

# AUSTRALIAN BATTERY GRAPHITE FROM MINE TO MARKET

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Managing Director and CEO

Presentation to Sydney Mining Club, 4<sup>th</sup> May 2023



AUSTRALIAN BATTERY GRAPHITE  
FROM MINE TO MARKET  
(ASX:IG6)

#### **Acknowledgement of Country**

*International Graphite acknowledges the Traditional Custodians of Country throughout Australia, particularly the Whadjuk, Willman, and Wudjari Peoples of the Noongar Nation, and recognises their continuing connection to lands, waters and communities. We pay our respects to Aboriginal and Torres Strait Islander cultures and to Elders past and present.*

# Vision

Western Australia's first fully integrated mine-to-market producer of graphite battery anode material

## Springdale Graphite Project

- Mine 100% owned mineral resource
- Produce 95% grade graphite concentrate
- Truck 450km to Collie

## Collie BAM Production

- Processing graphite concentrate to product battery anode material (BAM)



# Global megatrends driving graphite demand

## Unprecedented forecast for batteries and battery minerals

- Power and transport generate >70% of greenhouse emissions

- Governments worldwide are phasing out new combustion car sales and incentivising clean energy technologies



- Decarbonisation is creating a tectonic shift as industry moves from fossil fuels to clean energy



- Major economies around the world are pushing this transformation to:
  - Meet net zero commitments
  - Strengthen energy security and resilience
  - Protect infrastructure and biodiversity from climate change
  - Win market share in the lucrative new energy economy

**29%**



**Electric Vehicles  
10 year CAGR <sup>1</sup>**

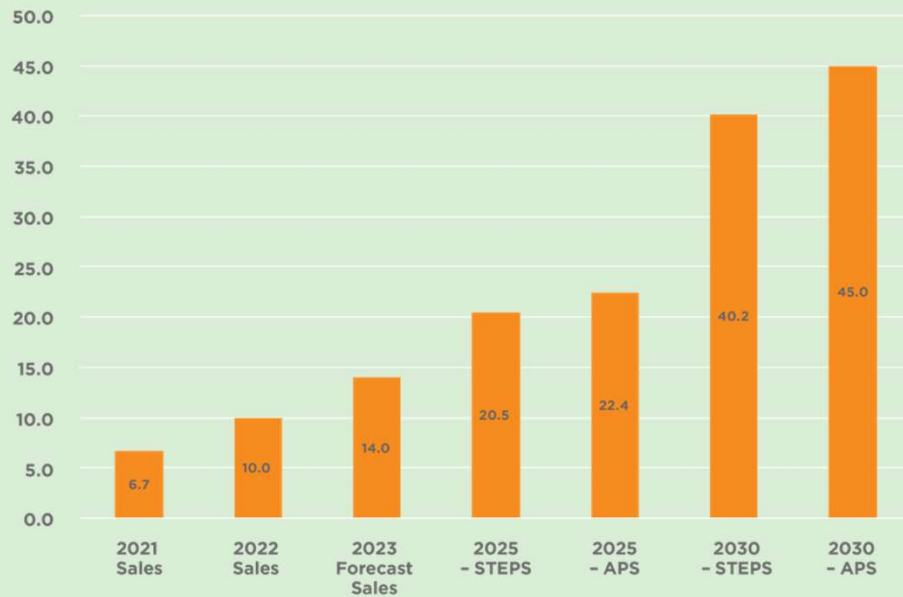
**EV sales  
expected  
to be  
35%  
of global  
car sales  
by 2030<sup>2</sup>**

<sup>1</sup> Deloitte outlook 2020-2030  
<sup>2</sup> International Energy Agency, 2023

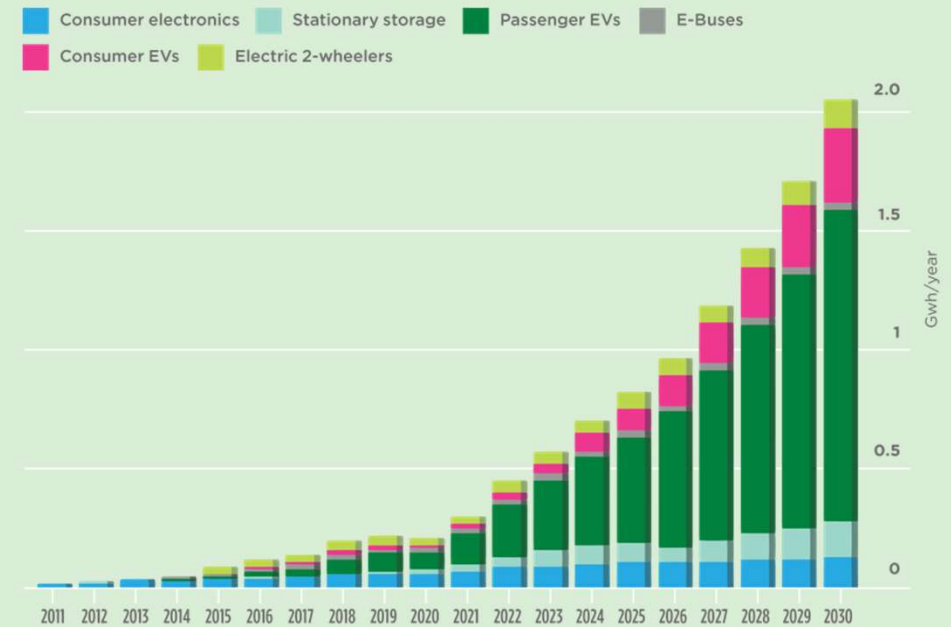
# EV sales to fuel lithium-ion battery demand

