

## Investor Presentation

The attached presentation has been delivered to investors in New York, the Middle East and South Asia.



### ABOUT QUANTUM GRAPHITE LIMITED

QGL is the owner of the Uley flake graphite mineral deposits located south-west of Port Lincoln, South Australia. The company's Uley 2 project represents the next stage of development of the century old Uley mine, one of the largest high-grade natural flake deposits in the world. For further information, [quantumgraphite.com](http://quantumgraphite.com)



### ABOUT SUNLANDS ENERGY CO.

Sunlands Energy Co. is the leading developer of thermal energy storage technology (TES Graphite Cells) designed to drive commercial, industrial and utility-scale steam turbine generators. The company's TES Graphite Cells are capable of restoring baseload generation, delivering critical synchronous support to grid networks and eliminating the large-scale curtailment of renewables generation. For further information, [www.sunlandsco.com](http://www.sunlandsco.com)



### ABOUT SUNLANDS PURE

Sunlands Pure is the refining technology partner of Quantum Graphite Limited, the Australian Securities Exchange listed owner and operator of the century old Uley natural flake graphite mine located on the Eyre Peninsula in South Australia. The Sunlands Pure technologies are uniquely capable of purifying natural flake graphite to a purity of 99.9% graphitic carbon and delivering this critical material to key markets including manufacturers in the Li-ion battery, isostatic graphite and thermal energy storage market segments

# THE FUTURE OF GRAPHITE

## THE NEW US FLAKE GRAPHITE SUPPLY CHAIN

JUNE 2025

"Our national and economic security are now acutely threatened by our reliance upon hostile foreign powers' mineral production. It is imperative for our national security that the United States take immediate action to facilitate domestic mineral production to the maximum possible extent."

Section 1, Executive Order of the President Donald J. Trump March 20, 2025

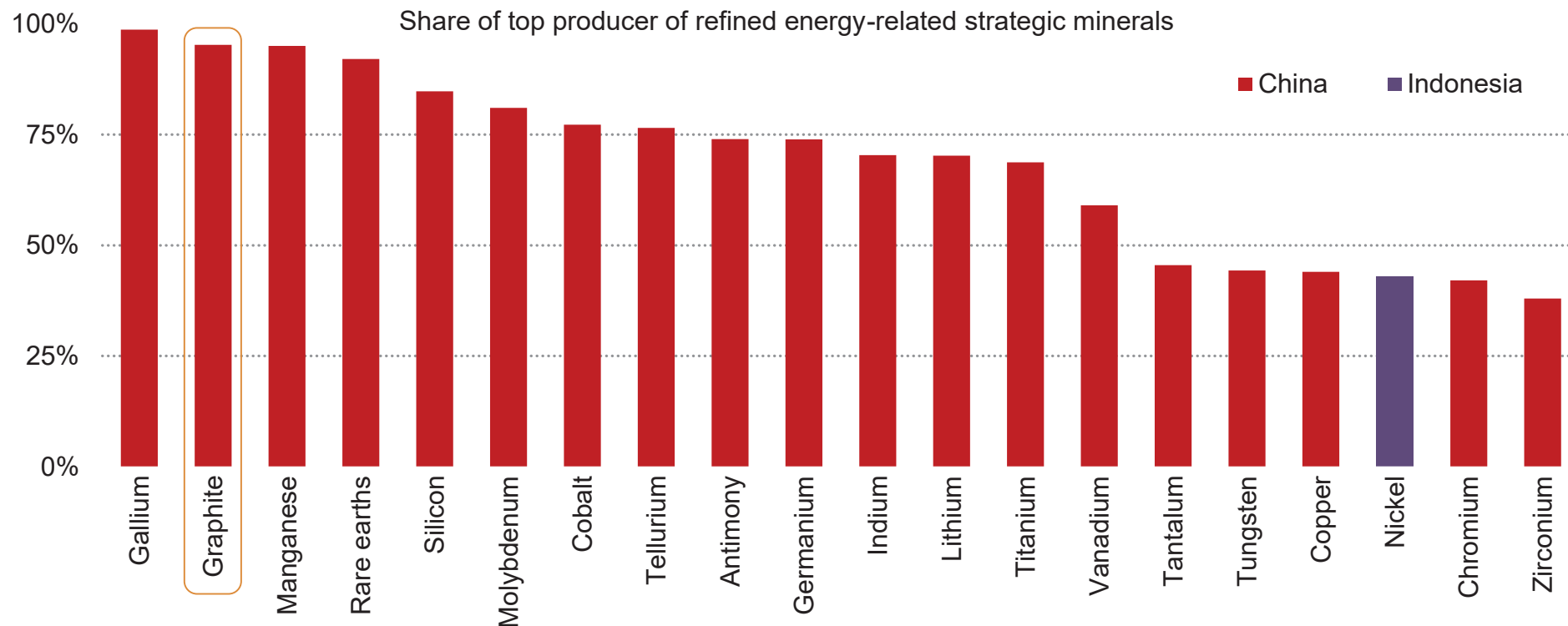
*Immediate Measures to Increase American Mineral Production*



# PROBLEMS, THREATS...

Global Critical Minerals Outlook 2025 [Extract]

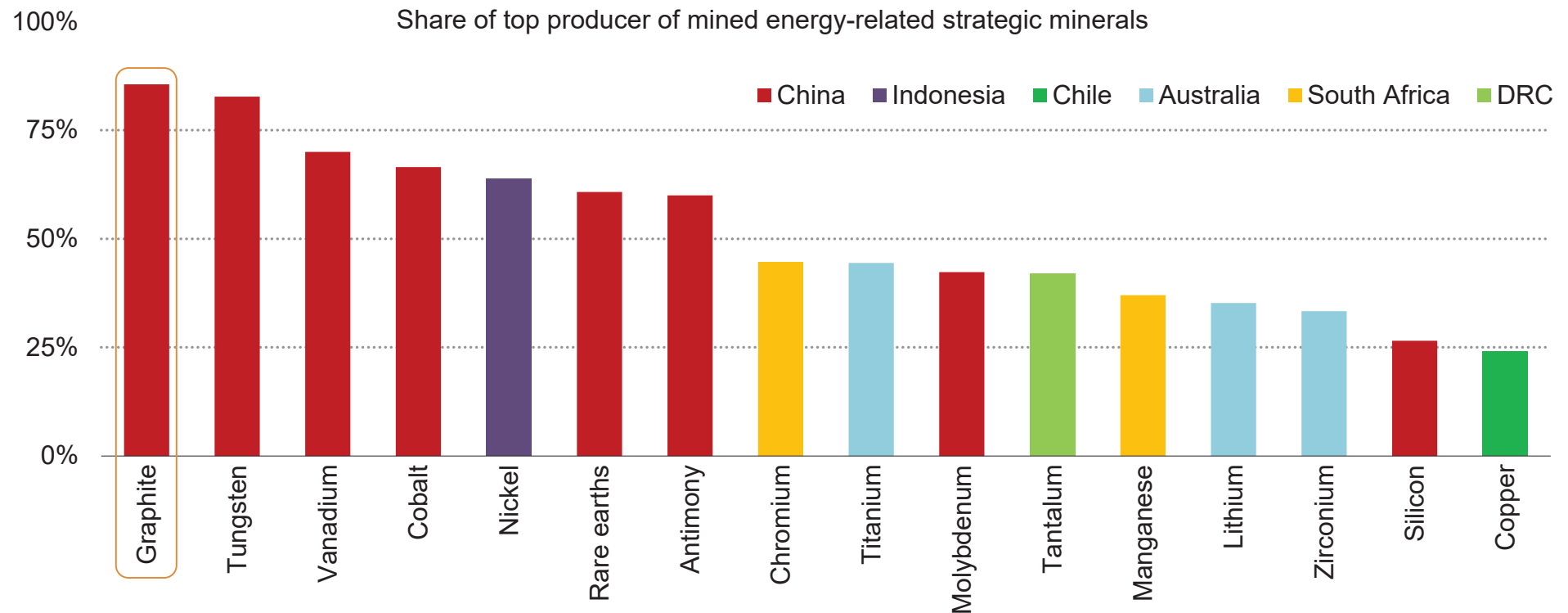
**For refined material production, China is the leading producer for nearly all of the 20 minerals analysed and has an average market share of around 70%**



