# AUSTRALIAN GRAPHITE FOR AMERICAN LITHIUM-ION BATTERIES




**SelectUSA Investment Summit**
Washington DC, 23-26 June 2024

INTERNATIONAL GRAPHITE
(ASX:IG6)

# International Graphite

International Graphite (ASX:IG6 and H99:FRA) is developing a world class graphite mineral resource and downstream processing facilities in Western Australia to produce active anode materials for lithium-ion batteries.




## THE US NEEDS GRAPHITE

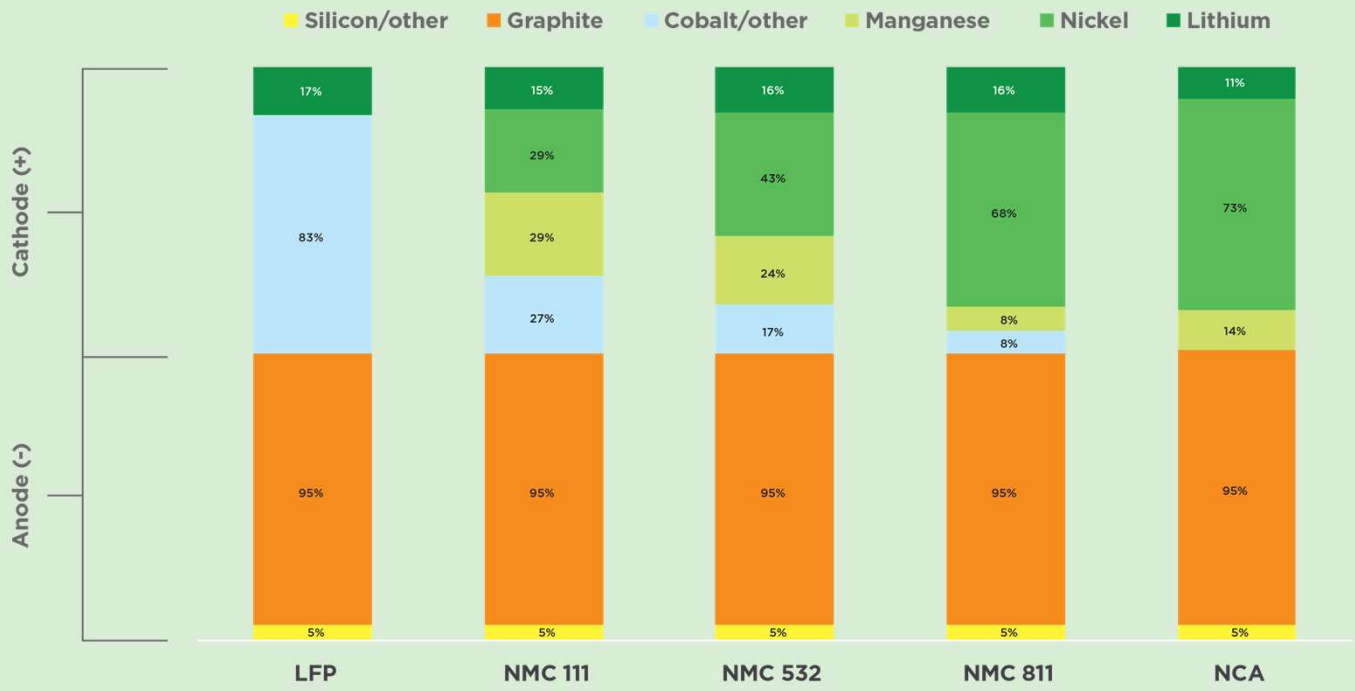
- US has little domestic natural graphite supply and few prospects
- Needs to diversify and grow its raw material supply chains
- Government is providing substantial policy support

## WESTERN AUSTRALIA OFFERS

- Secure, reliable, long-term source of natural graphite
- Trusted ally with free trade market entry
- Operating to the highest standards of ESG

