RENASCOR RESOURCES

ASX: RNU

ASX Release

08 August 2023

Siviour Battery Anode Material Study Results

Renascor's Siviour BAM Project confirmed as low-cost, high-value supplier of 100% Australian-made graphite for lithium-ion battery anodes

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Highlights:

- **Robust economics:** Optimised Battery Anode Material (**BAM**) Study confirms compelling economics of Renascor's vertically integrated graphite mine and downstream Purified Spherical Graphite (**PSG**) facility entirely in South Australia (the **BAM Project**).
  - Post-tax unleveraged NPV_{10} of A$1.5 billion.
  - Post-tax unleveraged IRR of 26%.
  - Average annual EBITDA of A$363 million.
- **World-class, low-OPEX project:** State-of-the-art BAM Project delivers globally competitive estimated PSG gross operating cost of US$1,782 per tonne over the first 10 years and US$1,846 per tonne over 40-year mine life (**LOM**), including Graphite Concentrate operating cost of US$405 per tonne over first 10 years and US$472 per tonne over LOM.
- **Start-up CAPEX from existing cash and debt:** Estimated capital requirement for initial upstream operation of A$214.5 million is expected to be funded via Renascor's existing cash balance (A$129 million as at 30 June 2023) and debt facilities.
- **Phased development strategy aligns downstream start-up with PSG market:** Phased development plan, commencing with production of Graphite Concentrate before shifting to PSG, is designed to align with graphite market demand and to reduce execution risk prior to the initial downstream capital requirement of A$394.6 million.
- **Funding sources:** The Australian Government, through its Critical Minerals Facility, has conditionally approved a loan facility of A$185 million for the development of the BAM Project. In addition, Renascor is progressing discussions with Export Finance Australia (**EFA**), the Clean Energy Finance Corporation (**CEFC**) and commercial lenders. Renascor has also commenced discussions with potential project partners, including potential offtakers, regarding equity investments to help further meet the BAM Project's capital requirements.
- **Alignment with offtakers:** Phased production of Graphite Concentrates and PSG aligns with positive feedback from anode manufacturers seeking to diversify supply of graphite with secure supply from low-risk mining jurisdictions. Potential offtake partners include POSCO and Mitsubishi Chemical, each of which have entered into non-binding strategic cooperation and offtake agreements with Renascor.
- **Next steps:** Renascor's next immediate steps include securing binding offtake agreements, concluding lender due diligence and commencing early contractor involvement.

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Renascor Resources (**ASX: RNU**) (**Renascor**) is pleased to announce the results of a study (the **BAM Study**) assessing the viability of integrating a graphite mining and processing operation at Renascor's Siviour Graphite Project near Arno Bay, South Australia, with a downstream operation to produce up to 100,000tpa of Purified Spherical Graphite (**PSG**) in Bolivar, South Australia (the **BAM Project**). The BAM Study supersedes all previous studies. Material assumptions are included in Appendix 2 of this announcement.

Financial highlights

Parameter	Estimated Value	
Life of mine (LOM)	40 years	
Annual Mining Capacity (mined ore)	1,650,000 tonnes per annum (tpa)	
Annual Graphite Concentrate Production Capacity	150,000 tpa	
Annual PSG Production Capacity	100,000 tpa	
Stage 1 CAPEX -- Mine and Mineral Processing Plant	A$214.5M	US$145.9M
Stage 1 Mining Capacity (mined ore)	825,000 tpa	
Stage 1 Graphite Concentrate Production Capacity	75,000 tpa	
Stage 1 CAPEX -- PSG Facility	A$394.6M	US$268.3M
Stage 1 PSG Production Capacity	50,000 tpa	
Stage 2 CAPEX (Mine and Processing | PSG Facility)	A$173M US$118M	A$377M US$256M
Average operating cost of **Graphite Concentrate feedstock** (per tonne)	A$596 *Years 1 to 10*	US$405
	A$694 *LOM*	US$472
Average operating cost of **PSG production** (gross, per tonne)	A$2,620 *Years 1 to 10*	US$1,782
	A$2,714 *LOM*	US$1,846
Average operating cost of **PSG** (with by-product credit)	A$2,167 *Years 1 to 10*	US$1,474
	A$2,136 *LOM*	US$1,452
Payback of total start-up capital (from commissioning of Stage 1 PSG facility)	4.5 years	
NPV_{10} (real, after-tax)	A$1,486 million	US$1,010 million
IRR of integrated project (after-tax)	26%	
EBITDA of integrated project (annual average, LOM)	A$363 million	US$247 million

Table 1. *Financial highlights*

Commenting on the BAM Study, Renascor Managing Director David Christensen stated:

> *"The study results confirm Renascor's BAM Project as a low-cost, high-value supplier of 100% Australian-made graphite for the growing lithium-ion battery anode sector.*
>
> *By integrating the world class Siviour Graphite Deposit with an in-country downstream manufacturing facility, the BAM Study provides a clear path to creating a competitive advantage as a low-cost producer of Purified Spherical Graphite.*
>
> *The project has already attracted conditional funding support from the Australian Government and non-binding commitments from leading anode manufacturers. We look forward to using the results of this study to assist in securing binding offtake and funding to permit us to advance into construction and operation of an important new supply line for the lithium-ion battery industry."*

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Renascor's Competitive Advantages

Low Operating Cost

The BAM Study shows a PSG gross operating cost of US$1,782 per tonne over the first 10 years of production and US$1,846 per tonne over the life of the mine. This compares favourably with operating costs from existing commercial PSG operations (all of which are in China), for which Renascor's market data suggests average operating costs of approximately US$2,000 per tonne.

Renascor achieves a relatively low PSG operating cost, in large part, by using its own Graphite Concentrates as feedstock to produce PSG and introducing operational efficiencies into a state-of-the-art PSG facility.

Low-cost Graphite Concentrate. Rather than purchase Graphite Concentrates at market prices, Renascor's vertically integrated operation obtains Graphite Concentrates at its own cost of production, which is projected to be US$405 per tonne for the first ten years and US$472 per tonne over the life of the mine[1]. As shown in Figure 1, the potential PSG unit operating cost savings attributable to using Siviour Graphite Concentrates is US$362 per tonne based on current Graphite Concentrate prices[2]. With Graphite Concentrate prices projected to increase[3], the potential cost savings from sourcing Graphite Concentrate from Siviour grows to over US$1,340 per tonne over the first ten years of production of PSG and US$1,460 per tonne over the life of mine[4].

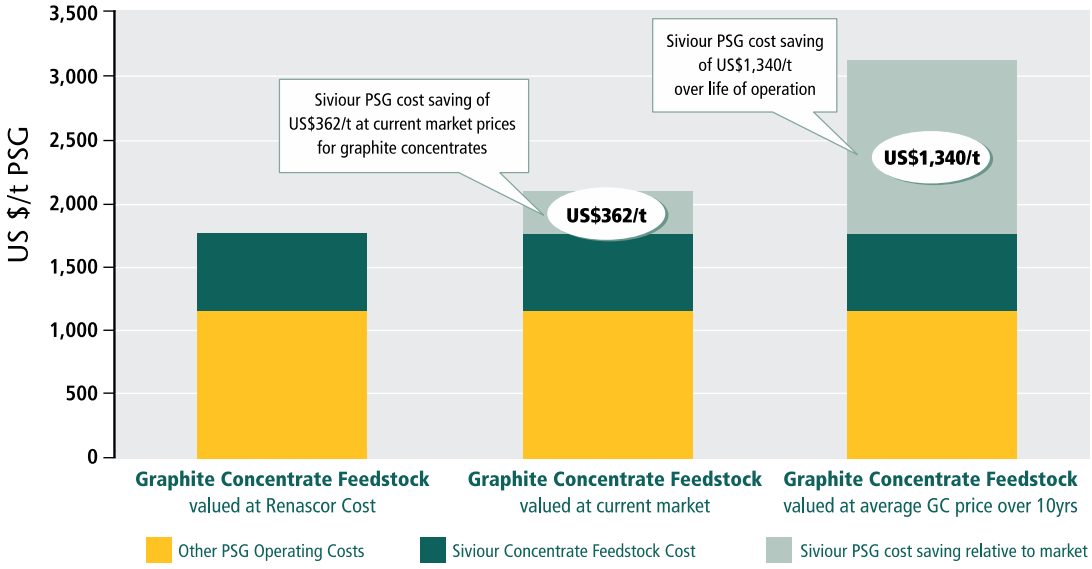

Figure 1. *Impact of Graphite Concentrate feedstock on unit PSG operating costs*

State-of-the-art PSG facility. Renascor has designed the PSG facility to include operational efficiencies that minimise unit operating costs. These efficiencies include:

- *Economies of scale.* The front-end capacity of the PSG facility has been designed to utilise 100% of the production of Graphite Concentrates produced from Siviour in order to maximise the production of higher margin PSG and take advantage of economies of scale in unit operating costs by spreading fixed costs over a greater amount of PSG production.
- *Increased yields*. The milling circuit of the PSG facility includes multiple product streams designed to process finer graphite flakes and produce both a primary PSG product, as well as smaller secondary products, thereby increasing projected yields from 50% in Renascor's previous studies to approximately 65% in the BAM Study[5]; and
- *Water treatment.* The PSG facility includes a water treatment circuit designed to recover caustic for re-use in processing and minimise water usage, thus reducing reagent and water consumption in the purification circuit.

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Secure Supply from Australia

China currently produces 100% of the world's supply of PSG. By offering commercially viable supply from Australia, which is considered among the most attractive mining jurisdictions worldwide[6], Renascor offers a secure alternative source, which Renascor considers as a competitive advantage with potential offtakers seeking to diversify existing supply channels.

The advantage of Australian supply has recently become more relevant as a result of policy initiatives in North America and Europe aimed at securing graphite supply and other critical minerals[7]. Initiatives such as the Inflation Reduction Act in the United States provide incentives that favour raw material supply chains from free trade partners like Australia[8]. Proposed European legislation is similarly targeting supply from secure jurisdictions such as Australia as alternatives to Chinese sources[9].

Aligned to Projected Growth in Graphite Demand

Renascor's strategy is based on obtaining direct exposure to the highest growth sector of the graphite market, the lithium-ion battery (**LIB**) sector, and introducing new supply to meet expected demand. By phasing development to commence with Graphite Concentrate production, Renascor expects to capture favourable margins in the start-up Graphite Concentrate operation and to commit to the higher margin PSG production in line with increased PSG demand from LIB anode manufacturers.

Graphite Concentrates

Currently, the battery market accounts for approximately 50% of total demand for Graphite Concentrates[10]. As take-up of electric vehicle increases, the battery market's share of total demand is expected to rise to 75% by 2029[11], with the overall market for Graphite Concentrates increasing by approximately 60% from 1.2 million tonnes to 2.9 million tonnes[12] over the same period.

As a result of this rapid increase in demand for Graphite Concentrates, coupled with a lack of upstream development in recent years, the market for Graphite Concentrates is at risk of going into supply deficit if new projects are not brought on-line in the near term. See Figure 2.

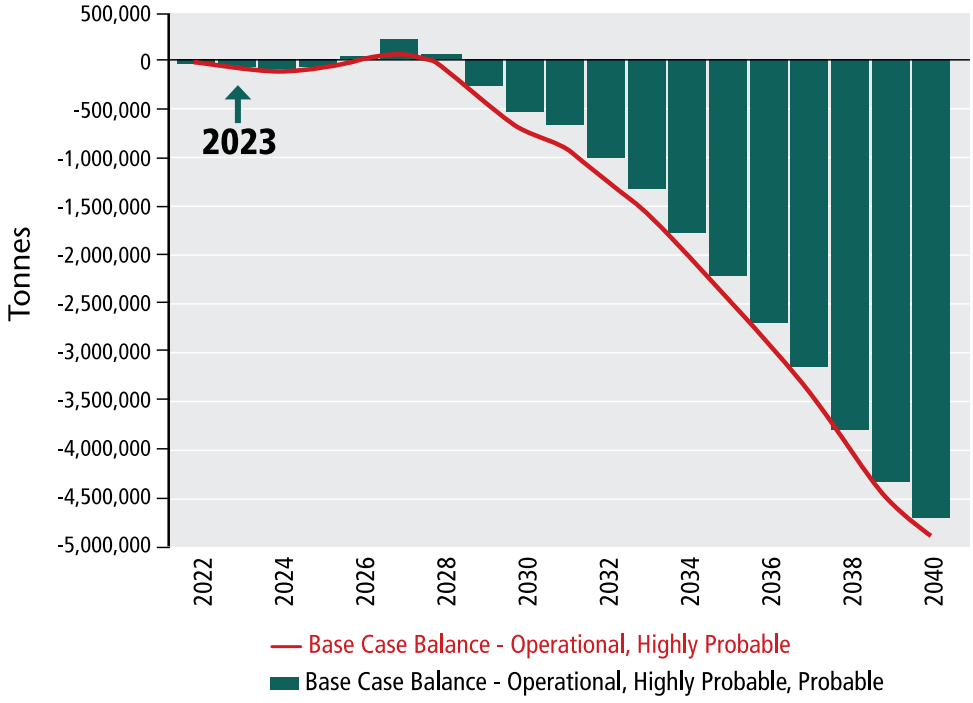

Figure 2. *Graphite Concentrate market balance (source: Benchmark Mineral Intelligence)*

The development plan adopted in the BAM Study, which provides for the accelerated 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. At current Graphite Concentrate prices of US$640 per tonne for -195 mesh[13], Renascor expects to realise a favourable margin and to be highly leveraged toward potential Graphite Concentrate price increases as a result of the sustained forecasted under-supply.

Purified Spherical Graphite

The impact of increased battery demand is expected to be even more pronounced in the demand for PSG, which is used almost exclusively in LIB applications. Demand is projected to increase by 315%, from approximately 380,000 tonnes in 2022 to 1.2 million tonnes in 2030[14]. See Figure 3.

