ASX Release

17 January 2024

Optimised Product Mix for Upstream Graphite Production

Increased coarse flake production to maximise initial revenues

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- Renascor has revised its projected product mix for the Siviour mine and processing plant, the upstream portion of Renascor's proposed Battery Anode Material (**BAM**) Project, a vertically integrated battery anode material manufacturing operation located wholly within South Australia.
- Renascor has adjusted the flowsheet parameters of the Siviour processing plant to increase the production of size fractions greater than 150 microns (+100 mesh) by approximately 60% from a projected 17% to 27% of total production.
- The production of increased amounts of coarse flake graphite is intended to enable Renascor to sell additional coarse flake graphite into high value industrial markets during the first phase of production from the upstream Siviour mine and processing plant.
- The adjustment to the flowsheet parameters is based on locked-cycle tests that resulted in the successful production of high-purity graphite products across all size fractions. Renascor has adjusted the scope of front-end engineering works to incorporate the revised product mix, with preliminary estimates suggesting no material change to projected capital costs and reduced operating costs.
- Renascor is accelerating the development of its planned phase one production of graphite, with recent and on-going work programs including: the acquisition of the freehold land that hosts the Siviour Graphite Deposit; more detailed engineering and procurement activities designed to minimise the planned phase one construction period; and discussions with potential partners regarding offtake terms and potential equity investments to help meet the BAM Project's capital requirements.

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Renascor Resources Limited (ASX: RNU) (**Renascor**) is pleased to announce that it has revised its projected graphite product mix for the Siviour mine and processing plant, the upstream portion of Renascor's proposed Battery Anode Material (**BAM**) Project, a vertically integrated battery anode material manufacturing operation located wholly within South Australia.

Renascor has adjusted flowsheet parameters of the mineral processing plant to increase the production of size fractions greater than 150 microns (+100 mesh) by approximately 60% from a projected 17% to 27% of total production.

The production of increased amounts of coarse flake graphite from the upstream operation is intended to enable Renascor to sell additional coarse flake graphite into higher value industrial markets during the first phase of production from the upstream Siviour mine and processing plant.

Commenting on the revised flowsheet, Renascor Managing Director David Christensen stated:

> *"The revisions to the flowsheet parameters announced today are part of our strategy to optimise and accelerate the production of graphite from our Siviour Project in alignment with projected near-term shortages in supply.*
>
> *As we look to conclude favourable agreements with offtake partners and advance to a final investment decision, we intend to take advantage of our favourable cash position to continue to accelerate the development of Siviour with a view to minimising the planned construction period and to develop an early mover advantage as a secure, long-term provider of 100% Australian graphite products."*

Discussion

Following completion of the definitive feasibility study assessment in the Siviour BAM Study[1], Renascor undertook value-added engineering programs aimed at optimising the production of high value Graphite Concentrates[2].

As part of these programs, Renascor completed locked-cycle tests that incorporated adjustments to the flow sheet parameters designed to reduce reagent costs and to increase the production of coarse flake by adjusting the primary grind size.

A shown in Table 1 below, the results of these tests have confirmed an improvement to the production of size fractions greater than 150 microns (+100 mesh) by approximately 60% from a projected 17% to 27% of total production.

Concentrate size by size analysis					
Screen size (mm)	Mesh Size	Revised flowsheet		BAM Study	
		Mass %	TC %	Mass %	TC %
Above 0.300	+50	1.1	97.6	N/A	
Between 0.180 and 0.300	+80	17.6	96.8	7.4	96.7
Between 0.180 and 0.150	+100	8.0	96.3	9.7	96.9
Below 0.150	-100	73.3	95.1	82.9	94.5
Total		100	95.5	100	95.0

Table 1. *Locked cycle test results, showing size-by-size analysis and comparison to results from the BAM Study*[3]

Coarser flake Graphite Concentrates generally sell at a premium to finer grades. According to Asian Metals, current reported graphite prices (per tonne) are US$1,047 for +80 mesh, US$907 for +100 mesh and US$600 for -100 mesh[4].