# PROBLEMS, THREATS...

Global Critical Minerals Outlook 2025 [Extract]

**Over 40% of strategic minerals have a single top producer accounting for more than half of global production, highlighting significant supply concentration risks**

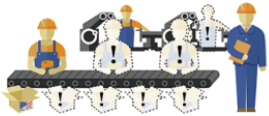




# U.S. RESPONSE

## The Problem

U.S. firms face supply shortage risks of critical minerals, jeopardizing American jobs.



Overseas mines have the potential capacity to produce these minerals but need large amount of financing to operate.



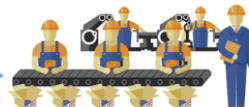
## EXIM's Response

### *Supply Chain Resiliency Initiative*

EXIM financing given to these overseas mines, U.S. firms sign contracts with overseas mines to secure their access to the minerals, fortifying American jobs.



## The Solution



EXIM is launching the Supply Chain Initiative (SCRI) to help secure supply chains of critical minerals and rare earth elements for U.S. businesses.

This will significantly enhance EXIM's support for U.S. jobs in sectors where these materials are integral. PRC market manipulation, subsidies, and export bans of critical mineral and rare earth elements further highlights the need for immediate action.

**U.S. EXIM Bank website extract posted January 9, 2025**



# U.S. RESPONSE

Federal Notice Register [Extract]

## Preliminary Affirmative Determinations in the Countervailing Duty Investigations of Active Anode Material from the People's Republic of China [Extract]

On May 20, 2025, the U.S. Department of Commerce (Commerce) announced its preliminary affirmative determination in the countervailing duty (CVD) investigation of active anode material from the People's Republic of China (China). Commerce is also conducting concurrent antidumping duty (AD) investigation of active anode material from China.

### Preliminary Subsidy Rates

Exporter/Producer	Subsidy Rate (percent)
Huzhou Kaijin New Energy Technology Corp., Ltd. <sup>1</sup>	712.03*
Panasonic Global Procurement China Co., Ltd. / Panasonic Corporation of China <sup>2</sup>	6.55
Shanghai Shaosheng Knitted Sweat	721.03*
All Others	6.55

\*Rate based on facts available with adverse inferences.

<sup>1</sup> Pursuant to 19 CFR 351.304(c)(2), the bracketing of business proprietary information in the original business proprietary document or, if a corrected version is timely filed, the corrected business proprietary document will become final. Once bracketing has become final, Commerce will not accept any further corrections to the bracketing of information in a submission, and Commerce will treat non-bracketed information as public information. As the name of Huzhou Kaijin New Energy Technology Corp., Ltd. was unbracketed in the public version of Panasonic's supplemental questionnaire response, Commerce is treating this name as public information. See Panasonic's Letter, "1st Supplemental Section III Questionnaire Response," dated May 1, 2025, at Exhibit S-4a (i.e., ACCESS barcode 4754928-01); see also the Federal Register notice and accompanying Preliminary Decision Memorandum at 8-9.

<sup>2</sup> Panasonic is a trading company that sold subject merchandise produced by an unaffiliated supplier BTR New Material Group Co., Ltd., BTR (Jiangsu) New Energy Material Co., Ltd., and BTR New Material Group Sales Co., Ltd. (collectively, BTR) and BTR's affiliates. We are preliminarily cumulating the benefits received by BTR and BTR's affiliates with the benefits received by Panasonic into one rate for Panasonic. For further details, see the Federal Register notice and accompanying Preliminary Decision Memorandum at 2-4 and 28-29.



# AUSTRALIA'S ROLE...

Global Critical Minerals Outlook 2025 [Extract]

## **Australia is a major player in global critical mineral supply chains, strategically deploying finance to build domestic supply chains and promoting strong sustainability practices**

### Supply and investment snapshot

Australia is a major player in global critical mineral supply chains, particularly for lithium and bauxite. The country holds the second-largest reserves of lithium in the world, accounting for approximately 23% of global reserves and 35% of global lithium output.

The country's mineral resources are primarily concentrated in Western Australia, home to the Greenbushes lithium mine (one of the world's largest lithium mines) as well as the Mount Weld mine (a key source of REEs for years).

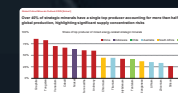
Investment in Australia's critical minerals sector is characterised by growing capital flows, with AUD 760 million newly invested in mineral exploration in 2023.

The investment landscape is composed of both domestic and foreign capital, focusing primarily on lithium and REEs. The REE sector has attracted large capital investments in recent years.

Key projects under development include Iluka Resources' Eneabba project (17.5 kilotonnes per year), Australia's first fully integrated REE refinery which is expected to commence production in 2027. Also significant is the National Reconstruction Fund Corporation's AUD 200 million commitment to Arafura Rare Earths Limited's Nolans Project in the Northern Territory.

Market volatility presents challenges, as evidenced by the closure of three Western Australian nickel mines in January 2024 due to global oversupply and low prices.

The market value of Australia's key energy minerals production currently stands at approximately USD 15 billion for mining and USD 4 billion for refining in 2024, with announced projects indicating growth to USD 23 billion and USD 5 billion respectively by 2040.