# Graphite is critical for the battery technologies that are driving the global energy transformation

- Graphite makes up **>90%** of the active anode in lithium-ion batteries
- It takes **7-10** times more graphite than lithium to make a lithium-ion battery
- **~1.2kg** of graphite is needed for every **1kWh** of battery capacity
- Production from IG6 Springdale would be sufficient to manufacture **~400,000** lithium-ion batteries a year*

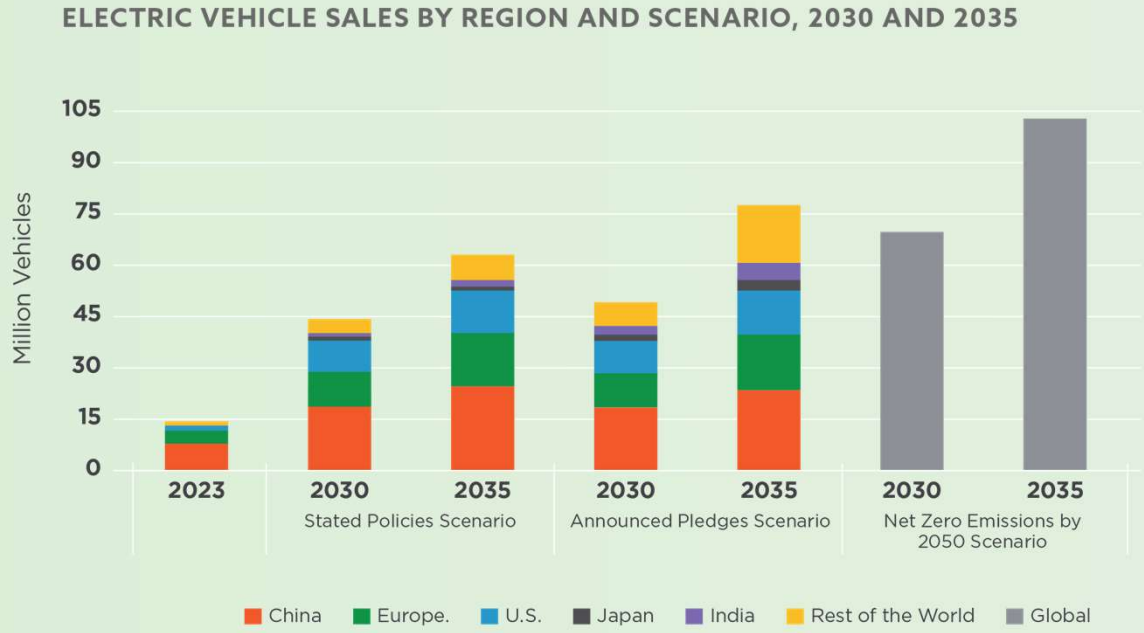



* Based on a standard battery mix of 50:50 natural / synthetic graphite

# Global EV sales continue to match forecasts

Electric vehicle demand is the primary driver for lithium-ion batteries

- **2023:** Global electric car sales were 3.5 million higher than in 2022, a 35% year-on-year increase
- **2023:** EV sales in the US reached ~1.4 million – increasing by more than 40% on 2022
- **Q1 2024:** Strong EV sales growth continues with a 15% increase on Q1 2023
- **2023:** New EV registrations in Europe reached ~3.2 million – up by almost 20% on 2022
- **2023: One in five** new registrations in **Europe** (3.2M) and **one in ten** new registrations in the **US** (1.4M) represent 20% and 40% year-on-year growth



