# **International Graphite Limited (ASX:IG6)**

Ian Spence | Resource Analyst +61 2 8651 7829 | Ian.Spence@pelotoncapital.com.au



Peloton Capital Pty Ltd Level 8, 2 Bligh Street, Sydney NSW 200, T 02 8651 7800 www.pelotoncapital.com.au, ABN 22 149 540 018

### Recommendation

# Initiating Coverage Speculative Buy

### **Company Statistics**

Share Price \$0.31

Trading Range since IPO \$0.27 - 0.475

Market Cap (undiluted) \$51.20m

Enterprise Value \$42.20m

Listed Shares 165.16m

Options (Unlisted) 14.25m

Cash Balance (\*est.) \$9.0m\*

### Major Shareholders

Comet Resources Limited	24.2%
Juad Pty Ltd	7.7%
Matthew Bull	3.3%
Pamplona Opportunities Ltd	2.1%
98 Investments Pty Ltd <98 Investments A/C>	1.8%
Directors & Management (*est)	21.0%*

### **Directors & Management**

Mr Phillip Hearse Executive Chairman
Mr David Pass Non Exec Director
Mr Matthew O'Kane Non Exec Director
Mr Andrew Worland Non Exec Director

### Share Price Performance



### Key Investment Highlights

# Australia's Response to the Global Call for Future Green, Ethically Sourced, Vertically Integrated, Downstream Graphite Products, Outside of China

#### **Investment Overview**

International Graphite Limited (ASX:"IG6" or "the Company") is a recently listed junior graphite company with some significant differences that distinctly sets it apart from its sector peers.

IG6 is not aiming at just becoming a standard graphite miner and producer of export grade concentrate, but instead is focussing on its shareholders additionally benefitting from the development of a commercial downstream graphite processing business, which will treat domestically mined (Springdale WA) graphite concentrates, producing finished graphite products for specialised industry applications and Battery Anode Material ("BAM") for the growing global demand for Lithium Ion batteries.

IG6 has a substantial competitive advantage over its peers in that the Company's key principles Mr Phillip Hearse (Chairman) and Mr David Pass (Director) could arguably be described as possessing unique innovative experience in graphite production and downstream graphite processing. This advantageous knowledge and production 'knowhow' has been gained over several years as owner operators of a private leading graphite metallurgy and process engineering firm that has successfully assisted numerous listed and private graphite companies undertake Definitive Feasibility Studies on graphite production and downstream graphite processing as well as providing and advising on key marketing intelligence.

Complimented by additional mining experience provided by board members Matt O'Kane and Andrew Worland, we consider the current board of IG6 to be well positioned to spearhead the development of IG6 as an Australian domiciled vertically integrated graphite business, capable of mining domestic raw graphite and applying leading edge graphite processing technology, precipitating in the production and sale of high end, high value, graphite products to multiple specialist graphite industries and the BAM market.

It is no coincidence that IG6 has been formed at this time, a time when global demand for graphite in battery applications including those in electric vehicles, static industrial storage and specialist industrial applications is forecast to exceed well beyond current global supply capacity starting from 2023.

The world's urgent need to diversify graphite and graphite product supply chains away from China can not be overemphasised. China not only alarmingly strategically dominates graphite processing and the production of downstream graphite products from a global perspective but also controls a less than transparent heavily polluting industry where multiple Chinese resellers purchase graphite from multiple mines making traceability of the graphite near impossible to ascertain. This then has sector knock-on effects in the sector's inability to providing product consistency, reliability and growth.

Attaining 'Supply Chain Custody' assurance to its future customers is top of IG6's list as the Company recognised early on that this is not only essential but now critical to the supply of battery raw materials. Customers and governments alike need to know; such products are ethically sourced, the efficacy of the processing used, a measure of the products carbon footprint and the environmental, social and governance applied during their creation.

We place a Speculative BUY on IG6 anticipating that we will see a steady flow of positive news over the coming weeks as the Company provides updates on the progress of the development of the Collie R&D operations with commissioning slated next quarter. Additionally, we anticipate a series of positive updates from resource development and mining feasibility studies at Springdale running in parallel with Collie.