EVs expected to be 35% of all vehicle sales in ten years – 13x increase

ANNUAL EV SALES (MILLIONS)



LITHIUM-ION BATTERY DEMAND FORECAST

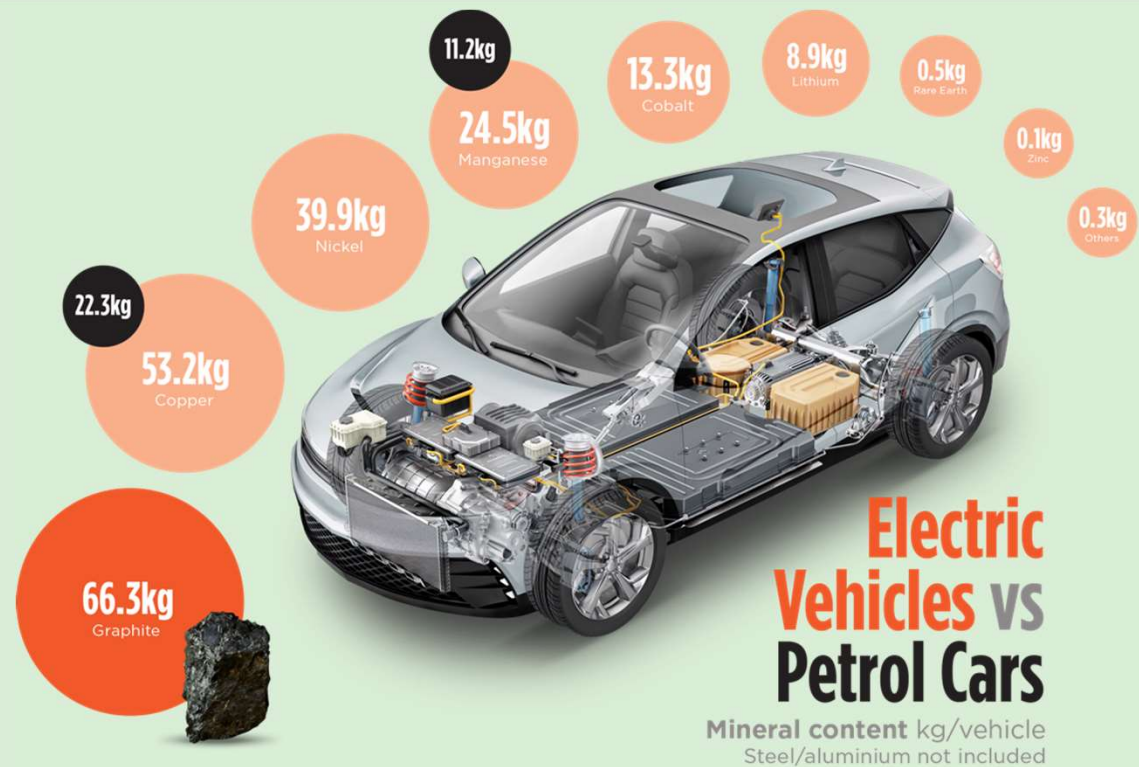


<sup>1</sup> International Energy Association EV Outlook 2023



# Graphite dominates the lithium-ion battery anode despite cathode formulation

- Graphite makes up 95% of the anode in a lithium-ion battery...
- ...up to 10x more graphite than lithium
- ~1kg of graphite is required for 1kwh
- Currently, almost every kilogram of battery anode material is processed through China