Furthermore, as a result of the reduced reagent costs from the revised flowsheet, Renascor estimates the overall operating costs to produce Graphite Concentrates will decrease, with preliminary engineering designs estimates suggesting no material change to projected capital costs.

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The production of increased amounts of coarse flake graphite is intended to optimise revenue during the initial stages of production from the first phase of the Siviour mine and processing plant by enabling Renascor to sell additional coarse flake Graphite Concentrates into high value industrial markets, while supplying finer flake Graphite Concentrates to the lithium-ion battery anode markets. Pending the construction of Renascor's proposed downstream BAM facility, Renascor plans to utilise Graphite Concentrates from Siviour as feedstock to produce Purified Spherical Graphite for direct use by lithium-ion battery manufacturers.

Next Steps

Renascor continues to accelerate the development of its planned production of Graphite Concentrates, with current and on-going work programs including:

- **Acquisition of freehold land hosting Siviour.** After entering into a definitive agreement to acquire the land hosting the Siviour Graphite Deposit[5], Renascor has now settled the purchase and acquired the freehold rights. With the completion of the purchase of the land, Renascor has now commenced on-site planning activities to conform with its obligations under its Mineral Lease and to permit preparatory works in anticipation of the construction phase.
- **Detailed engineering and design.** Renascor continues to advance more detailed engineering and design activities with a view to optimising and minimising the time-period for the planned construction phase. The scope of the front-end engineering design for phase one of the mineral processing plant has been adjusted to account for the revised flow sheet parameters. Additional activities include advancing design work on the tailings storage facility, desalination plant and portions of the power supply.
- **Offtake.** Renascor is currently in negotiations with lithium-ion battery supply chain participants, including its existing[6] and other potential offtake partners, regarding binding offtake terms and potential equity investments to help meet the BAM Project's capital requirements. In addition, in view of the increased production of coarser flake graphite from phase one of its planned production, Renascor is advancing discussions regarding potential offtake terms for coarser flake graphite.

Graphite Market

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

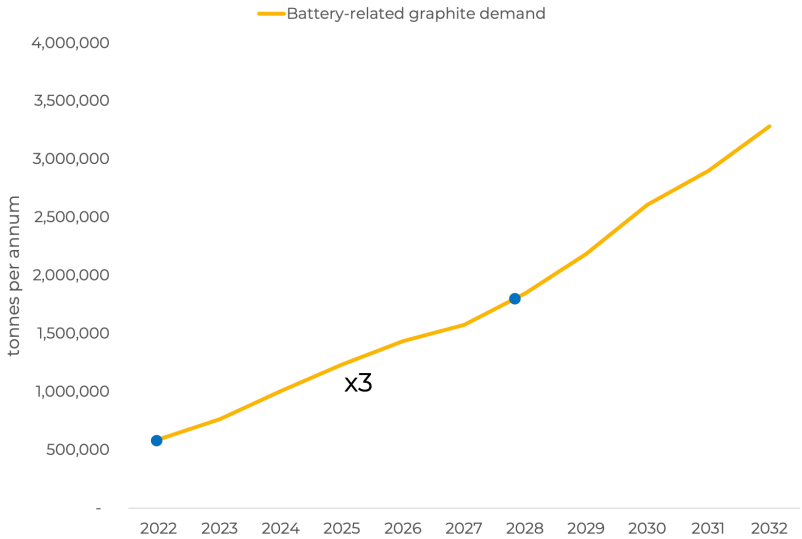

Figure 1. *Battery-related graphite demand (Source: Benchmark Mineral Intelligence)*

Without substantial new supply, the graphite market risks going into undersupply from as early as 2025. See Figure 2 below.

