**ASX Announcement**
**By eLodgement**
**26 April 2023**

# Scoping study shows outstanding investment case for Collie Graphite BAM Facility

## HIGHLIGHTS

- New Scoping Study confirms proposed Collie Graphite Battery Anode Material (**BAM**) Facility would produce high grade battery anode materials for the lithium-ion battery and generate outstanding financial returns.
- 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 is designed in modules and as two parallel lines – project could be implemented in stages. Initially USPG product could be produced with coating facilities added to produce CSPG.
- **Key attributes of the Collie Graphite BAM Facility Scoping Study:**
  - Capable of processing up to **40kt/y** of graphite concentrates.
  - **CSPG facilities:**
    - Producing up to **18.6kt/y of CSPG and 17kt/y of micronised by-products**.
    - Total capital cost estimate to produce CSPG approximately - **US$222M** including contingency (**AUD$317M**).
    - Annualised operating cost including cost of concentrate feed net of micronised by-product credits (assuming sales pricing of US$500-800/t by-product) approximately: **US$3,175/t CSPG produced**.
    - Pre-tax - pre finance $NPV_{10}$ (pre-tax discount rate 10%) and IRR approximately: **US$626M (AUD$894M) / 41%**.
    - Annual average revenue approximately: **US$172M** and EBITDA: **US$100M**.
  - **USPG facilities only:**
    - Producing up to **20kt/y of USPG and 17kt/y of micronised by-products**.
    - Total capital cost estimate to produce USPG approximately - **US$87M** including contingency (**AUD$124M**).
    - Annualised operating cost including cost of concentrate feed net of micronised by-product credits (assuming sales pricing of US$500-800/t by-product) approximately: **US$2,029/t USPG produced**.
    - Pre-tax - pre finance $NPV_{10}$ and IRR approximately: **US$290M (AUD$412M) / 48%.**
    - Annual average revenue approximately: **US$95M** and EBITDA: **US$43M**.

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 ± 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 ± 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.

International Graphite Limited (**ASX: IG6**) (**International Graphite** or the **Company**) has released the findings of a Scoping Study for its proposed Collie Graphite Battery Anode Material (**BAM**) Facility.

Commenting on the Scoping Study, Managing Director and CEO Andrew Worland said:

"Our expert graphite metallurgists and engineers have applied their collective expertise in graphite metallurgy, process design, flowsheet development, estimation and markets, to present a compelling development pathway for the Collie Graphite BAM Facility. The economics are outstanding and there are many opportunities to improve the cost structure with further testwork.

"The financial modelling of the Scoping Study applies long term forecast pricing for CSPG. Current and forecast natural graphite supply is well below the levels required to meet global decarbonisation goals from the uses of the lithium-ion battery.

"The plant has been designed as two parallel lines and could be implemented in stages, including developing a USPG facility in the first instance before expanding into coating.

"The total capital cost to produce CSPG is estimated at approximately US$222M and its operations are forecast to deliver a pre-tax – pre finance $NPV_{10}$ of approximately US$626M and IRR of approximately 41%.

"As an initial step, the total capital cost to produce USPG is estimated at approximately US$87M and its operations are forecast to deliver a pre-tax – pre finance $NPV_{10}$ of approximately US$290M and IRR of approximately 48%.

"We are working with a number of stakeholders in Collie to agree on site selection for the Collie Graphite BAM Facility to accommodate the initial graphite concentrate processing capacity of up to 40kt/y and potential further expansions.

"Whilst the financial forecasts for the Scoping Study are based on the purchase of graphite concentrates from third party sources, it is the intention to integrate our 100% owned Springdale Graphite Project with the development of the Collie Graphite BAM Facility. When we have advanced Springdale to a sufficient level of detail to allow forecasts to be published, we will be able to update the Scoping Study accordingly.

"Springdale is located only 450km by road from Collie and we are seeking to build a streamlined and efficient 'mine to market' supply chain in the world's most reputable and attractive jurisdiction for minerals investment. Australia's reputation for excellence in mining and minerals processing and our rigorous ESG commitment will provide the highest standard BAM for the world's lithium-ion battery makers."

## Collie Graphite BAM Facility Summary including Material Assumptions

The Scoping Study has been completed to an Association for the Advancement of Engineering (AACE) Class 5 with a nominal level of accuracy of ± 35%.