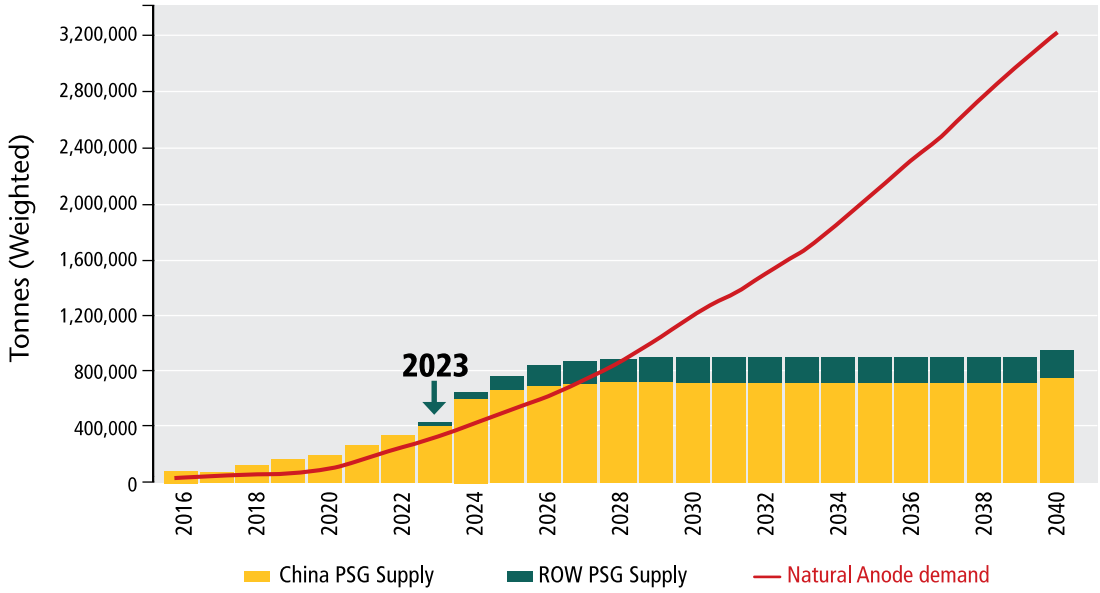

Figure 3. *PSG supply and natural anode demand forecast (source: Benchmark Mineral Intelligence)*

As shown in Figure 3, the market for PSG risks going into significant supply deficit without new production, and Renascor expects this potential supply deficit will lead to increased PSG prices. Since 2022, PSG prices have ranged between US$2,000 and US$3,800[15] per tonne, with a current reported spot price of US$2,475 per tonne[16]. Independent marketing consultant, Fastmarkets, has forecasted the PSG price to increase from US$4,150 per tonne in 2024 to US$5,035 per tonne in 2033 (averaging US$4,716 over the ten-year period).

Renascor's development plan under the BAM Study, which commences PSG production in 2026, is intended to permit Renascor's PSG supply to enter the market in alignment with rising PSG prices and to offer Renascor flexibility by incurring the capital expenditure for the initial downstream PSG facility in alignment with PSG prices increase.

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Offtake

Renascor's strategy is to obtain direct exposure to the high growth LIB sector by producing PSG for use in LIB anodes. Renascor expects to sell products directly to large-scale LIB anode manufacturers, with whom Renascor considers that it can develop a strong marketing position as a reliable and competitive ex-China producer of PSG.

Renascor has entered into several non-binding memoranda of understanding (**MOU**s) for the supply of PSG with companies active in the LIB anode sector, including with POSCO, a South Korean conglomerate and the largest anode manufacturer outside of China[17], Mitsubishi Chemical, Japan's largest Chemical supplier and one of the world's largest anode manufacturers[18], Japanese based global trading company Hanwa Co., Ltd[19], Jiangxi Zhengtuo New Energy Technology Co. Ltd., a top ten anode producer globally[20], and Chinese anode company Minguang New Material[21]. Renascor is currently in discussion with these and other groups regarding binding offtake terms.

Funding

The Australian Government, through its Critical Minerals Facility, has conditionally approved a loan facility of A$185 million for the development of the integrated BAM Project. Renascor is progressing discussions with Export Finance Australia (**EFA**), the Clean Energy Finance Corporation (**CEFC**) and commercial lenders. Renascor has also commenced discussions with potential project partners, including potential offtakers, regarding equity investments to help further meet the BAM Project's capital requirements.

Next steps

Renascor's next immediate steps are expected to include securing binding offtake agreements, concluding lender due diligence and commencing early contractor involvement (**ECI**).

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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Renascor confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. Renascor confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Forward-Looking Statements

This report contains certain "forward-looking statements" and comments about future events, that are based on Renascor management's beliefs, assumptions and expectations and on information currently available to management as at the date of this report. Often, but not always, forward-looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "plan", "believes", "estimate", "anticipate", "outlook", and "guidance", or similar expressions, and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and production potential, estimates of future Mineral Resources and Ore Reserves.

Where Renascor expresses or implies an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and on a reasonable basis. No representation or warranty, express or implied, is made by Renascor that the matters stated in this report will in fact be achieved or prove to be correct.

Images and Diagrams

Images and diagrams used in this report are illustrative only and may not be drawn to scale. Unless otherwise stated, all data contained in charts, graphs and tables is based on information available at the date of this report.

Mineral Resources and Ore Reserves

The information in this document that relates to Mineral Resources and Ore Reserves has been extracted from, respectively, Renascor's ASX announcements dated 18 August 2022 and 21 July 2020. Renascor has commissioned a Competent Person to prepare a revised Mineral Resources estimate following additional drilling to the north of the existing Mineral Resource (see Renascor ASX announcement dated 7 July 2023). Renascor has also commissioned a Competent Person to prepare a revised Ore Reserve estimate as a result of the work undertaken for the BAM Study. It is expected that this revised estimate will result in a restatement of the Ore Reserve. Except as referenced above, Renascor confirms that is not aware of any new information or data that materially affects the data included in the original market announcements referenced above and all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changes. Renascor confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcement.

Production Targets

The production target underpinning financial forecasts included in the BAM Study are based on a 22-year mining period, during which approximately 26% of the material mined is within the Measured Resource category, approximately 69% is within the Indicated Resource category, and approximately 5% is within the Inferred Resources category. During the first 10 years of mining, approximately 44.4% of the material mined falls within the Measured Resource category, approximately 55.3% is within the Indicated Resource category, and approximately 0.3% is within the Inferred Resources category.

There is a low level of geological confidence associated with Inferred Resources and there is no certainty that further exploration work will result in the determination of Indicated Resources or that the production target itself will be realised. There are 0.3% Inferred Resources included in the first ten years of the processing schedule. The BAM Study is based on the material assumptions outlined in Appendix 2 of this announcement. These include assumptions about the availability of funding. While Renascor considers the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the BAM Study will be achieved.

Competent Person Statement

The information in this document that relates to exploration activities and exploration results is based on information compiled and reviewed by Mr G.W. McConachy who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr McConachy is a director of the Company. Mr McConachy has sufficient experience relevant to the style of mineralisation and type of deposits being considered to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr McConachy consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

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[1] The BAM Study projects a unit operating cost for producing PSG of US$1,782 per tonne over the first ten years of PSG production (US$1,846 per tonne over LOM), of which approximately US$623 per tonne (US$726 per tonne over LOM) would relate to the cost of Renascor's production of Graphite Concentrates assuming all Graphite Concentrates were converted into PSG. The assumed Graphite Concentrate input cost in the chart is US$405 per tonne of GC over the first ten years (US$472 LOM). Approximately 1.6 tonnes of Graphite Concentrates are required to produce each tonne of PSG.

[2] The current price for -195 mesh graphite (the common feedstock used in to produce PSG) is US$640 per tonne. Source: Benchmark Mineral Intelligence.

[3] Source: Fastmarkets.

[4] Projected Graphite Concentrate prices are based on long-term forecast provided by Fastmarkets.

[5] See Renascor ASX announcement dated 10 January 2022.

[6] The Fraser Institute 2022 Survey of Mining Companies ranked South Australia at the ninth most attractive jurisdiction in the world for mining investment in 2022.

[7] See, e.g., The United States Department of Energy Critical Minerals Assessment, May 2023.

[8] The United States Inflation Reduction Act (IRA) requires that specified percentages of the value of minerals in lithium batteries must be extracted or processed in the United States or free trade partner countries (including Australia) by 2024 for automakers to obtain the full value of a US$7,500 tax credit for purchases of new electric vehicles. In addition, the IRA restricts "Foreign Entities of Concern," which includes companies from China, from extracting processing or recycling the minerals.

[9] See, e.g., the European Critical Minerals Act proposed by the European Commission in March 2023, which limits to no more than 65% of any key raw material to come from any single country.

[10] Source: Benchmark Mineral Intelligence.

[11] Source: Benchmark Mineral Intelligence.

[12] Source: Benchmark Mineral Intelligence.

[13] Source: Benchmark Mineral Intelligence.

[14] Source: Benchmark Mineral Intelligence.

[15] Source: Fastmarkets.

[16] Source: Benchmark Mineral Intelligence.

[17] See Renascor ASX announcement dated 25 August 2021.

[18] See Renascor ASX announcement dated 19 July 2023.

[19] See Renascor ASX announcement dated 25 March 2021.

[20] See Renascor ASX announcement dated 27 January 2021.

[21] See Renascor ASX announcement dated 29 September 2020.

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Appendix 1

Key Components of the Siviour Battery Anode Material Study

1. Overview

Figure 4. *Rendered image of the proposed PSG facility at Bolivar*

The Siviour Battery Anode Material Study (**BAM Study**) assesses the viability of integrating a graphite mining and processing operation at Renascor's Siviour Graphite Project near Arno Bay, South Australia with a downstream processing operation to produce Purified Spherical Graphite (**PSG**) in Bolivar, South Australia (the **BAM Project**).

The development plan for the BAM Study is based on maximising the production of PSG, with substantially all Graphite Concentrates produced from the mining and processing operation used as feedstock to produce PSG[1]. Renascor's plan to maximise PSG production was adopted following consideration of multiple production scenarios that demonstrated that maximising PSG production enables Renascor to maximise shareholder returns.

The development plan for the BAM Study is based on a staged implementation schedule, commencing with construction of a mining and Mineral Processing Plant (**MPP**) to produce approximately 75,000 tonnes of Graphite Concentrates per annum. During commissioning of the MPP, construction is planned on a PSG facility that will produce approximately 50,000 tonnes of PSG per annum.

Following commissioning of the initial PSG facility, Renascor plans to construct substantially identically scaled MPP and PSG operations to increase the total PSG production capacity to approximately 100,000 tonnes per annum.

Capital expenditure for the initial MPP is estimated at A$214.5 million, with the initial PSG facility's capital expenditure estimated at A$394.6 million.

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Based on Renascor's current cash balance of A$129 million (as at 30 June 2023), the conditionally approved A$185 million debt facility provided by the Australian Government's Critical Minerals Facility for the development of the integrated BAM Project and funding discussions with Export Finance Australia (**EFA**), the Clean Energy Finance Corporation (**CEFC**) and commercial lenders, Renascor expects that the capital requirement for the initial MPP will be met.

The BAM Study builds on and supersedes previous studies, including a previous BAM study completed in July 2020 (the **2020 BAM Study**)[2] that incorporated results from a Graphite Concentrate Definitive Feasibility Study completed in November 2019 (the **Siviour Concentrate DFS**)[3] and a PSG Prefeasibility Study completed in February 2019 (the **PSG PFS**)[4].

GR Engineering Services (**GRES**, ASX: GNG), an independent process engineering consulting and contracting company, acted as study manager and supervising engineers of the BAM Study, with Wave International, an independent resource and development group with specific expertise in battery minerals, consulting to Renascor as part of the integrated owner's team. In its capacity as study manager, GRES oversaw the compilation of the technical study work, preliminary assumptions and conceptual financial model using information provided by Renascor, Wave International, and the specialist consultants, including those noted in , who have consented to the information used in the context in which it appears in this announcement.

Scope of work	Consultant
Mineral Resource estimate	Snowden Optiro
Mining and mine design	Optima Consulting and Contracting
Process design (Graphite Concentrates)	GRES
Process design (PSG)	GRES, Proxa Australia
Infrastructure	GRES, Tonkin Consulting, GPA Engineering, Clutch Consulting, Engeo Australia, Wave International
Tailings	Wave International
Marketing	Fastmarkets
Environmental and permitting	JBS&G
Community and Stakeholder	JBS&G
Logistics	George Wilby
Financial analysis	GRES (sub-consultant Metta Karuna)

Table 2. *Consultants contributing to the BAM Study*

The cost estimates for the BAM Study have been prepared to Class 3 standard, suitable for a definitive feasibility study (**DFS**) in accordance with the Australian Institute of Mining and Metallurgy (**AusIMM**) guidelines[5] (with a target accuracy level within ±15%) and are subject to the cautionary statements relating to DFS parameters on page 7 and those stated in Appendix 2 of this announcement.

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2. Location

The BAM Project combines a graphite mining and processing operation at Renascor's Siviour Graphite Project near Arno Bay, South Australia and a downstream processing operation to produce PSG in Bolivar, South Australia. See Figure 5.

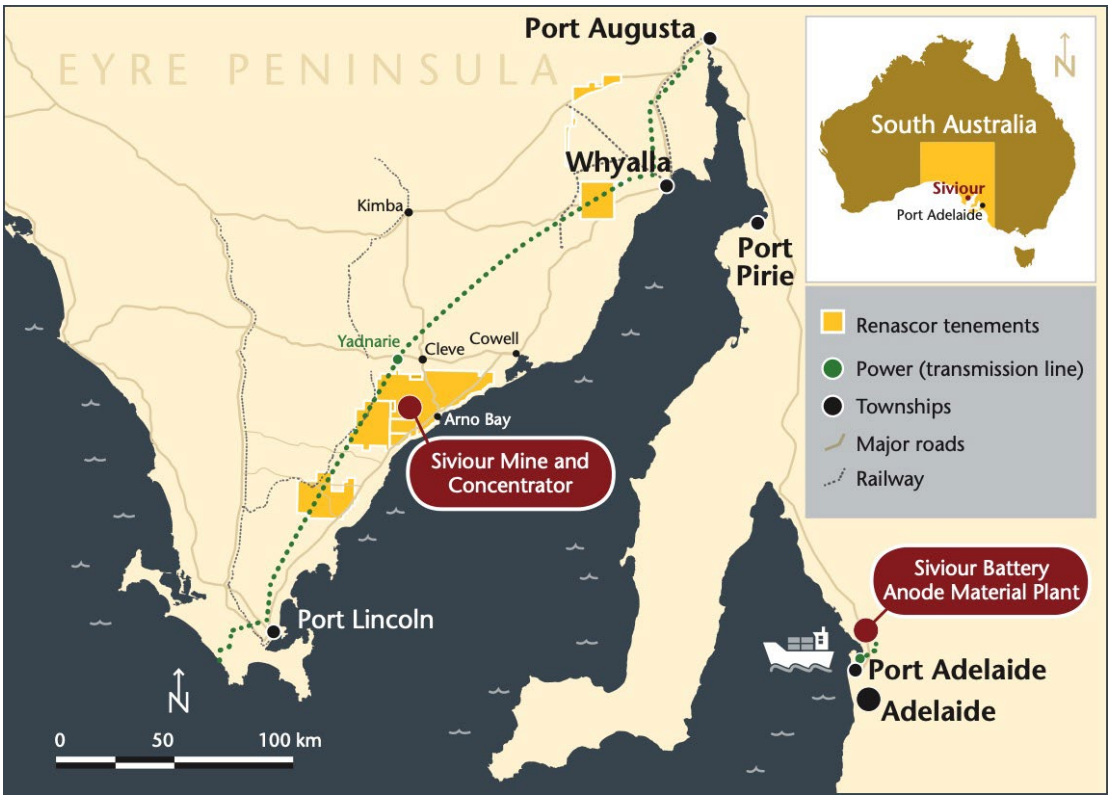

Figure 5. *Location of Siviour Mine, MPP and PSG Facility*

Siviour Mine and Mineral Processing Plant

The Siviour graphite deposit is located on South Australia's Eyre Peninsula, approximately 15 km west of the coastal township Arno Bay, 120 km northeast of Port Lincoln and 150 km southwest of Whyalla.