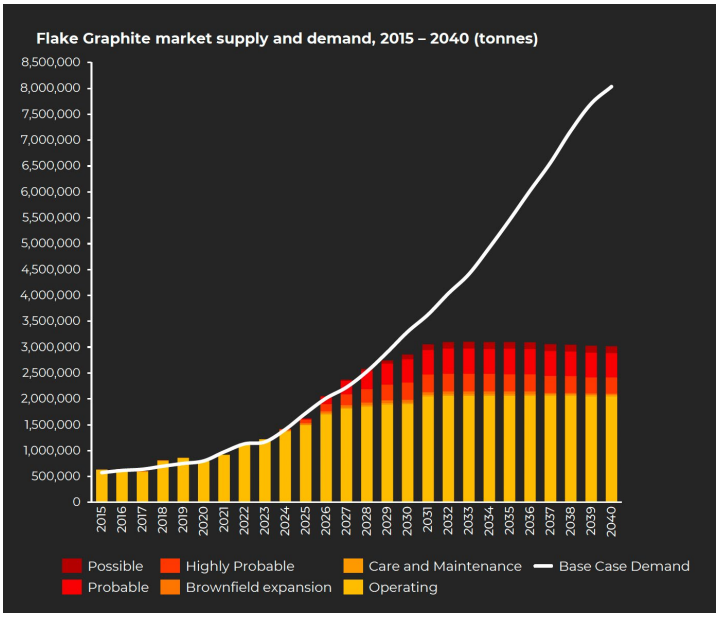

Figure 2. *Flake graphite supply and demand forecast 2015 to 2040 (Source: Benchmark Mineral Intelligence)*

Notwithstanding the increase in demand for graphite, the price of graphite has been volatile. In January 2023, the price for -100 mesh graphite (a typical graphite feedstock used in the production lithium-ion battery anodes) rose to as high US$885 per tonne before falling to US$600 per tonne as of January 2024[7]. This downward pressure in price has coincided with a period in China of lower cyclical demand and inventory drawdowns across battery minerals generally, as well as lower prices for synthetic graphite, which has caused increased substitution for natural flake Graphite Concentrates in the Chinese lithium-ion battery anode market.

Renascor does not consider current graphite pricing to be sustainable. The current decrease in synthetic graphite pricing has occurred during a period of low power and coke feedstock costs, as well as low utilisation rates of Chinese graphitization capacity following significant capital investment in the Chinese synthetic graphite sector in 2022[8]. This has led to aggressive pricing competition amongst Chinese synthetic producers. Renascor expects that, as utilisation rates increase and Chinese battery demand continues to grow, synthetic graphite pricing will increase, supporting higher prices for natural Graphite Concentrates.

Renascor also expects that support for new sources of graphite will improve as the demand for lithium-ion battery anodes and graphite continues to increase, with recent policy initiatives potentially accelerating the development of secure ex-China graphite supply. Recent legislation, such as the US Inflation Reduction Act (**IRA**), is incentivizing the growth of new ex-China supply, with the IRA requiring that from 2025 all graphite and other critical minerals used in the manufacture of electric vehicles must be from sources outside of China[9] to qualify for the full electric vehicle tax credit in the United States[10].

The importance of new ex-China supply sources has been further underscored by recently announced restrictions on the export of graphite products from China, with effect from 1 December 2023. These restrictions have the potential to limit the ability of non-Chinese companies, including anode manufacturers, to source graphite material from their traditional Chinese supply source.

In view of the potential for a near-term shortfall in graphite supply and increase in graphite prices, Renascor continues to advance planning for the first phase of production of Graphite Concentrates to minimise the planned construction period.

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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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Appendix 1

About Renascor

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

- **the Siviour Graphite Deposit** - the world's second largest Proven Reserve of Graphite and the largest Graphite Reserve outside of Africa[11];
- **the Siviour Graphite Mine and Concentrator** - a conventional open-pit mine and crush, grind, float processing circuit delivering world-class operating costs in large part due to the favourable geology and geometry of Renascor's Siviour Graphite Deposit; and
- **a Battery Anode Material Production Facility** - where Graphite concentrate will be converted to PSG using an eco-friendly processing method before being exported to lithium-ion battery anode manufacturers.