**Table 1 Summary of Key Findings**

| Item | Unit | CSPG Project | USPG Project |
|---|---|---|---|
| Annualised finished product production | Kt/y | 18.6 | 20.0 |
| Annualised micronised by-product production | Kt/y | 17.0 | 17.0 |
| Pre-tax / pre finance $NPV_{10}$ approximately | US$'M | 626 | 290 |
| IRR approximately | % | 41 | 48 |
| Capital cost estimate: | | | |
| Direct | US$'M | 155 | 65 |
| Indirect | US$'M | 67 | 22 |
| Total capital cost estimate approximately | US$'M | 222 | 87 |
| Average annual revenues approximately | US$'M | 172 | 95 |
| Average annual EBITDA approximately | US$'M | 100 | 43 |
| Revenue from primary products | US$/t product | 8,750 | 4,250 |
| Average cash operating cost estimate approximately | US$/t product | 3,733 | 2,548 |
| By-product sales credits net of marketing costs approximately | US$/t product | (558) | (519) |
| Average cash operating cost estimate net of by-product sales credits approximately | US$/t product | 3,175 | 2,029 |

**Table 2 Capital Cost Breakdown**

| Approximate Capital Cost Estimate | Unit | CSPG Project | USPG Project |
|---|---|---|---|
| Direct costs | | | |
| Equipment | US$'M | 105 | 34 |
| Building & Services | US$'M | 29 | 18 |
| Other | US$'M | 20 | 13 |
| Sub-total | US$'M | 155 | 65 |
| Indirect costs | US$'M | | |
| Owners, temporary services and other | US$'M | 19 | 9 |
| Contingency | US$'M | 48 | 13 |
| Sub-total | US$'M | 67 | 22 |
| Total | US$'M | 222 | 87 |

Capital costs have been estimated based on a mechanical equipment list and conceptual flowsheet.

**Table 3 Operating Cost Breakdown**

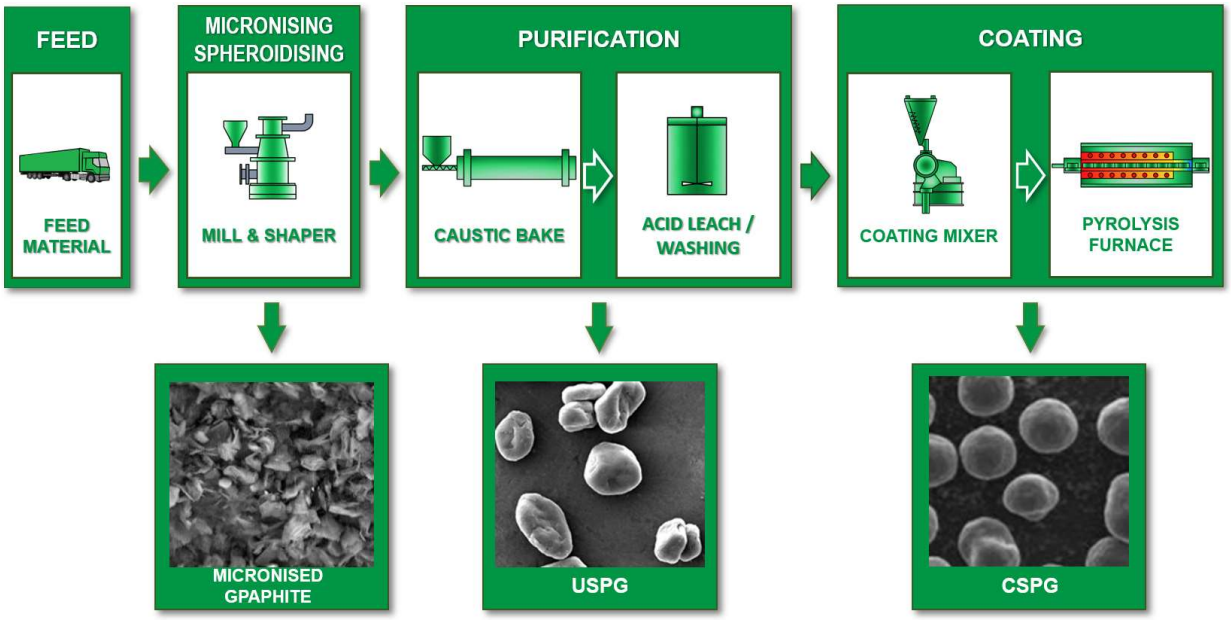
| Approximate Operating Cost Estimate | CSPG Project | | USPG Project | |
|---|---|---|---|---|
| | US$'M | US$/T product | US$'M | US$/T product |
| Feedstock, reagents, and consumables | 32.7 | 1,759 | 27.3 | 1,366 |
| Labour | 14.1 | 755 | 8.5 | 426 |
| Power | 15.1 | 811 | 9.3 | 463 |
| Transport | 2.8 | 149 | 2.8 | 141 |
| Other direct | 4.3 | 229 | 2.6 | 128 |
| Other indirect | 0.6 | 30 | 0.5 | 23 |
| Average cash operating cost estimate | **69.6** | **3,733** | **51.0** | **2,548** |