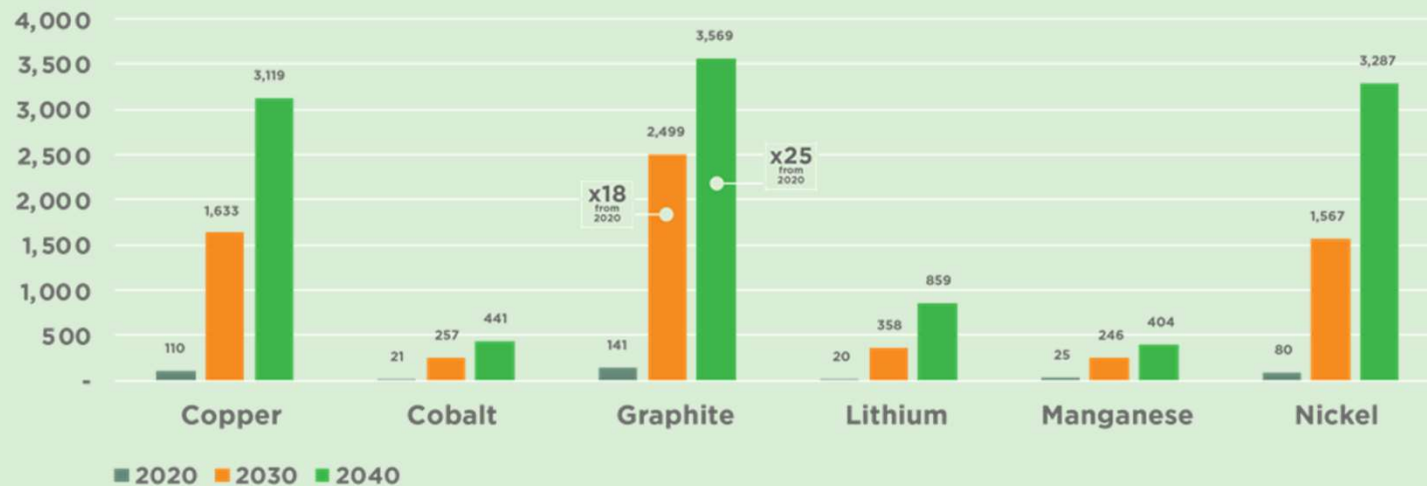


<sup>1</sup> International Energy Association EV Outlook 2023

<sup>1</sup> 75kwh battery

# New graphite (and other critical battery metals) mines and anode capacity essential

SDS: CRITICAL MINERALS REQUIRED IN EVs ('000t)



- “97 new natural flake graphite mines needed by 2035” – Benchmark Minerals Intelligence

<sup>1</sup> International Energy Association EV Outlook 2023

# Corporate Overview



## Capital Structure

	IG6
Shares on issue	165.2M
Market capitalisation as at 30 April 2023	\$38.0M
Cash in bank (31 March 2023)	\$2.2M
KMP Options (5 year term, ex price \$0.30 -\$0.40/share)	8.0M
Advisor Options (3 year term, ex price \$0.30/share)	6.2M
Performance rights with various milestone and share price hurdles to KMP	9.6M
Comet Resources Limited	24%
Board and management (fully diluted)	41%





# Springdale Graphite Project

Developing a high quality graphite resource at Hopetoun, Western Australia  
The world needs new graphite mines



# Springdale Graphite Project

## Key characteristics

- **Drilling** – 20,465m completed with four new graphite discoveries in 2022-23
- **100% owned** – covering 168km<sup>2</sup> with three licenses – 2x granted exploration, 1x granted prospecting + 1 exploration under application
- **Cleared agricultural land**
- **Existing resource** – includes high grade mineral component
- **Significant graphite anomalies** – identified by aeromagnetic survey by previous owners. Untested prior to acquisition.
- **Shallow mineralisation** – oxide transition to fresh rock
- **Fine flake** – only requires conventional flotation circuit to produce a 95% TGC concentrate
- **Material suitable for battery anodes** – evidenced by independent testwork in Germany
- **Permitting** – commenced

### Springdale Graphite Project Inferred Mineral Resource Estimate –2% TGC cut-off JORC 2012 <sup>(1)</sup>

Domain	Tonnes (Mt)	Density (t/m <sup>3</sup> )	Graphite (TGC%)
High grade	2.6	2.1	17.5
Low grade	13.0	2.2	3.7
<b>Total Resource</b>	<b>15.6</b>	<b>2.2</b>	<b>6.0</b>