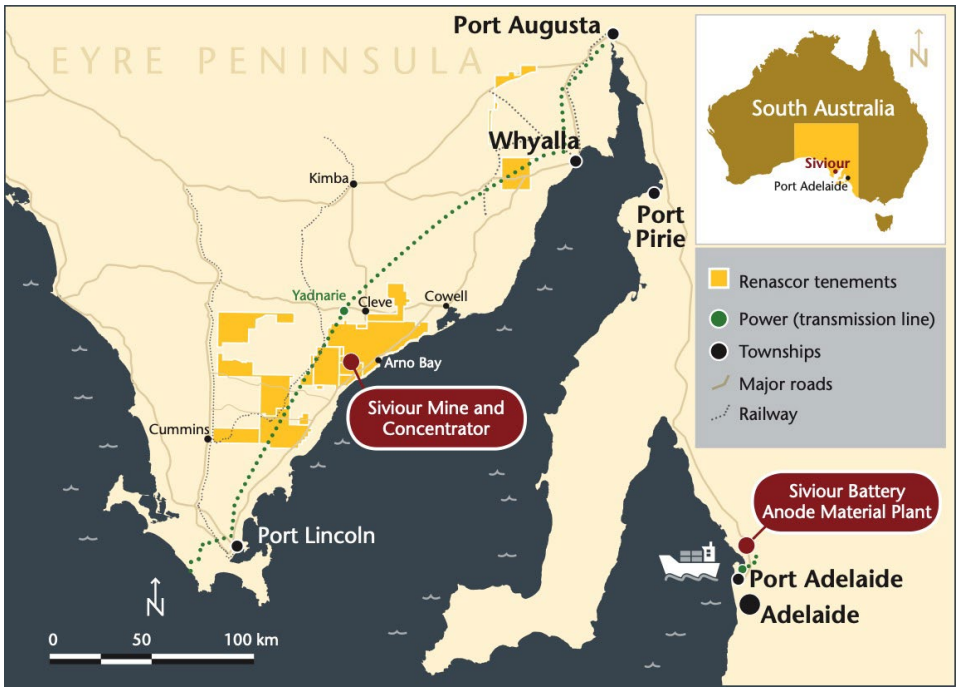

Figure 1. Siviour Battery Anode Material Project location.

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

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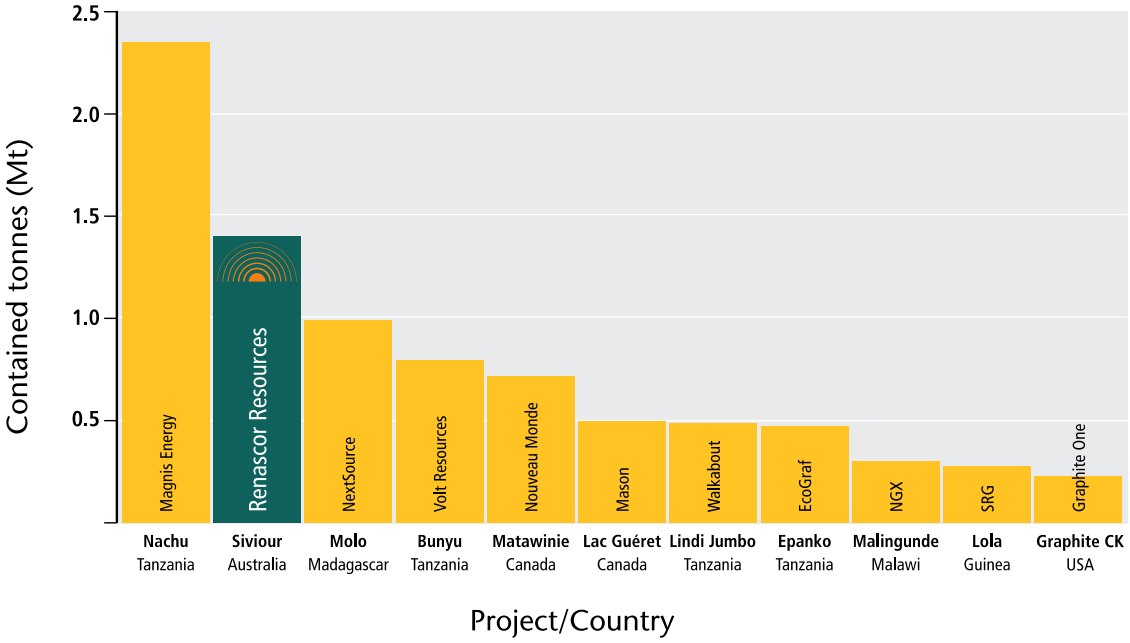