Operating costs have been estimated using current reagent and labour costs, equipment list power estimates and benchmark data. Operating costs include the cost of graphite concentrate feed assumed to be purchased from third party sources and delivered to the facility in Collie for treatment.

For the purposes of the Scoping Study, the Collie Graphite BAM Facility will comprise.

- Graphite concentrates at a nominal grade of 95% C (fixed carbon) will be purchased and road transported from the port of Fremantle to the proposed site for processing.
- Micronising of graphite to produce a suitable size material to feed spheroidisation shaping mills.
- Shaping and classification of graphite to produce spherical graphite and a micronised by-product.
- Purification of the spherical graphite to produce UPSG to a minimum grade of 99.95% fixed carbon. The purification flow sheet is based on a non-HF chemical purification process comprising a multi-stage caustic bake, wash and acid leach.
- Coating of USPG to produce CSPG based on a carbon pitch coating flowsheet.
- Waste, water treatment and recycle facilities.
- Products from the facility will be bagged, packaged and packed into sea containers, then trucked to Fremantle for export.

**Figure 1 Simplified Overall Flowsheet**




**Process Flowsheet Development**

A processing capacity of up to 40kt/y of graphite concentrate was assumed to set the design criteria. The process flowsheet including estimates of losses within the units of operations has been developed based on testwork and flowsheets selected from similar projects, literature review, information from the Company's technical consortium from operations in China, known concentrate specifications available in the marketplace and knowledge gained from the Company's successful installation and operation of pilot scale micronising and spheroidising facilities at the Collie R&D Facility (**Figure 2**) which treated imported graphite concentrate.

*Micronising and spheroidisation*

The traditional milling equipment used for micronising milling and spheroidisation shaping compromises multiple air classifying impact mills, air classifiers and cyclones in a continuous train, processing 2,000-3,000 t/y per line. Alternative newer technology is now available, comprising air classifying spheroidisation mills that operate on an automated batch process basis, and is understood to produce a high spherical graphite product yield with higher energy efficiency. The Company has tested this technology and has consulted with operators of this equipment and has selected this technology for the Scoping Study. Fines generated from the spheroidising process are collected and classified to produce two micronised graphite by-products.

*Purification*

The spherical graphite produced from the mill process is nominally at a grade of 94-95% C (Fixed Carbon). The spherical graphite is typically required to be purified to 99.95 % C. Traditional purification methodologies include multi acid leach including HF acid or a caustic bake/leach and high temperature (up to 3000$^{o}$C) purification. For the Scoping Study, a flowsheet comprising non-HF chemical purification

involving chemical leach of impurity elements from the inert graphite matrix was selected based on testwork and review of flowsheets from similar projects. The flowsheet comprises:

- A caustic soda bake stage.
- Multistage water wash and acid / caustic leach and neutralisation.
- Waste and wastewater treatment and reagent recycle.
- Product filtration, drying and bagging as required.

*Coating of USPG to produce CSPG.*

Coating of the spherical graphite with a carbon film reduces the occurrence of irreversible reactions with the electrolyte by reducing the surface area resulting in a reduction in the formation of the solid electrolyte interface. A conventional petroleum pitch-based coating flowsheet has been adopted for the Scoping Study and comprises:

- Pitch preparation by fine grinding.
- Mixing and blending prepared pitch with the USPG product to produce coated spherical graphite.
- Carbonisation of the coated USPG in a push furnace with an inert atmosphere at a temperature of 1,100 – 1,300ºC. The furnace technology selected is well proven within the industry.
- Unloading of the furnace, deagglomeration, screening and magnetic separation.
- Packaging of the final product.