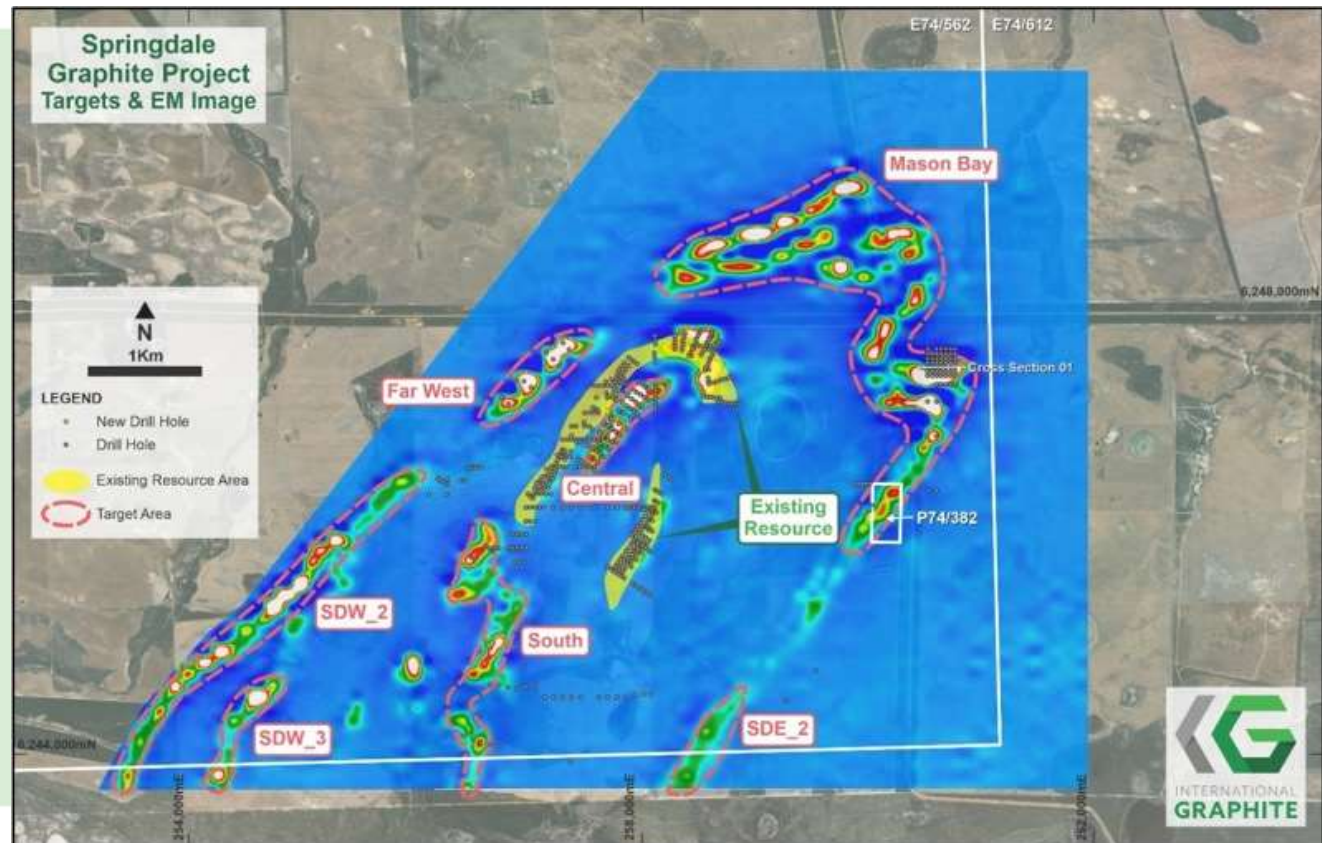


<sup>(1)</sup>Refer the Company's prospectus dated 21 February 2022 as updated by the Supplementary Prospectus dated 4 March 2022 for further details regarding the Mineral Resource Estimate, including the Independent Technical Assessment Report prepared in respect of the Springdale Graphite Project.

# Springdale Graphite Project

Exploration success with more substantial targets likely to add significant resources over time

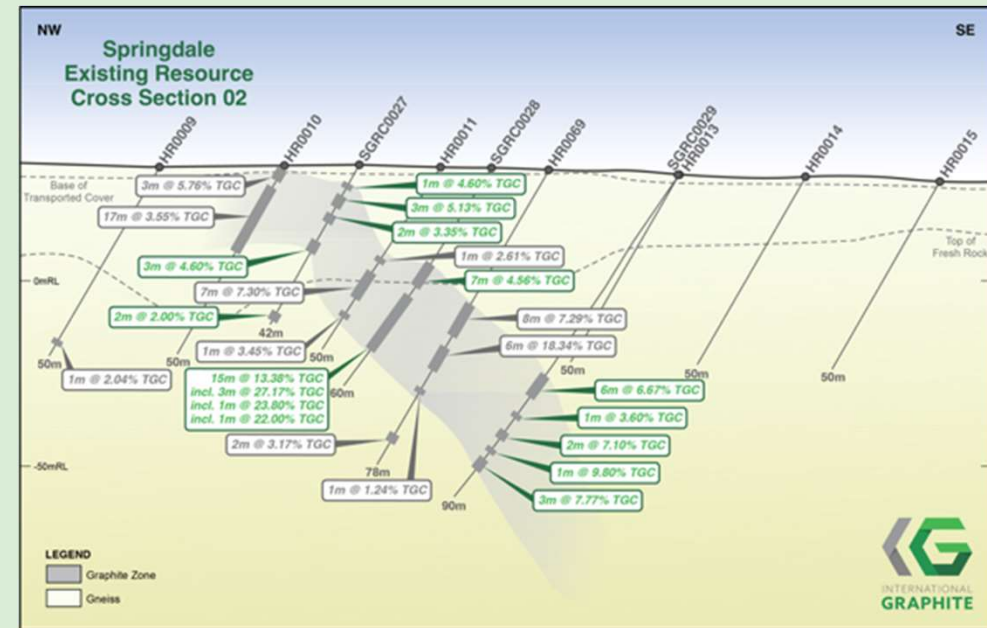
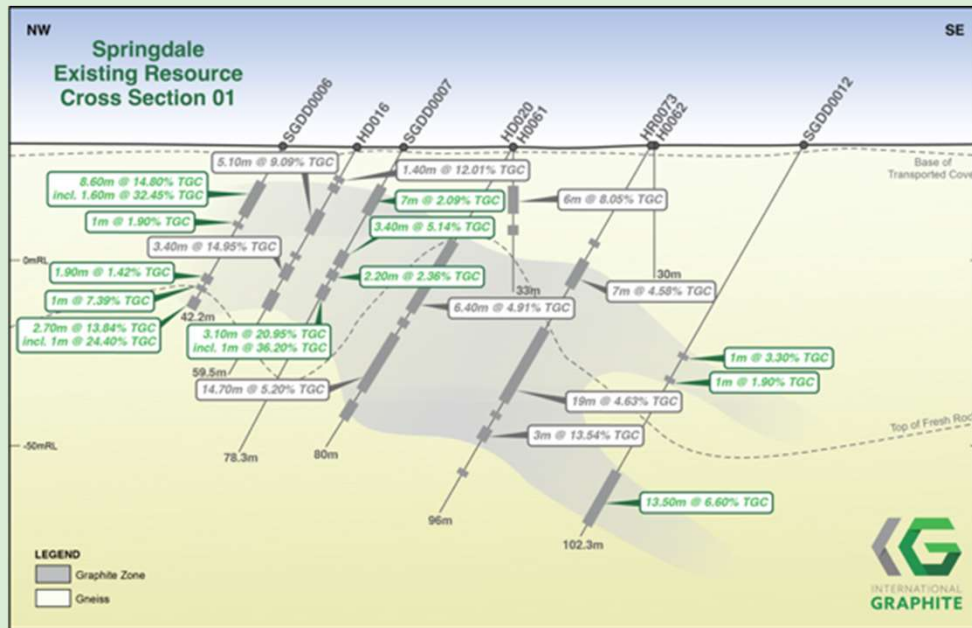
- ~20,465m of drilling completed by IG since June 2022, building on 7,900m of previous drilling
- Four new graphite discoveries in 2022-23
- Drilling confirms high grade domains in existing resource model and block model performance
- Flotation testwork confirms 97%+ concentrate grade with graphite recoveries > 93%
- Highly prospective with aeromagnetic survey identifying significant graphite anomalies yet to be explored
- Updated mineral resource estimate due Q2 2023