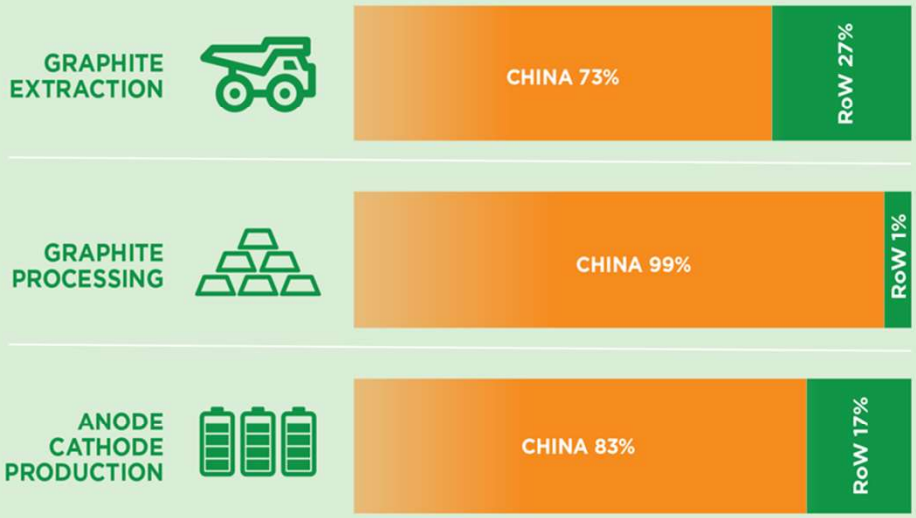

SOURCE: International Energy Agency Global EV Outlook 2024

# Diversifying world graphite supply

"Policymakers on both sides of the Atlantic (US and EU) believe that it is not just their economies but their social and political stability that are at stake*"

- **2021:** US Congress passes the Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law) – an historic US$1.2 trillion package to increase domestic capability
- **2023:** Biden Administration sets the goal for 50% of all new vehicle sales to be electric by 2030
- **2024:** Tariffs introduced:
  - 25% on Chinese natural graphite imports from 2026
  - Increased tariffs on Chinese EVs from 25% to 100%
  - EVs using any graphite extracted, processed, or recycled by a foreign entity of concern ineligible for Inflation Reduction Act (IRA) tax incentives
- **June 2024:** The European Union imposes import duty on Chinese EVs up to 38% from July 2024

## CHINA'S MONOPOLY OF WORLD MARKETS




SOURCE: Benchmark Mineral Intelligence 2024
*Australian Financial Review 19 September 2023

# US and Australia Governments are backing graphite with policy and incentives




- Allied governments are partnering to on-shore and near-shore graphite mining and processing
- Incentives and policy support is being rolled out to de-risk supply chains and grow sovereign capability
- The Australian Government's 2024 Budget launched a multi-billion dollar investment to expand domestic processing and battery capability over the next decade
- These trends underscore the outstanding opportunities for Australian graphite and IG6 which has already secured significant Federal and State Government support

# Australian graphite supports growth of the US as a leader in battery manufacturing

The US will need ~450,000t of natural graphite by 2030 to meet demand* – currently 100% of supply is imported from China

## NORTH AMERICA

North America's developments are largely concentrated in the USA. The passing of the Inflation Reduction Act in 2022 has boosted battery cell developments in the region and by mid-2023 it had overtaken Europe with the second largest pipeline outside of China.

**2030 Capacity pipeline:** **1.3 TWh**

**Share of 2030 pipeline:** 15%

**Gigafactories** — 38




| | | | | | |
|---|---|---|---|---|---|
| 1 | ABF, US | 14 | LGES/GM, US | 27 | SKI, US |
| 2 | Amprius Tech, US | 15 | LGES/GM, US | 28 | SKI/Ford, US |
| 3 | Electrovaya, US | 16 | LGES/GM, US | 29 | SKI/Ford, US |
| 4 | Envision AESC, US | 17 | LGES/Honda, US | 30 | SKI/Ford, US |
| 5 | Envision AESC, US | 18 | LGES/Stellantis, Canada | 31 | SKI/Hyundai, US |
| 6 | Envision AESC/Mercedes-Benz US | 19 | Microvast, US | 32 | Tesla, US |
| 7 | Ford/CATL, US | 20 | ONE, US | 33 | Tesla, US |
| 8 | Freyr, US | 21 | Panasonic, US | 34 | Toyota, US |
| 9 | Gotion, US (Location TBC) | 22 | Panasonic, US | 35 | VW, Canada |
| 10 | IM3, US | 23 | Panasonic/Tesla, US | 36 | LGES/Hyundai, US |
| 11 | KORE Power, US | 24 | Samsung SDI/GM, US | 37 | Samsung SDI/Stellantis US (Location TBC) |
| 12 | LGES, US | 25 | Samsung SDI/Stellantis, US | | |
| 13 | LGES, US | 26 | SKI, US | | |