The final finished products will include BAM materials compromising.

- USPG and CSPG products in a size range d50 10-20µm.
- By product micronised fines in two size ranges < 10 µm.

**Figure 2 International Graphite's Collie R&D Facility**

Ongoing development of the process flowsheet for USPG and CSPG will be assisted by undertaking product testing and accreditation processes that are an industry critical precursor to securing offtake commitments. The extent and cost of these processes will be determined as the Company proceeds through feasibility.

**Site Selection, Transport and Logistics**

The town of Collie is located 60km east of the City of Bunbury and 200km south of Perth. It is serviced by sealed roads in all directions including major highways to the ports of Bunbury and Fremantle. It has approximately 10,000 residents. Collie has been a significant provider of electricity for Western Australia with three operational power stations. The Western Australia government is supporting new projects in Collie within the priority sectors of green manufacturing, minerals processing, clean energy and energy-intensive industry.

The Company is advancing land acquisition and/or leasing discussions with various stakeholders in the Collie industrial region. The areas being evaluated are zoned for heavy industry, are of sufficient size for the operations including waste disposal, are well serviced by existing roads. They have access to reagents and consumables, power and water. Skilled labour is available within the Collie and Bunbury regional centres.

Of particular importance to site selection is gaining access to the most economic and reliable form of power. The sites under consideration are located within metres of the existing Collie transmission network that's at the heart of the south-west interconnected system. Western Australia power generation is in the process of transitioning toward various forms of renewable energy, to be sourced, in part, from projects in the south-west of the State. The site location will benefit from grid connection where power is generated in part by these renewable forms of power. The sites under view will also have the land area to host solar power generation which may form part of the power requirements of the facilities. The Scoping Study assumes metred power provided over the fence from the existing transmission network.

The port of Fremantle, approximately 200km north of Collie, will be the main port for the import of reagents and consumables and export of finished product. Graphite concentrates will be purchased and road transported to Collie and finished products from the facility will be bagged, packaged and packed into sea containers, trucked to Fremantle for export.

**Approvals**

Following the selection of a suitable site, approvals and licensing of a prescribed premises will be sought through the relevant Western Australian Government and regional agencies. The Company believes, based on the processes for similar industrial plants proposed to be built within the Collie regional precinct, including up to Kwinana, approvals can be achieved well within the definitive feasibility timetable for the facility.

**Feedstock**

The total supply of natural flake graphite for calendar 2022 has been estimated at approximately 1M tonnes with further mining capacity available. Over 65% of graphite is mined in China with most of the balance mined in Africa and Brazil. Almost all graphite concentrates today are treated by downstream facilities in China. With the existing size of the graphite concentrate market, and considering the significant forecast expansions required to meet forecast demand, coupled with the percentage of the market required to supply the proposed facility, the Company considers graphite concentrates to be readily available during the proposed operating life of the facility.

The Company has graphite concentrate purchase agreements in place to assist in the supply of graphite concentrate feedstock to the planned Collie Micronising Facility (refer ASX announcement 15 March 2023). Discussions are ongoing with these and other suppliers of fine graphite concentrates ranging from -100, -150 and -200mesh sizes with various grades and sources. Further testwork is planned on varied feedstock concentrates to confirm flowsheet and process parameters with alternative feedstocks and finalise concentrate selection. As set out in the Risks section,

**Basis of Capital Cost and Operating Cost Estimates**

Capital operating costs for the Collie Graphite BAM Facility have been estimated by BatteryLimits to an AACE Class 5 level with an accuracy of ± 35%. The capital cost estimate has been based on the high-level conceptual process flowsheet, process design criteria, mechanical equipment list and includes, vendor equipment pricing, industry estimating factors, inhouse databases information and additional project benchmark data. The capital cost estimate has a base date of Q1 2023 and includes an average contingency of 30%.

Operating costs have been estimated based on process design criteria. Pricing for consumables, reagent and labour costs reflect current market prices and conditions and benchmark data. Power estimates have been generated from the equipment list power loads and forecast power pricing available based on the likely site selection. The operating cost estimate has a base date of Q1 2023 with no allowance for escalation.