The MPP will be located at the mine site, with road access from the Lincoln highway at Arno Bay. Sections of roads nearby the mine site will be upgraded as part of the development to be suitable for increased traffic. The MPP will produce Graphite Concentrate from the Siviour Graphite Deposit.

A desalination plant will be located approximately 11 km south of the mine site to support the mine and mineral processing facilities.

PSG Facility

The PSG facility will be located in the suburb of Bolivar, approximately 20 km north of Adelaide, South Australia, with road access to the site via the North-South Connector/Northern Expressway, using the Waterloo Corner Interchange Connector Road and Robinson Road.

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3. Ownership and Tenure

Siviour Mine and Mineral Processing Plant (MPP)

The proposed Siviour mine site, is held entirely within Mineral Lease (**ML**) 6495, which was granted on 5 April 2019 to Ausmin Development Pty Ltd (**Ausmin**). Ausmin is a 100%-owned subsidiary of Renascor. The mine-site sits within Ausmin's Exploration Licenses (EL) EL 6469 and EL 6197.

Renascor has entered into an agreement with the owners of the land pertinent to the ML which grants Renascor the option to purchase the land. Renascor has issued the option notice and expects to finalise the land acquisition prior to commencing site construction.

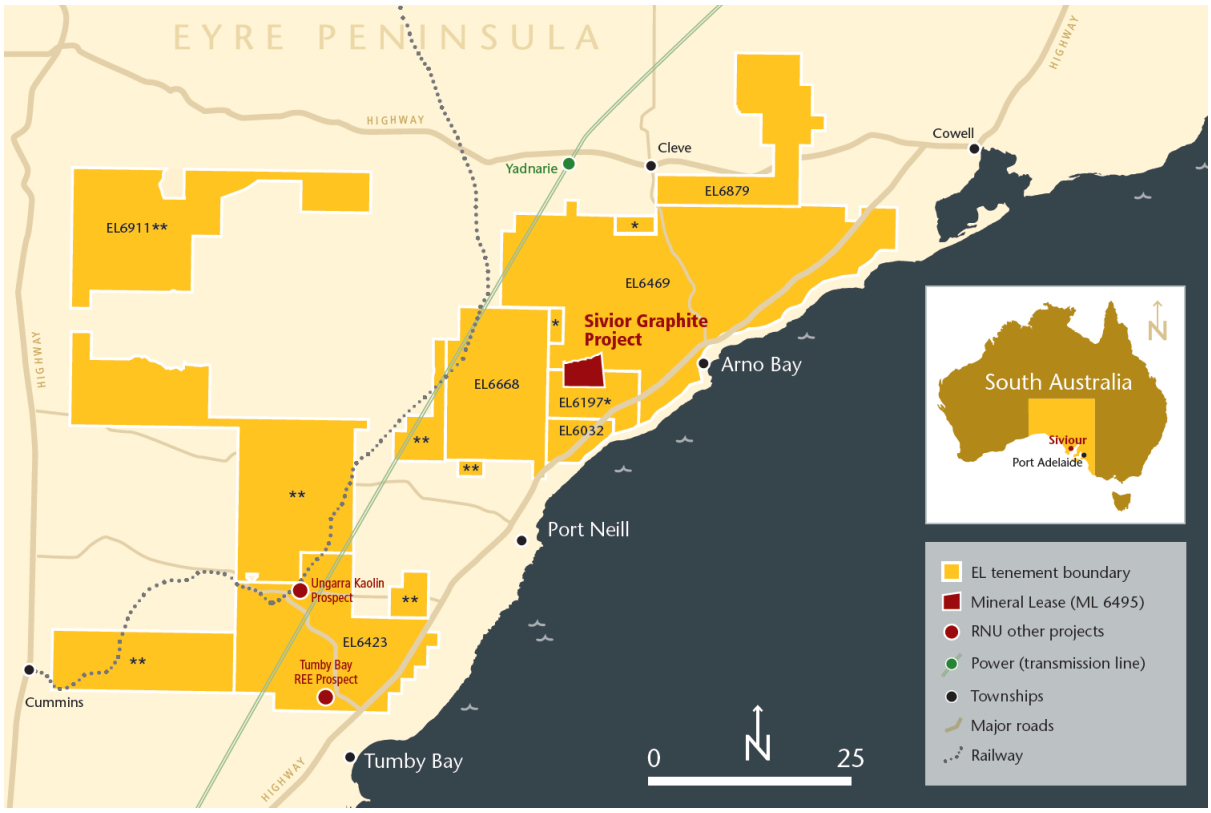

Figure 6: *Project tenements held by Renascor and subsidiaries near the Siviour Graphite Deposit on the Eyre Peninsula in South Australia*

On 24 October 2022, Renascor acquired the land for the site of the proposed desalination plant (freehold land held under Certificate of Title 6085 Volume 169).

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PSG Facility

The site of the proposed PSG facility is located adjacent to SA Water's Bolivar water treatment and industrial facilities, providing access to key infrastructure, including power and water, and is located along the transport corridor from the proposed Siviour mine to the shipping port of Port Adelaide. See Figure 7.

Figure 7. *PSG facility site highlighted in red in the northern Adelaide region*

At 20 hectares (ha), the site is of sufficient scale to permit both the initial PSG facility, as well as the planned Stage 2 expansion.

Renascor has entered into a lease option agreement with SA Water over the 20ha site for 40 years, with the rent to be set at market rates following a market valuation[6]. The lease option can be exercised any time prior to 30 June 2025.

4. Mineral Resource and Ore Reserve

The BAM Study considers the mining and processing of a single graphite orebody, the Siviour Graphite Deposit, to produce up to an estimated 150,000 tonnes per annum (**tpa**) of Graphite Concentrate.

The graphite mineralisation at Siviour is hosted within a sequence of schist, micro-gneiss and metasedimentary rocks. The mineralised zone is within a gently undulating tabular body and the main portion of the deposit is oriented east-west.

The BAM Study relies on the Mineral Resource estimate reported on 18 August 2022[7] and presented in Table 3 below; and an Ore Reserve estimate reported on 21 July 2020[8] and as set out in Table 4 below for total graphitic content (TGC).

Resource Category	Ore (Mt)	TGC (%)	Contained Graphite (Mt)
Measured	16.8	8.6%	1.4
Indicated	46.0	7.1%	3.3
Inferred	30.7	7.0%	2.2
Total	**93.5**	**7.3%**	**6.9**

Table 3. *Siviour Mineral Resource estimate as of August 2022 reported at a cut-off grade of 2.3% TGC*[9]

Reserve Category	Ore (Mt)	TGC (%)	Contained Graphite (Mt)
Proven	15.8	8.4%	1.3
Probable	35.8	6.9%	2.5
Total	**51.1**	**7.4%**	**3.8**

Table 4. *Siviour Ore Reserve as of July 2020*[10]

The Mineral Resource and Probable Ore Reserve estimates were prepared by Competent Persons in accordance with the 2012 JORC Code. In connection with work undertaken in preparing the mining schedule for the current BAM Study, Renascor has commissioned a Competent Person to prepare a revised Ore Reserve estimate. It is expected that this revised estimate will result in a restatement of the Ore Reserve.

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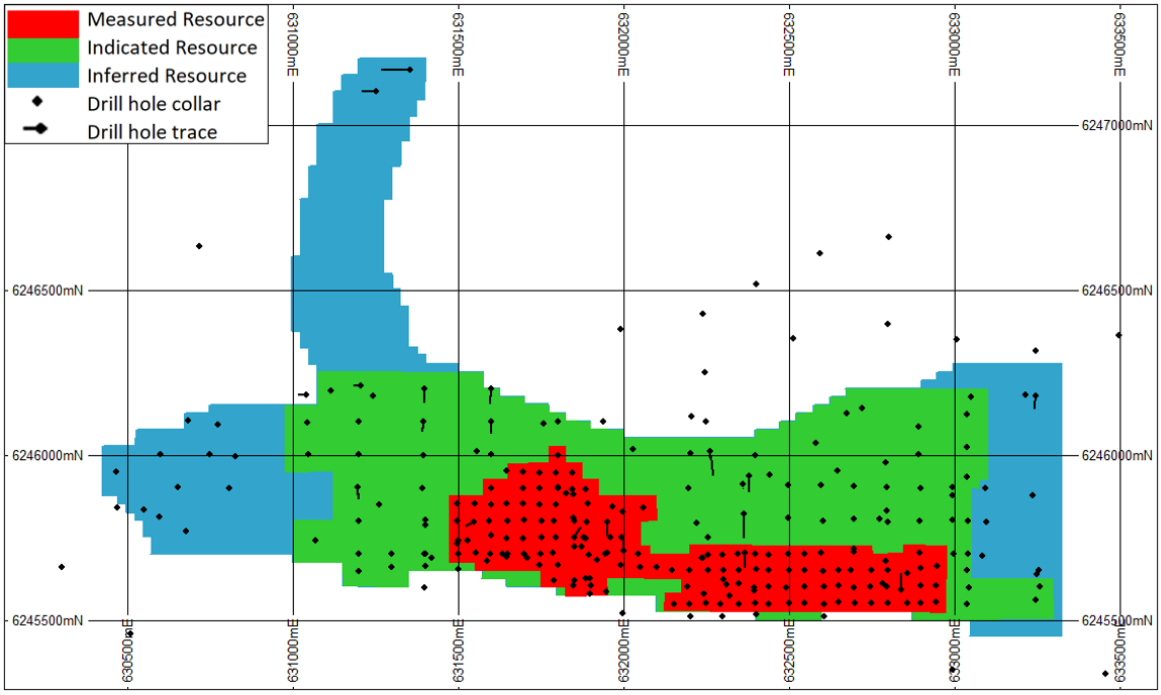

Figure 8. *Plan view of Siviour deposit showing the distribution of Resource classifications and drill hole locations*

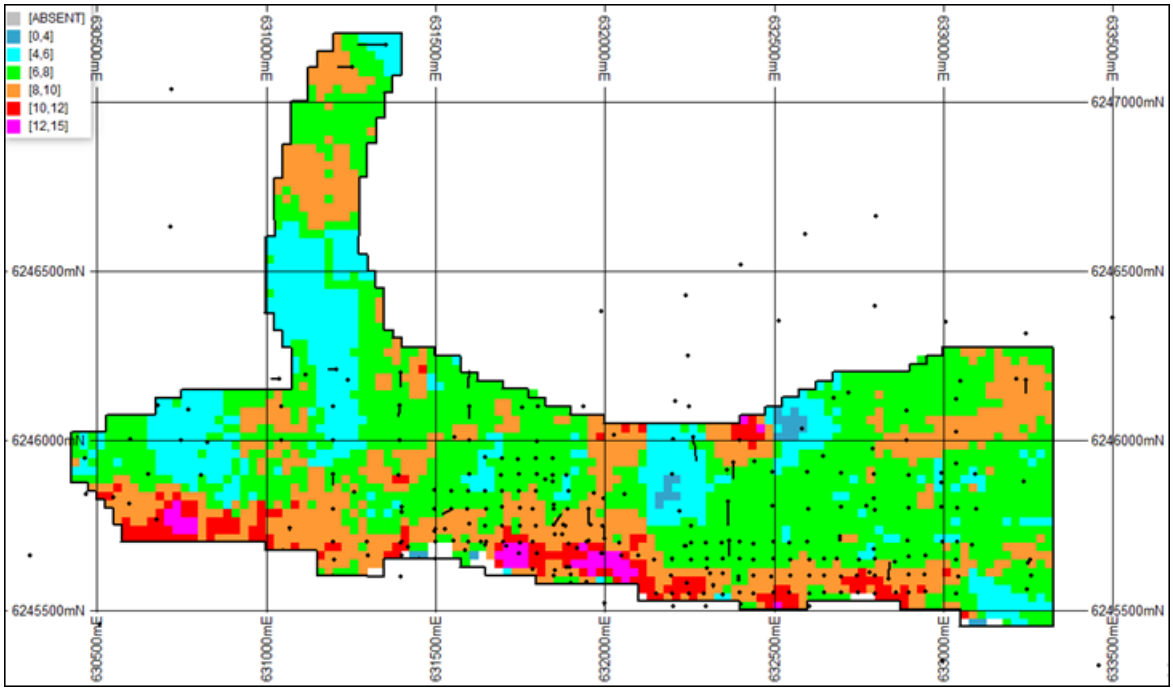

Figure 9. *Plan view of Siviour showing average TGC grade within the Mineral Resource (>2.3% TGC) overlain with the outline of the Mineral Resources and drill hole locations*

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5. Mining and Mine Design

The geometry of the Siviour Graphite Deposit is generally flat-lying, with thick, flat, gently folded graphite mineralisation sitting from within 5m to 15m of surface. This orientation facilitates a single shallow mining design that can be mined via conventional open pit mining methods.

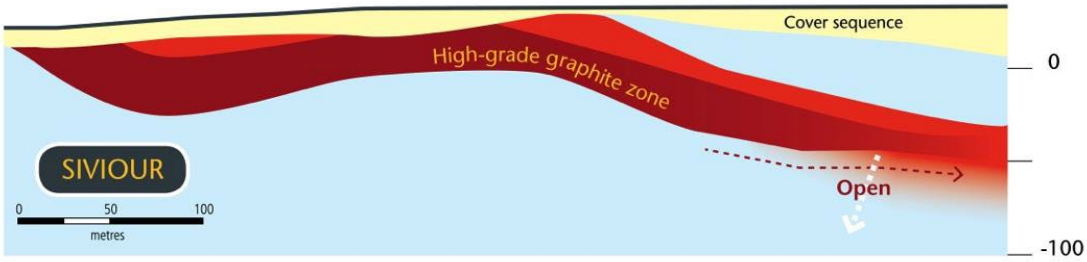

Figure 10. *North-south cross-section (631800E) – looking west*

The BAM Study pit optimisation and mining study resulted in a mining schedule conducted in 14 stages and mined over a period of 22 years. Mining commences in the southern portion of the orebody to permit mining of a higher-grade corridor in the mine's first year.