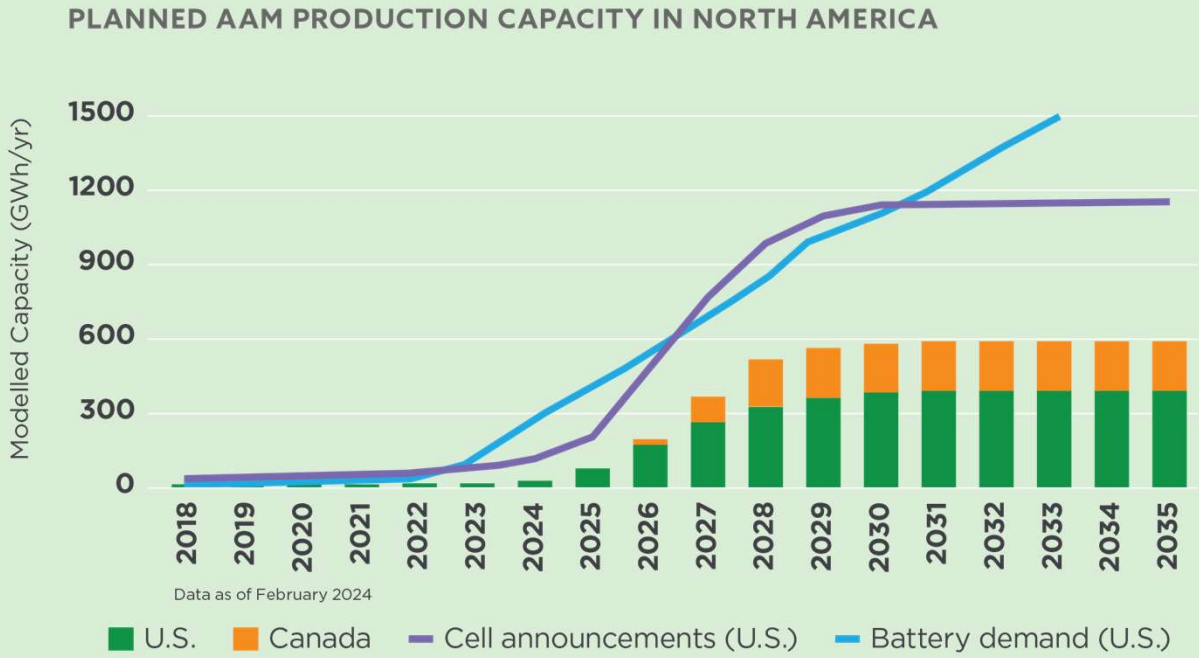
SOURCE: Benchmark Mineral Intelligence 2024

# Significant shortage in active anode supply forecast for North America

Electric vehicle demand the primary driver for lithium-ion batteries

- US production of active anode material (AAM) is insufficient to support planned battery cell production
- AAM production is expected to meet only 43% of cell production demand by 2035
- Imported material will be needed to fill the gap

**The Springdale Graphite Project is a prime source of high quality imported graphite**




GRAPH: US Office of Energy Efficiency and Renewable Energy and Argonne National Laboratory, 2024

# Springdale Graphite Project
# Western Australia

International Graphite's 100% owned Springdale graphite resource is one of the biggest in Australia and top 15 worldwide – named Australian resource discovery of the year in 2023