**Timetable and Ramp Up**

The Company estimates that it will conclude a definitive feasibility study for the Collie Graphite BAM Facility in the third quarter of 2024. A final investment decision would be undertaken at the point at which the Company considers it is suitably funded.

A 24-month construction and commissioning period has been assumed for the USPG and CSPG facilities with commercial production being achieved for USPG within this period and a further six months to achieve commercial production for CSPG. The production facilities are assumed to be operating at nameplate 12 to18 months from commissioning.

**Financial Model, Sales Pricing and Markets**

*Financial Model*

The financial model applied to the Scoping Study was run over a 25 year period and includes sustaining capital allowance with customary maintenance for a facility of this kind.

The financial forecasts in the Scoping Study are measured from the commencement of construction of the Collie Graphite BAM Facility.

Net present values and internal rates of return quoted are based on pre-tax, pre-finance forecast cashflows and a pre-tax discount rate of 10% as been applied. Other material assumptions in the model include:

*Sales Pricing and Markets*

The Company has applied a fixed price of US$8,750/t for CSPG and US$4,250/t for USPG based on management research, industry publications and market participants forecasts. A recent price deck published by a major global bank shows yearly forecasts through 2030 and a long term forecast for CSPG and USPG which supports the Company's application of fixed pricing for the level of study.

**Table 2 Product Price Outlook**

| Product | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | Long Term |
|---|---|---|---|---|---|---|---|---|---|
| CSPG US$/t | $7,720 | $8,229 | $8,750 | $9,250 | $9,000 | $9,274 | $9,413 | $9,555 | **$8,500** |
| USPG US$/t | $3,720 | $4,229 | $4,750 | $5,250 | $5,000 | $5,274 | $5,413 | $5,555 | **$4,500** |

Graphite is a critical mineral to global decarbonisation and electric vehicles and energy storage.

A typical electric vehicle requires six times more mineral inputs than a conventional vehicle. Lithium, nickel, cobalt, manganese and graphite are crucial to battery performance, longevity and energy density. The anode of a lithium-ion battery consists of 95% graphite. In one electric vehicle using a 75kwh nickel manganese cobalt (NMC) lithium-ion battery, graphite is the single largest raw material input at 66kg or 32% of the battery weight. Graphite supply would need to increase 18 times and 25 times on 2020 levels, by 2030 and 2040 respectively, to meet the 'sustainable development scenario' that achieves Paris Agreement goals[1].

Leading graphite market research analysts are forecasting significant graphite supply shortfalls with a sizeable number of new mines and expansion of existing mines required to meet this forecast demand. Benchmark Minerals Intelligence forecasts 97 new natural flake graphite mines are required by 2035 to meet lithium-ion battery demand and foresee battery anode production capacity reaching approximately 11M t/y by 2030 (up from approximately 1.3M t/y in 2022).

[1] Source: The Role of Critical Minerals in Clean Energy Transitions, May 2021 – International Energy Association

In addition, independent market reports commissioned by the Company have highlighted the growing forecast demand for micronised graphite products in traditional graphite markets, including lubricants, refractories, friction products and other applications.

The Company believes the outlook supports the sales pricing adopted in the Scoping Study for finished products and micronised by-products from the production process.

*Foreign Exchange Rate*

A flat rate AUD:USD exchange rate of $1.00 = US$0.70 has been applied.

**Project Sensitivities**

The Collie Graphite BAM Facility approximate pre-tax $NPV_{10}$ sensitivity to major inputs and material assumptions for the CSPG project and UPSG project is shown in Figure 3 and Figure 4 respectively. NPV is most sensitive to changes in product pricing.