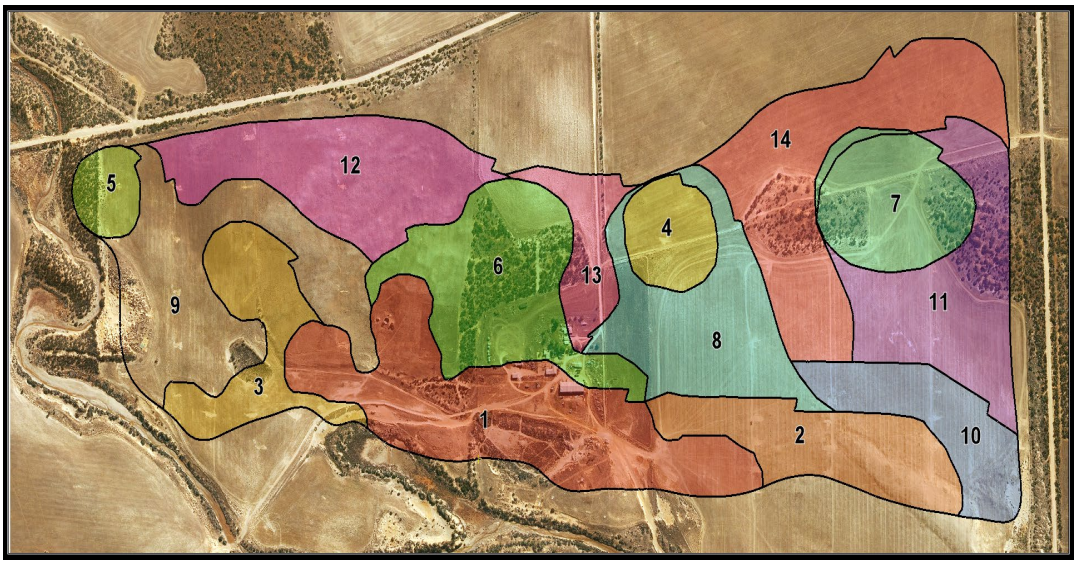

Figure 11. *Surface footprint of mining stages throughout the current 40-year life-of-mine*

The proposed mining method is conventional truck and shovel open pit bench mining. Free digging in alluvial material makes up the first 10m of overburden, while drill and blast is required for all other lithologies.

The BAM Study has adopted a mining fleet comprising a Komatsu PC2000-8 200t excavator, HD785-7 haul trucks with a 60m^3 standard tub capacity and a Komatsu WA500-7 wheeler loader. Komatsu HD785-7 trucks were selected as they are an efficient match with the PC2000 excavator, with 5 passes required for a full load.

The BAM Study has assumed that the mining fleet, along with a Komatsu GD655_5 Grader, Komatsu HM400_3MO Water truck, Komatsu WA 320PZ IT tool carrier and Komatsu D275AX Dozer will be acquired under a hire purchase agreement. Additional ancillary equipment will be purchased outright.

Initially, mining will be conducted on a 24-hour basis in order to access high grade ore as soon as possible, before dropping to day-shift only in years 2 and 3. Mining will return to a 24-hour operation from Year 4, coinciding with the process plant expanding to 1,650,000 tpa capacity.

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Total material movement by year and Resource Category is shown in Figure 12.

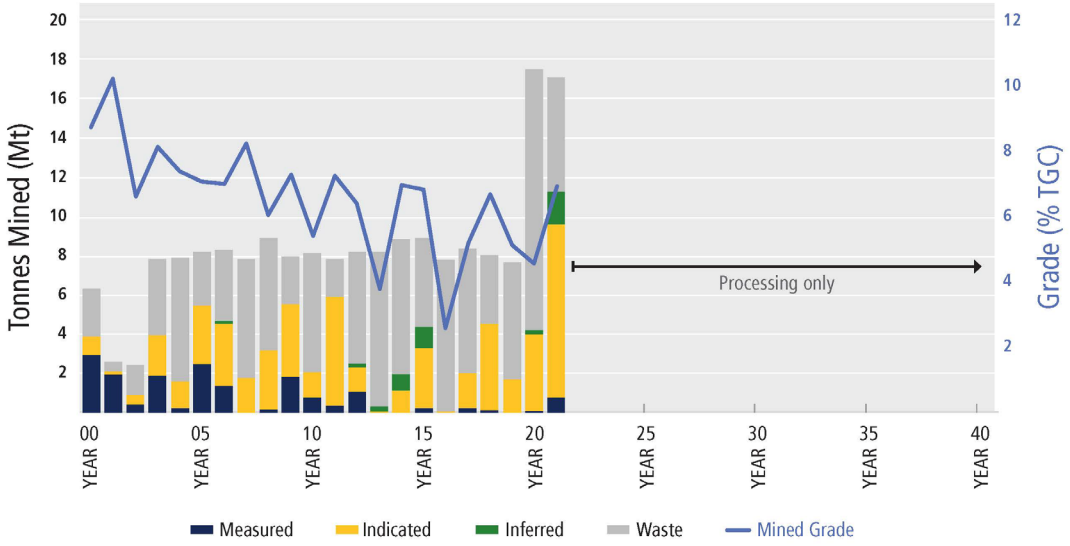

Figure 12. *Total material mined by Resource Category and average total graphitic carbon (TGC) grade*

Over the 22-year mining period, approximately 26% of the material mined is within the Measured Resource category, approximately 69% is within the Indicated Resource category, and approximately 5% is within the Inferred Resources category.

During the first 10 years of mining, approximately 44.4% of the material mined falls within the Measured Resource category, approximately 55.3% is within the Indicated Resource category, and approximately 0.3% is within the Inferred Resources category.

Figure 13. *Photo taken of the location of Renascor's Siviour graphite deposit, near Arno Bay on the Eyre Peninsula in South Australia*

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6. Metallurgy

The BAM Study relies on metallurgical test work programs for the MPP undertaken in relation to this study, as well as additional test work completed previously[11]. PSG test work includes micronisation, spheronisation and purification tests designed to ensure the production of PSG meets industry specifications for the lithium-ion battery (**LIB**) anode market.

MPP

The metallurgical test work program has comprised a comprehensive range of testwork undertaken between 2016 and 2023.

For the Siviour Concentrate DFS, mineral processing parameters were based on composite samples from 13 diamond holes within the Siviour Mineral Reserve. More recent optimisation test work for the BAM Study was completed on samples from 11 diamond holes located within the Siviour Measured and Indicated Resource and within the first 6 years of mining.

Further metallurgical investigations undertaken for the BAM Study assessed varying regrind and flotation times, reagent dosages, alternative reagents and cleaner pulp densities, ultimately resulting in a locked cycle test on the optimised conditions representing the first ten years of the mine plan.

Examination of final concentrates via size assay analysis demonstrated continuity of the quality of the graphite for those locked cycle test conditions, with final concentrate grade, recovery and size analysis results presented below in Table 5.

Con Grade, TC, %	TC Recovery, %	Con Grade, TGC, %	TGC Recovery, %
95.0	92.5	94.5	95.5
Concentrate size by size analysis			
Screen Size (mm)	**Mass (%)**	**TC (%)**	
Above 0.180	7.4	96.7	
Between 0.180 and 0.150	9.7	96.9	
Below 0.150	82.9	94.5	
TOTAL	100	95.0	

Table 5. *Locked cycle test results from DFS optimisation test work completed in 2022*

Investigations also included variability testing based on grade and lithology covering a range of conditions for the mine plan. Results for all variability tests demonstrated that a weighted average concentrate grade of approximately 94% TGC and a recovery of 91% TGC was achieved.

Additional test work programs to support the basis of design for process engineering included: comminution, grinding energy, thickening and filtration, with all results and parameters adopted in the flowsheet and design in relation to the BAM Study (see Section 7 of this Appendix).

Subsequent pilot plant programs were also conducted to validate the flowsheet, confirm any additional process parameters, collect data for engineering design and generate bulk samples for vendor test work and downstream PSG processing. Renascor conducted pilot plant programs both in Australia, at independent laboratory ALS Metallurgy Services, and overseas, in a commercial graphite facility and independent laboratory in China. The results from the pilot testing compared favourably to the results achieved in locked cycle tests.

In total, over 240 tonnes of bulk and drill samples have been collected, analysed and tested from the Siviour Graphite deposit in support of the current flowsheet, process design and test work results achieved to date.

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PSG Facility

Mechanical Shaping

The production of PSG requires that Graphite Concentrates are first micronised and then mechanically shaped into a spherical form before being purified for use in LIB anodes. Customers generally require that several physical specification parameters, including product size, particle size distribution, tap density and surface area, must be achieved after milling (micronisation and spheronisation) for use in high quality LIB anode material.

The 2020 BAM Study relied upon preliminary milling equipment trials using up to 60kg samples of Siviour Graphite Concentrates and a projected yield of 50%, which is in line with global industry norms. To prepare for engineering design in the BAM Study, Renascor completed milling trials on commercial-scale equipment on a larger sample of up to 750kg of Siviour Graphite Concentrates per trial, and achieved yields in excess of 65%, consisting of both a primary spherical graphite that meets a standard size specification (D_{50} = 16 microns), as well as finer secondary spherical graphite products ($D_{50} \leq 10$ microns). In both cases, the physical product specifications were achieved[12].

Subsequently, a larger, bulk micronisation and spheronisation pilot plant program was undertaken on Siviour Graphite Concentrates produced from a commercial graphite facility in China sourced from over 140 tonnes of bulk ore sample collected from the Siviour Graphite deposit. This program was undertaken to confirm process parameters and collect data for the BAM Study, test variability in feed size and flowsheet flexibility, and generate bulk sample for downstream purification programs and potential offtake partners. This larger bulk milling program validated and optimised the flowsheet developed previously[13], confirming the yields and design criteria for the BAM Study.

Renascor expects that the primary PSG product (D_{50} = 16 microns) will account for the majority of PSG manufactured from Siviour, with the product expected to be used in high-volume lithium-ion battery anode applications (e.g., electric vehicles). Finer PSG products ($D_{50} \leq 10$ microns), which have traditionally been used for high performance and other speciality LIB anode applications, are expected to account for the balance of PSG.

Purification

To purify Siviour Graphite Concentrates to battery-grade, Renascor has developed a more eco-friendly purification process with battery mineral consultancy group Dorfner ANZAPLAN[14] that avoids the use of hydrofluoric acid (**HF**), which is generally used in Chinese PSG operations. Instead, Renascor uses less environmentally harmful reagents to purify Siviour graphite for use in lithium-ion battery anodes.

As part of the BAM Study, Renascor completed bench-scale optimisation trials with battery mineral specialist Dorfner ANZAPLAN. The bench scale trials used sulfuric acid as one of the primary leaching reagents in the cadence of the caustic bake process, replacing hydrochloric acid, which was adopted as part of 2020 BAM Study. The bench-scale trials consistently met or exceeded LIB anode purity specifications, with results of up to 99.99% Carbon (**C**) (versus anode industry standard of 99.95% C).

To enable detailed engineering works for its purification circuit, Renascor completed locked cycle purification tests adopting the flowsheet parameters used in the bench-scale trials. The locked cycle tests differed from the previous bench scale tests by more closely approximating processing conditions by including recycle streams in a closed circuit and permitting a more accurate mass-water balance calculations and other process design criteria necessary for completing engineering designs.

The locked cycle tests were undertaken by Dorfner ANZAPLAN, with a total of six cycles completed on spheronised samples of Siviour Graphite Concentrates, using Renascor's HF-free flowsheet in which graphite is first leached with sulfuric acid, then roasted at low temperature with a caustic solution, followed by a final leaching stage using diluted sulfuric acid to achieve the required purity. The results confirmed that optimised purification circuit using caustic and sulfuric acid can meet or exceed LIB anode purity specifications, with results of up to 99.99% C, with no impurities detected above acceptable anode customer specifications. Locked cycle tests also utilised recovered caustic to further decrease reagent consumption, offering improved efficiencies and lower operating costs in the operation of the planned PSG facility.

Additional test work programs to support the basis of design for process engineering have included: water treatment optimisation to recover caustic, filtration test work, flow properties testing and materials handling characteristics, with all results and parameters adopted in the flowsheet and design in relation to the BAM Study (see Section 7 of this Appendix).

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7. Processing Plants

The BAM Study considers the construction of two identically-scaled Graphite Concentrate mineral processing plants and two identically-scaled PSG facilities, with the scale of the PSG facilities designed to maximise the production of PSG by utilising substantially all the Graphite Concentrates produced from the upstream plant as feedstock for the downstream facility.

Production schedules

The anticipated concentrate processing for the start-up MPP begins after a three-month pre-strip and ramps up to 825,000 tpa (feed-rate) over a 6-month period, approximately 12 months prior to the Stage 1 PSG facility being ready for commissioning. Following the construction of the Stage 2 MPP, the processing capacity then ramps up over a 6-month period to 1,650,000 tpa, approximately 3 months prior to the Stage 2 PSG facility being ready to commission.

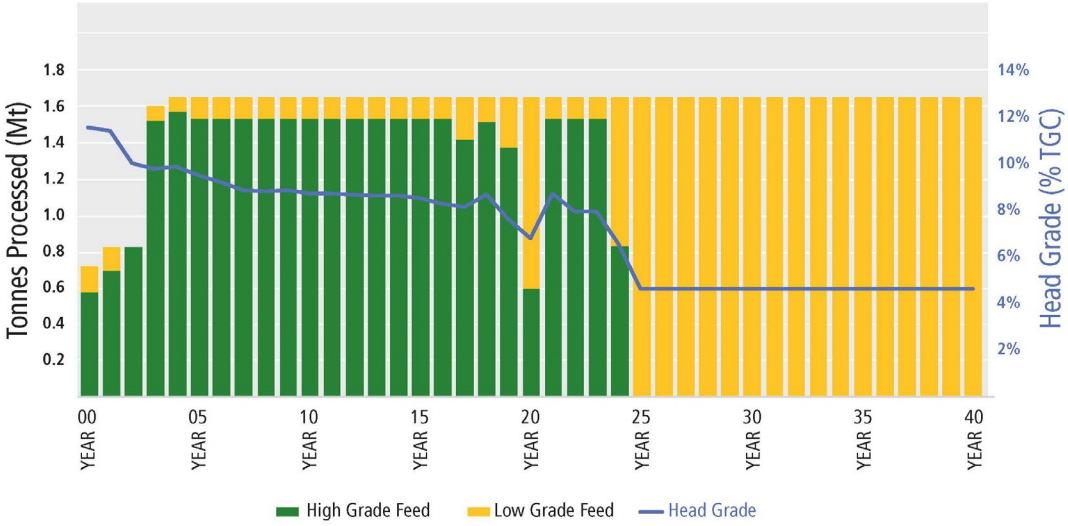

Figure 14. *Mining production schedule showing feed type and head grade*

The average processed grade for the MPP operation over the first three years is 11% TGC. The average processed grade is 10% over the first 10 years and 8% from years 11 to 25. From year 26 onwards, 100% of the ore is sourced from the low-grade stockpile at an average processed grade of 4.7%.