# Springdale Graphite Project

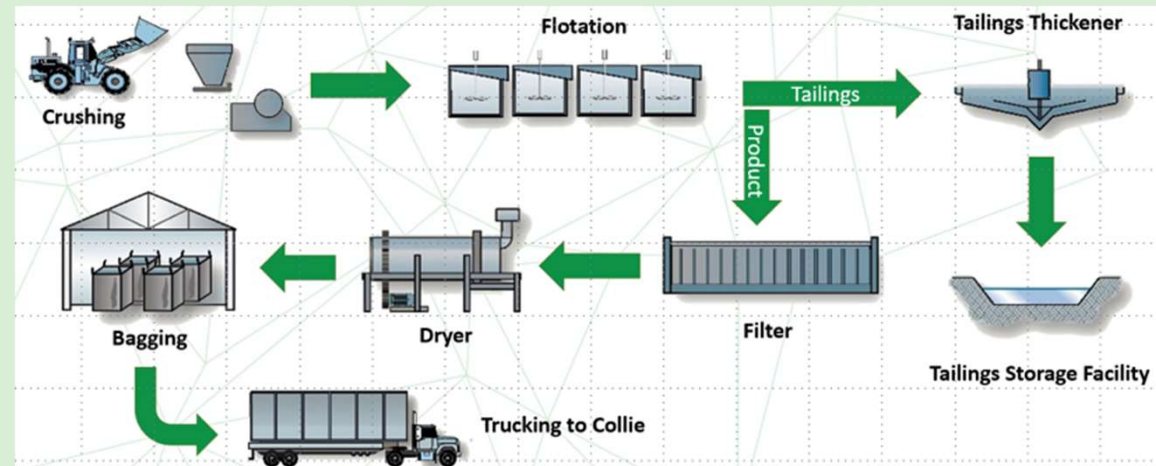
Typical cross sections from diamond and RC drilling within the existing Mineral Resource – shallow, open at depth



# Springdale Graphite Project

Target operations – subject to confirmation through feasibility studies

- Design subject to feasibility studies
- Ore mining – target of 250ktpa-500ktpa to be determined by updated mineral resource model and grade / tonnage profile
- Concentrate production – target of 40-50ktpa
- Shallow, multiple open pits
- Targeting weathered/oxide zone of mineralisation
- Strip ratio likely to be <5:1
- Primarily free dig with limited drill and blast
- Small conventional mining equipment
- Day shift mining operations only
- Off the shelf concentrator plant readily available



