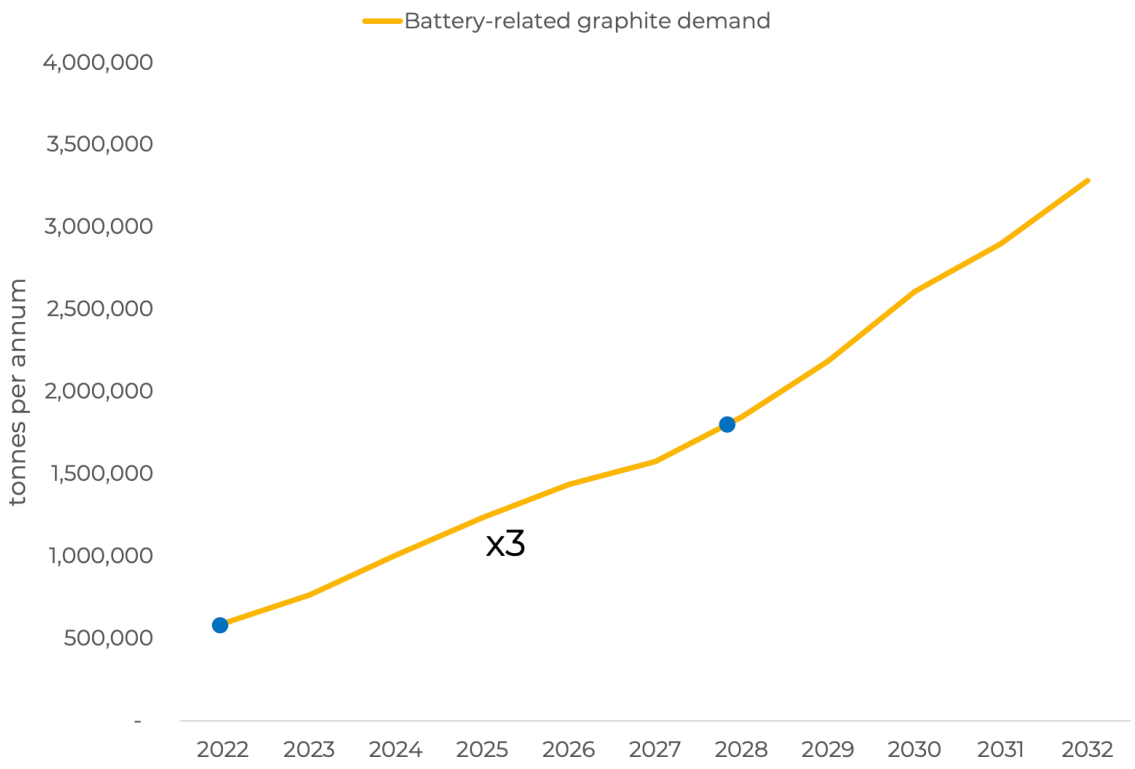

Figure 1. *Battery-related graphite demand (Source: Benchmark Mineral Intelligence)*

China currently dominates the supply of graphite, with a global market share of 65% for Graphite Concentrates[9]. Since 2019, China has fluctuated between a net importer and a net exporter of Graphite Concentrates (see Figure 2), with the balance dictated by a variety of factors, including overall Chinese battery-related demand, the availability of Chinese domestic graphite supply sources and Chinese downstream capacity for both the processing of natural flake Graphite Concentrates into Purified Spherical Graphite and for processing coke-based products into synthetic graphite.

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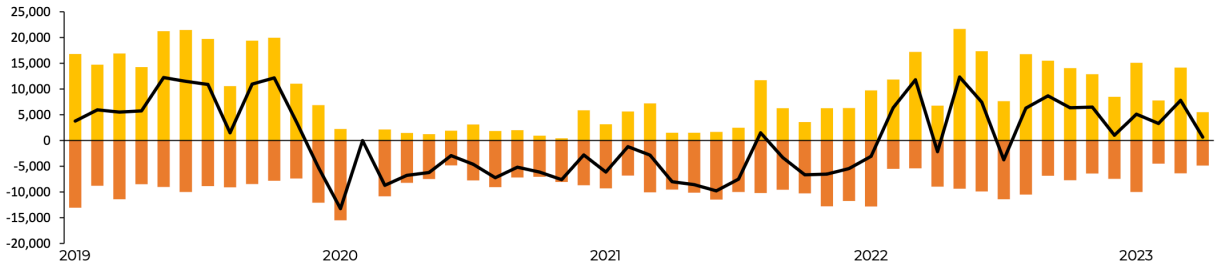