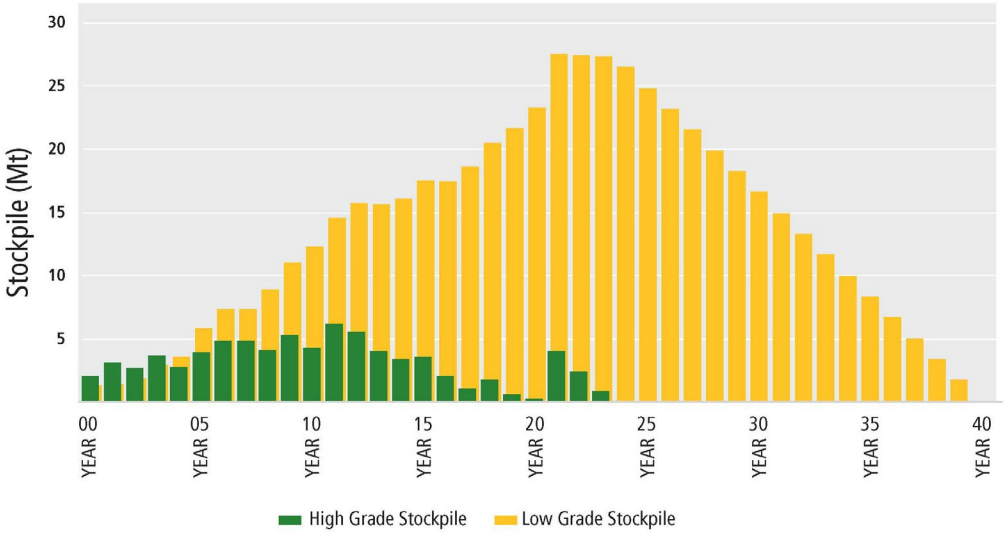

Figure 15. *Stockpile balance for high-grade and low-grade material prior to processing on the mine-site*

PSG production assumes a more conservative ramp-up, with nameplate feed-rate capacity of 75,000 tpa Graphite Concentrates (approximately 50,000 tpa PSG) achieved over a period of 12 months from commencement of commissioning of Stage 1. Approximately three years following completion of construction of the Stage 1 PSG facility, processing capacity then increases to 150,000 tpa Graphite Concentrates, as ramp up of Stage 2 commences. The Stage 2 PSG facility ramps up to nameplate capacity of indicatively 100,000 tpa PSG over a similar 12-month period.

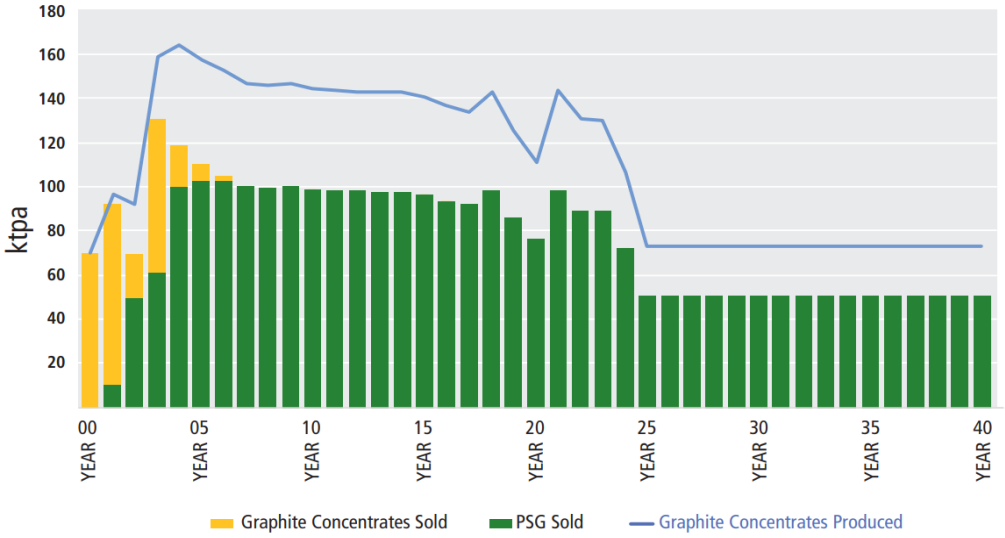

Figure 16. *Graphite Concentrates and PSG sold over the life-of-mine*

Mineral Processing Plant Design – MPP

The MPP has been designed to produce Graphite Concentrates to the quality standards required to further process into PSG meeting LIB anode standards. Key requirements for the design include:

- Graphite Concentrate will be produced at approximately 95% total carbon (**TC**) or 94% to 95% total graphitic carbon (**TGC**) at greater than 91% TGC recovery;
- All Graphite Concentrate produced from the MPP facility will be processed through the PSG facility, with a focus on achieving purity and maximising recovery;
- Ore from the mine will be crushed, followed by grinding, flotation, filtering, drying and then loaded into sealed isotainers and transported from site by trucks in an AB triple configuration; and
- The layout of the initial plant provides sufficient space for construction of a duplicate facility for Stage 2, with minimal shared equipment between the stages.

A simplified flowsheet is shown in Figure 17 (next page).

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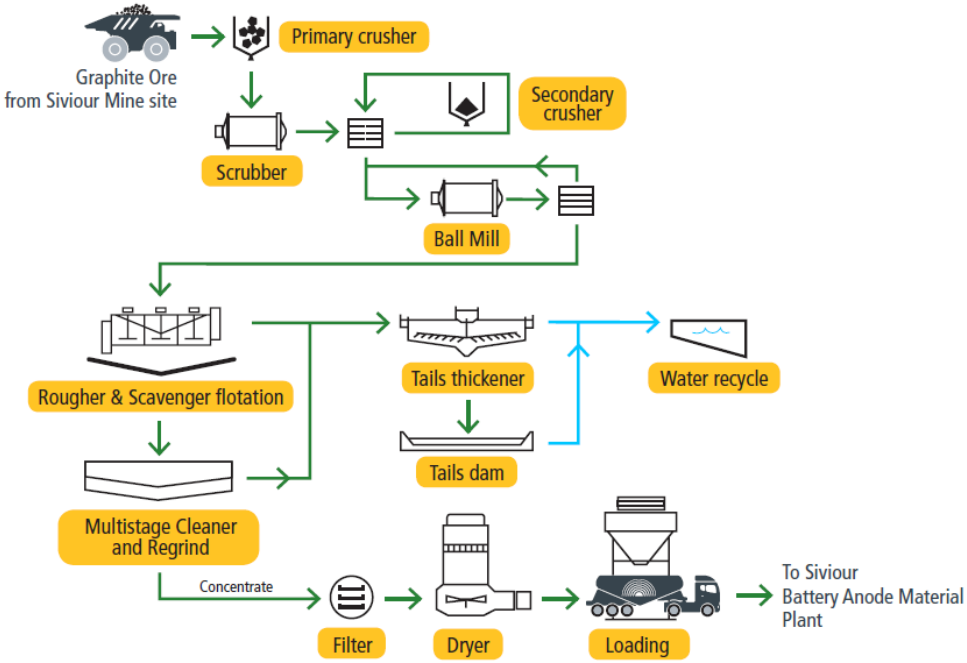

Figure 17. *Mineral Processing Plant (MPP) simplified flowsheet*

Crushing

Crushing will occur in two stages. In the first stage, a primary jaw crusher will crush ore from the pre-blended ROM pad, and crushed product will be conveyed to a scrubber. The scrubber oversize will be crushed in a secondary pebble crusher and conveyed back to the scrubber feed. The primary crushing circuit operates at higher capacity than the mill to allow for a crushed ore stockpile.

Grinding

Crushed, scrubbed ore will be conveyed to a primary ball mill to achieve flotation feed of P_{99} 425 µm. The mill discharge will be collected in a hopper before being pumped to a screen, with oversized material recycled back to the ball mill. The fine material bypasses the primary mill to avoid overgrinding.

Flotation and Regrind

Flotation and regrind circuits contain desliming, roughing, scavenging and four stages of regrind and cleaning. The cleaning circuit consists of Jameson cells, whilst rougher and scavengers is undertaken through conventional tank cells. The finer material will pass through additional regrind and cleaning to increase purity. The circuit is designed to optimise flake graphite recovery at a minimum purity of 94% to 95% TGC.

Dewatering, Drying and Handling

The final concentrates will be filtered in frame and plate filters, dried in a flash dryer system and then discharged into three dry concentrate storage silos. Silos will then have the functionality to load isotainers simultaneously as part of the AB triple truck configuration.

Tailings

Tailings, including slimes and flotation circuit tailings, will be directed to a tailings thickener for dewatering prior to being pumped to the tailings storage facility. Tailings thickener overflow will report to a process water tank for water recovery and reuse.

A site layout plan showing the processing plant, infrastructure and the life of mine pit shell and orebody appears in Figure 18 (next page).

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Figure 18. *MPP site layout, stage 1 (foreground) and stage 2 (background)*

PSG Plant Design – PSG

The PSG facility is designed to produce spherical graphite that meets LIB anode physical product specifications and that can be purified to battery-grade, which is sold as PSG.

The PSG facility uses two broadly separated processing areas, mechanical shaping and purification, with associated services and reagent preparation. A simplified flowsheet is shown in Figure 19.

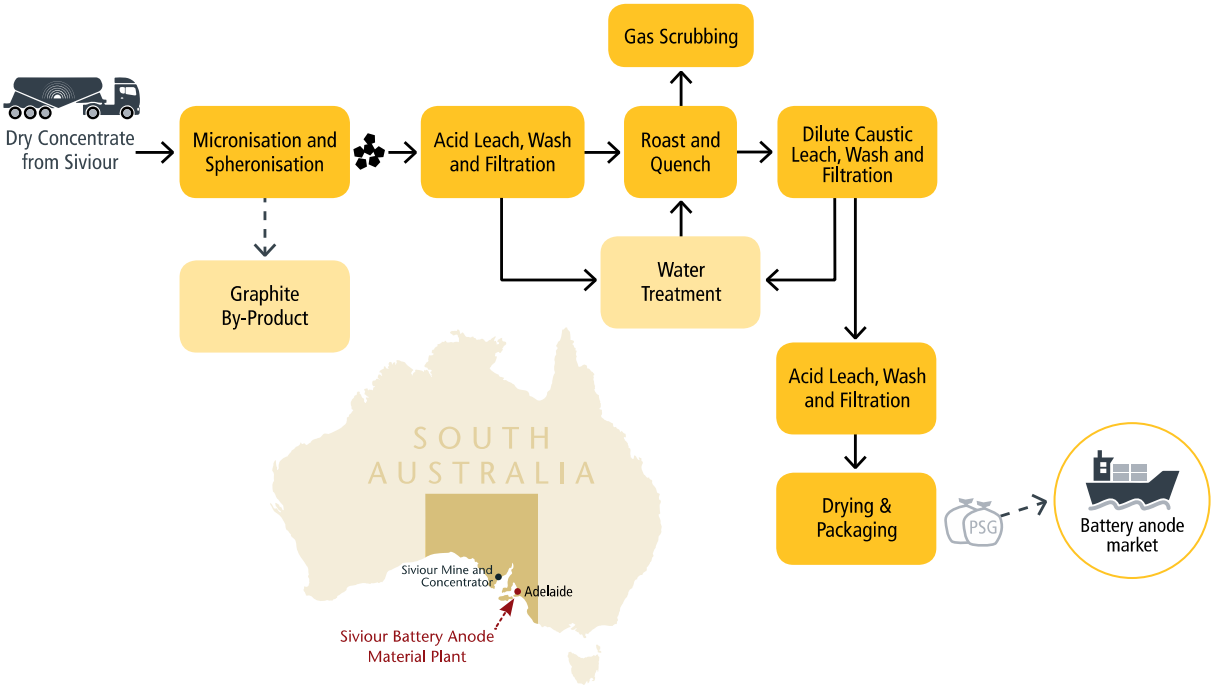

Figure 19. *PSG facility simplified process flowsheet*

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Mechanical Shaping

The PSG facility will receive Graphite Concentrates from the MPP at a purity of approximately 95% TGC and produce the final PSG products with a purity of greater than 99.95% TGC. Three products, differentiated by particle size, are included in the design: a primary spheroidal graphite with a D_{50} of 16 µm and two finer spheroidal graphite with a $D_{50} \leq 10$ µm (PSG_{10}). In addition to these products, an un-purified fines fraction will also be produced.

The mechanical shaping area will receive Graphite Concentrates and micronise and spheronise this feed material to produce the three intermediate products for subsequent purification. This process operates continuously, with the Graphite Concentrate being treated through a series of trains containing numerous mills, housed within manufacturing style buildings designed specifically for the application.

Spheronised products will be stored in silos ahead of the purification plant through which the three size fractions will be separately treated on a campaign basis.

Purification

Purification comprises an acid leach step, followed by a caustic roast and leach to remove silicates, and a second acid leach to remove the remaining impurities, with water washes at each stage to reduce impurity transfer.

Solutions will be circulated counter-current in the process and ultimately alkaline and acidic process water streams will be produced that will be treated via an on-site water treatment plant, recovering caustic for re-use in the process and producing solid residues for disposal or other use, as well as a treated process water.

Drying and Bagging

Final product from the purification stage will be fed to the spiral flash dryer.

Dried final product will be transferred to the product silo and from here to a PSG bagging plant, where it will be bagged and placed into containers ready for shipment.

Stage 1 and Stage 2 of the PSG facility have been designed as two separate processing plants, with no shared equipment or current allowances for shared services, however with sufficient area allowed for Stage 2 development.

A site layout plan showing the processing plant and infrastructure including the full Stage 2 development appears in Figure 20.

Figure 20. *PSG facility site layout*

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8. Infrastructure

The Siviour Mine, MPP and PSG facility are advantageously located close to existing infrastructure including gazetted highways and high voltage power supply. The PSG facility will also take advantage of nearby export ports (Port Adelaide) with container handling capability, natural gas supply pipelines and water supply sources.

Siviour Mine and MPP

Infrastructure to support the Siviour Mine and MPP operations will include:

- 33kv power supply, supplementary generation, solar PV arrays and reticulation infrastructure,
- Communications infrastructure,
- Raw water supply and distribution infrastructure and
- Access roads to the project site, plant and desalination plant.