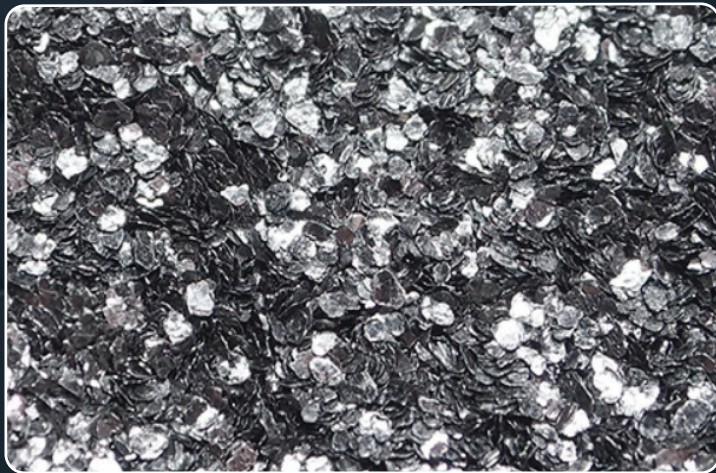


# SOUTH AUSTRALIA - THE SCALABLE CRITICAL MINERALS SOLUTION

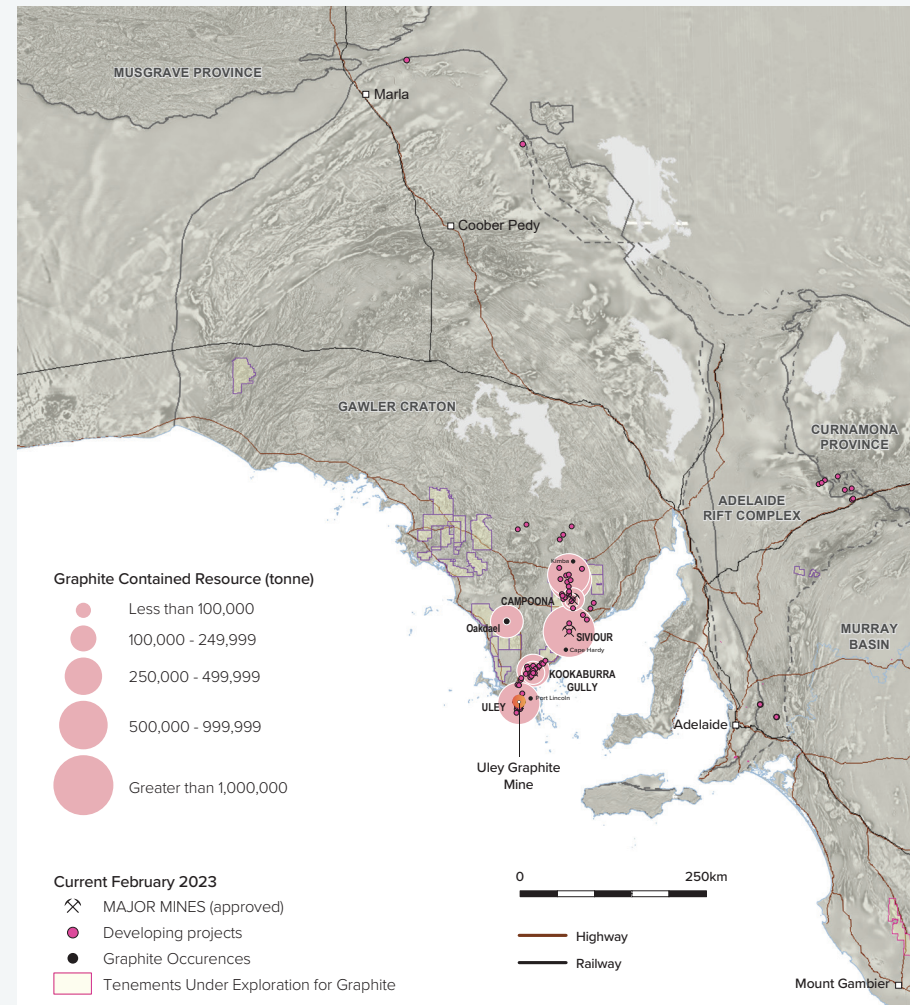
South Australia contains 66% of Australia's confirmed graphite resources (Department for Energy and Mining 2022). Statewide there are >60 recorded graphite occurrences, with the most significant region being the Eastern Eyre Peninsula. Disseminated flake graphite is widely distributed in metamorphosed Paleoproterozoic Hutchison Group rocks. On Eastern Eyre Peninsula, numerous occurrences have been recorded over a 200 km long zone extending from south of Port Lincoln to Kimba.

High graphite contents have been reported in schist units during gold and base metal exploration in the Olary district. The graphite is typically fine grained and has not been assessed for commercial uses.

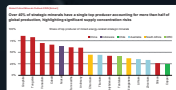
Occurrences of minor graphite are known from Precambrian rocks of the Mount Lofty Ranges near Woodside, Williamstown and Truro.



Uley coarse flake graphite product (>300 micron)



Government of South Australia, Department of Energy and Mining, Graphite  
[www.energymining.sa.gov.au/industry/minerals-and-mining/mineral-commodities/graphite](http://www.energymining.sa.gov.au/industry/minerals-and-mining/mineral-commodities/graphite)



# THE ONGOING CHALLENGE

Global Critical Minerals Outlook 2025 [Extract]

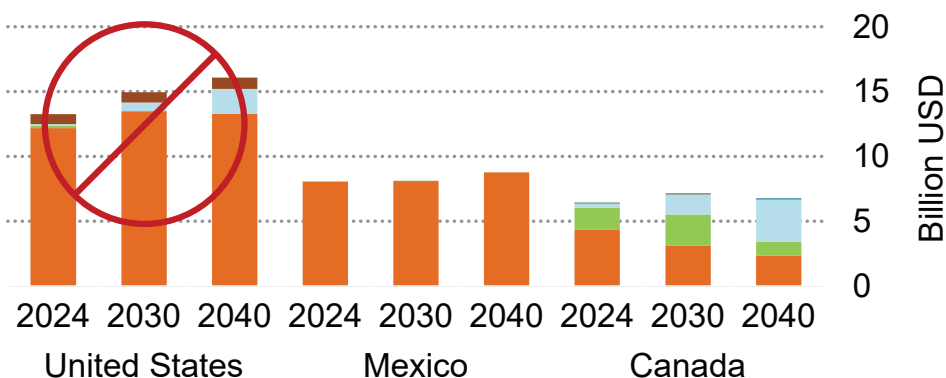
## Outlook: Graphite is one of the materials that are most exposed to potential supply risks, requiring urgent efforts for diversification

North America may also provide potential supplies, with four projects under development in Canada, in addition to the already operating Lac des Îles mine...

