For personal use only

Siviour Battery Anode Material Project – 100% Australian-Made Spherical Graphite

IMARC INTERNATIONAL MINING AND RESOURCES CONFERENCE+EXPO
2 - 4 November 2022
ICC Sydney

3 November 2022

David Christensen
Managing Director

RENASCOR RESOURCES
Powering Clean Energy

Section 1:

Executive Summary

For personal use only

For personal use only

*Electric Vehicle growth is driving **annual increases of 29%** in demand for PSG for use in lithium-ion battery anodes*

Project Highlights

Renascor's Competitive Advantages:

- ✓ **Vertically integrated** operation to produce uncoated **Purified Spherical Graphite (PSG) located wholly within South Australia.**
- ✓ **World's 2nd largest Proven Graphite Reserve** and **largest Graphite Reserve outside of Africa[1].**
- ✓ The **favourable geology** allows manufacturing of PSG at costs that are competitive with current Chinese production and **advantaged over developments outside of China.**
- ✓ **Proven eco-friendly, HF-free purification process** endorsed by leading global anode companies.
- ✓ **Tier-1 jurisdiction** with low sovereign risk and access to established infrastructure.

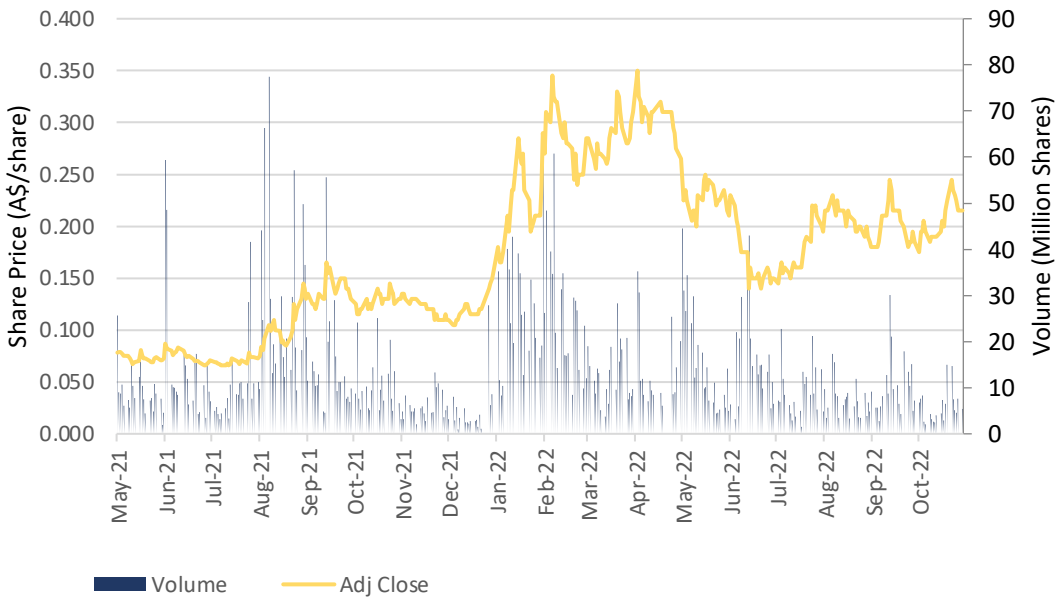
Project Status:

- Definitive feasibility study completed in 2019 demonstrated amongst lowest cost graphite concentrate production globally.
- Siviour Battery Anode Material (BAM) Project Study (June 2020) based on Stage 1 production of 28,000tpa of PSG; currently being revised to consider increased increased Stage 1 PSG production and additional PSG production stages.
- Downstream site secured from South Australian Government utility SA Water
- The Siviour BAM Project has been **granted Major Project Status by the Federal Government.**
- **Conditional approval received for a A$185 million Loan Facility** from Export Finance Australia via the Federal Governments A$ 2 billion Critical Minerals Facility.

Renascor Resources: Corporate Overview

For personal use only

Share Chart – ASX code: RNU



Shareholder Breakdown (31 October 2022)

Capital Structure

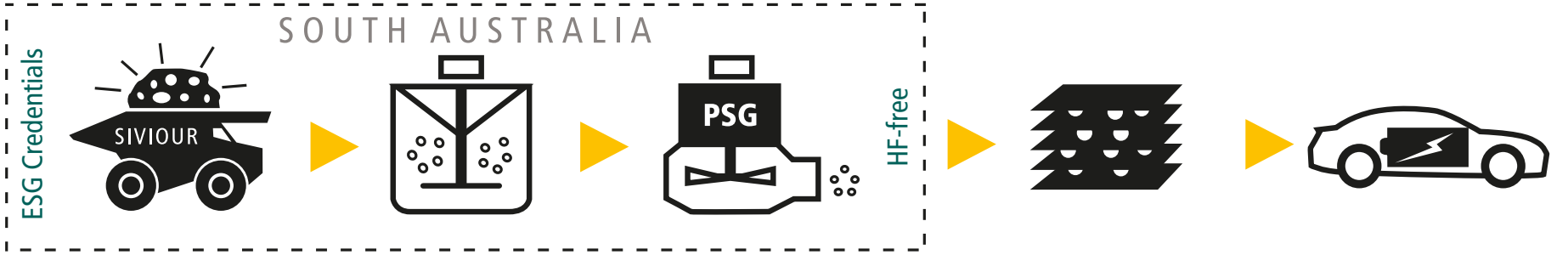
Shares on issue (31 Oct 2022)	2,177M
Listed Options (31 Oct 2022)	108M
Share price (31 Oct 2022)	A$0.215/sh
Market Cap (at A$0.215/sh)	**A$468.1M**
Cash (30 Sep 2022)	A$71M
Debt (30 Sep 2022)	Nil
Enterprise Value	**A$397.1M**

European Capital Markets Exposure with Renascor shares also traded on the Börse Frankfurt (Ticker **RU8**)

Renascor's Battery Anode Material Project in the Graphite Supply Chain

Renascor is developing a vertically integrated operation within South Australia consisting of a mine, concentrator and downstream manufacturing facility **to produce Purified Spherical Graphite (PSG)** via eco-friendly chemical purification for **sale to anode makers** and use in Li-ion batteries for **Electric Vehicles.**

Renascor's Integrated Battery Anode Material Manufacturing Operation



Graphite mining	Graphite Concentrates	Purified Spherical Graphite (PSG)	Anodes	Li-ion Battery
Graphite-containing ore is mined, crushed and processed through flotation to 94-96% total carbon (TC)		Graphite Concentrates are micronised, spheronised and purified to >99.95% TC	China, Japan, South Korea Emerging production in Europe and USA PSG coated and treated to create anode material	China, South Korea, Japan, Europe, USA Anode and other components are assembled into Li-ion cells

For personal use only

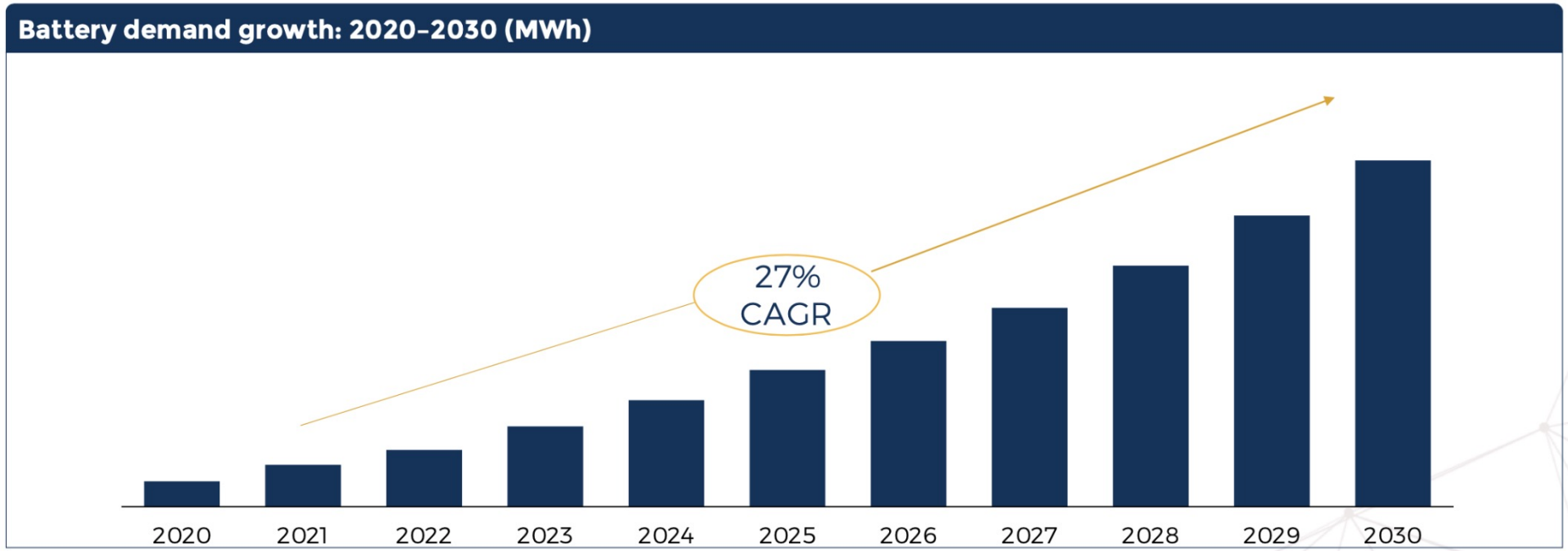
Section 2:

Impact of Lithium-Ion Battery Growth on the Graphite Market

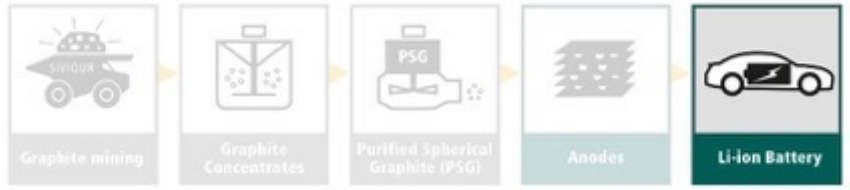
For personal use only

Lithium-Ion Battery Growth is Creating a Paradigm-Shifting Event

Electric vehicle adoption is creating unprecedented global demand for batteries.



Source: Benchmark Mineral Intelligence

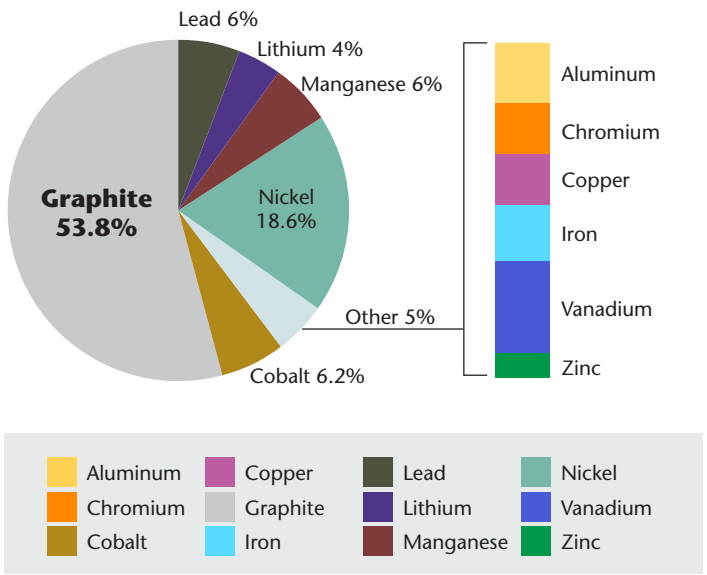


For personal use only

Anode and Graphite Demand are Directly Linked to Battery Growth

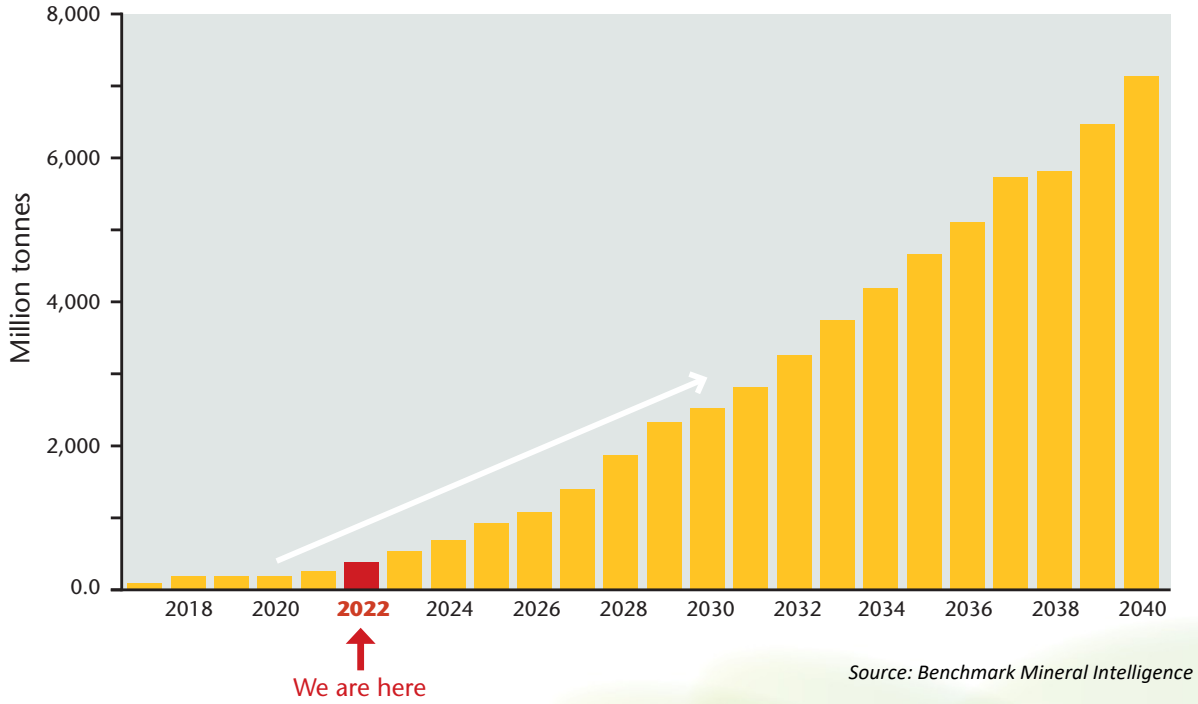
Graphite is the fundamental raw material in lithium-ion battery anodes.

Share of Mineral Demand from Energy Storage

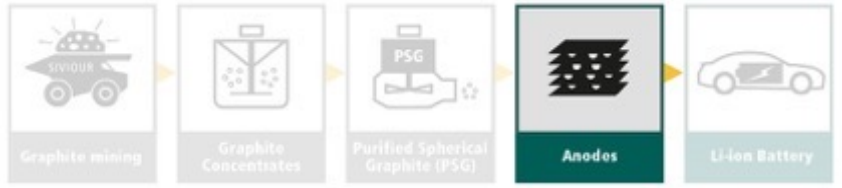


Source: IEA

Anode Demand Forecast 2018 to 2040



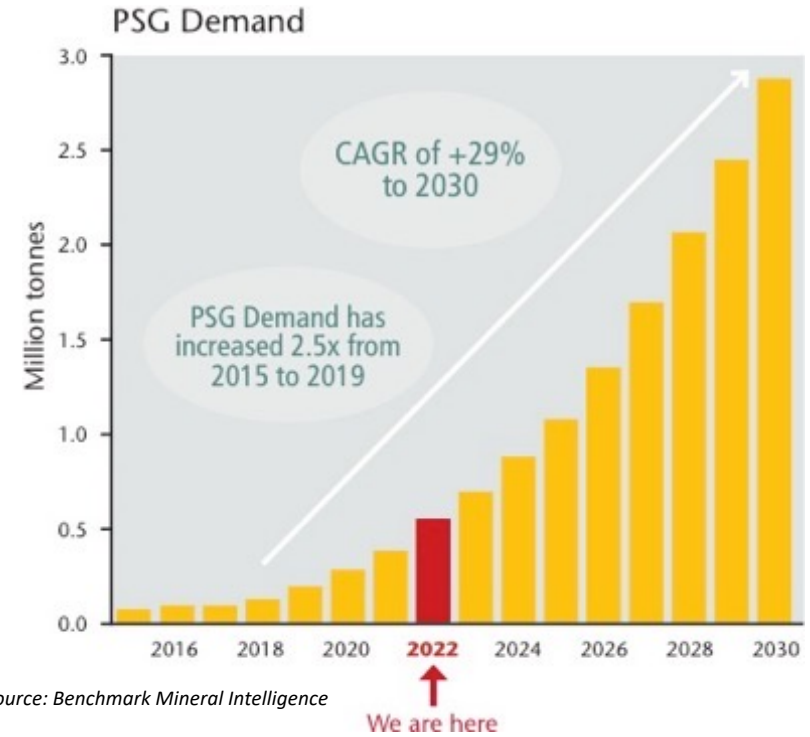
Source: Benchmark Mineral Intelligence



For personal use only

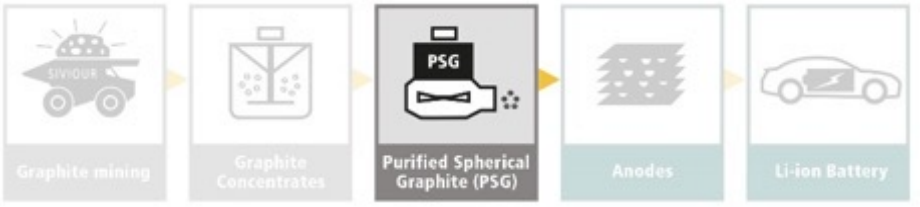
Strong Demand Growth for Purified Spherical Graphite

The projected growth rate in the demand for Purified Spherical Graphite will put graphite mining and graphite refining under increasing pressure to expand supply to meet demand.