Electricity. For stage 1, the mine site, MPP and desalination plant will be primarily supplied from a new 33kV grid connection to the existing SA Power Networks (**SAPN**) distribution network. The existing network has capacity to supply the majority of Renascor requirements, with supplementary power supply via solar photovoltaics arrays and on-site diesel generation. To facilitate the grid connection a new 12.5km long 33kV overhead powerline (**OHL**) will be constructed to connect the MPP to the SAPN distribution network, along with a 12km extension to connect the desalination plant.

Power will be reticulated on site at 33kV to distribute power to substations at the comminution, deslimes / services and administration / mining operations.

The solar PV array will also be installed 'behind the meter' at both the mine site and desalination plant to provide the project with low-cost, renewable electricity. A third party will build, own, operate and maintain (**BOOM**) the PV array and will provide power through a power purchase agreement. The PV array BOOM model has been selected to minimise Renascor upfront capital costs.

Stage 2 power supply will necessitate a new direct 66kV supply from the SAPN Yadnarie Substation, which will provide sufficient capacity for all stage 1 and 2 loads.

Communications. Communications to site are assumed to be provided via a point-to-point microwave link to a receiving tower located at the mine site.

Water supply and management. Raw water for use at the mine site will be provided via a new seawater desalination plant, located approximately 12 km to the south of the Mine and MPP, via a pipeline to supply the raw water storage tank at the mine site.

Feed water for the desalination plant will be sourced from the ocean via pipeline for Stage 1 of the development and it is proposed to be supplemented by bore water from beach wells for Stage 2. Desalination outflow will return to the ocean via pipeline with sufficient capacity for both stage 1 and 2 flows.

Transport. Current site access is from the Lincoln Highway at Arno Bay via Five Cross Road and Wharminda Road. To facilitate heavy vehicle traffic for both construction and transport of concentrate between upstream and downstream, a link road has been proposed to connect Five Cross Road to Schmitt Road, which has already been upgraded with right hand turn lanes and acceleration lanes suitable for heavy vehicles at the Lincoln Highway.

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PSG Facility

Infrastructure to support the PSG facility at Bolivar will include:

- Power supply and 33kV reticulation infrastructure,
- Communications infrastructure,
- Raw water supply, treatment and distribution infrastructure,
- Natural gas supply and
- Access roads to the project site.

Electricity. Power to the PSG facility for both Stage 1 and Stage 2 is to be supplied via grid connection to the existing electricity network sourced from the nearby Parafield Gardens (**PGW**) West substation. The connection will either comprise a direct connection to PGW at 33kV and then a new OHL to Renascor's site or a connection to an existing 66 kV OHL adjacent to the site, with engineering studies progressing on the preferred connection arrangement.

Natural gas. The gas supply for the site is proposed via connection to the SEAGas transmission pipeline, which passes immediately to the south of the PSG facility. Off take from the SEAGas pipeline will be at an existing valve station, with an approximately 500m long lateral transporting gas to the point of distribution within the facility. A pressure reduction and metering station, owned and operated by SEAGas, will be located within the site boundary. Downstream of the custody transfer point, gas will be reticulated at low pressure to site users in buried pipework.

Water supply and management. The raw water supply for the PSG facility will be sourced from SA Water and drawn from the Bolivar Wastewater Treatment Plant (**WWTP**) outfall channel adjacent the site. Water taken from the Bolivar WWTP outfall channel will be treated on-site through the demineralised water treatment plant, comprising ultrafiltration, double-pass reverse osmosis and electro-deionisation to produce demineralised water for process use.

Neutralised and treated process water from the on-site water treatment plant, along with brine produced by the demineralisation plant, will be returned to SA Water's outfall channel downstream of the intake, as part of a re-use and recycle system with SA Water's treated wastewater. The on-site water treatment plant utilises conventional water treatment equipment to recover the majority of caustic for re-use in the purification system, removing impurities through precipitation with solids and neutralising and treating the remaining process water which is then returned to the outfall channel.

Potable water for the PSG facility will be provided by connection to the local scheme water system.

***Transport*.** The main entrance to the Bolivar site will be via Robinson Road, just south of the intersection with Waterloo Corner Road. Current road access to the site is from either the North-South Motorway or the Princes Highway via Waterloo Corner Road. Upgrades to Robinson Road, including the existing intersection with Waterloo Corner Road, is expected to be undertaken by third-parties. These upgrades will be designed to allow access to the site by AB Triple configuration road trains and hence no further upgrades to existing public roads will be required for the Project.

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9. Environmental and Community

Renascor's environmental assessments for the Siviour BAM Project have been conducted as part of the compliance, permitting and approvals processes for each of Renascor's assets to establish baseline characteristics and the project's impact on the environment. Relevant studies have not indicated any material impediments to the proposed development of the project.

Siviour Graphite Mine and MPP

Mining projects in South Australia are assessed and approved under the Mining Act through a two-part process; the granting of a ML and then the approval of a Program for Environment Protection and Rehabilitation (**PEPR**). Renascor received mining approval through the granting of a ML in April 2019. The PEPR, which is required prior to the commencement of construction, was approved in November 2022. No other primary approvals are required to commence construction of the Mine and MPP.

Following detailed investigations into the potential to source water from local aquifers or existing infrastructure, a seawater desalination plant was identified as the best solution for water supply for the Mine and MPP. Along with providing a reliable water supply and an independent water source, the project avoids having any adverse impacts on the regional water supply network, an area that has been subject to significant and ongoing water stress.

The approval for the Desalination Plant was granted under the Planning, Development and Infrastructure Act in December 2021.

PSG Facility

As a project of substantial scale which supports Australian Government objectives regarding in-country critical minerals capacity, the PSG facility is a project of state significance. Accordingly, and commensurate with the PSG facility's anticipated scale, intensity and potential impacts, the facility was declared by the South Australian Minister's delegate to be an Impact Assessed Development under the Planning, Development and Infrastructure Act 2016 in December 2022, requiring preparation of an Environmental Impact Statement (**EIS**).

Following this declaration, Renascor submitted a Development Application that included initial baseline environmental studies to establish the characteristics of the site and assist in identifying the potential impacts of the project.

This baseline data and preliminary assessment was referenced by the State Planning Commission to develop project-specific Assessment Requirements (issued to Renascor in March 2023) for the preparation of the EIS.

Renascor have integrated the principles of circular economy into the project design to reduce raw inputs, transport and packaging, as well as resale of products otherwise considered to be waste. Renascor aspires to be part of the broader response to climate change by increasing South Australia's capability to produce critical minerals for production of renewable energy technologies.

Community

Renascor is committed to effective, ongoing and transparent consultation with stakeholders directly and indirectly impacted by the Project. As part of this undertaking, Renascor is committed to being a responsible and sustainable business by ensuring its operations have a positive impact on the communities and environments where it operates. Renascor acknowledges and respects the Traditional Custodians and Elders of the land on which it operates.

Renascor remains committed to developing long term relationships with its stakeholders and continues to work to identify and provide opportunities that create shared value. Renascor's aim is to minimise potential negative impacts and maximise beneficial outcomes of its Project, within both the Arno Bay and Bolivar communities.

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10. Capital Costs

The capital cost estimate for the BAM Study has been developed in accordance with the AusIMM guidelines (with a target accuracy of ±15%) and has been compiled by GRES. Capital items relating to mining have been compiled by Optima Consulting and Contracting. Renascor has obtained cost estimates for the remaining capital items from external consultants or suppliers.

The estimate includes all costs associated with project management, process engineering, design engineering, drafting, procurement, construction and commissioning services required to construct and commission the processing facilities and associated supporting infrastructure. In addition, the estimate includes costs associated with the establishment of mining services facilities, critical spare parts and the provision of first fills and consumables required for the commencement of operations. Pricing for the estimate was obtained predominantly during the fourth quarter of 2022, with additional pricing obtained in the first quarter of 2023; subsequent escalation has been excluded from the capital cost estimate.

Parameter	Stage one		Stage two	
	A$M	US$M	A$M	US$M
Mine and Mineral Processing Plant				
Mining (pre-production)	$9.7	$6.6	-	-
Mineral processing plant (MPP)	$132.1	$89.8	$122.6	$83.4
Infrastructure	$55.1	$37.5	$37.2	$25.3
Owner's costs, including contingency	$17.6	$12.0	$13.5	$9.2
Total Mine and MPP	**$ 214.5**	**$ 145.9**	**$ 173.3**	**$ 117.9**
PSG Facility				
PSG Processing Plant	$265.4	$180.5	$261.5	$177.8
Infrastructure	$96.9	$65.9	$85.8	$58.3
Owner's costs, including contingency	$32.3	$21.9	$29.8	$20.3
Total PSG Facility	**$ 394.6**	**$ 268.3**	**$ 377.1**	**$ 256.4**

Table 6. *Summary of capital cost estimates*

A summary of each to the parameters included in the Table 6 is provide below.

Mine and MPP

Mining (pre-production). Pre-production mining capital costs include:

- Pre-strip mining,
- Explosives magazine and charge up truck,
- Light vehicles and service truck,
- Clearing, grubbing and construction of haul road,
- Plant and equipment mobilised to site and
- Communications, survey, computers and software

Mineral Processing Plant (MPP). The capital costs for the MPP includes the establishment of a functioning process plant, plant specific infrastructure, equipment supply, installation labour and materials and freight to site, including:

- Stockpile area, crushing circuit and conveyors,
- Scrubbing, pebble crushing, primary grinding and classification,
- Scavenger, cleaner, regrind and flotation circuits,

- Concentrate filtration, drying, storage and load-out facilities,
- Tailings discharge (disposal) system,
- Reagents storages, mixing and distribution systems,
- Laboratory, workshop, warehousing, and stores,
- Change house, ablutions, first aid, emergency response facilities and crib rooms and
- Indirect costs such as construction facilities, equipment, laydown areas, cranes, site supervision and management.

Mineral Processing Plant Infrastructure. Capital costs for the MPP infrastructure includes:

- Seawater desalination facility,
- Communications and connection to power distribution network,
- Mine dewatering and mining infrastructure,
- Site access road upgrades,
- Accommodation and
- Tailings storage facility and mine waste rock storage facility

PSG Facility

PSG Processing Plant. The capital costs for the PSG processing plant are made up of the establishment of a functioning process plant, plant specific infrastructure, equipment supply, installation labour and materials and freight to site, as detailed below for:

- Concentrate receival, mechanical shaping, milling and classification,
- Purification and filtration,
- Product / fines drying and bagging,
- Reagent storages, mixing and distribution systems
- Solid and liquid waste disposal and
- Indirect costs such as construction facilities, equipment, laydown areas, cranes, site supervision and management.

PSG Processing Plant Infrastructure. Capital costs for PSG processing plant infrastructure include:

- Demineralised water and process water treatment plants,
- Water discharge and supply infrastructure, stormwater management,
- Connection to the power transmission network,
- Workshops, warehousing, stores, laboratory, administration, training, change-house and ablutions facilities and
- Utilities, including steam and compressed air systems and natural gas.

Owners Cost

Owner's costs have been compiled inclusive of the following:

- Owner's project management team and consultants, and
- Operational readiness items including pre-operations costs, pre-production personnel, business systems, IT equipment and software, regulatory compliance monitoring equipment, insurances and other expenses.

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Contingency and Growth

Contingency and growth, commensurate with the level of design and estimating confidence, has been included in the capital cost estimate.

Allowances in the estimate vary for different types of costs according to the level of engineering development associated with equipment/materials pricing, estimates of material quantities, estimates of equipment, labour requirements and site costs. Project contingency and growth is summarised in Table 7.

Parameter	Stage one			Stage two		
	%	A$M	US$M	%	A$M	US$M
Mine and MPP	9.4	$19.1	$13.0	9.5	$16.5	$11.2
PSG Facility	10.0	$39.2	$26.7	10.0	$37.7	$25.6

Table 7. *Summary of growth and contingency*

Sustaining Capital

Sustaining capital covers the funding required over the life of the project to replace items of plant, infrastructure and equipment that have reached their maintainable and useful life or planned expenditure. Sustaining capital costs have been estimated, comprising:

- Mine and MPP average A$1.9M per annum over life of mine, inclusive of sea water desalination plant, replacement mining equipment, expansion of mine dewatering infrastructure, and re-sheeting of unsealed roads,
- Tailings storage facility sustaining capital for wall raises average A$2.4M per annum over life of mine and
- PSG Processing Plant averages A$4M per annum over the life of asset.

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11. Operating Costs

A summary of operating costs is provided below in Table 8.

Parameter	Estimated value*					
	First 10 Years	First 20 Years	LOM (40 years)	First 10 Years	First 20 Years	LOM (40 years)
Graphite Concentrate						
	A$/tonne of Graphite Concentrate			US$/tonne of Graphite Concentrate		
Mining	161	189	140	109	128	95
MPP Processing	323	341	431	220	232	293
General & Administration (G&A)	36	37	47	24	25	32
Logistics	76	76	76	52	52	52
Total	**596**	**643**	**694**	**405**	**437**	**472**
Purified Spherical Graphite (PSG)						
	A$/tonne of PSG			US$/tonne of PSG		
PSG Processing	1,328	1,316	1,374	903	895	934
G&A	89	88	92	61	60	63
Logistics	145	128	125	99	87	85
Sub-total (cost to convert Graphite Concentrate into PSG)	**1,562**	**1,532**	**1,591**	**1,063**	**1,042**	**1,082**
Graphite Concentrate Feedstock cost	1,058	1,055	1,123	719	717	764
Sub-total (gross cost of producing PSG)	**2,620**	**2,587**	**2,714**	**1,782**	**1,759**	**1,846**
By-product credit	(453)	(534)	(578)	(308)	(363)	(394)
Total	**2,167**	**2,053**	**2,136**	**1,474**	**1,396**	**1,452**

Table 8. *Operating cost estimates*

*** The commencement of PSG production is assumed as year one, with the values shown including the Stage 2 expansion.**

All operating cost estimates for the BAM Study have been prepared to Class 3 standard, suitable for a definitive feasibility study in accordance with the AusIMM guidelines (with a target accuracy level within ±15%) and are subject to the cautionary statements relating to study parameters on page 7 of this announcement.

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12. Marketing and Offtake Strategy

Renascor's strategy is to obtain direct exposure to the high growth lithium-ion battery (**LIB**) sector through the production and sale of PSG for use in LIB anodes. By producing PSG, Renascor expects to sell products directly to large-scale LIB anode manufacturers, while also realising a robust profit margin. Renascor also considers that it can develop a strong marketing position as a reliable and competitive ex-China producer of PSG and therefore obtain favourable long-term offtake terms.

Renascor's strategy is informed by extensive market development activities, including direct engagement with end-users of graphite products, market and financial analysis, engagement with industry and trade organisations and product qualification test work, including testing undertaken with end-users.