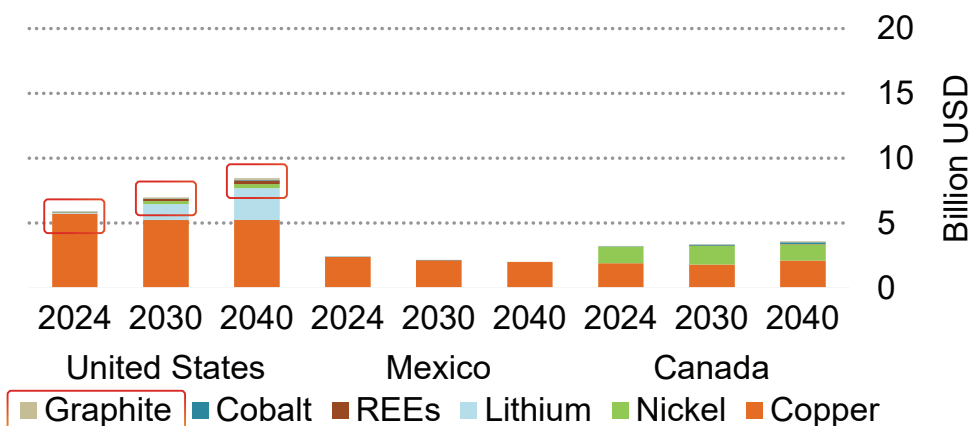
Several projects are also under development in Australia, notably **Quantum's Uley** and Renascor's Siviour projects (100 kt each).

Source: IEA Global Critical Minerals Outlook (2025)

### Mining



### Refining



# THE FUTURE OF GRAPHITE

DELIVERING GLOBAL SCALE TO THE USA IN PURIFIED  
GRAPHITE/ANODE PRECURSOR MATERIAL



Australian Raw Material Supply



U.S. Process and Refining



Commercialisation and Sales



// 10



The Uley Mines comprise several discrete, highly mineralised envelopes all located within a 1200-metre radius representing a potential certified resource of more than 5 million tonnes of natural flake – equivalent to 15 times the annual global flake graphite production.

### ULEY 2 - EXISTING PROJECT (2026 - 2038)

The Uley 2 Project includes the Uley 2 Mine and the Uley 3 Mine.

- All permitting including environmental approvals have been obtained
- All infrastructure requirements have been met, including power (33kVa supply) and water
- Provides the initial 12-years' supply of flake graphite ore to the Sunlands Pure Concentrator

### ULEY 3 SOUTH, 4, 5 AND 6 (2038 - c2070)

These mines will be progressively developed as the Uley 2 Project nears completion.

- Uley 6 is likely to be the next development in light of proximity of the Concentrator servicing the Uley 2 Project (Uley 2 & Uley 3), and the efficiencies associated with the use of existing infrastructure

#### ULEY MINES





The Uley Mines (Near Term Resource Expansion) Plan represents approximately 20% of the total graphite potential in mineral tenements.



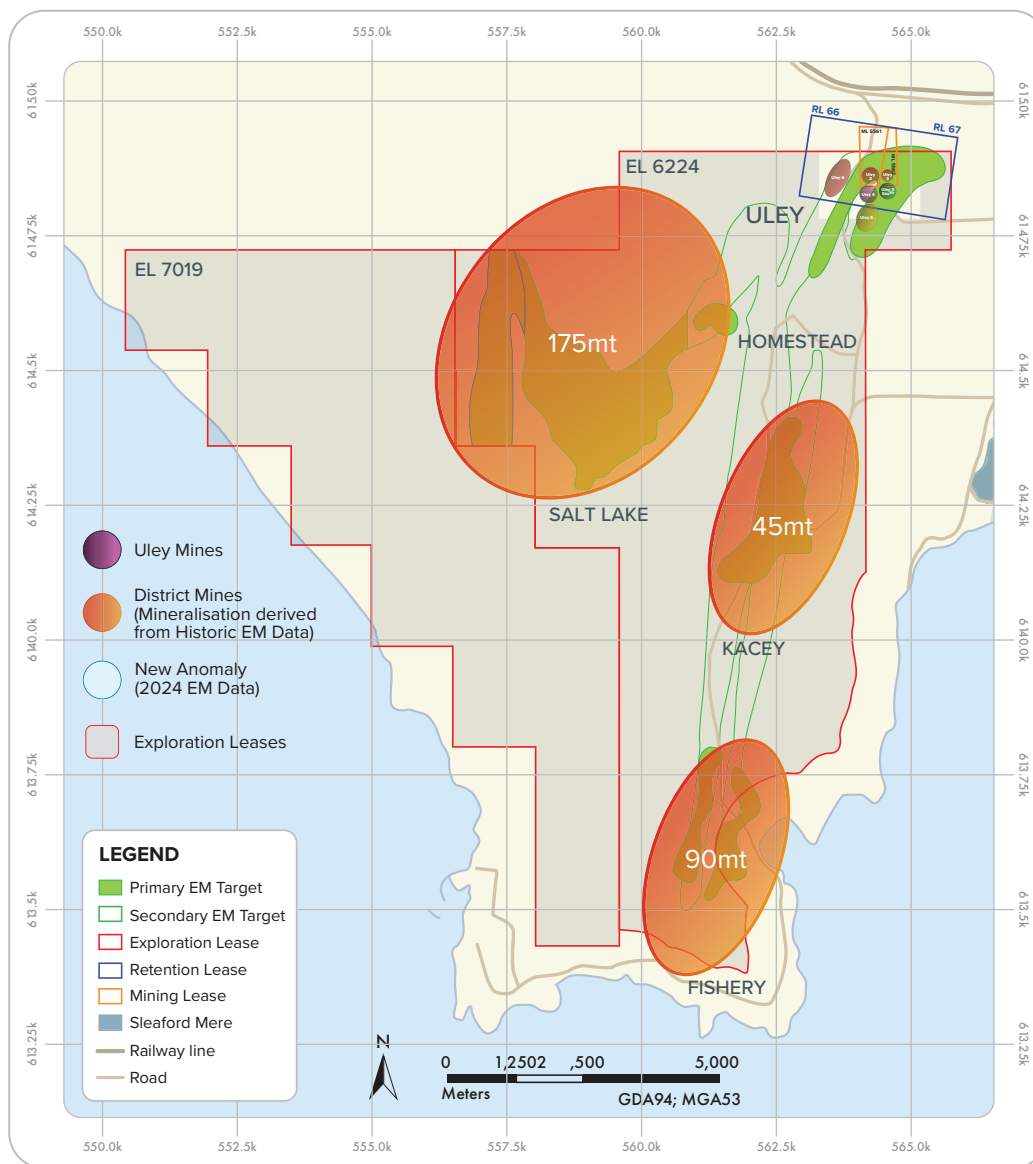
The District Mines Expansion Plan supports a further 50+ years supply of graphite ore from the Salt Lake, Kacey and Fishery prospects. The combined potential graphite resources from these prospects are approximately 6 times larger than the Uley Mines.