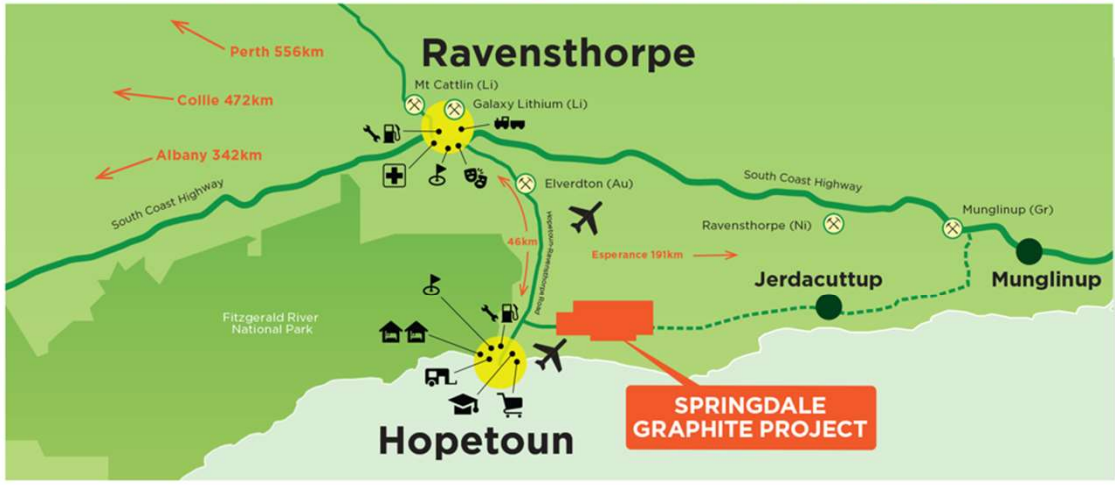




# Springdale Graphite Project
# Key attributes

- **Jurisdiction** – Western Australia regularly voted the world's best mining jurisdiction with supportive governments, communities, stable regulatory framework and high ESG standards
- **Long life** – Mineral Resources have been defined to support many decades of operations with significant exploration potential to add further life and satisfy expansions - 28MT @ 9% TGC*
- **Low costs** – high grade, shallow deposit exclusively fine flake, and perfectly suited for lithium-ion batteries – **US$50M** CAPEX, **US$485/t** all in sustaining cost FOB Fremantle, WA
- **Simple plant** – 500ktpa processing plant, conventional equipment to produce 40-50ktpa of graphite concentrate
- **Established infrastructure** – minesite is serviced by sealed government roads, water and power access, airstrip and accommodation in nearby towns
- **Simple permitting** – located on cleared agricultural land






* At 5% cut-off

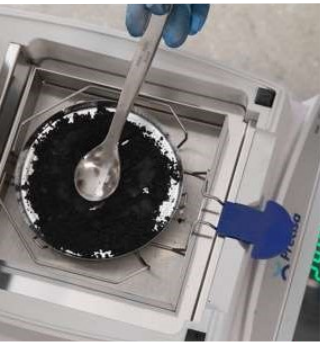
# Collie Graphite Processing Hub Western Australia

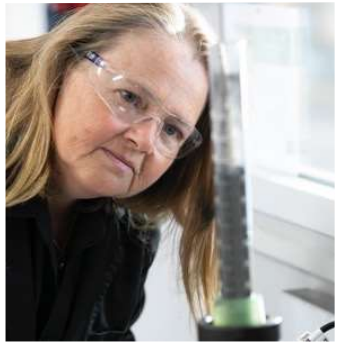
International Graphite's Collie R&D facility and qualification-scale process plant is one of the first in Australia and is producing micronized and spheroidized products for customer acceptance testing