Renascor has entered into several non-binding memoranda of understanding (**MOU**s) for the supply of PSG with companies active in the LIB anode sector, including with POSCO, a South Korean conglomerate and largest anode manufacturer outside of China[15], Mitsubishi Chemical, Japan's largest chemical supplier and one of the world's largest anode manufacturers[16], Japanese based global trading company Hanwa Co., Ltd[17], Jiangxi Zhengtuo New Energy Technology Co. Ltd., a top ten anode producer globally[18], and Chinese anode company Minguang New Material[19].

PSG Product specifications

PSG must meet purity, size and other product quality specifications for use in LIB anodes. Renascor has undertaken extensive engagement with anode manufacturers, including multiple rounds of customer qualification of PSG produced from the Siviour orebody. Feedback from anode manufacturers suggests that Renascor's PSG will be a sought-after product.

Based on qualification test work and engagement with anode companies, Renascor has adopted physical and chemical specifications for three sizes of PSG that are widely used by anode manufacturers, including a primary product with a size (D_{50}) of 16 microns and smaller-size fractions of 10 microns or less.

Forecast pricing

The BAM Study contemplates the sale of PSG, with additional sales of a PSG by-product into the fine flake graphite market, and limited sales of Graphite Concentrates for the period prior to the construction of the initial PSG facility and the ramp-up of the Stage 2 PSG facility.

Graphite is generally sold on a directly negotiated basis between suppliers, end-users and intermediaries without regard to a recognized reference price.

For the purposes of project valuation and product pricing, Renascor commissioned Fastmarkets, an independent marketing consultant with expertise in PSG pricing, to prepare a market report, including a ten-year forecast for PSG. The market report supports prices increasing from US$4,150 per tonne in 2024 to US$5,035 per tonne in 2033 (averaging US$4,716 over ten-year period). The Fastmarkets price forecast has been adopted for the BAM Study.

By-product pricing is based on extensive engagement with end-users, intermediaries, specialty price reporting consultants and other graphite market participants regarding the potential sale of PSG by-products. As part of the BAM Study, Renascor provided sample by-product to customers for testing, with the results suggesting the by-product will be a sought-after product. For the purposes of project valuation and product pricing, Renascor commissioned an independent specialist graphite company to prepare a market report, including a ten-year forecast for by-product pricing. The market report supported prices increasing from US$432 per tonne to US$790 per tonne (averaging US$650 per tonne over the ten-year period). The by-product price forecast has been adopted for the BAM Study.

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13. Financial Evaluation

Estimated values of key parameters of the BAM Study are shown below in Table 9.

Parameter	Stage-one		Stage-two	
Life of mine (LOM)	40 years			
Annual ore mining rate capacity (tpa)	825,000		1,650,000	
Annual Graphite Concentrate production capacity (tpa)	75,000		150,000	
Annual PSG production capacity (tpa)	50,000		100,000	
CAPEX Mine and MPP ($M)	A$214.5	US$145.9	A$173.3	US$117.8
CAPEX PSG Facility ($M)	A$394.6	US$268.3	A$377.2	US$256.5
Average operating cost of production of Graphite Concentrate (per tonne of Graphite Concentrate)	A$596		US$405	
	Years 1 to 10			
	A$694		US$472	
	LOM			
Average operating cost of production of PSG (gross, per tonne of PSG)	A$2,620		US$1,782	
	Years 1 to 10			
	A$2,714		US$1,846	
	LOM			
Average operating cost of production of PSG (with by-product credit)	A$2,167		US$1,474	
	Years 1 to 10			
	A$2,136		US$1,452	
	LOM			
Payback Stage 1 and 2 (from commissioning Stage 1 PSG facility)	4.5 years			
NPV_{10} (real, after-tax)	A$1,486 million		US$1,010 million	
IRR of integrated project (after-tax)	26%			
EBITDA of integrated project (annual average, LOM)	A$363 million		US$247 million	

Table 9. *Financial highlights*

A sensitivity analysis was completed to assess the impact of a range of key parameters to the project net present value (**NPV**) using a 10% after tax discount rate, expressed in Australian Dollars.

These parameters include operating expenditure, capital expenditure, Australian/US exchange rate and product prices, including PSG, By-product and Graphite Concentrates. Refer to Figure 21 which presents the results of the sensitivity analysis.

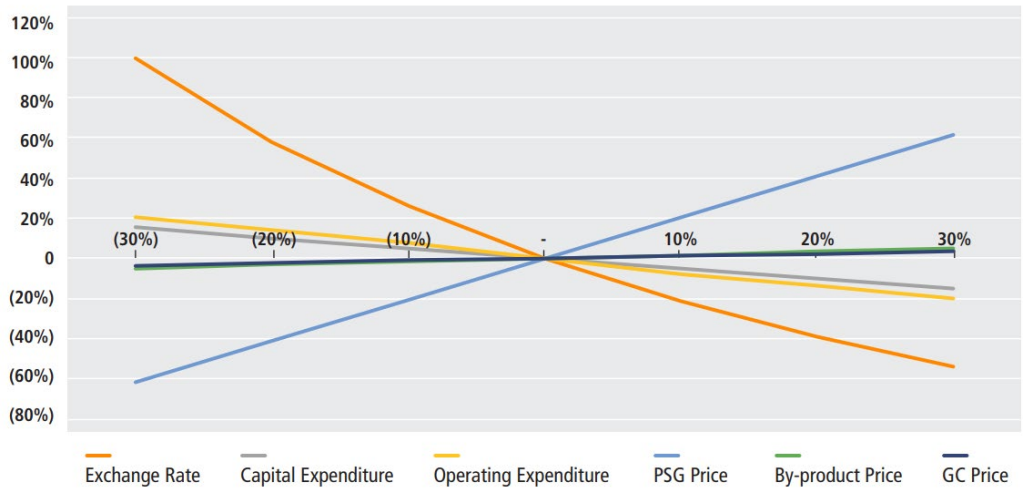

Figure 21. *Sensitivity analysis*

14. Funding

The start-up capital requirement for the Project is A$214.5 million, consisting of the construction of the initial MPP. The initial PSG facility will be constructed a year later for an estimated A$394.6 million.

Renascor has phased the development of the initial MPP and PSG facility to reduce the upfront project capital requirement and reduce execution risk prior to the larger capital requirement for the initial PSG facility.

Renascor currently has a cash balance of A$129 million and expects to fund the balance of the initial MPP capital costs with debt finance. Financing arrangements are advanced, with debt funding expected to be made available for both the initial MPP and PSG facility from multiple sources.

These sources include a conditionally approved A$185 million debt facility received from the Australian Government's Critical Minerals Facility in February 2022 to support the integrated BAM Project. The $2 billion Critical Minerals Facility was established in September 2021 to assist the development of Australian critical minerals projects and to secure the vital supplies of resources needed to drive the new energy economy and support the resources jobs of the future.

In addition, Renascor is progressing discussions with EFA and the CEFC to secure further debt facilities for the BAM Project. The interest from EFA and CEFC does not constitute a commitment to provide finance and there is no certainty that an agreement will be reached between the parties.

As Australia's export credit agency, EFA, provides commercial finance for export trade and infrastructure projects that support broader economic security and foreign policy objectives. EFA administers the Australian Government's National Interest Account, which includes the Critical Minerals Facility described above.

The CEFC invests on behalf of the Australian Government in the clean energy transition, including in the development of clean energy technologies that can decarbonise the economy and help Australia reach its renewable energy and emissions reduction goals.

In addition to the Critical Minerals Facility, EFA and the CEFC, Renascor is progressing due diligence with commercial lenders who have expressed interest in supporting the BAM Project.

Renascor has also commenced discussions with potential project partners, including potential offtakers, regarding equity investments to help further meet the BAM Project's capital requirements.

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15. Implementation Schedule

The development plan for the BAM Study is based on a staged implementation schedule, commencing with construction of an initial MPP to produce approximately 75,000 tonnes of Graphite Concentrates per annum. During commissioning of the MPP, construction is planned to commence on an initial PSG facility to produce approximately 50,000 tonnes of PSG per annum.

Following commissioning of the PSG facility, Renascor plans to construct substantially identically scaled MPP and PSG operations to increase the total PSG production capacity up to 100,000 tonnes per annum.

The proposed implementation schedule is indicative only and subject to project and board approvals, funding and securing offtake agreements. Pending completion of the foregoing, the final investment decision (**FID**) of the initial MPP is planned for Q4 2023, with first production of Graphite Concentrates planned for Q1 2025. The proposed FID for the initial PSG facility is planned for Q3 2024, with first production of PSG planned for Q2 2026. For the period between the commencement of production of Graphite Concentrates from the MPP and the production of PSG, Graphite Concentrates will be sold, after which they will be utilised by the PSG facility as feedstock in the production of PSG.

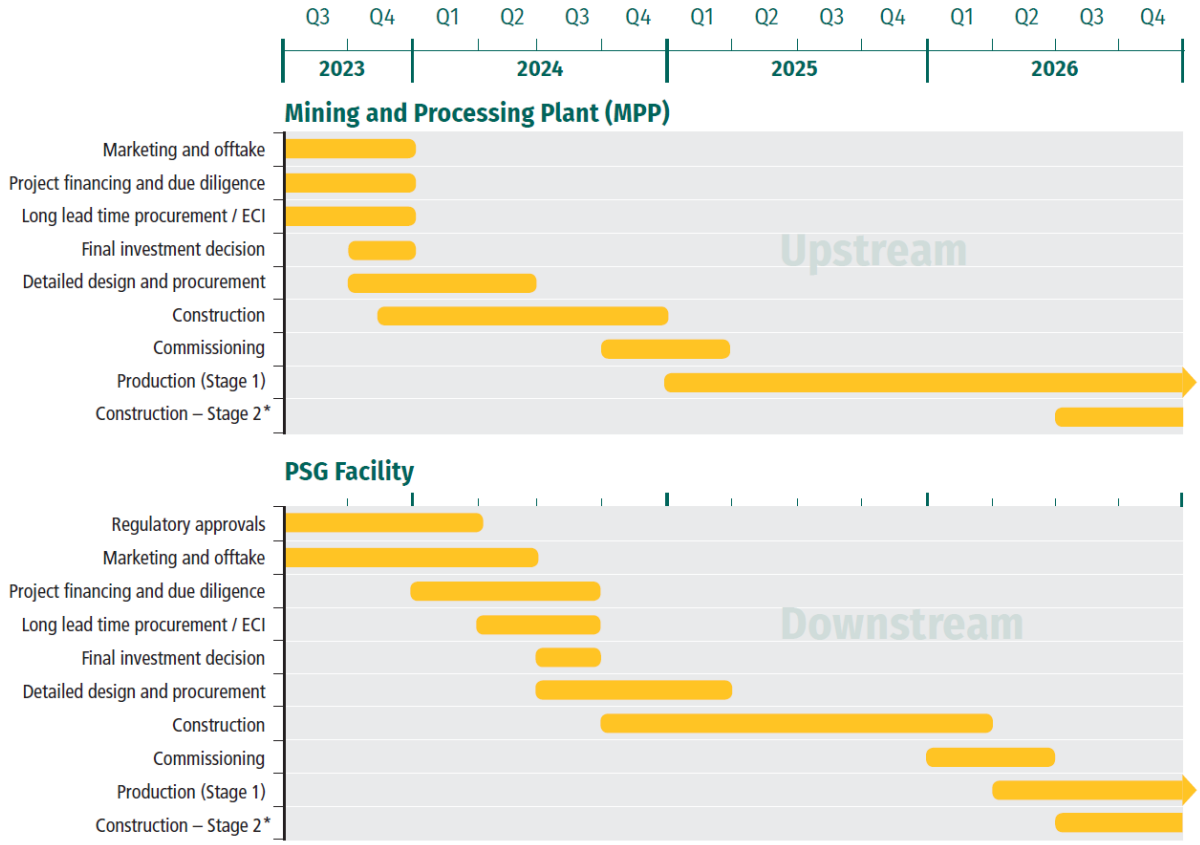

Table 10. *Indicative summary project schedule*

* Production of Graphite Concentrates from the Stage 2 MPP is scheduled to commence in Q3 2027, with production of PSG from the Stage 2 PSG facility scheduled to commence in Q2 2028. For the approximate nine-month period between commencement of production of the Stage 2 MPP and the Stage 2 PSG facility, Graphite Concentrates produced from the Stage 2 MPP are expected to be sold, after which they will be utilised by the Stage 2 PSG facility as feedstock in the production of PSG.

[1] The BAM Study contemplates using Graphite Concentrates from the MPP as feedstock for to produce PSG, with the exception of Graphite Concentrates produced from the Stage 1 MPP prior to the production from the Stage 1 PSG facility and Graphite Concentrates produced from the Stage 2 MPP prior to the production from the Stage 2 PSG facility.

[2] See Renascor ASX announcement dated 1 July 2020.

[3] See Renascor ASX announcement dated 11 November 2019.

[4] See Renascor ASX announcement dated 21 February 2019.

[5] AusImm 2012. Cost Estimation Handbook. 2nd Edition, Monograph 27. The Australian Institute of Mining and Metallurgy.

[6] The lease option includes an option fee payment of an amount Renascor does not consider material.

[7] See Renascor ASX announcement dated on 18 August 2022.

[8] See Renascor ASX announcement dated 21 July 2020.

[9] Columns may not total exactly due to rounding.

[10] Columns may not total exactly due to rounding.

[11] See Renascor ASX announcements dated 12 July 2021, 28 July 2021, 31 August 2021, 26 November 2021, 13 December 2021 and 10 January 2022.

[12] See Renascor ASX announcement dated 10 January 2022.

[13] See Renascor ASX announcement dated 10 January 2022.

[14] Dorfner ANZAPLAN is a leading consultancy and engineering company with experience in battery minerals. Dorfner ANZAPLAN's graphite expertise includes testing, developing, piloting and adapting mineral processing parameters to purify Graphite Concentrates to LIB grade levels of +99.95% carbon.

[15] See Renascor ASX announcement dated 25 August 2021.

[16] See Renascor ASX announcement dated 19 July 2023.

[17] See Renascor ASX announcement dated 25 March 2021.

[18] See Renascor ASX announcement dated 27 January 2021.

[19] See Renascor ASX announcement dated 29 September 2020.

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Appendix 2

Material Assumptions

Material assumptions used in the estimation of the production targets and associated financial information relating to the study discussed in this announcement are set out in the following table.