- > Recently listed & aiming to become Western Australia's (WA) first fully integrated 'mine to market' graphite company
- > Board & Management considered a 'Competitive Advantage' possessing unique innovative "knowhow" experience in graphite production & downstream graphite processing, gained over several years in the graphite sector
- > WA's emerging SW renewable energy & battery hub, considered as being located in one of the worlds most stable, responsible, mining friendly jurisdictions which is continuing to attract private support, funding & government grants (\$2m granted to IG6)
- > IG6 provides excellent leverage to the strong rising demand for graphite, a "critical element" component of modern batteries in electric vehicles and battery energy storage, as well as specialist industrial applications required as an integral part of the global green energy transition
- > IG6 is also considered as answering the West's call for, diversified ethically sourced, greener, quality graphite & high end specialist graphite products in a domestic capacity outside of conflict zones and high sovereign risk jurisdictions



# **Company Overview**

A low capitalised graphite company with much to offer over its sector peers

Vision to produce ethically and responsibly finished graphite products for specialised

Battery Anode material (BAM)

industrial applications and

**International Graphite Limited** (ASX: "IG6" or "the Company") is a recently listed low capitalised Western Australian domiciled graphite company which we believe has much to offer investors over its sector peers.

The Company's *vision* is not to simply mine and produce graphite concentrates for export to China to feed China's graphite processing industries, but to develop as a downstream integrated graphite producer in its own right, treating natural raw mined graphite from the Company's wholly owned Springdale WA graphite project at its downstream processing facility in Collie Western Australia and produce ethically and responsibly finished graphite products for specialised industrial applications and Battery Anode material (BAM) to feed the world's insatiable appetite for Lithium Ion Batteries.

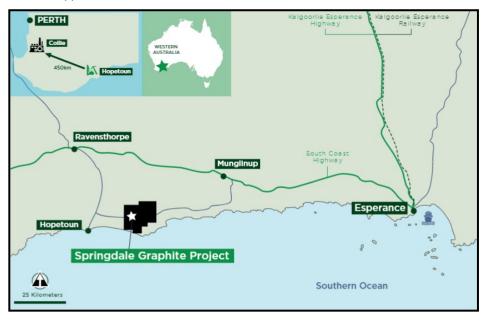


Figure 1 Right: General location map of IG6's Springdale Graphite Project and the Company's Collie downstream processing site in Western Australia

We believe management's innovative experience in Graphite Production & Downstream Graphite Processing, to be an exceptionally strong Competitive Advantage over sector peers

Aiming to be Western Australia's first "Mine to Market" integrated downstream graphite company

The Government of Western Australia has already recognised IG6's specialist knowledge through he award of a \$2m grant toward the cost of establishing the Collie facility An Investment in IG6 at This Time is Predominantly About Backing Management's Innovative Experience in Graphite Production & Downstream Graphite Processing, Something, We Consider as a Competitive Advantage over IG6's Peers

We believe the development of what is planned to be Western Australia's first *Mine to Market* integrated downstream graphite processing company is far from a 'piped dream' for IG6. The Company in our view has a tremendous competitive advantage over its peers in that its key board members, Messrs Phill Hearse and David Pass, through their years of experience in the graphite sector owning and operating in a private capacity a metallurgy and process engineering firm, providing extensive professional services and advice to other graphite companies, have already developed extensive leading edge downstream graphite processing knowledge and technologies which are currently being installed at the Company's Collie site. Therefore, we believe it is fair to state that an investment in IG6 at this current time is as much or even more about the experience and *knowhow* of the management as it is about the current asset base of the Company.

IG6 has recently moved into new premises in Collie and is underway installing R&D pilot plant facilities. These facilities will eventually be smartly and cost effectively transitioned and integrated into additional facilities that will be developed as part of the Company's future commercial production base.