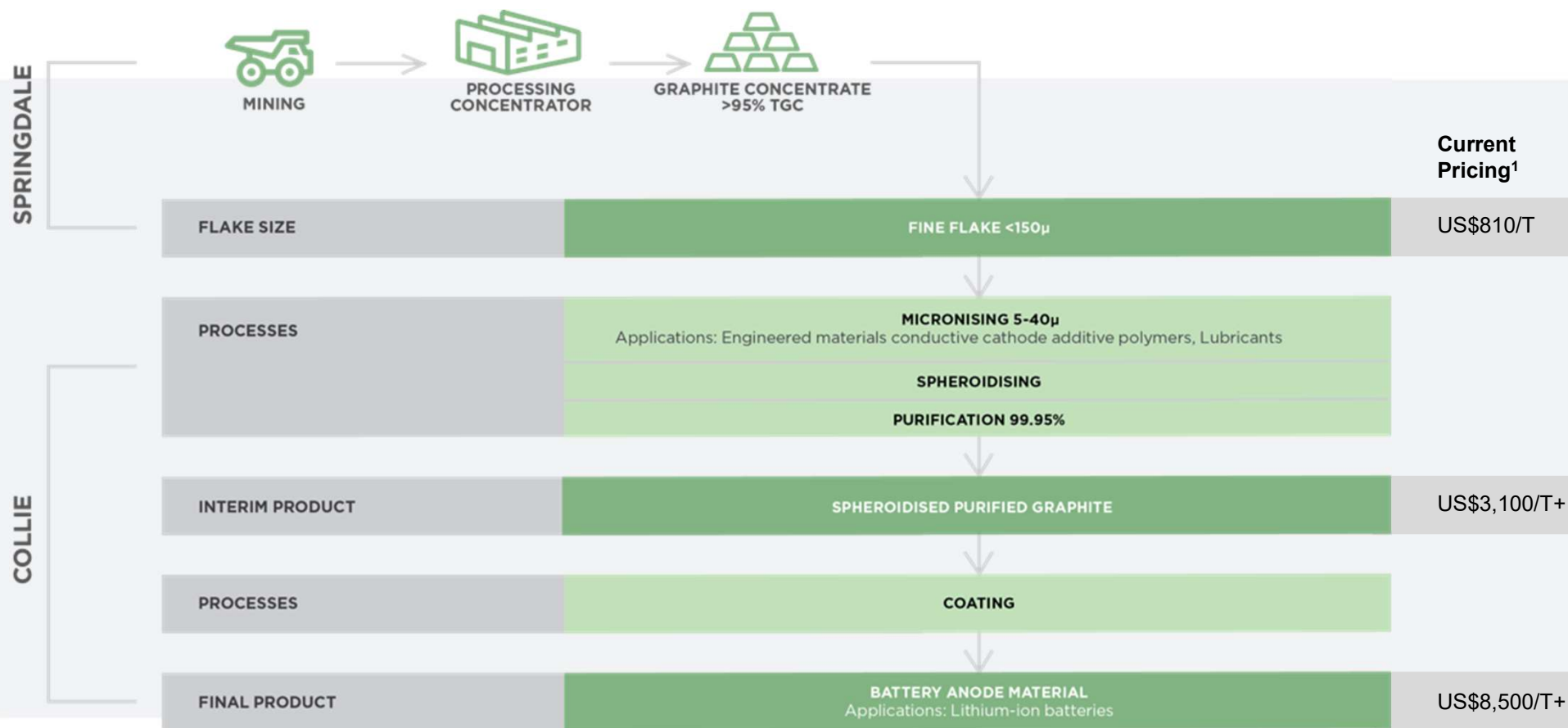


# Collie Downstream Processing

Western Australia's first fully integrated mine-to-market producer of graphite battery anode material



# Capturing full resource value



<sup>1</sup> FOB China Benchmark Intelligence – January/February 2023

# The Collie advantage

Emerging battery and renewable energy hub with \$662M WA Government investment in new industry

- Southern end of WA's main industrial strip with strong focus on power and critical minerals
- 200km from Perth and 450km from Springdale on sealed roads
- Established infrastructure and road/rail transport from mine to port
- Skilled workforce and training facilities
- \$200M Collie Industrial Transition Fund part of an unprecedented Government commitment to the region
- South West interconnected power grid being supported by renewable energy build out





# Collie Graphite R&D Facility

First facility establishes a presence in Collie with pilot scale equipment

- \$2.5M spent in Collie to date establishing pilot scale micronising, spheroidising mills and purification equipment
- Plant one of the first and most advanced of its kind in Australia
- Product testing commenced in 2022 with imported concentrates used to assess the conditions for micronising and spheroidising to market acceptable specifications
- First sample product achieved in September 2022
- Sizing and distribution of spheroidised graphite product achieve standards for battery anode material
- Qualification scale micronising plant has been ordered (~\$1.4M) and set to be delivered in Q3 2023
- JTSI \$2M grant awarded



# Collie Graphite BAM Facility

Scoping Study shows outstanding results and development pathway

- Scoping Study\* completed to Association for the Advancement of Engineering (AAE) Class 5 with a nominal level of accuracy of  $\pm 35\%$
- Facility capable of receiving 40kt/y of graphite concentrates
- Planned flowsheet involves graphite micronising, spheroidising and non-HF chemical purification, to produce uncoated spheroidised purified graphite (USPG), then carbon coating to produce coated spheroidised purified graphite (CSPG)
- Plant designed in modules and as two parallel lines enabling the project to be implemented in stages. Initially USPG product could be produced with coating facilities added to produce CSPG
- Scoping Study based on the purchase of graphite concentrates from third party sources. When Springdale has advanced to sufficient level of detail to allow forecasts to be published, the Scoping Study will be updated integrating Springdale

	Unit	CSPG Project	USPG Project
Annualised finished product	Kt/y	18.6	20.0
Annualised micronised by-product	Kt/y	17.0	17.0
Pre-tax/pre finance NPV <sub>10</sub>	US\$'M	626	290
IRR	%	41	48
Capital cost estimate	US\$'M	222	87
Operating cost estimate net of by-products	US\$/t product	3,175	2,029
Average annualised revenue	US\$'M	172	95
Average annualised EBITDA	US\$'M	100	43

\*Refer to disclaimer and cautionary statement in this presentation



# Collie Graphite Micronising Facility

Springboard to early cashflow and a market for BAM by-products

## Rationale

- Micronised products are a by-product from BAM flowsheet
- Facility would develop markets critical for placement of BAM by-products and develop operations skills
- Cashflow generation prior to BAM facility

## Description

- Nominal capacity – 4-5ktpa depending on graphite size fractions and target markets
- Capex forecast – A\$12.5M
- Concentrate source – imported feed
- Turnover – US\$12M+ per annum, margins – US\$5M+ per annum

## Timeframe

- Qualification plant – ordered due for delivery in Collie June 2023
- Commissioning and product quality / sales initiatives – Q3, 2023
- Final investment decision – H2, 2023
- Operations – commence Q3 2024