Source: Benchmark Mineral Intelligence

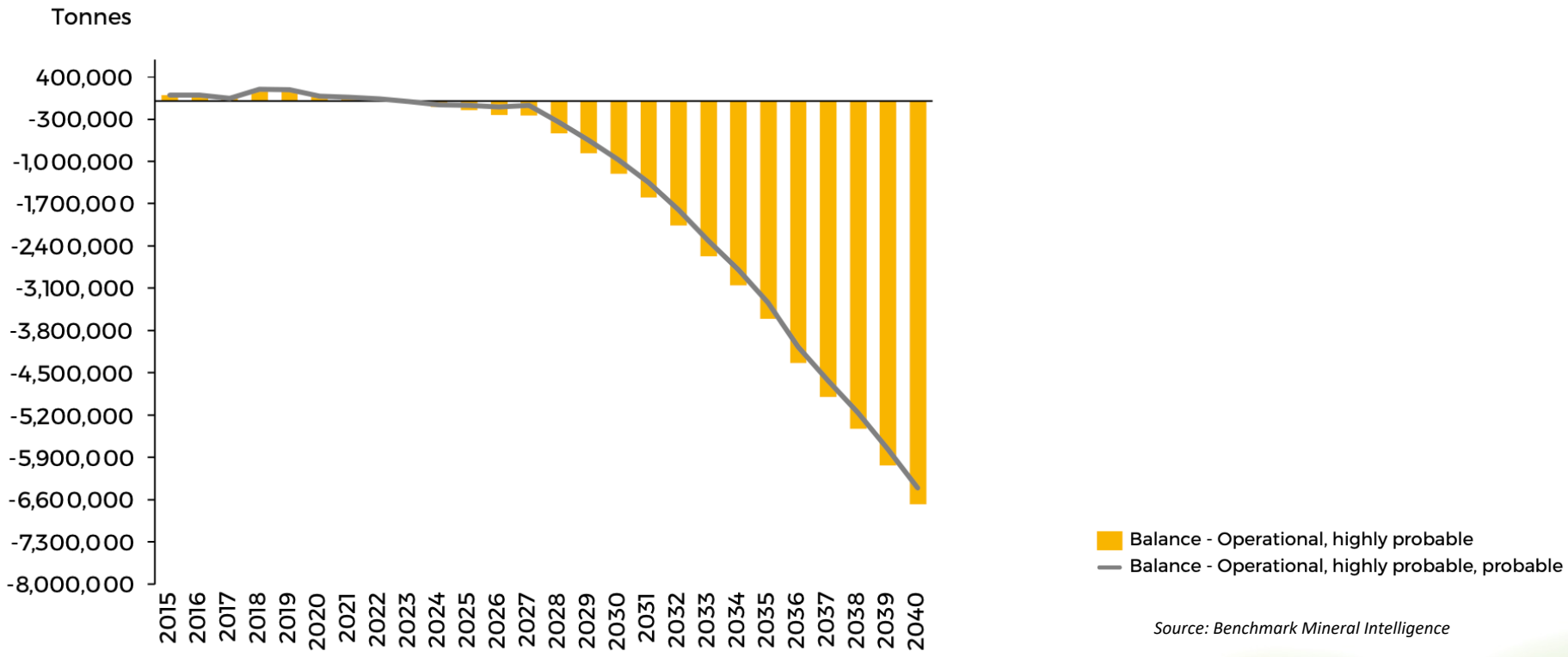
90x Siviour Over 90 new Siviour-sized projects needed over next 10 years



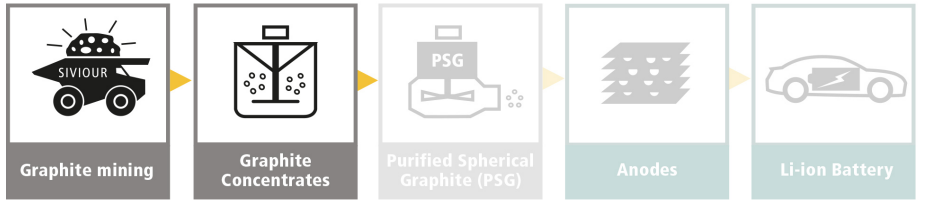
For personal use only

Graphite Flake Market Balance Moving to Undersupply

Significant new production is required to meet projected demand for graphite flake concentrates