**Figure 3 CSPG Project Sensitivity**

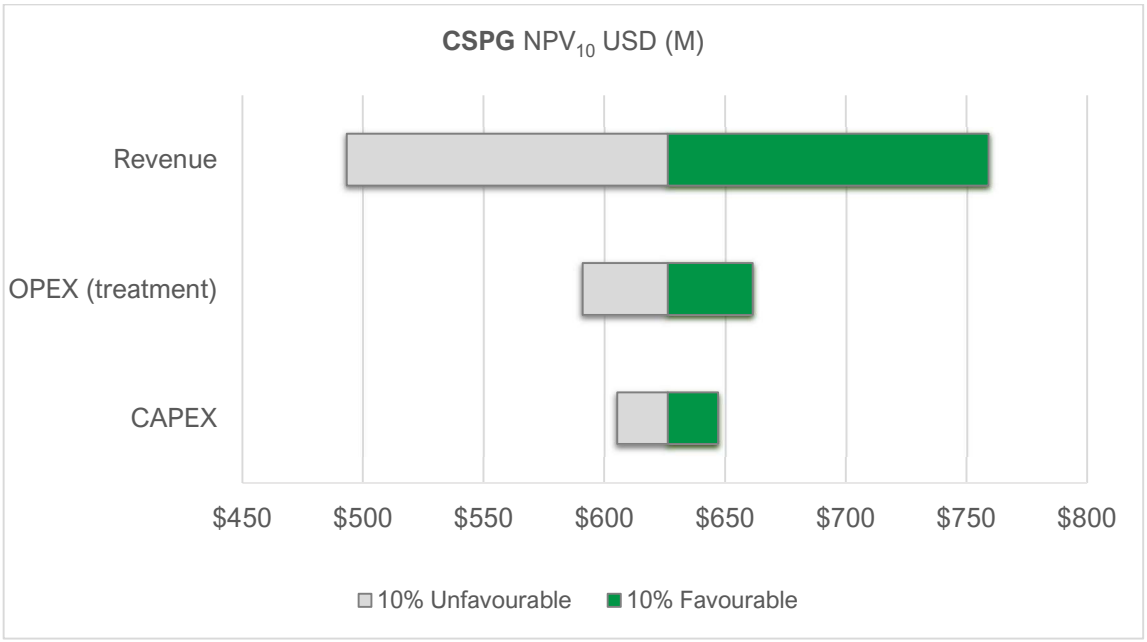
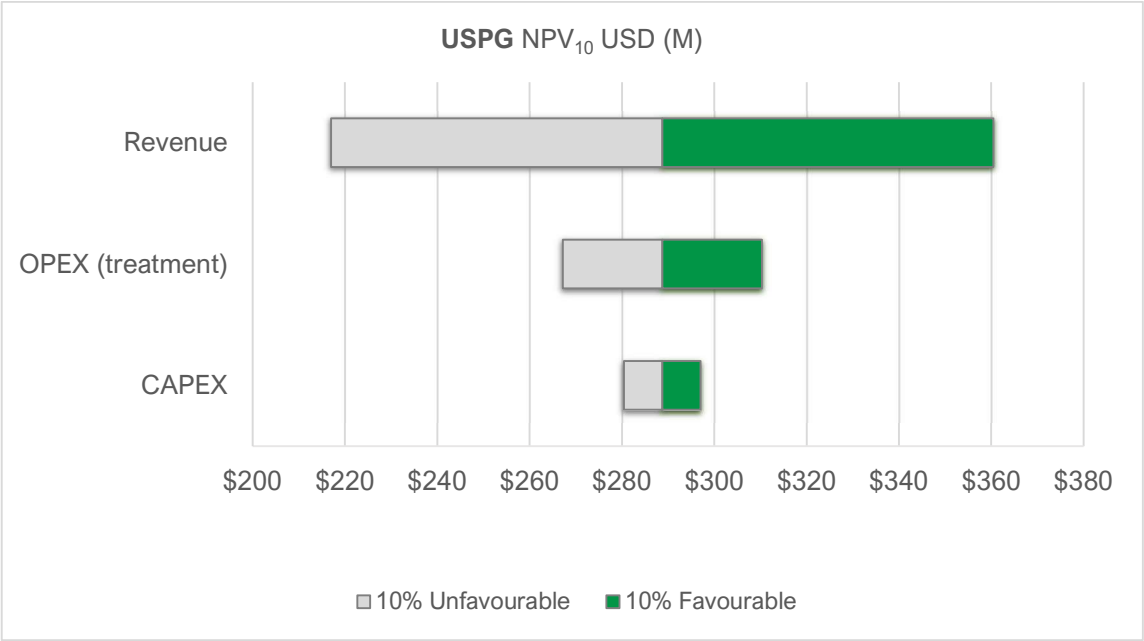


**Figure 4 USPG Project Sensitivity**




## Funding

Reference is made to the Cautionary Statement within this release. The Scoping Study outlines a capital cost of approximately US$87M to produce USPG and approximately US$222M to produce CSPG. During the upcoming feasibility study process, the Company will assess the optimal development and funding path which may include seeking to build and operate USPG facilities before adding the CSPG capability. Based on the strength of the financials outlined in the Scoping Study, and the forecast demand for graphite driven by decarbonisation, the Company expects to be presented with many funding opportunities from traditional equity and debt markets, industry groups, potential offtakes and government programs that are supporting world decarbonisation initiatives.