District Mines	Potential Graphite Resources (mt)	
	CRA Explorations (Rio Tinto) 1985 Estimated @ 7.5% gC	QGL/SP 2024 Exploration Target @ 8% gC
Fisheries	107	90
Salt Lake/Homestead	150	175
Kacey	69	45

**JORC 2012 Uley Mineral Reserve and Resource Estimate**

Location	Classification	Tonnes (kt)	TGC (%)
Uley 3	Inferred	900	6.6
	<b>Uley 3 Total</b>	<b>900</b>	<b>6.6</b>
Uley 2	Measured	800	15.6
	Indicated	4,200	10.4
	Inferred	1,300	10.5
	<b>Uley 2 Total</b>	<b>6,300</b>	<b>11.1</b>
<b>Uley Project Total</b>		<b>7,200</b>	<b>10.5</b>

The Uley Mineral Resource Estimate of 7,200kt includes proved and probable reserves of 4,003kt at 3.5% TGC cut-off



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The Sunlands Pure integrated processing and refining operations create an end-to-end supply chain supporting an high purity graphite (HPG) hub, ensuring a scalable and independent (ex-China) supply for the global LFP EV BAM sector.

### CONCENTRATOR - PROCESS FACILITY AND FEED STOCK RESERVE

Sunlands Pure will construct a Concentrator to process graphite ore supplied by the Uley Mines.

- Production will consist of 100,000tpa of -196 (flake graphite having a maximum particle size of 150µm and a purity of 96%)
- The process utilises readily available conventional plant and equipment available in Australia
- Sunlands Pure will maintain a secure warehouse to hold sufficient concentrate inventories to ensure continuous supply to the refinery.
  - The secure warehouse is the base of a centralised inventory management and logistics facility that will coordinate its activities with refinery operations and customers
  - Certification and quality management capabilities of this facility forms part of an integrated Australia ASEAN technical & traceable supply chain

### REFINERY - HPG FACILITY AND INVENTORY HUB

Sunlands Pure will construct a refinery that will further process the -196 concentrate to produce -199 HPG.

- Product will be of sufficient quality to satisfy multiple markets – thermal management products e.g. refractory, isostatic graphite and high-value feed stock for the production of LFP EV BAM
- Process utilises proven technologies and readily available plant and equipment available in Australia
- The quality of the concentrate ensures that the process has a minimal environmental impact – confirmed by South Australian Government
- Sunlands Pure will maintain a secure warehouse to hold inventories of HPG. The facility will include a laboratory for testing and sampling of product and independent certification capabilities to support customer requirements.

#### CONCENTRATOR

QGL mines and crushes graphite ore and delivers it to the ROM Pad supplying the [Sunlands Pure](#) Concentrator. Monthly ROM feed is 85,000 tonnes (1,000,000tpa).

#### REFINERY

Concentrate is transported from the [Sunlands Pure](#) Concentrator to the [Sunlands Pure](#) Refinery.

##### Step 1. Crushing & Grinding.

Ore is subject to primary/initial grind to deliver 600µm material to the flotation and polishing circuit.

##### Step 2. Flotation and Polishing Separation.

Milled ore is subject to a sequential flotation and polishing process that liberates graphitic carbon from waste material. This is achieved by a repetitive process of delamination, using the three-stage progressive flotation and polishing circuit.

##### Step 3. Drying & Bagging.

The final graphitic product (~96%gC) is dried and screened for bagging. Laboratory sampling, testing and certification is conducted for each 1 tonne bag on site.

##### Step 4. Storage of Feed Stock Reserves.

Certified inventory is stored at the Sunlands Eyre Peninsula Graphite Hub, ensuring a reserve supply is permanently available to the refinery.

##### Step 5. Transport to refinery.

Inventory readied for transport to the refinery by way of standard shipping lined 40' containers.

##### Step 1. Plant Feed Preparation.

Concentrate is fed into the plant and scrubbed with demineralised water.

##### Step 2. Leaching.

Multiple rounds of leaching in acid solubilises all silicates and removes all other impurities from the graphitic carbon.

##### Step 3. Filtration.

Filtration utilising a membrane squeeze followed by a final wash of the filtrate delivers the purified product (i.e., HPG) to the dryer.

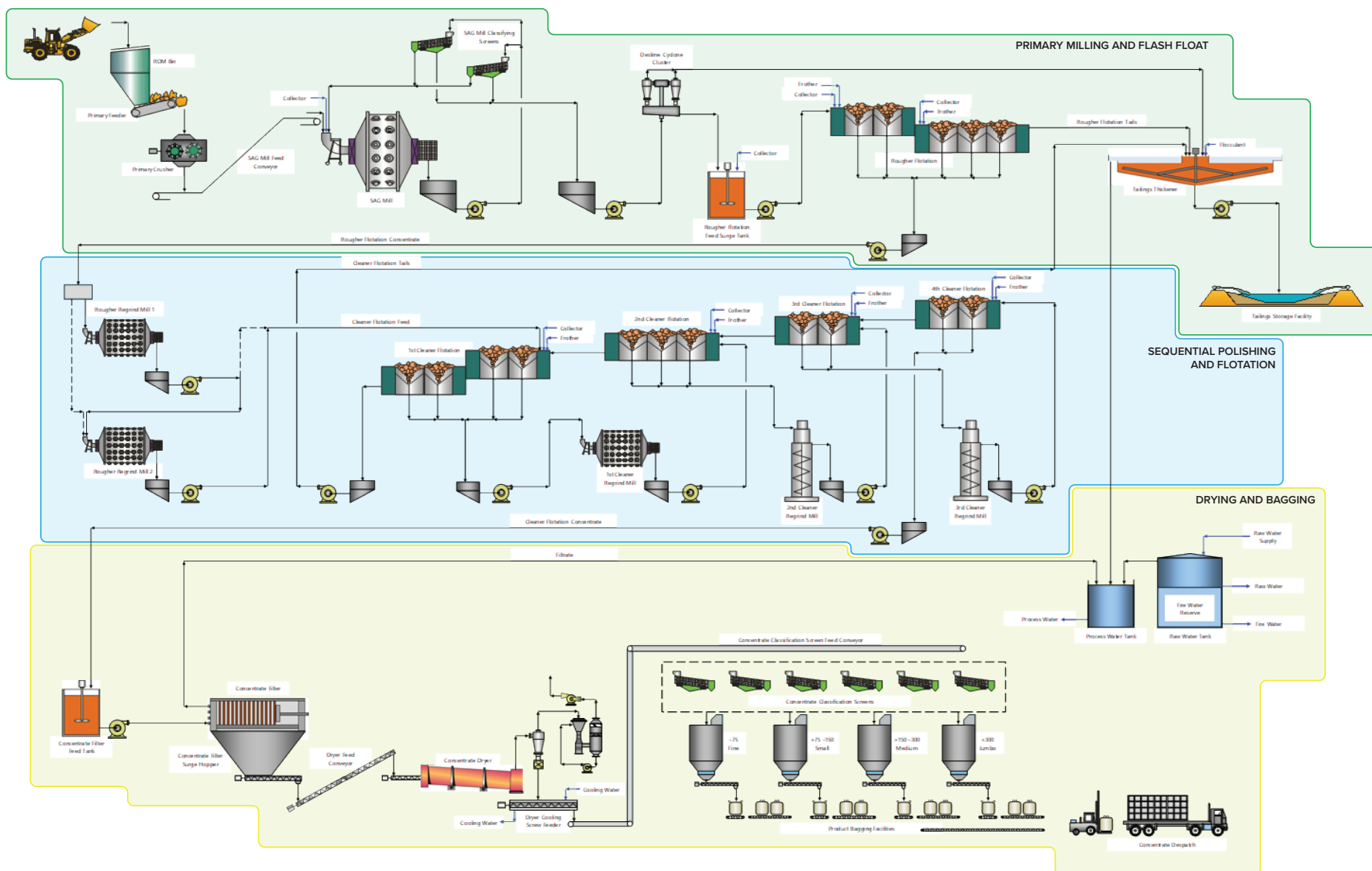
##### Step 4. Drying & Packaging.