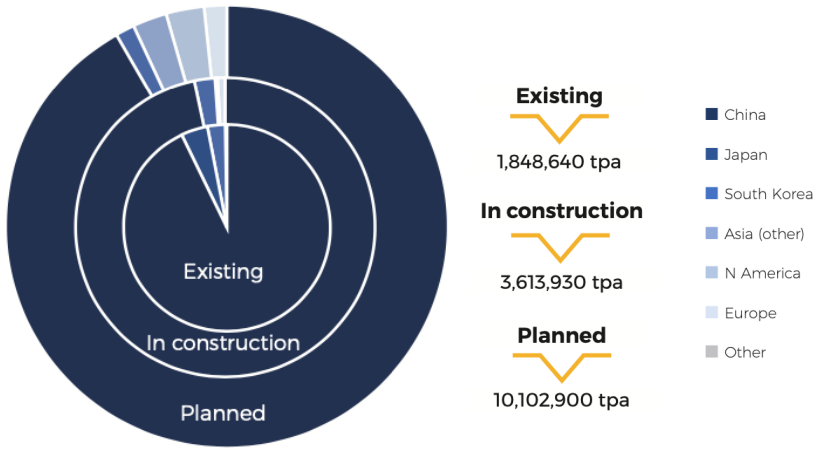
Source: Benchmark Mineral Intelligence



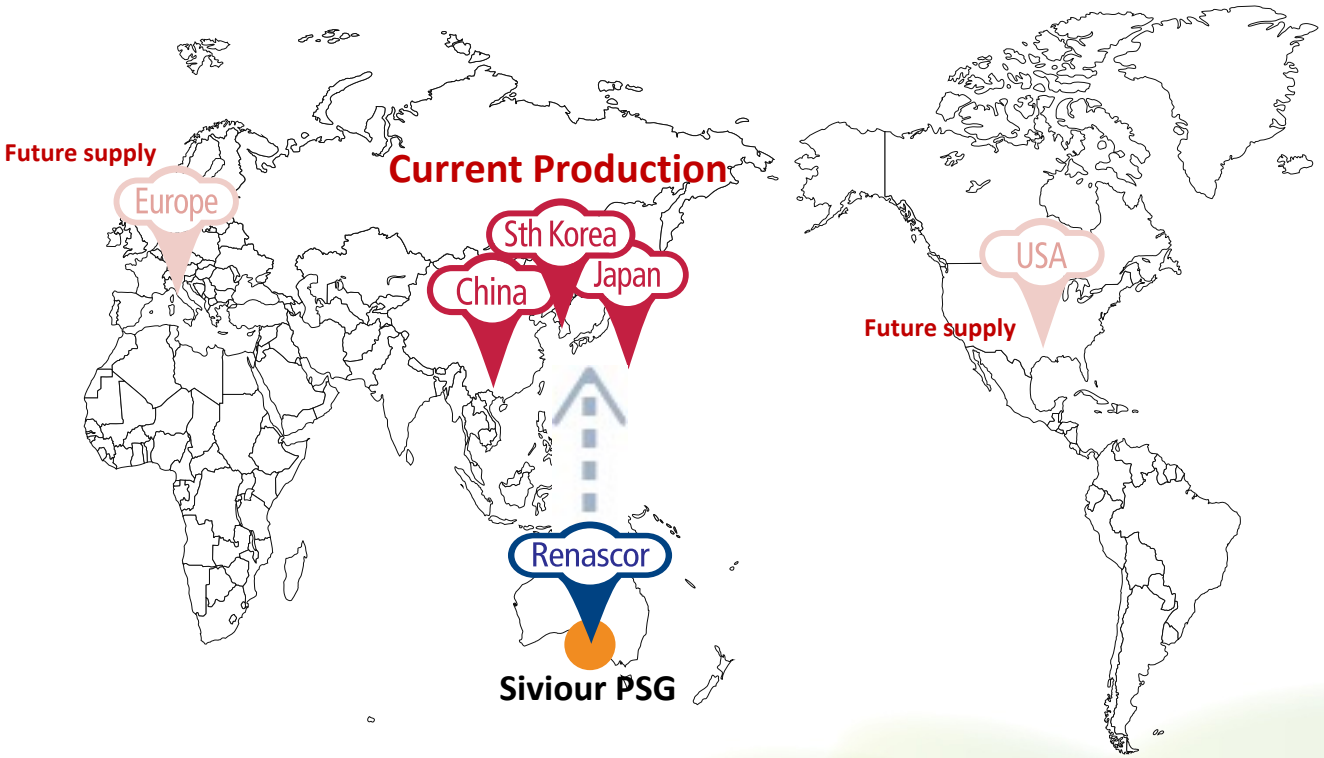
For personal use only

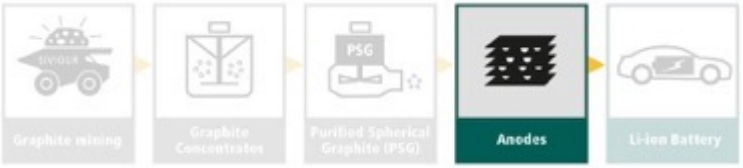
Global Anode Supply is Centered in Northeast Asia

China, Japan and South Korea will remain the center of anode production in the near-term before expanding over time into European, US and other markets.



Source: Benchmark Mineral Intelligence



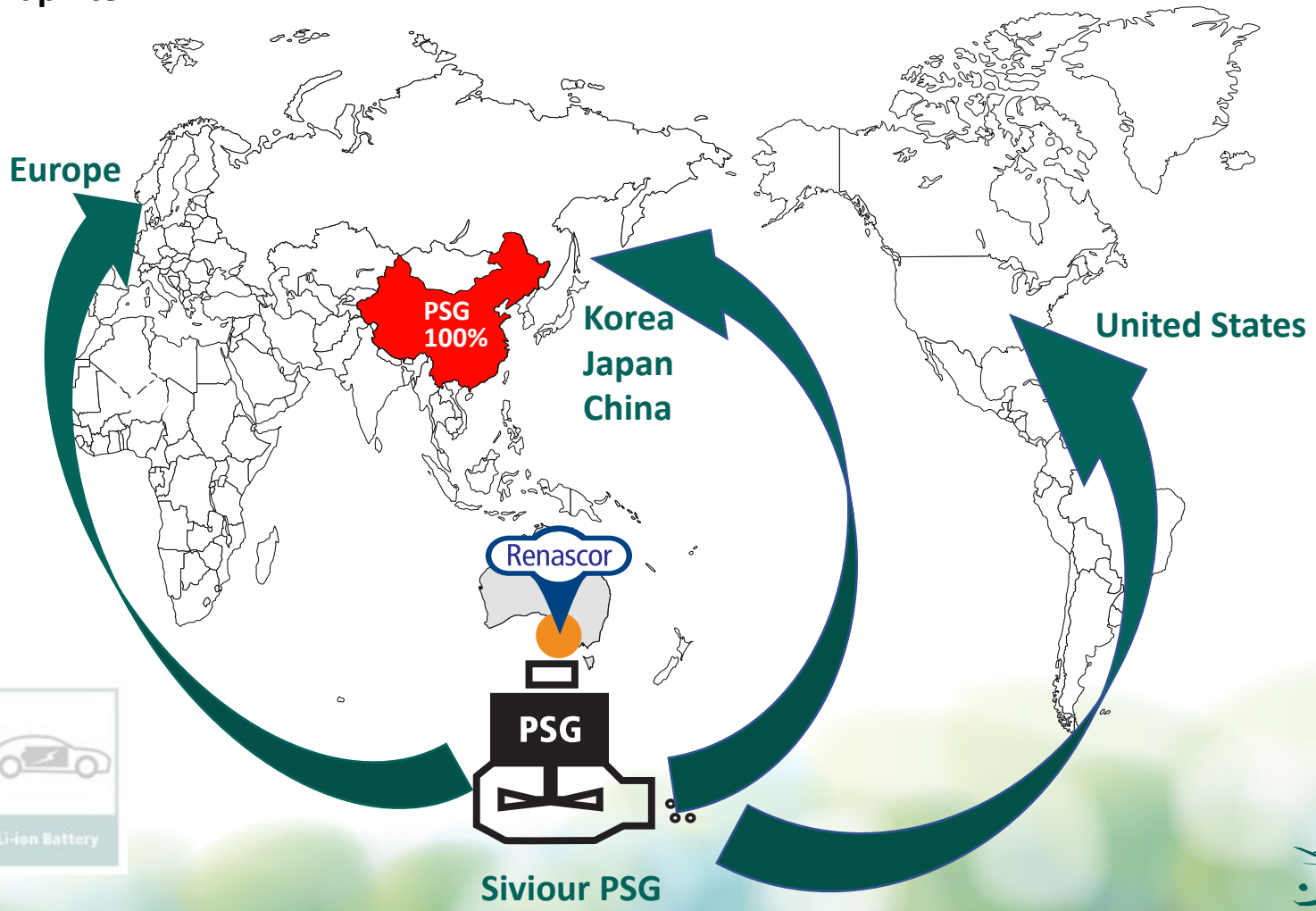


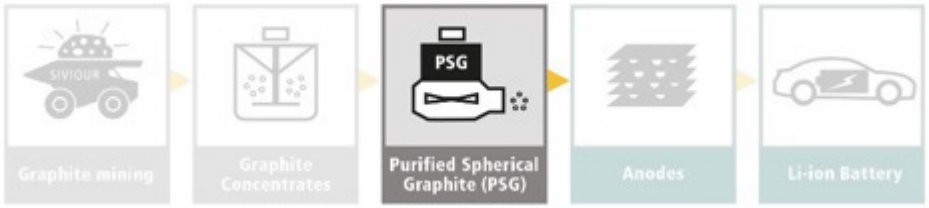
For personal use only

China Currently Controls 100% of the Market for Purified Spherical Graphite

All anode producers (including manufacturers in South Korea and Japan) are currently dependent on China for Purified Spherical Graphite.