Figure 2. *Chinese graphite trade balance, showing imports (yellow), exports (orange) and net balance (black) (Source: Benchmark Mineral Intelligence)*

Since the beginning the year, Graphite Concentrate pricing has experienced downward pressure, with prices for -195 Graphite Concentrates (a typical feedstock used in the production of anode material) falling to US$578 per tonne this month (from US$813 per tonne in January 2023)[10]. This has coincided with a period in China of lower cyclical demand and inventory drawdowns across battery minerals generally, as well as lower prices for synthetic graphite, which has caused increased substitution for natural flake Graphite Concentrates in the Chinese lithium-ion battery anode market.

Whilst these factors have impacted the natural graphite market in recent months, Renascor does not consider the current situation to be sustainable. The current decrease in synthetic graphite pricing has occurred during a period of low power and coke feedstock costs, as well as low utilisation rates of Chinese graphitization capacity following significant capital investment in the Chinese synthetic graphite sector in 2022[11]. This has led to aggressive pricing competition amongst Chinese synthetic producers. Renascor expects that, as utilisation rates increase and Chinese battery demand continues to grow, synthetic graphite pricing will increase, supporting higher prices for natural Graphite Concentrates.

Further, as the lithium-ion battery industry develops outside of China, policy initiatives such as the US Inflation Reduction Act (**IRA**) are incentivizing the growth of non-Chinese graphite supply chains to meet new demand. Of particular note, commencing in 2025, the IRA requires that all graphite and other critical minerals used in the manufacture of electric vehicles must be from sources outside of China to qualify for the full electric vehicle tax credit in the United States[12].

As a result, the outlook for graphite remains strong, with the overall market for Graphite Concentrates expected to increase by approximately 60% from 1.2 million tonnes to 2.9 million tonnes by 2029[13]. This rapid increase in demand for Graphite Concentrates, coupled with a lack of upstream development in recent years, creates the risk of the market for Graphite Concentrates going into a supply deficit if new projects are not brought on-line in the near term. See Figure 3.

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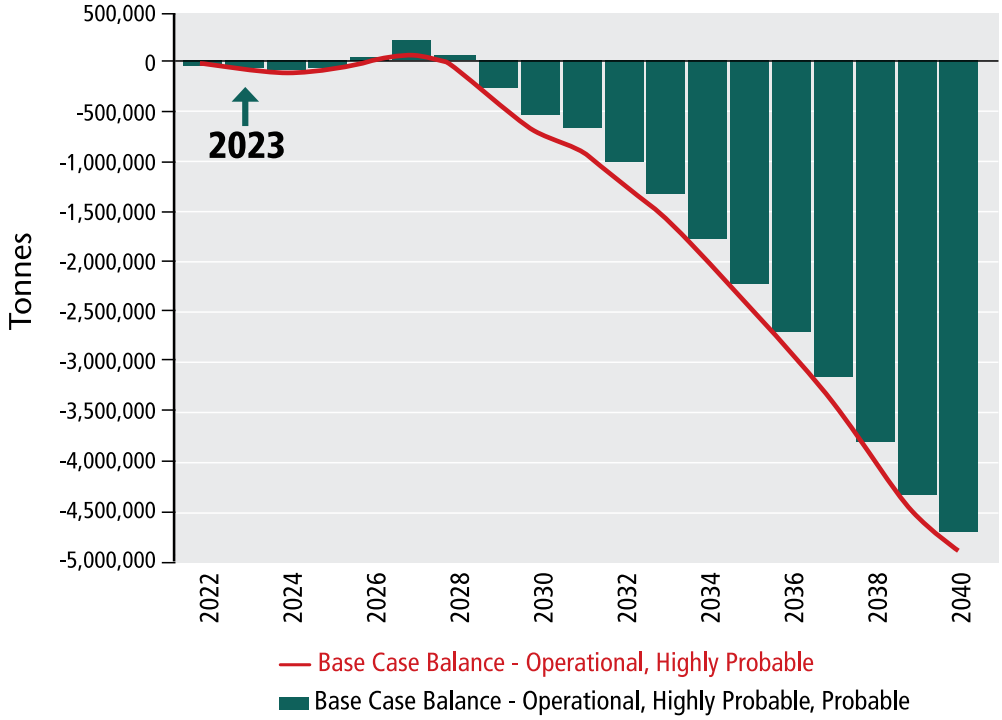

Figure 3. *Graphite Concentrate market balance (source: Benchmark Mineral Intelligence)*

Renascor's strategy to accelerate the start-up of the Graphite Concentrate operation is intended to offer Renascor a potential early-mover advantage by entering the market at the time of growing undersupply, which Renascor expects will lead to increased prices.