# Collie Graphite Processing Hub Development milestones




**2021:** R&D facility and pilot plant commissioned, first of its kind in Australia - awarded $2M WA Government grant

**2021-22:** Micronizing and spheroidizing testwork completed

**2023:** Qualification scale micronizing plant installed

**2024:** Qualification plant commissioned – WA Government awards a further $6.5M

**2023-25:** Ongoing testwork for active anode material

**2025:** 4,000tpa commercial micronizing plant scheduled for completion

**2026-7:** Planned buildout of active anode material production facility for Springdale graphite concentrates







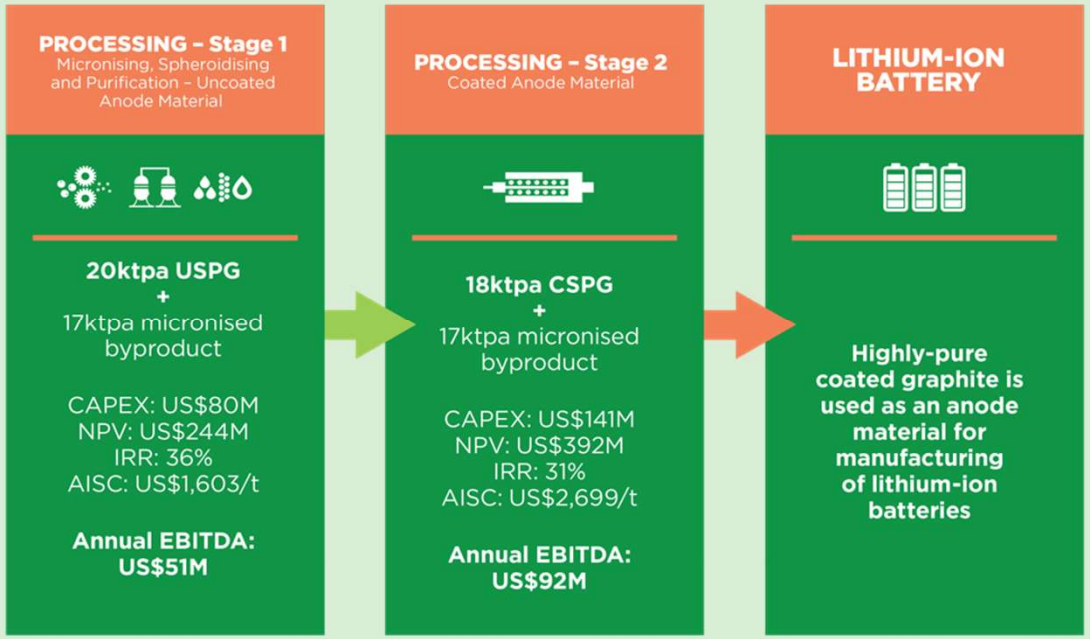



ABOVE: WA Premier Roger Cook launches the Collie qualification plant with a $6.5M grant announcement, April 2024

# Graphite manufacturing creates jobs, opportunity and economic value for communities

Process facilities will incorporate graphite micronizing, spheroidizing, purification and coating to produce an active anode material for lithium-ion battery manufacturing

- Processing of **~40ktpa** of graphite concentrate from the Springdale Graphite Project in Western Australia
- Producing **~20ktpa** of active anode materials for use in the lithium-ion battery supply chain
- Producing **~18ktpa** of micronized by-products for sale to US markets
- Creating **80+** highly skilled jobs including plant operators, chemists, metallurgists, electrical trades, engineers.




SOURCE: ASX announcement dated 29 January 2024

# An expert professional team

The International Graphite team has a strong technical focus with decades of experience in graphite, mining, processing and business operations