# ESG commitment across the supply chain

- Promoting sustainability along the value chain with mine to market oversight in Western Australia
- Smaller carbon footprint – 450km road haul means transport efficiency, reduced cost and waste
- Maximise use of available green energy from South West Interconnected System
- Contributing to the growth and development of regional communities
- Creating jobs and in Collie
- Community partnerships in sport, art and education eg Einstein-First with UWA
- Demonstrating best practice in reporting and compliance

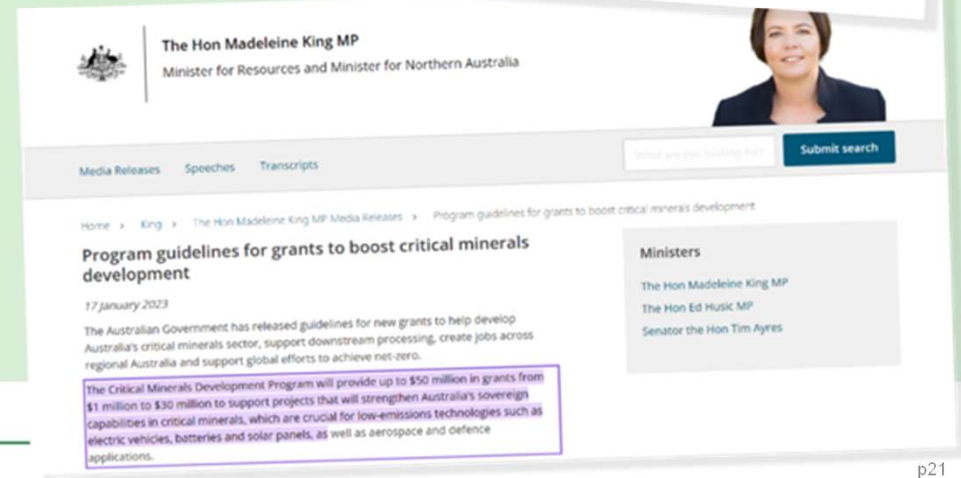
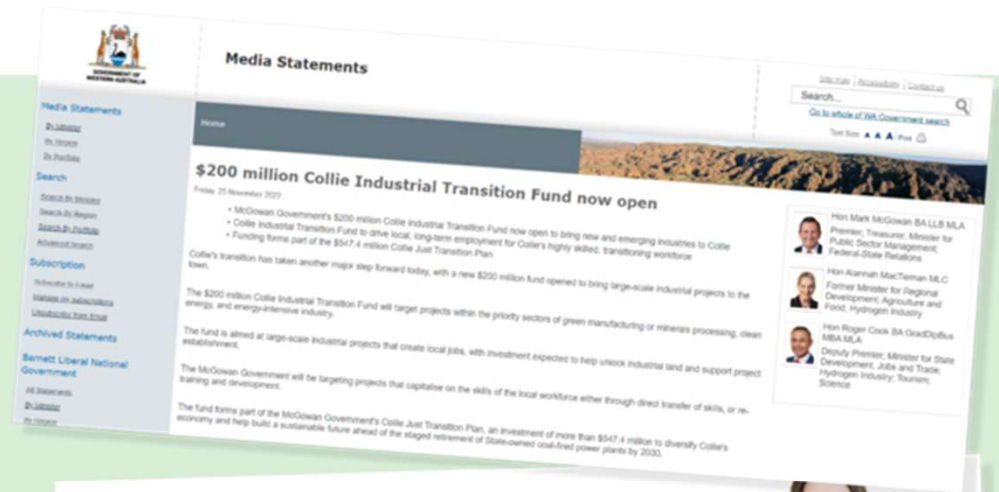
IG6 offers a unique ESG platform for battery manufacturers – critical in their search for raw materials



# Government backing for battery minerals

Potential for additional investment in IG6

- Australia aspires to be a battery minerals superpower
- \$200M Collie Industrial Transition Fund announced by the WA Government 25 November 2022
- \$50M Critical Minerals Development Program announced 17 January 2023 by the Australian Federal Government
  - Feasibility funding
  - R&D tax rebates
- Australian Export Finance Agency proven debt financiers of sovereign graphite developers



# Expert professional team

Strong technical focus with decades of graphite experience



**Phil Hearse**  
Chairman and Founder



**Andrew Worland**  
Managing Director & CEO



**David Pass**  
Chief Technical Officer



**Robert Hodby**  
CFO & Company Secretary



**Jasbir Khosa**  
Principal Process Engineer



**Marie Howarth**  
Director Marketing & Communications



**Greg Entwistle**  
Project Director



**Josh Hearse**  
Project Manager



**Darren Sparks**  
Exploration Manager



**John Tollis**  
Collab. Construction Manager



**Kathy Miller**  
Chief Industrial Chemist



**Mick Murray**  
Community Relations Advisor Collab.





# Stay tuned for...

- Springdale resource and exploration drilling results – ~10,000 samples currently with assay laboratory
- Revised mineral resource estimate for Springdale
- Site selection for Collie Graphite BAM Facility
- Arrival of Collie Graphite Micronising Facility qualification scale plant, installation and commencement of customer qualification
- Springdale mine planning and ore reserve estimation
- Preparation of bulk concentrate samples at Springdale for downstream processing testwork
- Participation in government funding programs