HPG is dried with a rotary dryer, removing all moisture for bagging, sampling, testing and certification.

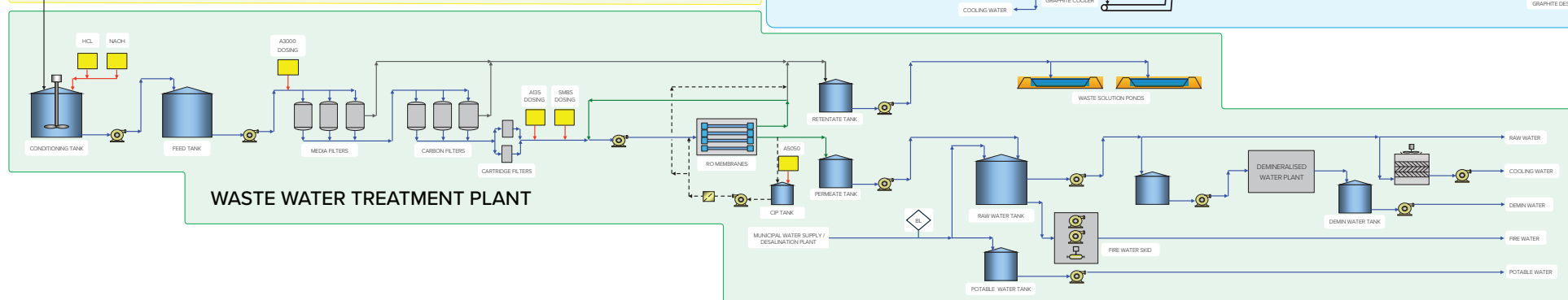
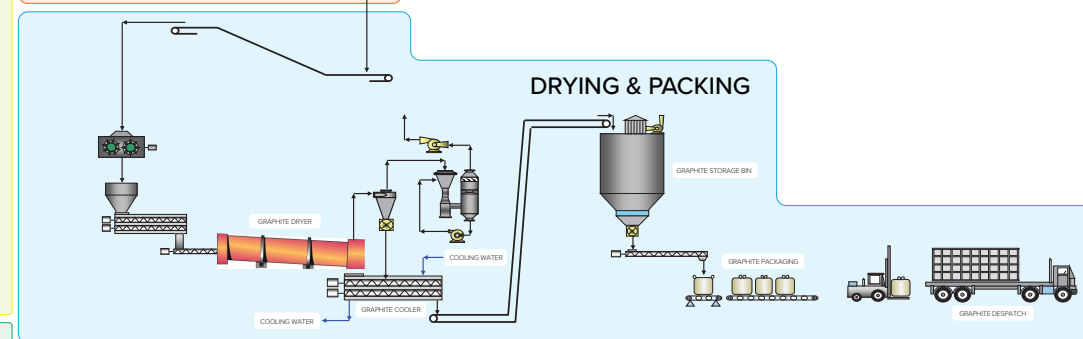
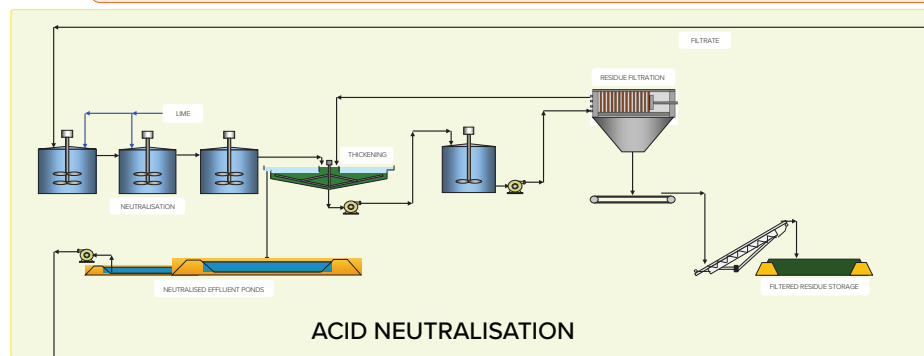
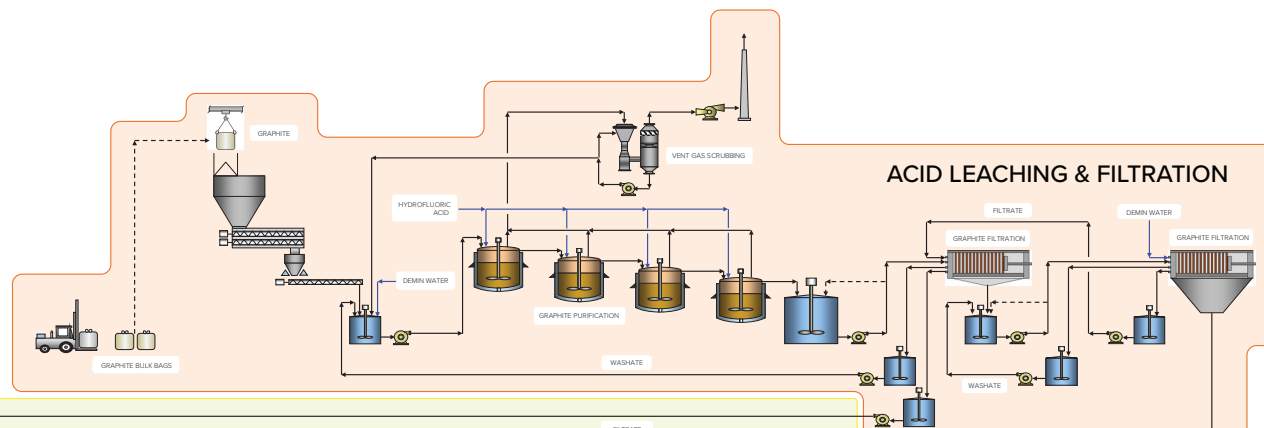
##### Step 5. Storage & Export from Graphite Hub.