This ASX announcement has been approved by Renascor's Board of Directors and authorised for release by Renascor's Managing Director David Christensen.

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[1] See Renascor ASX announcement dated 28 November 2022.
[2] See Renascor ASX announcement dated 8 August 2023.
[3] See Renascor ASX announcement dated 8 August 2023.
[4] See Renascor ASX announcement dated 9 May 2023.
[5] See Renascor ASX announcement dated 28 November 2022.
[6] See Renascor ASX announcement dated 8 August 2023.
[7] See Renascor ASX announcement dated 9 May 2023.
[8] Renascor ASX announcement 7 December 2022.
[9] Source: Benchmark Mineral Intelligence.
[10] Source: Benchmark Mineral Intelligence.
[11] Fastmarkets estimates that China added over one million tonnes of new graphitization capacity in 2022.
[12] Under the IRA, a tax credit of up to US$7,500 is available for the purchase of electric vehicles, with the credit made up of two US$3,750 tax credits. Commencing in 2025, graphite and other critical minerals sourced from 'foreign entities of concern' (including entities that are owned by, controlled by, or subject to the jurisdiction China) are disqualified for eligibility for the US$3,750 critical mineral tax credit. The other US$3,750 tax credit applies to battery components, with the IRA disqualifying battery components from the US$3,50 battery component tax credit if they are sourced from 'foreign entities of concern' from 2024.
[13] Source: Benchmark Mineral Intelligence.

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About Renascor

Renascor is developing a vertically integrated Battery Anode Material Manufacturing Operation ("**the Project**") in South Australia. The Project comprises:

- **the Siviour Graphite Deposit** - the world's second largest Proven Reserve of Graphite and the largest Graphite Reserve outside of Africa[14];
- **the Siviour Graphite Mine and Concentrator** - a conventional open-pit mine and crush, grind, float processing circuit delivering world-class operating costs in large part due to the favourable geology and geometry of Renascor's Siviour Graphite Deposit; and
- **a Battery Anode Material Production Facility** - where Graphite concentrate will be converted to PSG using an eco-friendly processing method before being exported to lithium-ion battery anode manufacturers.

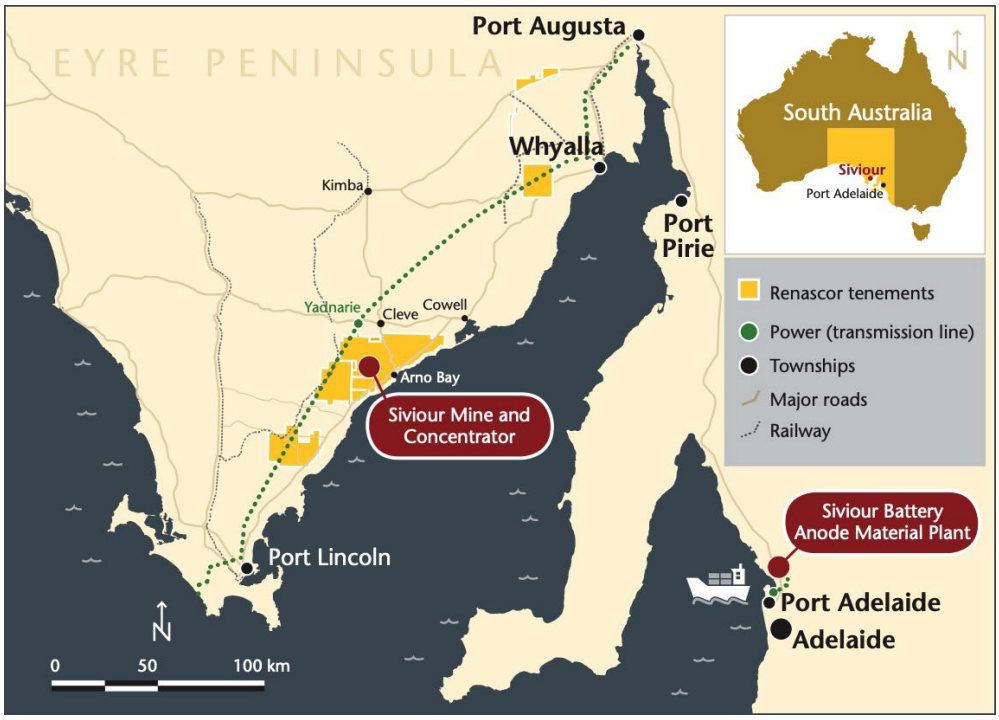

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Figure 1. Siviour Battery Anode Material Project location.