In parallel to the development of Collie, the Company is also now underway advancing the Springdale graphite project towards mining feasibility status. Production and trucking of first concentrates from Springdale to Collie, assuming smooth approvals, financing, building and commissioning process, is tentatively slated to commence late 2024. Collie is however expected to need feed earlier than that timeframe and as such until Springdale comes *on line*, the Company plans to utilise imported graphite feedstock until that time.



# Graphite's Critical Role in a "Greener World"

This paper has been written on the assumption that the reader has a fair and reasonable understanding of the graphite market and graphite's critical place in the strategic hierarchy of green energy metals. The reader is strongly encouraged to conduct their own additional market pricing and projections in relation to graphite. It is however pertinent to highlight a few key general points.

It is no coincidence that IG6 has been formed at this time, a time when global demand for graphite in battery applications including those in electric vehicles, static industrial storage and specialist industrial applications is forecast to exceed well beyond current global supply capacity starting from 2023.



Looming colossal supplydemand deficit forecast by leading market Intelligence firms paints a sobering picture from 2023

The forecast graphite supply

for IG6 to the point we speculatively anticipate the likelihood that the Company will forward sell well in advance as much processed graphite as it

can produce

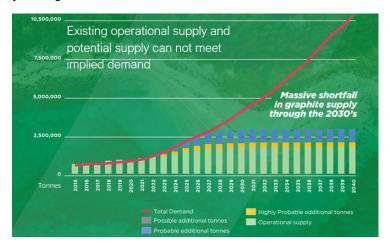
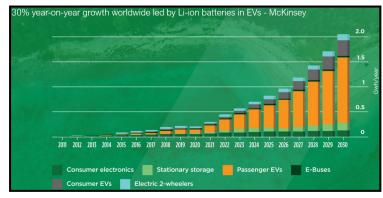


Figure 2 (above) taken from IG6's recent presentation, sourced from Benchmark Mineral Intelligence Q4 2021 Forecast highlights the colossal expected deficit between demand v's known plausible global supply of graphite.





Further reinforcing Benchmark Intelligence's forecast supply-demand deficit predictions the McKinsey bar chart above (Figure 3), also sourced from IG6's most recent presentation paints a similar picture highlighting the forecast demand for EV's moving forward out to 2030. Is it going to be a case of the Company forward selling well in advance as much processed graphite product as it can possibly produce? At this point we think its certainly looking like that.

The world has a critical need to diversify supply chains away from China which controls the downstream processing of graphite products.

China's opaque, "less than green" downstream processing practices now hindering the green revolution as product quality, consistency and reliability required for high end applications is compromised

### The Need to Diversity Graphite Product Supply Chains Away From China is Not Urgent ..... Its Critical!

The world's critical need to diversify graphite and graphite product supply chains away for China can not be overemphasised. Alarmingly, China not only strategically dominates graphite processing and the production of downstream graphite products from a global perspective but also controls a less than transparent heavily polluting industry where multiple Chinese resellers purchase and blend graphite from multiple mines making traceability of the graphite near on impossible to ascertain. This then has knock-on effects in the sector's inability to provide product quality, consistency, reliability and growth, all of which are critical in high tech applications.



Attaining Supply Chain Custody is top of IG6's agenda with Collie (downstream processing) and Springdale (Graphite mine), both located in WA fitting that

Graphite now finally being recognised as a "Critical Element" in the global push to transition away from heavy reliance on fossil fuels to net zero green energy solutions

Shareholders of western industries and consumers now expect their products to contain ethically sourced commodities with graphite being no exception. This adds additional immense pressure to an already tight supply chain

Introduction of the REEShore Act to the US Senate on 14th January 2022, whilst still to be enacted on, is seen as an example of a powerful indication of the US's support for companies like IG6 trying to establish high quality product supply chains of critical elements outside of the influence of China's dominance and control

IG6 Chairman Phil Hearse invited to a seat at the table with WA Governor Kim Beasley to stress to international industry leaders and government the importance of securing supply of critical minerals from WA

### Supply Chain Custody: Top Priority for the Company

Attaining 'Supply Chain Custody' assurance to its future customers is top of IG6's list as the Company recognised early on that this is not only essential but now critical to the supply of battery raw materials. Customers and governments alike need to know; such products are ethically sourced, the efficacy of the processing used, a measure of the products carbon footprint, and the environmental, social and governance applied during their creation. By setting up downstream processing operations in Western Australia and sourcing Western Australian graphite feed from its wholly owned Springdale project IG6 will ensure Supply chain custody developing a business in full control from mine to market refined and processed product market off-takers.