Inventory stored in a 50,000ft secure warehouse ready for export.

## CONCENTRATOR



## REFINERY



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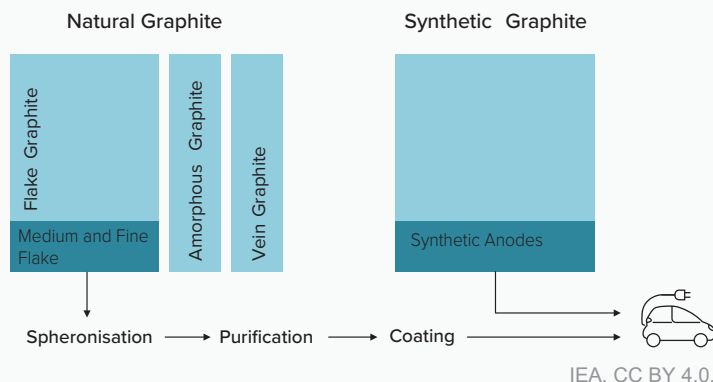


"This is a pivotal moment in the US graphite sector, with the US aiming to de-risk from China and become more self-sufficient in the graphite space, particularly for battery-grade materials," Bennett said. "The combination of incredible growth and the impact of the IRA and Section 301 tariffs will by necessity prompt the development of a US pricing premium..."\*

- IEA states that 20% of EV and storage batteries are sold and installed outside of China. This represents 250,000 tpa of *refined* graphite content wholly supplied within China or by China controlled entities
- By 2030 the estimate of demand outside of China ranges from 2.2 million tpa to 3.5 million tpa of *refined* graphite. Chinese demand pressure on its existing supply chain dramatically increases U.S. supply risk
- Fastmarkets\* estimates U.S. *refined* graphite demand is set to rise by more than 600% to 700,000 tpa within the decade. This represents 1.75 million tpa of high purity graphite (HPG) anode precursor material

Most battery producers globally are heavily reliant on China for graphite anodes. While sizeable natural graphite anode capacities exist outside of China, they depend almost entirely on refined graphite supply from China and exhibit low utilisation rates

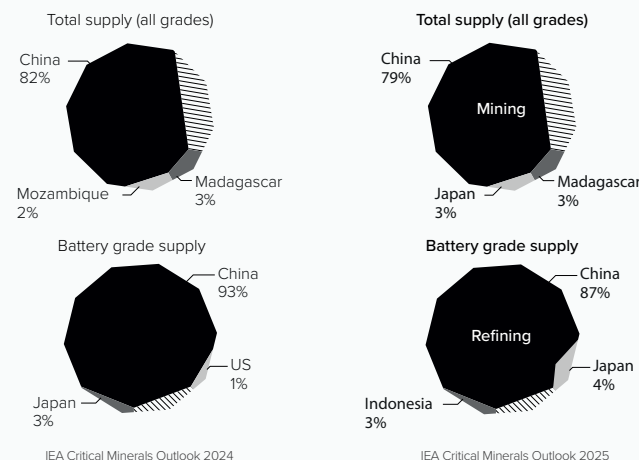
#### Battery-Grade Graphite Supply



\*Amy Bennett, Fastmarkets, 3 October 2024 [www.fastmarkets.com](http://www.fastmarkets.com)

- QGL/SP is the only development ready natural flake graphite producer targeting US (ex-China) scalable production of anode precursor material for LFP Li-ion batteries
- U.S. development of an alternative/independant anode precursor supply chain is a priority to combat pre-existing market dominance