The Company has formed the view that there is a reasonable basis to believe that requisite funding for development of the Collie Graphite BAM Facility will be available when required, having considered many factors including the following:

- The Company's Board and management team has extensive experience in the development and financing of major projects including processing facilities.
- There are no impediments to contracting critical inputs to the facilities as the technical studies evolve and a final investment decision draws closer.
- The basis of the Scoping Study will be updated and reclassified as more detailed feasibility studies are undertaken to further de-risk the project and improve its definition.
- Sound market fundamentals and forecast pricing.
- Strong financial forecasts and a long project life will support debt financing.
- Government support for critical minerals, manufacturing initiatives and regional development.

## Risk Assessment

The Scoping Study has identified the following risks, which are not exhaustive, but believed to be the more substantial risks at this stage of the projects development and mitigation strategies to minimise these risks:

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Graphite Concentrate Feedstock | Risk that graphite concentrates will not be available treat at the Collie Graphite BAM Facility. | The total supply of natural flake graphite for calendar 2022 has been estimated at approximately 1M tonnes with further mining capacity available. Over 65% of graphite is mined in China with most of the balance mined in Africa and Brazil. Almost all graphite concentrates today are treated by downstream facilities in China. With the existing size of the graphite concentrate market, and considering the significant forecast expansions required to meet forecast demand, coupled with the percentage of the market required to supply the proposed facility, the Company considers graphite concentrates to be readily available during the proposed operating life of the facility. |
| Sales pricing and foreign currency | Sales prices of finished products do not achieve forecast levels.<br>The majority of the project operating costs will be incurred in AUD whilst revenues will be received in USD. | Sales pricing is the most important driver of financial success of the project. Significant market assessment and negotiation will be undertaken with a range of buyers in order to achieve a diversity of customers, markets and sales terms to achieve the best market prices.<br>The Company will implement a foreign currency hedging program to mitigate risks to future debt servicing and operating costs denominated in AUD. |

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Plant performance | The risk that the Collie Graphite BAM Facility will produce finished products that do not meet market specifications | The process flowsheet has been developed based on testwork and flowsheets selected from similar projects, literature review, information from the Company's technical consortium from operations in China, known concentrate specifications available in the marketplace and knowledge gained from the Company's successful installation and operation of pilot scale micronising and spheroidising facilities at the Collie R&D Facility which treated imported graphite concentrate.<br>The Company has tested micronising and spheroidising equipment and its technology and has consulted with operators of this equipment and has selected this technology for the Scoping Study. The purification flowsheet comprising chemical purification involving chemical leach of impurity elements from the inert graphite matrix was selected based on testwork and review of flowsheets from similar projects.<br>A conventional petroleum pitch-based coating flowsheet has been adopted for the Scoping Study<br>Ongoing development of the process flowsheet for USPG and CSPG will be assisted by undertaking product testing and accreditation processes that are an industry critical precursor to securing offtake commitments. The extent and cost of these processes will be determined as the Company proceeds through feasibility.<br>During the feasibility process the Company will undertake selective competitive bidding processes to ensure it contracts with reputable, experienced, capable equipment providers and technology partners. |

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Access to services | The risk that the Collie Graphite BAM Facility will be unable to access power, water and labour. | The most likely site selection for the Collie Graphite BAM Facility will be cleared land within an industrial zone that will have direct access to the electricity grid and water for processing (allowing for both inputs to be contracted) and allow for waste treatment. |
| Site location | The risk that the Company is unable to obtain a suitable location for the Collie Graphite BAM Facility. | The Company is advancing land acquisition and/or leasing discussions with various stakeholders in the Collie industrial region. The areas being evaluated are zoned for heavy industry, are of sufficient size for the operations including waste disposal, are well serviced by existing roads and services. The Company believes it will be able obtain legally binding access during the feasibility stages. |
| Approvals | The risk that the Company is unable to obtain relevant approvals for the Collie Graphite BAM Facility. | The most likely site selection for the Collie Graphite BAM Facility will be cleared land within an industrial zone. Approvals and licensing will focus on plant emissions and operating conditions. The approval process is well understood and relevant experts will be hired to manage the approvals process. |