Figure 2. Globally Reported Proven Ore Reserve estimates (September 2023)[12]

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

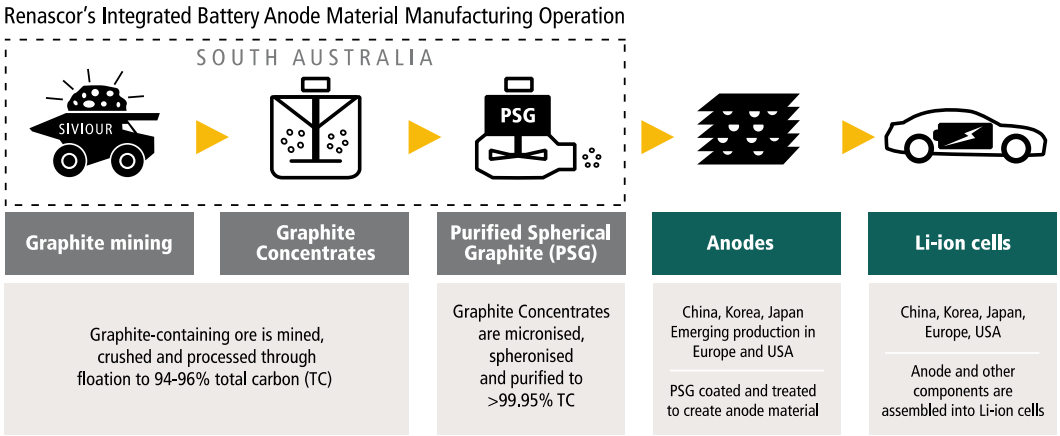

Figure 3. Renascor's vertically integrated Mine and Concentrator and Downstream PSG production facility within the Electric Vehicle supply chain.

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Appendix 2

Peer Comparison Data

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

[1] Renascor ASX release 8 August 2023.
[2] Renascor ASX release dated 10 October 2023.
[3] The revised flowsheet is based on sample representative of years one to three of the proposed mine plan, BAM Study results were based on sample representative of years one to ten.
[4] Asian Metals reports +80 mesh and +100 mesh graphite at a purity of 95% Carbon on an Ex-works China basis, with -100 mesh graphite at purity of 94% Carbon on FOB China basis. All prices are reported based on a range, with the arithmetic average shown. Asian Metals does not provide a price report for +50 mesh graphite.
[5] See Renascor ASX announcement dated 28 November 2023.
[6] Renascor has entered non-binding memoranda of understanding for the supply with companies active in the LIB anode sector, including with POSCO, a South Korean conglomerate and the largest anode manufacturer outside of China (see Renascor ASX announcement dated 25 August 2021), Mitsubishi Chemical, Japan's largest Chemical supplier and one of the world's largest anode manufacturers (see Renascor ASX announcement dated 19 July 2023), Japanese based global trading company Hanwa Co., Ltd (see Renascor ASX announcement dated

25 March 2021.), Jiangxi Zhengtuo New Energy Technology Co. Ltd., top ten anode producer globally (see Renascor ASX announcement dated 27 January 2021.)and Chinese anode company Minguang New Material (see Renascor ASX announcement dated 29 September 2020).

[7] Source: Asian Metals, showing average prices for -194 mesh (FOB China).

[8] Fastmarkets estimates that China added over one million tonnes of new graphitization capacity in 2022.

[9] China currently dominates the graphite and anode markets, supplying approximately 70% of the global supply of graphite and 90% of global supply of anodes for lithium-ion batteries. Source: Benchmark Mineral Intelligence.

[10] Under the IRA, a tax credit of up to US$7,500 is available for the purchase of electric vehicles, with the credit made up of two US$3,750 tax credits. Commencing in 2025, graphite and other critical minerals sourced from 'foreign entities of concern' (including China) are disqualified for eligibility for the US$3,750 critical mineral tax credit. The other US$3,750 tax credit applies to battery components, with the IRA disqualifying battery components from the US$3,50 battery component tax credit if they are sourced from 'foreign entities of concern' from 2024.

[11] Renascor ASX release dated 21 July 2020.

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

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