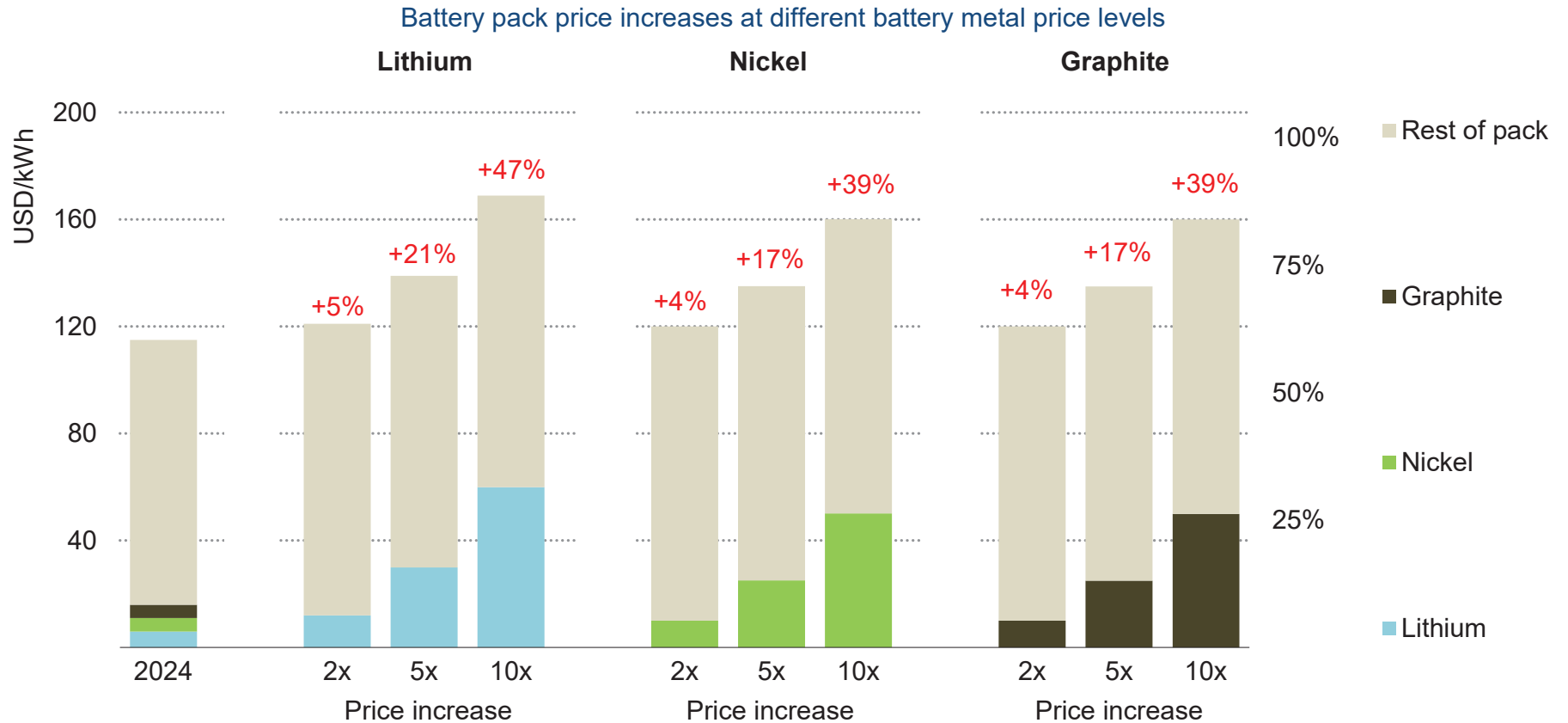
#### Top three producers 2030



- LFP has emerged as the preferred Li-ion battery technology due to lower cost structure and least complex supply chain (i.e., no cobalt or nickel)
- LFP batteries are likely to drive a significant increase in the natural graphite share within anode from more than a quarter (**28% natural**, 72% synthetic) to half (**50% natural**, 50% synthetic) by 2030
- Within the next 5 years, based on these estimates, this translates to U.S. demand or more than 250,000 tpa of refined graphite or 625,000 tpa of HPG

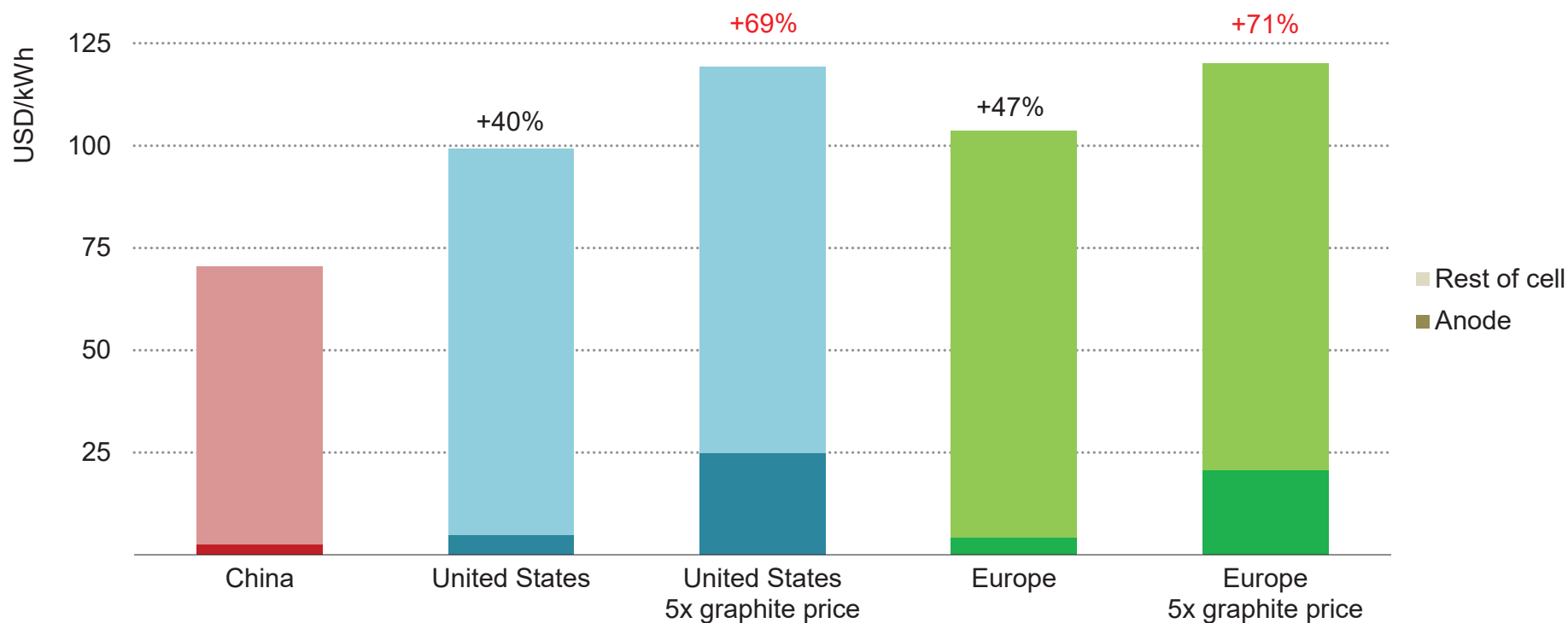


**A battery mineral price shock could increase global average battery pack prices by 40-50% resulting in higher prices for consumers...**



... and dramatically reducing manufacturing competitiveness, widening the battery manufacturing cost gap with China from 40-50% to 70% for Europe and the United States

Battery cell levelised cost of production by region at different graphite price levels





## Binding Offtake Agreement

- Binding off-take agreement executed with MRI Trading AG, leading Global Metals and Mining, Swiss based trading group for up to 55% (55,000 tpa) of total HPG production of 100,000 tpa
- Trading platform built upon more than 20 years of market intelligence
- 5 year term commencing from first delivery (est. Dec 2026)
- Ultimate customers include: Mitsubishi Chemicals Group, Marubeni Corp. and Sumitomo Corp.
- Minimum of 45% of HPG production reserved for U.S. domestic sales and marketing plan to ensure guaranteed long term supply of anode precursor material for U.S. anode manufacturers

## Forecast Concentrate Prices - Unprecedented Upside

Commodity Prices (US\$/t) gC	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	LT
94-97% +32 mesh	1,878	1,800	1,913	2,138	2,363	2,250	2,373	2,436	2,500	2,025
94-97% +50 mesh	1,444	1,545	1,700	1,900	2,100	2,000	2,110	2,165	2,222	1,800
94-97% +80 mesh	1,207	1,241	1,360	1,520	1,680	1,600	1,688	1,732	1,778	1,440
94-97% +100 mesh	984	996	1,107	1,235	1,365	1,300	1,371	1,407	1,444	1,170
94-97% -100 mesh	831	800	850	950	1,050	1,000	1,055	1,083	1,111	900
Purified spherical	3,576	3,720	4,229	4,750	5,250	5,000	5,274	5,413	5,555	4,500
Active Anode Material	7,576	7,720	8,229	8,750	9,250	9,000	9,274	9,413	9,555	8,500

Product Pricing Range

Source: Macquarie Bank, Fastmarkets 2023