### **Graphite Now Finally Being Recognised on the Critical Element List**

Graphite's recognition as a commercially critical element has been known for a significant amount of time in the resources sector, highlighted well in that back in 2012 the British Geological Survey added the element to its Critical Element List. More recently now in the capital markets, and by global policy makers and governments, graphite is now firmly recognised by the developed world as a key strategic battery material holding a critical role in the world's transition from a heavy reliance on fossil fuels to net zero green energy solutions.

### Introduction of the REEShore Act\* One Prominent Example of Graphite's Recognition as Being of Critical Importance Bodes Positively for IG6

On 14th January 2022 US Senators introduced before the Senate a bipartisan bill for Restoring Essential Energy and Security Holdings Onshore of Rare Earths" i.e. (REEShore Act\*). This proposed legislation if passed (and it is strongly anticipated it will) bodes positively for IG6 with future graphite production in a U.S. allied country devoid of links to the Chinese supply chain.

\*REEShore Act is a proposed bipartisan legislation designed to largely support domestic and US Allied production of rare earth metals and rare earth metal products in the United States and "protect America from the threat of rare earth element (metal) supply disruptions and reduce the USA's reliance on China." The crux of the legislation if enacted would:

- require the establishment of a US rare earth metals strategic reserve by 2025 1)
- 2) force certain Department of Defence ("DoD") contractors to disclose "country of origin" for materials made of rare earth metals such as graphite and rare earth magnets
- 3) prohibit the use of rare earth metals processed or refined in China in DoD contracts by December 2026
- 4) require audits of compliance with the REEShore Act
- require the United States Trade Representative ("USTR") to investigate and monitor 5) China's practices regarding rare earth metals
- 6) require reports on U.S. allied efforts to reduce dependence on rare earth metals from non-allied countries.

The REEShore Act defines "rare earth metals" as: beryllium, cerium, cobalt, dysprosium, erbium, europium, gadolinium, graphite, holmium, lanthanum, lithium, lutetium, manganese, neodymium, praseodymium, promethium, samarium, scandium, tantalum, terbium, thulium, tungsten, ytterbium, and yttrium.

### Invitation to Attend the May 2022 AUKUS Alliance Round Table: Another Example of the Recognition of the Graphite Sectors Critical Importance and IG6's Current & **Future Contribution**

In May 2022 in recognition of the critical nature of IG6's plans in Western Australia, its chairman Phil Hearse was invited to a seat at the table with industry leaders and government officials from the UK, US and Australia to discuss and stress the importance of secure supply of critical commodities from Western Australia. This is in our view another good example of the strong recognition of IG6 and the WA graphite sectors critical importance in a current and particularly near term future global supply context.



# South-west Western Australia Battery Hub: Aiming to Achieve Global Significance as a Key Supplier in the Global Battery Chain

Western Australia's Southwest Battery Hub now starting to emerge as a key player in the global supply chain of the highest quality battery material ingredients for high end applications

With support at both

development grants,

launch an integrated

WA's Battery Hub is a

near perfect platform to

downstream business like

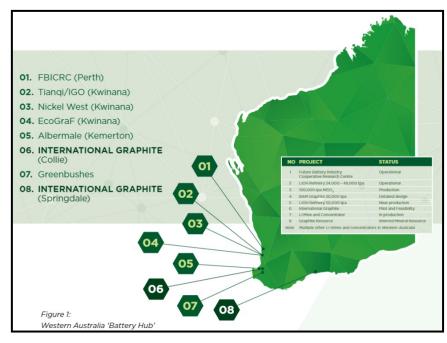
level includina

IG6

industry and government

IG6 has chosen not just the stable favourable mining and processing jurisdiction of Western Australia but also Western Australia's designated *Battery Hub* as the location upon which the Company is underway developing its integrated graphite business.