Criteria	Commentary
Study status	The production targets and financial information in this Battery Anode Material Study (BAM Study) are based on a Definitive Feasibility Study ("DFS") level assessment, with cost estimates prepared to a target accuracy level of ±15% in accordance with the Australian Institute of Mining and Metallurgy (the AusIMM) guidelines (AusIMM 2012 Cost Estimation Handbook, 2nd Edition, Monograph 27).
Site visits	A site visit to the Siviour deposit was undertaken by Optiro (Mr J Froud) during November 2016 to inspect the diamond drilling, sampling, logging and to inspect the drill core. Mrs C Standing (Snowden Optiro) visited the drill sample storage facility in Adelaide in November 2018 to inspect the diamond core and RC chip samples, and to review this with respect to the assay data, geological logging and cross-section interpretations. RC chips and diamond core from three cross-sections was examined. The Competent Person for Optima Consulting and Contracting, Ben Brown, visited site in December 2018, and has viewed drilling core.
Mineral resource estimate underpinning the production target	The Mineral Resource estimate for Siviour declared in August 2022[41] underpins the production target related to the Graphite Concentrates that are processed into Purified Spherical Graphite (PSG) as contemplated by this study. This Mineral Resource estimate was prepared by a Competent Person in accordance with JORC Code 2012 (the JORC Code). The JORC Code (Clause 49) requires that industrial minerals must be reported "in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals" and that "it may be necessary, prior to the reporting of a Mineral Resource or Ore Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability." The likelihood of eventual economic extraction was considered in terms of possible open pit mining, likely product specifications, possible product marketability and potentially favourable logistics to port.
Cut-off factors	Cut-off grade was based on the processing plant feed grade that produced the breakeven point of product revenue less all associated costs except mining costs on a block-by-block basis in the resource model. Low grade Cut-off grade was calculated at 2.7%, 2.8% and 3.2% TGC for Metcodes 1, 2 and 3, respectively. Metcode categories were created to represent different 'ore types' within the deposit – 90% of the ore processed is Metcode 1.
Classification	Mineral Resources converted to Ore Reserves as per JORC 2012 guidelines.
Mining factors or assumptions	This study is based on mining and processing of graphite ore that is obtained from the Siviour Graphite Deposit. The BAM Study contemplates mining based on an open pit operation utilising conventional drill and blast, load and haul and crusher feed. Whittle LG shell optimisation was carried out on Measured, Indicated and Inferred Resources to identify the mining sequence and location of economic shells. The optimisation was constrained by the Driver River in the west and south and constrained by public unsealed roads to the north and east. The optimised selected shells were then used to base detailed mine designs. The mine designs were then scheduled with the results placed in a cost model to evaluate the feasibility of mining these designs. The mining method to be used is conventional

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	truck and excavator mining with drill and blast for fresh, partially weathered rock and all ore. Alluvium and weathered rock is assumed to be free dig with some minor ripping expected in weathered rock. This is supported by drill core samples and the geotechnical rock strength analysis in the PFS. This mining method suits the thick flat lying shallow nature of mineralisation and results in a low stripping ratio of 1.5 over the first ten years of mine life and 1.9 over the life of mine. Other bulk mining methods were assessed with truck and excavator conventional mining clearly found to be the most suitable mining method. Pit walls were constrained to recommended values based on a Geotechnical assessment by AMC Consultants. Mining assumes that the ground water level is pumped below the bottom level of mining and that pit wall conditions are dry. UCS and metallurgical test data was used to establish drill and blast requirements. The cut-off grade was applied to the resource model to flag possibly economic blocks. A 1m skin was placed around these blocks and flagged to represent dilution from mining on each bench and projected up 2m to represent bench recovery. The resource model was then transferred into a 10x10x2m mining model to create a diluted mining model. Overall resource recovery is around 98% with around 3% dilution. Minimum mining width is 20m but due to the flat lying nature of mineralisation is not a constraint on mining. Over the 40-year life of mine, approximately 26% of the ore processed is within the Measured Mineral Resource category, approximately 69% is with the Indicated Mineral Resource category, and approximately 5% is within the Inferred Resources category. Removing Inferred material makes no material difference to project economics. Inferred material is generally at the indicated boundary and part of the Indicated only Whittle shell and mine design volumes and is mined incidental to Indicated material. Infrastructure requirements are modest for the selected mining method with no upgrade of nearby services and infrastructure required.
Metallurgical factors or assumptions	The metallurgical process to produce Graphite Concentrate is to crush, grind and float which is common for this style of mineralisation and is commonly used in mine sites globally. Metallurgical test work was conducted on composite samples which included lithological variations with a range of head grades; acceptable grade and recovery was achieved. No deleterious elements have been identified. The concentrate produced from test work is at the benchmarked 94% TGC purity or above. The parameters for the processing of Graphite Concentrates into Purified Spherical Graphite are based on test work (bench scale and locked cycle tests) completed in 2022 and 2023 with German battery mineral specialist Dorfner ANZAPLAN on the flowsheet which was proposed by ANZAPLAN in that test work. The Graphite Concentrates used in this test work were produced during a successful pilot plant campaign, using Siviour ore, conducted in 2021[42].
Infrastructure and logistics	The infrastructure required to support the mining and processing operation includes: a tailings storage facility, site communications, accommodation, water supply pipeline, desalination plant, access roads within the plant and the project site, powerline from a SAPN connection point, office and employees' facilities and upgraded roads as required for site access and logistics. The infrastructure required to support the PSG facility includes: roadways, administration including first aid room, change house and amenities facilities, light vehicle car parking, workshop and warehouse facility, power supply, water supply / return pumps, tanks and pipelines, sewage services, stormwater management, security fencing, and other miscellaneous items. The BAM Study is based on siting the PSG facility in the northern Adelaide site of Bolivar. This study assumes that PSG product will be bagged into 1t bulk bags and then packed into 40-foot sea containers, that are loaded with approximately 21t

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	or 26t of cargo. The sea containers will be transported to the nearby Port of Adelaide for export.
Environment and permitting	Ongoing environmental assessment for the PSG facility is based upon studies initiated as part of the compliance and approvals process to establish baseline characteristics, including water, air, noise, flora, fauna, socio-economic, traffic and transport, cultural heritage and visual amenity, including historical and recorded data. These studies support an Environmental Impact Statement. Renascor has adopted an integrated planning approach, feeding results from stakeholder engagement and environmental studies into the project to minimise potential impacts on the surrounding environment and community, whilst reducing regulatory risk. Material environmental approvals for the mine and MPP have been received and Renascor consider that minor secondary approvals are unlikely to cause a material impediment to the project implementation.
Capital costs	The capital cost estimate for the PSG facility, MPP and related infrastructure costs at both sites has been compiled by GR Engineering Services (GRES) based on a preliminary process design, for the design, supply, fabrication, construction and commissioning of the facility. The process flowsheet derived from ANZAPLAN underlies the basis of this estimate. The estimate has been prepared based upon equipment quotations, current in-house data from recent projects, industry standard estimating factors and benchmarking against other projects, and excludes duties and taxes, working capital, financing costs, relocation and resettlement costs, rehabilitation and closure costs. A contingency and growth allowance has been applied to the estimate for direct and indirect costs, based on a risk-based allocation of each work breakdown area for all facilities. The cost estimate was compiled in A$ with a base date of Q1 2023 with no escalation allowance, and to a target accuracy of ±15%, with the exception the water treatment plants at the PSG facility which is regarded as having an accuracy of ±30%. EPCM refers to engineering, procurement and construction management costs and was calculated based on directly estimated hours to produce deliverables or time-based durations on activities. The estimated owners' costs were prepared by Renascor based on estimates for the Owner's project team, pre-production personnel and other operational readiness requirements. Owners' costs related to road and intersection upgrades, regulatory monitoring and compliance, ecological offsets, power supply estimates and costs related to the desalination plant were obtained from contractor tender submissions, vendor received quotations or third-party consultants with input from other consultants and suppliers. Pre-production development costs related to land purchase at Arno Bay are excluded and assumed to be purchased prior to the financial investment decision for mine and MPP development. A rehabilitation bond as required by the State Government have been included in the funding consideration but have not been treated as capital expenditures. Working capital requirements for the period prior to final investment decision have not been included as capital costs or within the cashflow model.
Operating costs	The operating cost estimate for the BAM study includes all costs associated with processing, infrastructure, logistics and site-based general and administration (G&A) costs to produce PSG, Graphite Concentrates and the fines by-product for Stage 1 and Stage 2. G&A costs presented in operating cost tables within this

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	document represent annual average estimates based on Stage 2 only. The operating cost estimate is presented on an annualised (real) basis and has included an initial ramp-up period for both facilities however with no contingencies applied. Mining costs were developed by Optima Consulting based on a mine optimisation and design and the development of a mining schedule and equipment selected. The operating costs for the MPP and PSG facility have been developed in A$ by GRES with input from Renascor. Renascor provided input into the labour headcount, which was based on industry standards from similar operations. Publicly available salary and wages estimates from a reputable salary report was obtained and further refined by Renascor based on regional factors for the MPP and PSG. GRES obtained budget quotations for reagents and vendor received pricing on spares and other operating consumables. Diesel, gas and electricity pricing forecasts has been provided by an independent third-party consultant with expertise in developing forecasts for similar types of projects in South Australia. The estimate for product logistics is based on vendor received pricing for the transportation and handling of PSG, Graphite Concentrates and fines by-product in line with anticipated production schedules of each. Logistic costs for Graphite Concentrates only, presented in operating cost tables within this document, represent those attributable for transport of concentrates from Arno Bay to Bolivar and do not represent bagged Graphite Concentrates for sale. Pricing for the temporary bagging of Graphite Concentrates for sale is included in the total logistics pricing for the Project. In all cases, the operating cost estimates exclude exchange rate variations, price escalation and interest charges.
Revenue factors	Revenue from the project is derived from the sale of PSG, Graphite Concentrates and fines by-product. The sale of Graphite Concentrates is planned to occur initially in Stages 1 and 2 until the respective downstream PSG facilities have been constructed, otherwise all Graphite Concentrate produced is intended as feedstock to produce PSG. Renascor has established the characteristics of expected final products of PSG through test programs undertaken on composite samples from Siviour core and a bulk sample processed from sample ore. Renascor has received market feedback that PSG produced to a minimum purity of approximately 99.95% TC will be attractive to potential customers. PSG, Graphite Concentrates and fines by-product prices are based on discussions with end-users and market professionals, such as Fastmarkets and the examination of other studies and indexes. Risks associated with these assumptions used in product pricing include that the product split is not achieved and that the price assumptions are not met by the prevailing markets. Sensitivity analysis has been completed with key parameters assessed, with the project maintaining a positive net present value in all cases.
Schedule and timeframe	The project development schedule is based on this BAM study without material modification and having funding readily in place to commence construction of the MPP in Q4 2023. The schedule assumes a likely EPC/EPCM implementation strategy. The project implementation schedule also estimates a timeline of up to 24 months from funding approval of the PSG facility to operation and production of PSG. The schedule assumes that permitting for PSG facility progresses concurrently with the schedule. MPP approvals have already been received. The project development schedule in this study is based on the Stage 1 PSG facility construction occurring during the commissioning of the Mine and MPP, whereby Graphite Concentrates will be sold to the market in the period up until the PSG facility being available and producing PSG.

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	For the purposes of this BAM study, Year 0 is assumed as the year in which Graphite Concentrate production commences, whereas Year 1, is the first year of PSG production, unless stated otherwise. Pre-strip mining is set to commence 3 months before the completion of construction of the Mine and MPP.
Market assessment	PSG is considered a key growth market, as this product is utilised in the manufacture of anode material of the lithium-ion battery. There is perceived to be a potential market shortfall in the mid-term of PSG supply. This is understood from various market analyst reports. Based on discussions with end-users and market professionals and examination of other studies, Renascor also considers it reasonable to assume that there will be an adequate market for the fines by-product it contemplated producing in this study, along with Graphite Concentrates produced.
Funding	To achieve the range of outcomes indicated in the Battery Anode Material Study, total approximate funding of (1) A$214.5m or US$145.9m will likely be required for capital works, pre-production working capital and contingency required to construct the initial mine and MPP, and (2) A$394.6m or US$268.3m will likely be required for capital works, pre-production working capital and contingency required to construct the initial PSG. It is anticipated that the finance will be for the initial MPP will be sourced through a combination of existing cash and debt facilities, with the initial PSG facility financed through a combination of equity and debt instruments. The Company has sufficient cash on hand at the date of this announcement to undertake the next stage of planned work programs, including the next phase of engineering and long lead procurement items to produce Graphite Concentrates, continued metallurgical and battery testing and completion of downstream approvals. Renascor's Board believes that there is a reasonable basis to assume that funding will be available to complete all studies and finance the pre-production activities necessary to commence production on the following basis: • Renascor has a conditionally approved A$185 million debt facility received from the Australian Government's Critical Minerals Facility in February 2022 to support the integrated BAM Project. The $2 billion Critical Minerals Facility was established in September 2021 to assist the development of Australian critical minerals projects and to secure the vital supplies of resources needed to drive the new energy economy and support the resources jobs of the future; • Renascor is progressing discussions with Export Finance Australia (EFA) and the Clean Energy Finance Corporation (CEFC). The interest from EFA and CEFC does not constitute a commitment to provide finance and there is no certainty that an agreement will be reached between the parties; • Renascor has commenced discussions with potential project partners, including potential offtakers, regarding equity investments to help further meet the BAM Project's capital requirements; • Renascor's Board and executive team have a strong financing track record in developing resources projects; • Renascor has a proven ability to attract new capital; • Renascor's Board believes this BAM study demonstrates the project's strong potential to deliver favourable economic return; and • Other companies at a similar stage in development have been able to raise similar amounts of capital in recent capital raisings.
Economic	A discount rate of 10% real after tax has been used for financial modelling and all numbers are shown in real, 2023 dollars unless specified. The discount rate was selected as a generic cost of capital and considered a prudent and suitable discount rate for project funding and economic forecasts. The model has been run as a life of mine model, assumes the operation of both Stage 1 and Stage 2 of the

	MPP and PSG at the production rates outlined in Figure 16 and includes sustaining capital costs. The study outcome was tested for key financial inputs including price, capital and operating costs and US/AU exchange rate. All of these inputs were tested for variations of ± 30%.
Exchange rate	The exchange rate for the reporting of the results from this study is A$1.00 = US$0.68 which aligns with capital and operating cost and revenue estimates.
Social	This study contemplates siting the PSG facility in Bolivar, an existing industrial precinct situated in near proximity to shipping port. Renascor has had meetings with potential stakeholders within the Bolivar and Arno Bay areas, with further meetings expected to occur in the near term. There are no known community issues that Renascor has identified as being a likely material impediment to developing the project.
Other	There are several other material risks to this project including product price, competition, regulatory approval, social license, scheduling and other risks typical of projects of similar scale.
Audits or reviews	This study was internally reviewed by Renascor and other independent experts engaged by Renascor. No material issues were identified by the reviewers.

[41] See Renascor ASX announcement dated 18 August 2022.
[42] See Renascor ASX announcement dated 10 January 2022.

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