# Vision

Western Australia's first fully integrated mine-to-market producer of graphite battery anode material



- Graphite – critical for electric vehicles, storage and global decarbonisation
- Supply deficits inevitable
- The right assets in the world's best location
- High calibre team
- Supportive governments and communities
- Demonstrating the highest standards of ESG
- Aiming to capture full value from the natural graphite resource

A rare high value opportunity for global participants in the electrification of world economies

## Disclaimer

Pursuant to 'ASX interim guidance: Reporting scoping studies', International Graphite provides the following commentary:



### 1 – Include all information required by the Listing Rules

Note that The Collie Graphite BAM Facility Scoping Study does not rely upon estimated ore reserves / and or mineral resources. Graphite concentrate feedstock for the proposed Collie Graphite BAM Facility has been assumed to have been purchased directly from miners currently producing graphite concentrates or marketing agents or traders currently purchasing graphite concentrates and selling to the downstream processors. Ultimately the Company's 100% owned Springdale Graphite Project would be a source of graphite concentrate for the facility, however this is subject to the completion of feasibility studies at Springdale. Accordingly the JORC Code is not relevant to this study nor are Listing Rules 5.16 and 5.17 to the extent to which they relate to matters concerning JORC.

### 2 – Reasonable grounds for any forward-looking statements

This release contains "forward-looking information" that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to studies, the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations. Generally, this forward-looking information can be identified by the use of forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this news release are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward-looking information. Forward-looking information is developed based on assumptions about such risks, uncertainties and other factors set out herein, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current development activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of metals; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the chemical industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward-looking information. These and other factors should be considered carefully, and readers should not place undue reliance on such forward-looking information. Neither the Company, nor any other person, gives any representation, warranty, assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statement will actually occur. Except as required by law, and only to the extent so required, none of the Company, its subsidiaries or its or their directors, officers, employees, advisors or agents or any other person shall in any way be liable to any person or body for any loss, claim, demand, damages, costs or expenses of whatever nature arising in any way out of, or in connection with, the information contained in this document. The Company disclaims any intent or obligations to or revise any forward-looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law.

### 3 – Disclose all material assumptions

All material assumptions in the Scoping Study have been described in this release in the section titled Collie Graphite BAM Facility Summary including Material Assumptions.

### 4 – Cautionary Statement

The Collie Graphite BAM Facility Scoping Study has been completed in accordance with AACE Principles to a Class 5 level with a nominal level of accuracy of  $\pm 35\%$ . The Scoping Study referred to in this announcement has been undertaken to assess the potential technical feasibility and economic viability of constructing and operating facilities capable of producing battery anode materials for use in lithium-ion batteries and by-products from those units of operations and provide baseline financial metrics to consider future investment decisions.

It is a preliminary technical and economic study of the potential viability of the Collie Graphite BAM Facility. It is based on low level technical and economic assessments that are not sufficient to provide definitive assurance of an economic development case, or to provide certainty that the conclusions of the study will be realised. Further evaluation work including in process flowsheet and units of operation would be required before International Graphite will be in a position to determine the viability of the Collie Graphite BAM Facility and accurately define the business potential. Given the uncertainties involved, all figures, costs, estimates quoted are approximate values and within the margin of error range expressed in this announcement. Investors should not make any decisions based solely on the results contained in this announcement. The operating parameters and economic estimates are representative of a 100% owned interest in the Collie Graphite BAM Facility, support the estimation of ore reserves.

The Scoping Study is based on the material assumptions outlined including that it has been completed in accordance with AACE Principles to a Class 5 level with a nominal level of accuracy of  $\pm 35\%$ , that the financial forecasts rely upon the purchase of third party graphite concentrates as the feedstock for the plant (ultimately the Company's 100% owned Springdale Graphite Project would be a source of graphite concentrate for the facility, however this is subject to the completion of feasibility studies at Springdale) and about the availability of funding. While International Graphite considers all of 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 Scoping Study will be achieved. To achieve the range of outcomes indicated in the Scoping Study, funding in the order of US\$87 million - \$222M will likely be required depending upon the development scenario outlined in the Scoping Study that is pursued. Investors should note that there is no certainty that International Graphite will be able to raise that amount of funding when needed. It is also likely that such funding may only be available on terms that may be dilutive to or otherwise affect the value of International Graphite's existing shares. It is also possible that International Graphite could pursue other 'value realisation' strategies such as a sale, partial sale or joint venture of the project. If it does, this could materially reduce International Graphite's proportionate ownership of the project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

### 5 – Fair and Balanced Summary of Scoping Study

This release outlines the results, material assumptions, risks and sensitivities identified in the Collie Graphite BAM Facility project.

### 6 – Reporting the results of a scoping study in a headline

Headlines do not report results.

### 7 – Reporting the results as a realistic range

Where appropriate all the results reported in this release have been given a range and are qualified by terms such as 'approximately'.

### 8 – Disclosure of a 'value per share'

No information has been disclosed on a value per share.

### 9 – JORC terminology

JORC terminology is not relevant to this release.

**IG6 is on track to be Western Australia's first fully integrated mine-to-market producer of battery anode graphite – building Australia's capability in critical minerals and an ethical supply to support global decarbonisation and the transition to renewable energy.**

**International Graphite Limited**

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