**Phil Hearse**
Chairman and Founder



**Andrew Worland**
Managing Director & CEO



**David Pass**
Chief Technical Officer



**Robert Hodby**
CFO & Company Secretary



**Jasbir Khosa**
Processing Manager



**Marie Howarth**
Director Marketing & Communication



**Greg Entwistle**
Project Director



**Josh Hearse**
Project Manager



**Darren Sparks**
Exploration Manager



**Mel Chapman**
Grant Development & Social Media Manager



**Kathy Miller**
Chief Industrial Chemist



**Mick Murray**
Community Relations Advisor Collie

# Western Australian graphite from mine to global battery markets

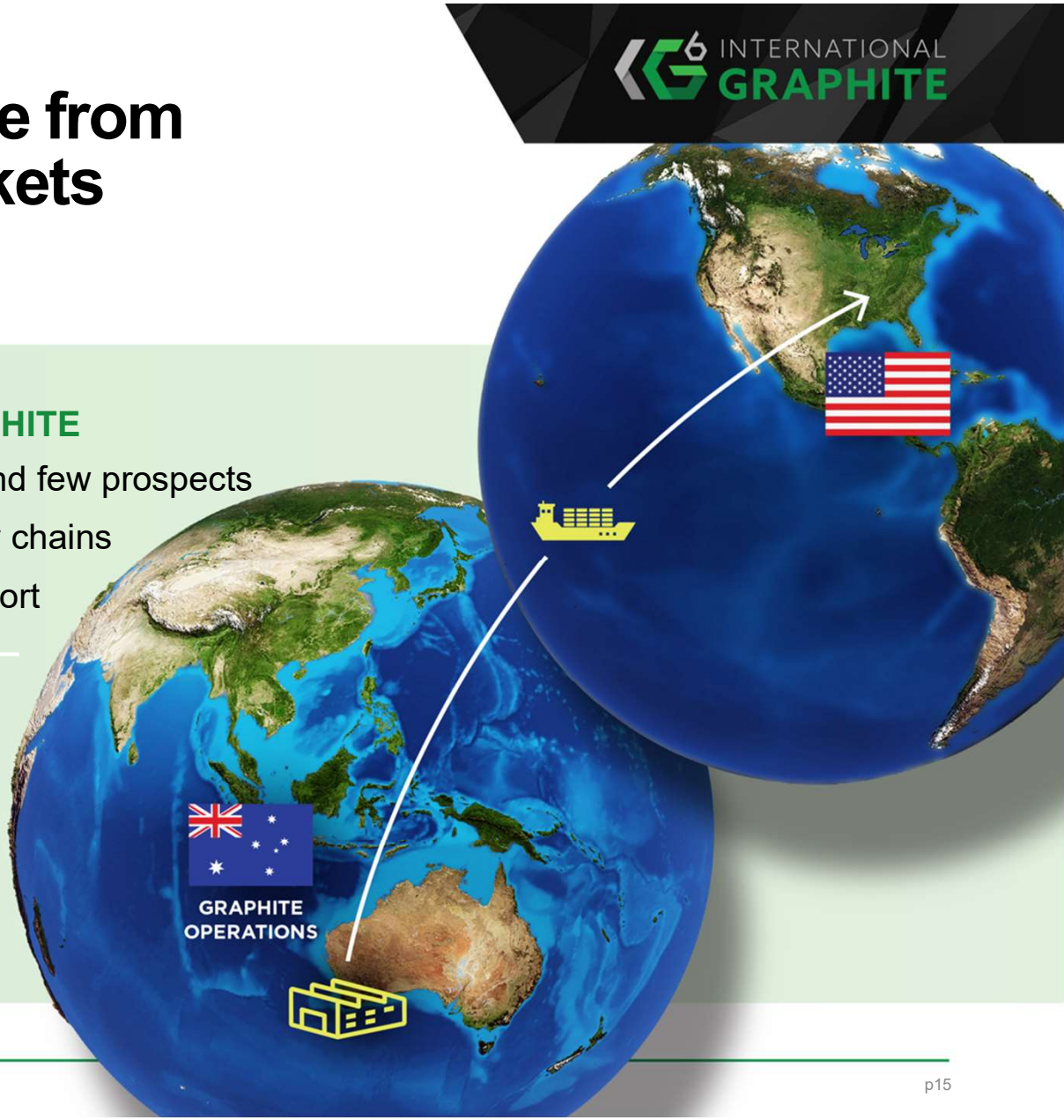
Working together to build a robust, trusted and sustainable battery supply chain

## THE US NEEDS WESTERN AUSTRALIAN GRAPHITE

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- Needs to diversify and grow raw material supply chains
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## WESTERN AUSTRALIAN OFFERS

- Secure, reliable long term supply source
- Trusted ally with free trade market entry
- Highest standards of ESG



# INTERNATIONAL GRAPHITE Ltd

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INTERNATIONAL GRAPHITE

AUSTRALIAN BATTERY GRAPHITE
FROM MINE TO MARKET
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