Noting a significant paradigm shift in thinking at both industry and government levels, Western Australia has now started to recognise and embrace the concept that simply *digging up* and exporting raw materials to the likes of China at basic raw materials prices is, without doubt, not the optimum way to commercially benefit from the state's finite resources. This particularly applies to more finite battery material commodities such as nickel lithium and graphite.



significant growing support at both Federal and State government levels, including available grants, Western Australia has established a directive to develop a battery hub in the southwest of state aimed Western Australia directly benefitting commercially terms of increased revenue, jobs and technology development. Several companies

have already taken advantage of the

incentives on offer and are developing business operations in the precinct, IG6 being one of them. Western Australia's Battery Hub is now not just a concept, its happening.

Targeting European battery manufacturers who particularly need not just continuous reliable supply of the highest quality graphite products but also the knowledge their sourced products are ethically and environmentally manufactured to the highest standards



The state's newly established battery hub plan is aiming to enable Western Australia to become a key qo-to player on an international platform supplying the highest quality downstream products for

rapidly growing international battery sector. IG6 has made it clear is particularly keen to attract the attention of European battery manufacturers who need not just supply but stable

continuous reliable supply of the highest quality downstream graphite products ethically and responsibly manufactured to the highest commercial and environmental standards, something being asked of them from their customers.



# Springdale Graphite Project, Hopetoun, Western Australia (IG6 100%)

### Well Positioned to Supply Long Term Feed to Collie Operations

With the long term sustainable supply of suitable high quality graphite concentrate to feed its planned Collie Operations, enabling supply chain custody, firmly in IG6's vision, the Company has recently acquired 100% the Springdale Graphite Project, located 30km east of Hopetoun in Western Australia.

### **Location & Tenure**

Springdale, situated 450km southeast of Collie and accessible by bitumen road wasn't a random acquisition for the Company, but a carefully considered one, based on significant due diligence with key parameters including but not limited to; trucking proximity to Collie, potential for low impact open pit mining and extremely importantly, the potential of the graphite mineralisation being targeted to be able to produce a suitable clean, high quality concentrate that is amenable to IG6's planned downstream processing.

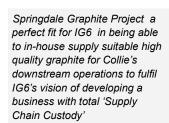
The Project, covered largely by cleared farmland and islands of native bush encompasses two granted exploration licences and one prospecting licence, all of which are accessible by a network of sealed and unsealed roads located south of main South Coast Highway (Figure 1).

### **Geology & Mineralisation**

Geologically, Springdale is located within the Albany-Fraser Orogeny and is dominated by Archean age gneiss with schists also present. It is these schists which contain stratigraphic graphite horizons which are of commercial interest with typical Total Graphite Content (TGC) grades of 15-40% located within a lower grade graphitic envelope of 2 to 10% TGC.

### Geophysics Indicates Significant Size Potential to Support a Long term Operation

In 2017 a high resolution aeromagnetic survey was undertaken by previous owner Comet Resources Limited. This survey turned out to be more important than initially expected in that whilst numerous high grade graphite intersections had been documented, the extent of the mineralisation in the underlying shallow covered geology was largely unknown. The survey demonstrated the graphite bearing horizons which gave off a low magnetic response, were substantially more extensive than first thought with the survey revealing the stratigraphy to be strongly and tightly folded which provided numerous new targets, for example in zones of thickening in fold hinges. Furthermore, whilst the graphite mineralisation gives off a low magnetic response it is however strongly conductive showing up as a strong Elecromagnetic (EM) conductor further highlighting and refining many targets which are currently located outside of the current resource boundaries (Figure 4) below.