The 100% Renascor owned Siviour Graphite deposit is unique in both its near-surface, flat-lying orientation and its scale as one of the world's largest graphite Reserves. The favourable geology and size of the deposit will allow Renascor to produce Graphite Concentrate at a low-cost over a 40-year mine life.

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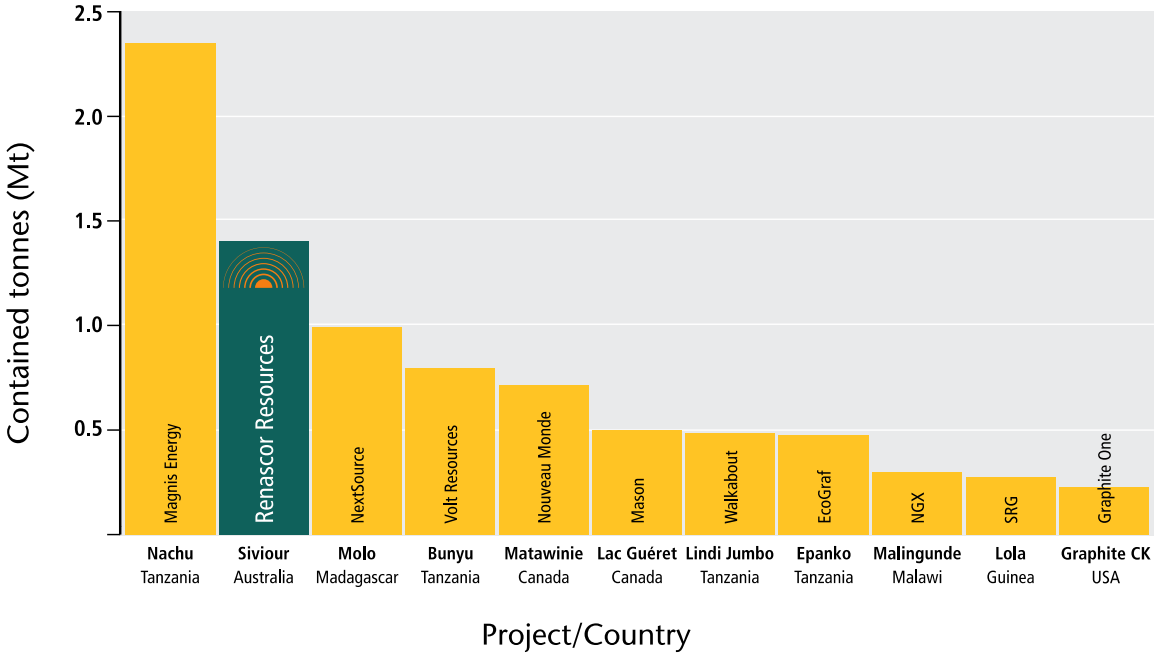

Figure 2. Globally Reported Proven Ore Reserve estimates (September 2023)[15]

Renascor intends to leverage this inherent advantage and develop a vertically integrated operation to manufacture high value PSG from a low-cost graphite concentrate feedstock and provide a secure cost-competitive supply of battery anode raw material into the rapidly growing lithium-ion battery market.