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Operating costs | The risk that operating costs are impacted by adverse supply terms or lack of availability to inputs or cost escalation | The key operating costs for the project can be summarised as concentrate feed, labour, power, reagents and consumables. Graphite concentrate feedstock is discussed above. The Company will implement a local content and personnel policy to capture the services of local skilled and unskilled workers. The Collie region is a strong industrial region and is well supported by service providers from a residential base.<br>The Company expects to be able to offer attractive terms and conditions to attract and retain personnel and services. There are no reagents or consumables required by the operation that are scarce. Collie has ready access to those required. Power and water are expected to be contracted to site ad discussed under site location above.<br>Operating costs have been estimated based on process design criteria. Pricing for consumables, reagent and labour costs reflect current market prices and conditions and benchmark data. Power estimates have been generated from the equipment list power loads and forecast power pricing available based on the likely site selection. The operating cost estimate has a base date of Q1 2023 with no allowance for escalation. Inflation remains a risk to the project and the industry. |

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Capital costs | The risk that capital costs are impacted by adverse supply terms or lack of availability to inputs or cost escalation | Capital operating costs for the Collie Graphite BAM Facility have been estimated by BatteryLimits to an AACE Class 5 level with an accuracy of ± 35%. The capital cost estimate has been based on the high-level conceptual process flowsheet, process design criteria, mechanical equipment list and includes, vendor equipment pricing, industry estimating factors, inhouse databases information and additional project benchmark data. The capital cost estimate has a base date of Q1 2023 and includes an average contingency of 30%. Inflation remains a risk to the project and the industry.<br>The construction contract of the Collie Graphite BAM Facility will be tendered to a highly experienced engineering local firm under a typical engineering, procurement, construction and management contract. Major long lead equipment items will be identified during the feasibility stage and contractual arrangements entered into with vendors as appropriate. |
| Timetable | The risk that the Collie Graphite BAM Facility will not be implemented within the forecast construction period. | A 24 month construction and commissioning period has been assumed for the USPG and CSPG facilities.<br>The construction contract of the Collie Graphite BAM Facility will be tendered to a highly experienced engineering local firm under a typical engineering, procurement, construction and management contract. Major long lead equipment items will be identified during the feasibility stage and contractual arrangements entered into with vendors as appropriate. |

| Risk | Description of risk | Mitigation Actions |
|---|---|---|
| Funding | The risk that the Company will not be able to finance the capital costs and associated working capital requirements to complete the Collie Graphite BAM Facility. | The Board and management of International Graphite are focused on developing the most economic downstream processing facility possible which will be the focus of the upcoming feasibility studies. There is forecast to be unprecedented demand for battery anode materials. The Company believes the estimates presented in the Scoping Study compare well to the Company's peers and for the reasons outlined under section titled 'Funding' believes the project can be financed and draws the reader's attention to the Cautionary Statement. |

## Next Steps

The next stage of technical development for the Collie Graphite BAM Facility includes:

- Site selection and infrastructure development at Collie.
- Ongoing testwork to further develop and optimise the BAM flowsheet.
- Reviewing staged BAM development options.
- Progressing BAM sales and marketing agreements with customers.
- Completing an integrated definitive feasibility study for the development and operation of the Springdale Graphite Project and Collie Graphite BAM Facility targeting Q3 2024, with various development updates on that path.
- BAM product qualification processes.

This announcement has been authorised for release by the Board of Directors of International Graphite Limited.

Andrew Worland
Managing Director & CEO

## About International Graphite


International Graphite is an emerging supplier of processed graphite products, including battery anode material, for the global electric vehicle and renewable energy markets. The Company is developing a sovereign Australian 'mine to market' capability, with integrated operations wholly located in Western Australia. The Company intends to build on Australia's reputation for technical excellence and outstanding ESG performance with future mining and graphite concentrate production from its 100% owned Springdale Graphite Project and commercial scale downstream processing at Collie. International Graphite is listed on the Australian Securities Exchange (ASX: IG6) and Tradegate and Frankfurt Stock Exchange (FWB: H99, WKN: A3DJY5) and is a member of the European Battery Alliance (EBA250) and European Raw Minerals Alliance (ERMA).

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