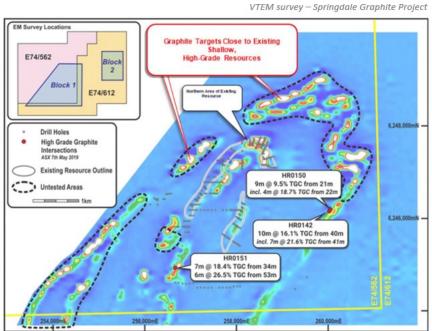
Springdale has been acquired under carefully selected criteria including but not limited to trucking proximity to Collie, quality of graphite concentrate potential and ability of the project to host a low impact, low cost open cut mining operation

Favourable geology with high grade zones of high quality graphite with no known deleterious elements

Geophysics in the form of gravity low anomalies and strong EM conductive highs in addition to limited reconnaissance drilling, all outside the current resource boundary strongly points to the potential of a substantially larger resource base than currently in place

Figure 4 Right: VTEM Survey results over Springdale with key reconnaissance drilling intercepts lying outside the current resource boundary marked

NB) The extent of the dashed outline of prospective anomalous areas which remain untested with drilling which provides for substantial exploration and resource upside potential





# Springdale Graphite Project, Hopetoun, Western Australia (166 100%)

### Current Resource: Considered An Excellent Starting Base But Certainly Not Finite

Springdale currently has an initial JORC Inferred resource base of 15.6Mt grading 6% TGC, including a high grade Inferred component of 2.6Mt grading 17.5% TGC (mineral Resource table breakdown provided below.

 Domain
 Tonnes (Mt)
 Density (t/m³)
 Graphite (TGC%)
 Classification

 High-grade
 2.6
 2.1
 17.5
 Inferred

 Low grade
 13.0
 2.2
 3.7
 Inferred

 Total
 15.6
 2.2
 6.0
 Inferred

Table 1 Right: Springdale's current resource base is considered an excellent solid base to build an integrated graphite business

Based on 18 diamond holes and 102 Reverse Circulation (RC) holes, the 2018 resource estimation has been divided into three domains namely *Northern, Eastern & Western*, each of which represent a series of tabular mineralised zones located on the limbs and in the fold nose of a sizeable plunging synformal structure.

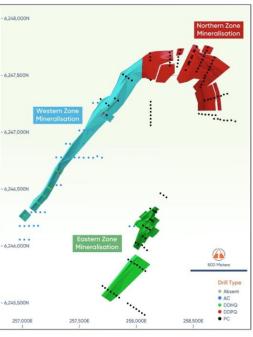
Key summary takeaways evident from this initial work is that there is strong evidence the mineralisation remains open at depth and along strike. Even more strikingly is that the new EM survey work and several reconnaissance drilling intercepts has highlighted compelling evidence of the strong potential for the discovery and delineation of new shallow mineralisation outside of the current resource boundaries within 2km of the current resource on the same fold structure and additional fold structures ( Figure 5) below.

Figure 5 Right: Springdale Graphite Project mineralised zones and distribution of the current drilling used in the current JORC Inferred Mineral Resource Estimate

The current resource is, with little doubt, far from finite in terms of size potential, with additional upside expected at depth and along strike of the current resource boundaries

However, new EM work in combination with limited reconnaissance drilling indicates significant future exploration upside potential is likely in the form of the discovery of new mineralisation on repeat fold limbs and hinges now recognised within the Springdale tenement's boundaries

Drilling already underway to upgrade the existing JORC resource from Inferred to Indicated to satisfactorily allow mining feasibility work and permitting process to commence in 2023



### Increasing Resource Confidence Levels & Embarking Upon Mining Feasibility Studies is What to Expect from Springdale in the Coming Months

With the Collie operations already under construction in terms of the building of the R&D plant it may initially look like the Company is putting the horse before the cart in terms of pushing the button on plant development before it has firmly established a high confidence resource base. However, this isn't really the case. Collie is initially planned as an R&D centre which will test at benchtop and pilot level Springdale graphite concentrate allowing optimisation of the mining of the resource to occur to suit Collie's future requirements.

One also needs to bear in mind that the Company only acquired Springdale from previous owner Comet resources on the IPO and has therefore had little time yet to further advance Springdale towards the final goal of "decision to mine status".