Renascor will provide a reliable source of PSG to the global market





For personal use only

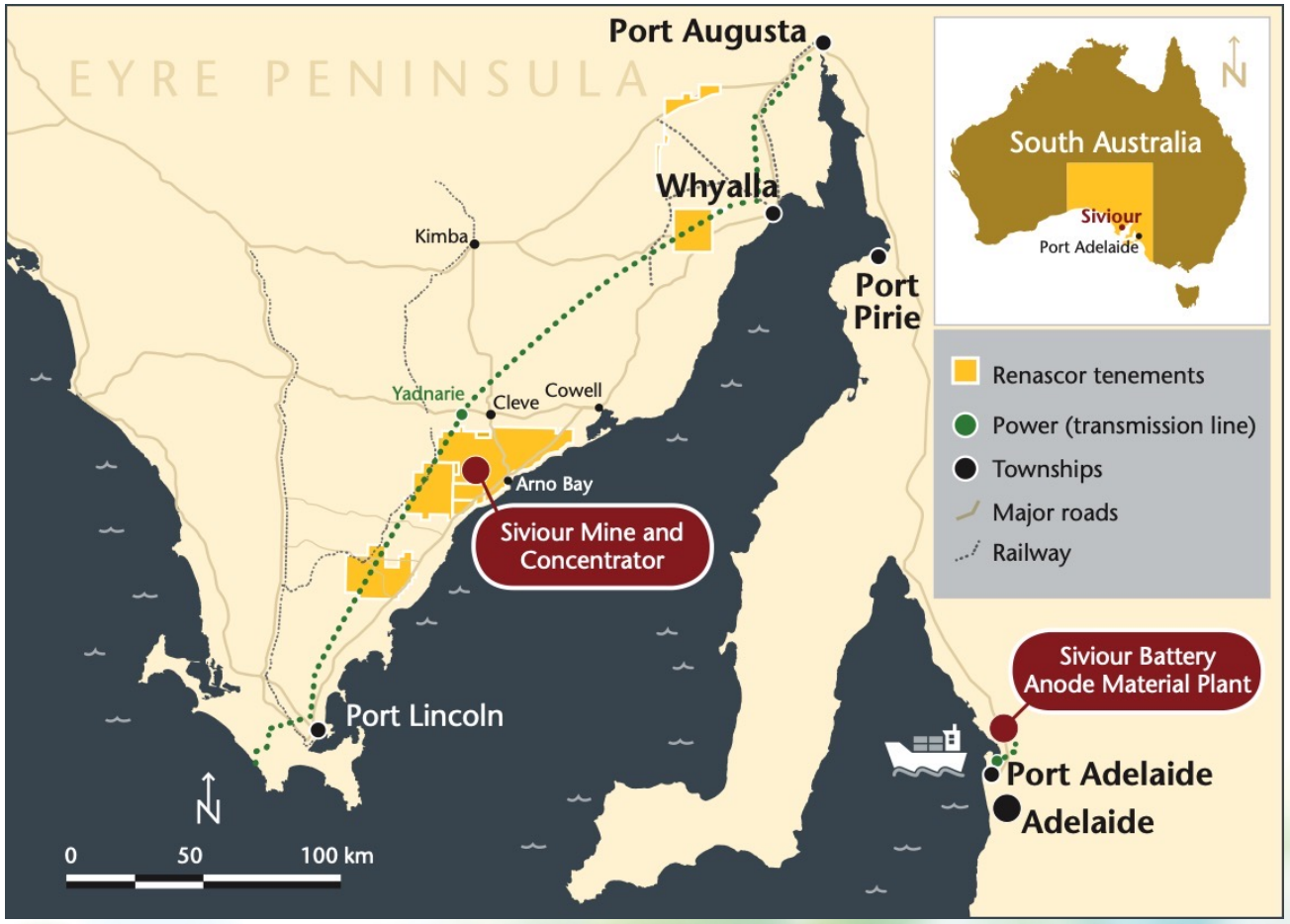
For personal use only

Section 3:

The Siviour Battery Anode Material Project

Prime Australian location offers mine to market supply chain security

The Siviour Graphite Deposit is located in coastal South Australia, with nearby access to major highway for delivery to state-of-the-art Battery Anode Material Plant located with 20km of port



For personal use only

For personal use only

Section 3-A:

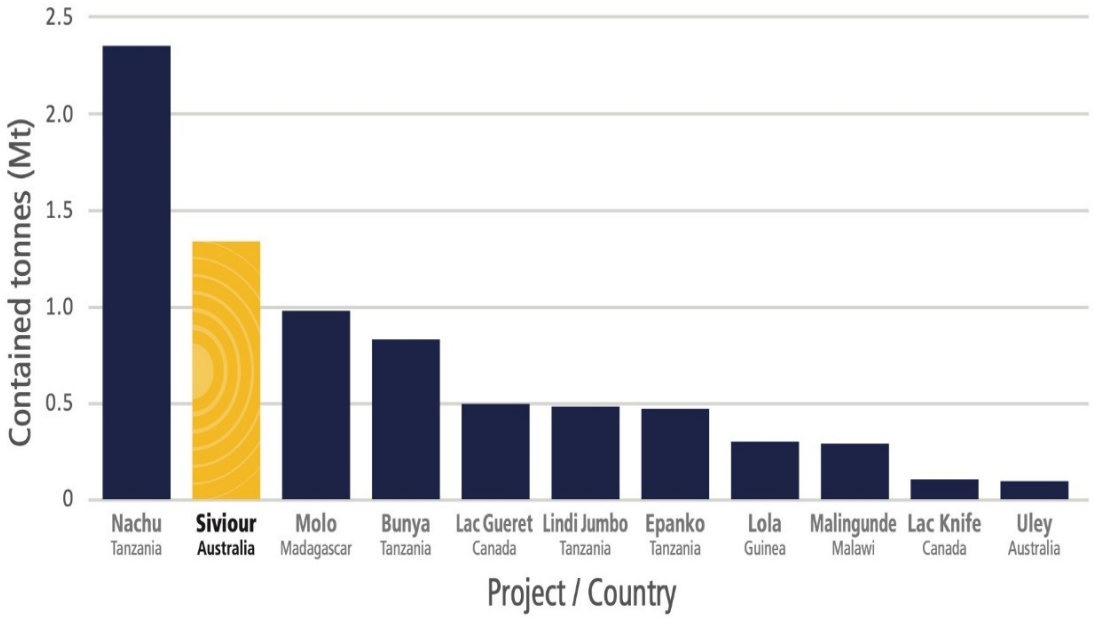
Siviour Upstream Mining Operation

For personal use only

The Siviour Graphite Deposit is amongst the world's largest

Siviour is the <u>second largest Proven Reserve of graphite globally</u> and the <u>world's largest reported graphite Reserve outside of Africa</u>.

Global Graphite Proven Reserve



Mineral Resource Estimate (August 2022)[1]

Category	Tonnes (Mt)	Grade (% TGC)	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**

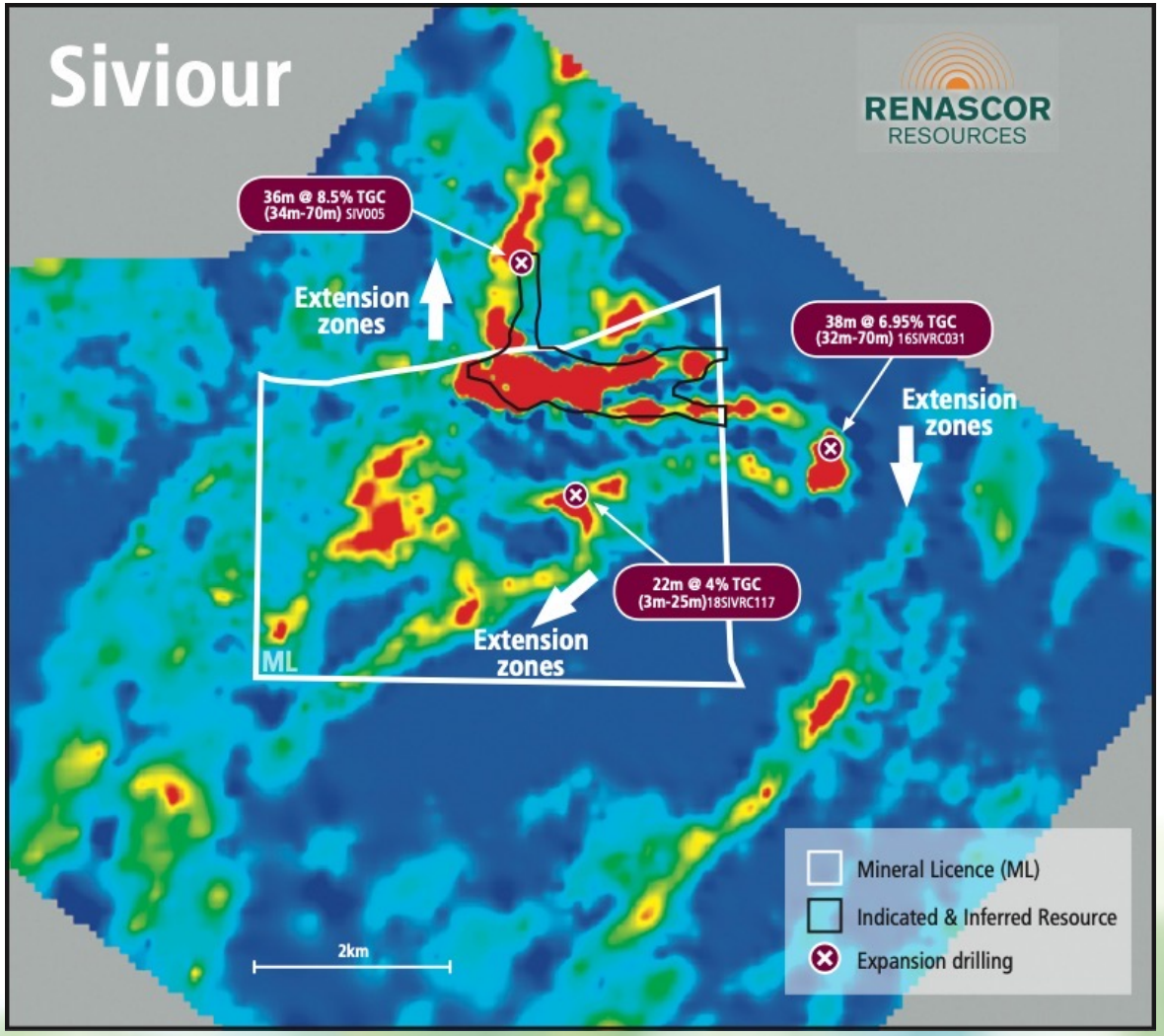
Ore Reserve Estimate (July 2020)[2]

Category	Tonnes (Mt)	Grade (% TGC)	Graphite (Mt)
Proven	15.8	8.4%	1.3
Probable	35.8	6.9%	2.5
Total	**51.5**	**7.4%**	**3.8**

1. ASX release 18 August 2022 "Upgrade Of Siviour Mineral Resource", 2. ASX release 21 July 2020 "Updated Mineral Ore Reserve Estimate"