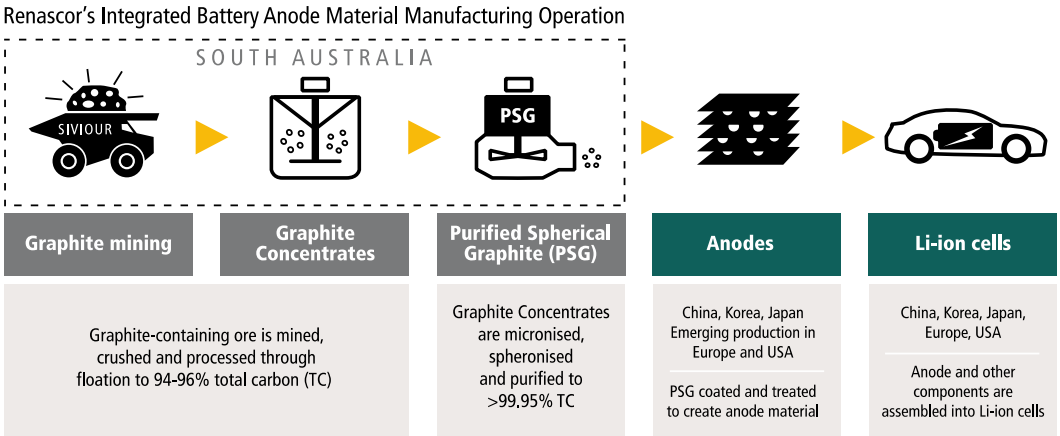

Figure 3. Renascor's vertically integrated Mine and Concentrator and Downstream PSG production facility within the Electric Vehicle supply chain.

Appendix 2

Peer Comparison Data

Project name	Code	Company	Country	Report name	Date	Link
Bunyu	VRC	Volt Resources Ltd	Tanzania	Pre-Feasibility Study Completed	15 December 2016	https://announcements.asx.com.au/asxpdf/20161215/pdf/43drlhpvdwbhxp.pdf
Epanko	EGR	Ecograf Ltd	Tanzania	Updated 60ktpa Bankable Feasibility Study	21 June 2017	https://announcements.asx.com.au/asxpdf/20170621/pdf/43k2d21wvk2sv1.pdf
Graphite Creek	GPH	Graphite One Inc	USA	Preliminary Feasibility Study Technical Report Graphite One Project	14 October 2022	https://www.graphiteoneinc.com/wp-content/uploads/2022/10/JDS-Graphite-One-NI-43-101-PFS-20221013-compressed.pdf
Lac Guéret	LLG	Mason Graphite Inc	Canada	Feasibility Study Update of the Lac Guéret Graphite Project	12 December 2018	https://masongraphite.com/wp-content/uploads/2021/06/a53b7c_22115be39ccf4d85b9579f359680997c.pdf
Lindi Jumbo	WKT	Walkabout Resources Ltd	Tanzania	Updated Ore Reserve delivers 17.9% graphite grade	28 February 2019	https://announcements.asx.com.au/asxpdf/20190228/pdf/44321stl8dlk5f.pdf
Lola	SRG	SRG Mining Inc.	Guinea	Lola Graphite Project NI 43-101 Technical Report – Updated Feasibility Study	12 April 2023	https://srgmining.com/wp-content/uploads/2023/04/J6626-SRG_Lola_UFS_Rev_0_Fin_2023-0407.pdf
Malingunde	NGX	NGX Ltd	Malawi	Replacement Prospectus	14 June 2023	https://announcements.asx.com.au/asxpdf/20230614/pdf/05qn89bfqrhwx8.pdf
Matawinie	NOU	Nouveau Monde Graphite	Canada	NI 43-101 Technical Feasibility Study Report for The Matawinie Mine and the Becancour Battery Material Plant Integrated Graphite Projects	10 August 2022	https://nmg.com/wp-content/uploads/2022/08/Feasibility-Study-NMGs-Integrated-Phase-2-Projects.pdf
Molo	NEXT	NextSource Materials Inc	Madagascar	Molo Phase 2 Preliminary Economic Assessment NI 43-101 Technical Report	27 April 2022	https://www.nextsourcematerials.com/wp-content/uploads/2023/01/2022_04_27_molo_phase_2_pea_technical_report_dated_april_27__2022__final.pdf
Nachu	MNS	Magnis Energy Technologies Ltd	Tanzania	Bankable Feasibility Study Update Confirms Strong Financial and Technical Viability for the Nachu Graphite Project	27 September 2022	https://announcements.asx.com.au/asxpdf/20220927/pdf/45fhzx2nsgrmjb.pdf
				Supplementary Information Regarding Nachu BFS Update Released 27.9.2022	30 September 2022	https://announcements.asx.com.au/asxpdf/20220930/pdf/45fqs3q6h3hpw4.pdf

[14] Renascor ASX release 21 July 2020.
[15] Source: public company reports. Does not include graphite deposits that do not publicly report data on main stock exchanges in Australia, Canada, the United Kingdom and the United States. See Appendix 2 for further details on sourcing.

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