Siviour has potential to get even larger

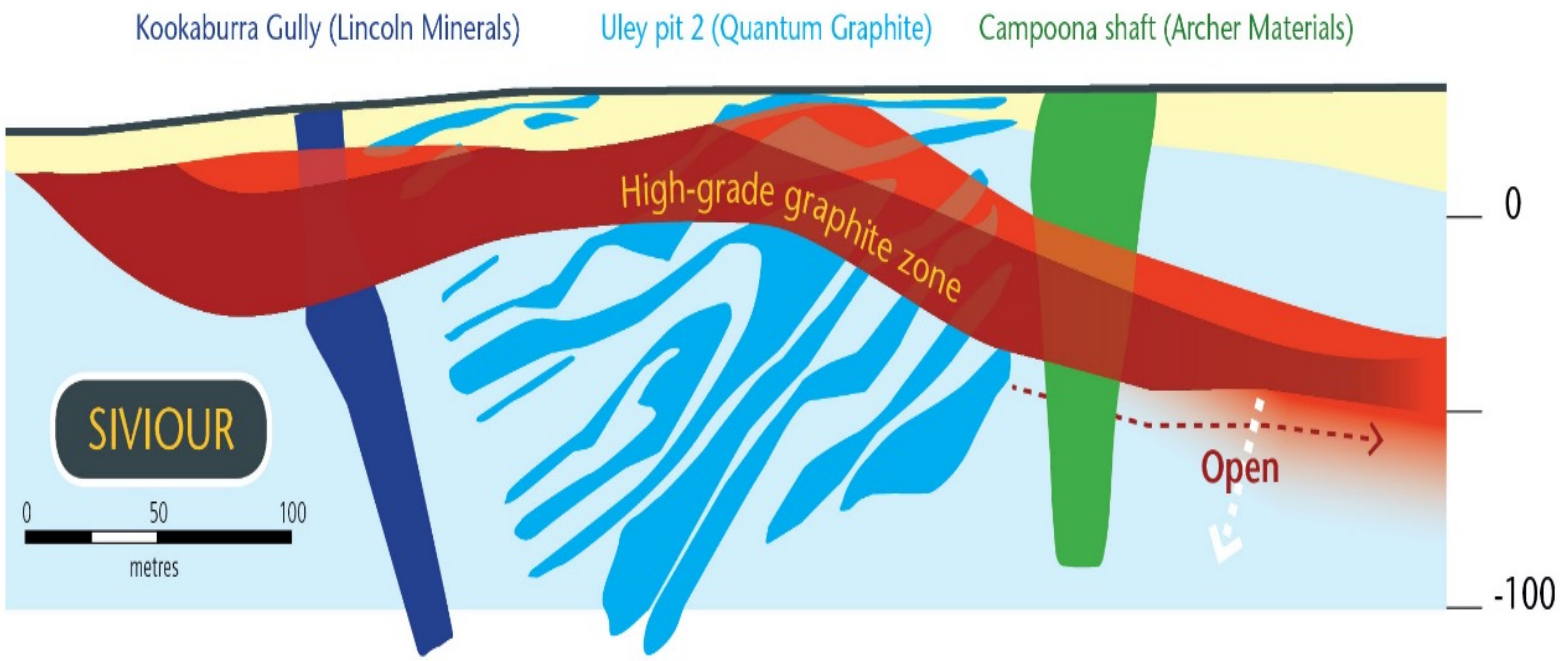
Siviour remains open along-strike to both the north and the southeast



For personal use only

The Siviour Graphite is unique in both its near-surface, flat-lying orientation

The deposit is flat, shallow and large, resulting in low-cost mining and consequently low-cost production of Graphite Concentrate <u>world's largest reported graphite Reserve outside of Africa.</u>

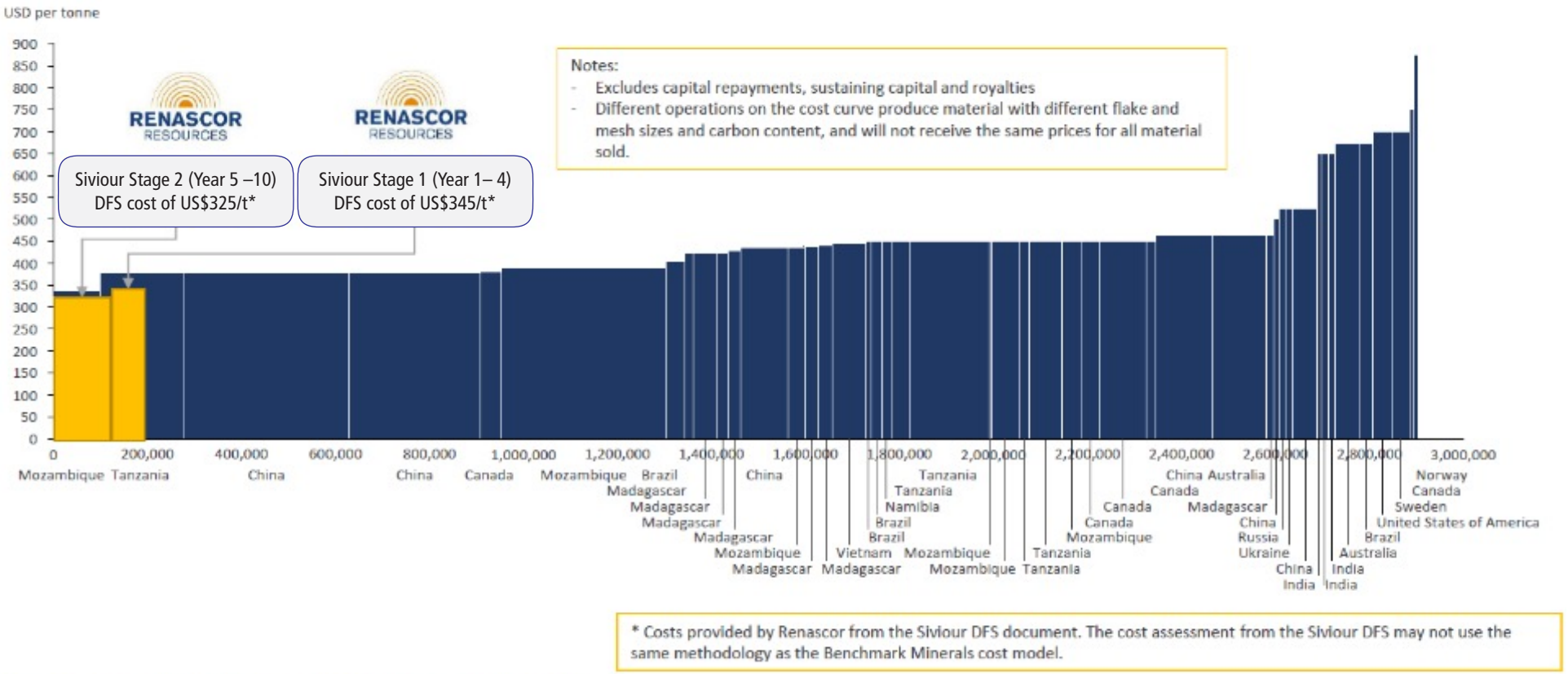


Cross-section of Siviour Deposit (shown in red) compared to other Australian graphite deposits

For personal use only

Siviour Graphite Concentrate: Among the World's Lowest Cost Production

Graphite Concentrate DFS confirms lowest quartile OPEX, underpinning globally competitive PSG production.



Source: Benchmark Mineral Intelligence.

For personal use only

For personal use only

Section 3-B:

Siviour Downstream Battery Anode Material Operation

Downstream site location

Site secured from South Australian Government

The site is ~20km from South Australia's main shipping port at Port Adelaide.

Close to SA Water's Bolivar water treatment and industrial complex.

20 hectares site provides sufficient scale to permit both an increase to the originally planned Stage 1 PSG production capacity of 28,000tpa, as well as additional Stage 2 PSG production capacity.

For personal use only

Production of Purified Spherical Graphite

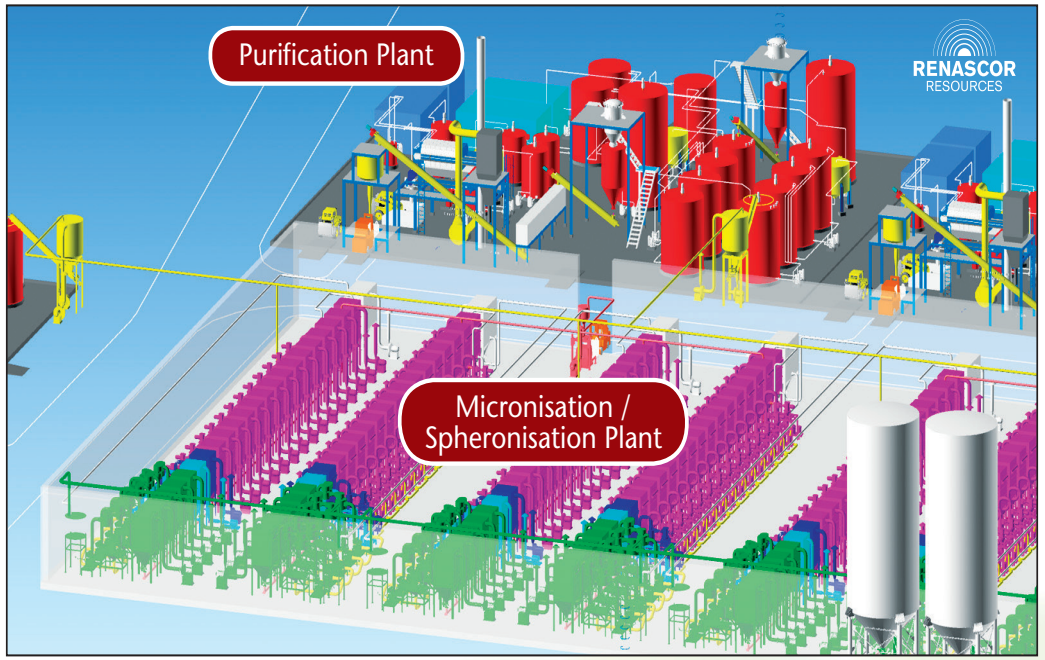
Purified Spherical Graphite to be produced from Siviour Graphite Concentrates in two-step process.

Step One: Milling

- Micronisation and spheronisation using conventional cascading milling equipment.
- Production of primary spheronised product (D50 = 13µm -20µm) and secondary products (D50 = 6µm -12µm).

Step Two: Purification

- Caustic low-temperature roast followed by multi-step leaching process that **avoids use of hydrofluoric-acid**.

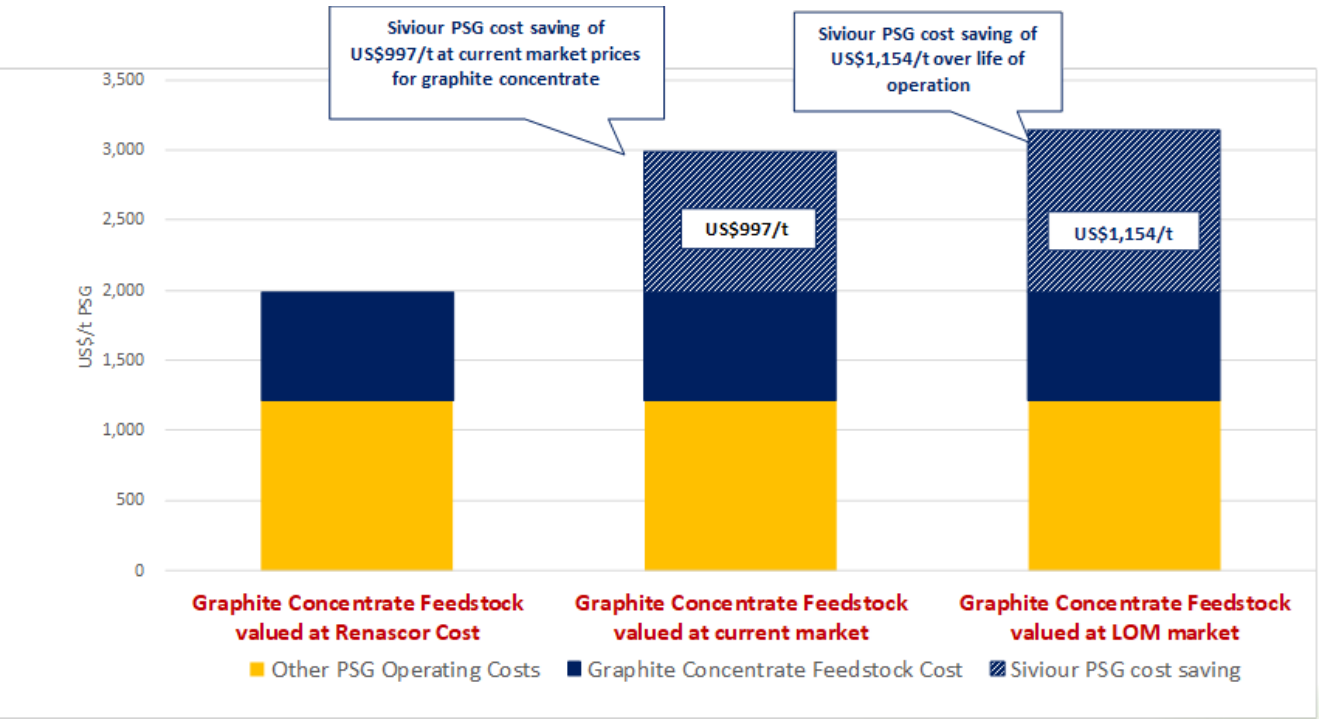


For personal use only

Strong Comparative Advantage in PSG Production

Vertical integration underpins low-cost PSG production.

- Graphite Concentrate feedstock a significant cost input to the PSG manufacturing process.
- Renascor's PSG operation benefits from obtaining Siviour Graphite Concentrate feedstock at the cost of production rather than buying the feedstock at market price.
- The difference in feedstock price has an exaggerated impact on PSG operating costs because only half of the Graphite Concentrates used as feedstock are spheronised to PSG during the milling process (i.e., PSG production can be at a 50% yield).
- Renascor's market data suggests an average operating costs of ~US$2,000/t PSG for existing PSG market (100% China).
- Renascor's gross operating cost estimate of US$1,989/t PSG is favourable by comparison.



Renascor cost data based on Siviour Battery Anode Material Study (ASX release 1 July 2020 "Renascor Announces Battery Anode Manufacturing Operation"). Graphite price data based on: (i) for current market value: Benchmark Mineral Intelligence June 2022 price report for -195 Graphite Concentrates (US$825 per tonne); and (ii) for life of mine market value: graphite price forecast data sourced from Benchmark Mineral Intelligence for Battery Anode Material Study.

For personal use only

For personal use only

Battery Anode Material Study Results – Stage 1 PSG Production[1]

Low graphite concentrate feedstock costs drives Renascor's low PSG production costs, high margins and strong cash generation.

Item	Value
Average annual LOM production of Graphite Concentrate	105,000t
Average annual LOM production of PSG (Stage 1)	**28,000t**
Life of mine/project	40 years
Start-up capital cost of mine and concentrator	US$79m
Start-up capital cost of battery anode material operation	US$63m
Total start-up capital	**US$142m**
NPV_{10} (after tax) of integrated operation with Stage 1 PSG production	**US$499m**
Cost of Feedstock per tonne PSG production	US$775/t
Cost of Feedstock Conversion to PSG per tonne PSG production	US$1,214/t
Total Cost Project Operating cost per tonne PSG production	**US$1,989/t**
Operating cost (with by-product credit)	US$1,398/t
Projected PSG sales price (first ten years)	US$3,815/t
Net revenue of integrated operation	US$6,686m
EBITDA of integrated operation with Stage 1 PSG production	US$4,387m
Project cashflow of integrated operation with Stage 1 PSG production	**US$2,878m**

1. ASX release 1 July 2020 "Renascor Announces Battery Anode Manufacturing Operation"

Renascor is currently updating previous studies to consider substantial increase in Stage 1 PSG production capacity beyond the currently planned 28,000tpa of PSG, as well as additional staged PSG expansions.

For personal use only

Socially responsible investing aims to better mitigate risks and help shape a more sustainable world.

Strong Environment, Social and Governance (ESG) credentials

- South Australia is a Tier-1 jurisdiction with **low sovereign risk** and a **robust and transparent regulatory framework**.
  - South Australia's Minister for Energy and Mining granted a Mineral Lease for Siviour April 2019,[1] the first step in the South Australian government's two-stage assessment and approval process. Second-stage approval submitted in September 2021.
- Renascor's **purification process is eco-friendly.**
  - Over the last five years, Renascor had developed a purification process that avoids the use of Hydrofluoric ("**HF**") acid, offering a cleaner **HF-free** alternative to prevailing process used in China.
  - Renascor's eco-friendly graphite purification technology achieved outstanding results of 99.99% C purity in recently completed locked cycle testing at leading German independent battery mineral consultancy group Dorfner Anzaplan.
- By vertically integrating the mine and downstream processing operation in South Australia, Renascor **optimises the use of local resources** to lessen costly and inefficient transport of raw materials for intermediate processing and ensures strong ESG oversight of entire supply chain.

100% Australian-made

HF-free

1. ASX 8 April 2019, "Mineral Lease Granted"

Offtake Strategy: Aligned with Global Leading Battery Anode Manufacturers

Total commitments for up to 200% of current Stage 1 PSG capacity of 28ktpa

- **POSCO**: Non-binding MOU with POSCO for the purchase of 20,000tpa to 30,000tpa of PSG.
  - This potentially represents up to 100% of Renascor's proposed initial production capacity of PSG.
- The MOU provides scope for strategic cooperation between POSCO and Renascor including the potential for equity investment by POSCO International. Discussions with POSCO regarding the nature of the strategic cooperation are ongoing.
- POSCO is one of South Korea's largest conglomerates, and is the largest anode manufacturer outside of China, with existing production capacity of 44,500tpa, and a further 83,500tpa under construction.

Sample qualification and negotiation on binding offtake terms currently underway

For personal use only

Offtake Strategy: Aligned with Global Leading Battery Anode Manufacturers *(cont.)*

Total commitments for up to 200% of current Stage 1 PSG capacity of 28ktpa

- **Minguang:** First stage product qualification achieved with Chinese anode company Minguang as part of non-binding PSG Offtake MOU covering up to 10ktpa for 10 years.
  - Minguang is a subsidiary of Fujian Metallurgical Holding Co. Ltd. - one of China's largest battery material suppliers (total assets ~ US$13 billion).
- **Zeto**: First stage product qualification achieved with Chinese anode company Zeto as part of non-binding PSG Offtake MOU covering up to 10ktpa for 10 years.
  - Zeto is a top-ten anode producers globally and is a major supplier of anodes to the world's largest battery makers, including Hong Kong listed BYD Co. Ltd, the world's second largest manufacturer and retailer of EVs (market cap ~US$100 billion).
- **Hanwa:** Access to Japanese market through non-binding PSG Offtake MOU covering up to 10ktpa for 10 years.
  - Hanwa is a leading Japanese-based global trading company long history of trading with some of the world's largest metal and chemical producers and operates a dedicated Battery Team focussed on supplying graphite and other metals across the global battery value chain.

Increased offtake demand has led Renascor to bring forward feasibility work on potential first stage expansion and larger subsequent stage production.

For personal use only

For personal use only

$185 Million Conditional Loan Approval from Australian Government

The Australian Government has conditionally approved a A$185 million loan facility to support the development of the Siviour Graphite Project in South Australia.[1]

- This loan is approved under the Australian Government's **$2 billion Critical Minerals Facility**, which was established 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.
- The Siviour BAM Project has been **granted Major Project Status by the Federal Government**, in recognition of its potential to contribute to Australia's Critical Mineral Strategy and Resource Technology, and Critical Mineral Processing National Manufacturing Priority Roadmap.
- Renascor aims to become **a world leader in the sustainable production of 100% an Australian-made advanced graphite product** for use in the Li-ion batteries.
- Final Approval of the Loan Facility is subject to conditions customary for project financings of this nature or otherwise required under the Critical Minerals Facility. Export Finance Australia (EFA), the Australian Government's Export Credit Agency, will manage this process.

David Christensen representing Renascor at the recent delegation of Australian Critical Minerals industry leaders to the Republic of Korea. *Photo compliments of Austrade, October 2022.*

1. ASX 2 Feb 2022, "Australian Government conditionally approves A$185 million Loan Facility to Fund the Development of the Siviour Graphite Project"

Renascor's Strategy

We aim to become a global leader in the supply of sustainable, 100% Australian-made battery anode material

Stage 1

Commence PSG Operation

- Initial production of Graphite Concentrates and Purified Spherical Graphite
- Continue to build valuable offtake relationships with leading anode suppliers
- Develop markets for other specialty graphite products
- Increase Resource / Reserve
- Plan future growth

Stage 2

Expand Manufacturing of PSG

- Expand Purified Spherical Graphite production
- Staged approach to minimise upfront shareholder dilution
- Anode product development with current and next-generation anode suppliers
- Increased sales of specialty graphite products in traditional industrial, battery and emerging graphite end-user sectors

Stage 3

Full Renascor Potential

- Further expansion of mine and Purified Spherical Graphite manufacturing capacity
- Establish further downstream processing expertise (and partnerships, as appropriate) to support development of fully integrated anode production
- Utilise expertise in graphite materials, engineering and applications to become industry leading manufacturer of high value graphite products and solutions

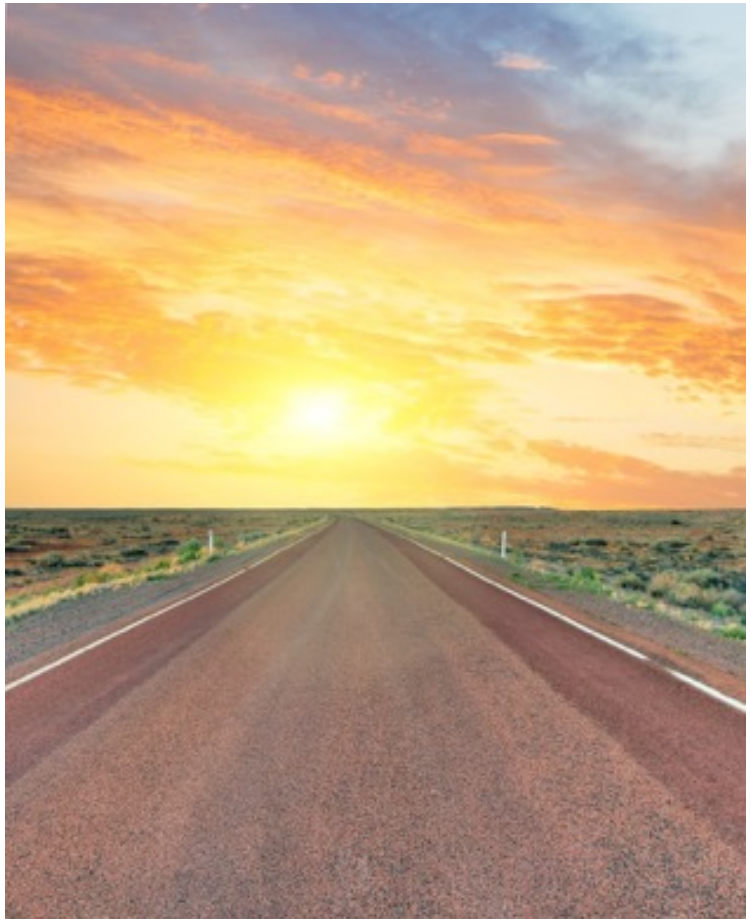
For personal use only

For personal use only

Our goal is to become one of, if not the largest, global suppliers of PSG to the lithium ion battery sector

Renascor Resources: Multiple Near-Term Value Drivers

- **Siviour Battery Anode Material Project:**
  - Final regulatory approval for mine.
  - Optimised feasibility study assessing expanded production.
  - Resource expansion drilling currently underway.
  - Advancing to binding offtakes with existing offtake and potential new offtake partners.
  - Execution of binding credit approved terms sheets and Final Investment Decision.



Powering Clean Energy

For personal use only

Forward Looking Statements

This Presentation may include statements that could be deemed "forward-looking" statements. Although Renascor Resources Limited (the "Company") believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those expected in the forward-looking statements or may not take place at all.

No Offer to Sell or Invitation to Buy

This Presentation is not, and should not be considered to, constitute any offer to sell, or solicitation of an offer to buy, any securities in the Company, and no part of this Presentation forms the basis of any contract or commitment whatsoever with any person. The Company does not accept any liability to any person in relation to the distribution or possession of this Presentation from or in any jurisdiction.

Disclaimer

Whilst care has been exercised in preparing and presenting this Presentation, to the maximum extent permitted by law, the Company and its representatives make no representation, warranty or undertaking, express or implied, as to the adequacy, accuracy, completeness or reasonableness of this Presentation; accept no responsibility or liability as to the adequacy, accuracy, completeness or reasonableness of this Presentation; and accept no responsibility for any errors or omissions from this Presentation.

Competent Persons Statement

The results reported herein, insofar as they relate to exploration activities and exploration results, are based on information provided to and reviewed by Mr G.W. McConachy (Fellow of the Australasian Institute of Mining and Metallurgy) who 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.

Bibliography

Renascor confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements noted below and referenced in this presentation 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.

For personal use only

Renascor Resources Limited
36 North Terrace
Kent Town, South Australia 5067
Phone: + 61 8 8363 6989
Email: info@renascor.com.au
Website: www.renascor.com.au

ASX Code: **RNU**

Proud members of:

EUROPEAN BATTERY ALLIANCE | EBA250

EUROPEAN RAW MATERIALS ALLIANCE | ERMA

RENASCOR RESOURCES

Powering Clean Energy