With the IPO now firmly behind it, IG6 has now embarked upon the next stage of resource evaluation and development at Springdale which involves further drilling to enable the Company to elevate the current resource base to higher confidence Indicated & Measured status which will then be sufficient to undertake Pre & Definitive Feasibility studies into mining at Springdale including all necessary required permitting.

A 7,100m RC and diamond drilling program is already underway providing a combination of infill and step-out drilling, the former aiming to reduce drill hole spacing allowing for higher confidence levels with the existing resource boundaries. In addition drilling is also planned to identify new areas outside of the current resource that is prospective for new shallow high grade mineralisation to increase the current global resource base. On 30th May 2022 IG6 released its first progress update on the project and announced for the first time an indicative Exploration Target of 18Mt to 54Mt grading 4% to 18% TGC. This *Exploration Target* excludes the existing JORC Mineral Resource Estimate tabled above (Table1).

At this early conjecture, there is a sufficient level of confidence to envisage Springdale having strong potential of being able to supply Collie with a reliable continuous supply of high quality concentrate for many years to come, assuming Collie continues to develop beyond current R&D status.



# Collie Downstream Operations, Western Australia (IG6 100%)

Construction of the R&D facility is underway at the new Collie site.

Many reasons why IG6 has chosen the Collie site for the development of its downstream processing business

The choice of site was strongly influenced by the overwhelming support for the company from both the local community and local government, the latter culminating in the granting of a \$2m facility to assist the company in funding its micronising plant

Installation of an ultra high temperature furnace and pilot spheroidising unit underway

The R&D facility aims to produce important samples for prospective customers and offtakers seeking supply of high end downstream graphite products

Figure 6 Right: Collie planned process flow chart with micronising, spheroidising and purification (initial BAM facility) and in the next stage coating are the four key processes which will be undertaken

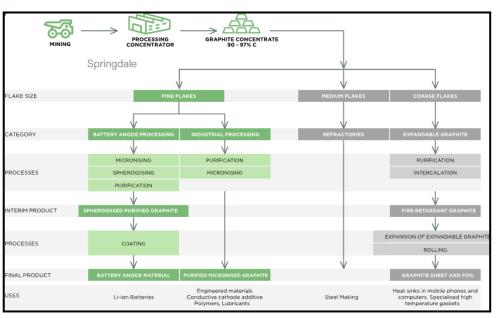
In 2020 IG6 completed its due diligence studies looking into the establishment of a brand new downstream processing facility at Collie. Construction is now well underway) with a Research & Development (R&D) facility, the facility is designed to be later scaled up to plant status for commercial production as R&D phase is concluded.

Collie was by no means a random choice of site. It was carefully selected as a focal processing point due to several reasons, the largest of which were its inclusion in Western Australia's Future Battery Industry Strategy (discussed earlier), considerable community support, already established infrastructure the Company is able to leverage off, an available skilled workforce and access to a potentially low cost power base which is transitioning from coal to local alternative green energy sources.

IG6 has also benefitted from being eligible for local government grants to develop its business. In September 2021 the Company was awarded a \$2m grant from the Collie Futures Industry Development Fund (CFIDF) to assist in funding the development of its "WA Collie Micronising Plant". Whilst the grant is not a *game changer* in terms of its size, it nevertheless sends a strong message that both the community and local government of Collie are supportive of the Company developing its operations in Collie and opens up the opportunity for further state and federal funding assistance.

### So What is IG6 Exactly Trying to Achieve at Collie?

The Company is already well underway establishing what it refers to as an *initial processing facility* and is in the process of installing an ultra high temperature furnace and pilot spheroidising unit. This *initial processing facility* will be commissioned and operated initially as an R&D facility, producing high quality spheroidised graphite product suitable for BAM applications. IG6 also plans to have a semi-commercial micronising plant on line in H1 2023 to produce micronised graphite products using initially imported feedstock. The establishment of the facility will also importantly provide IG6 with *market presence* enabling the Company to showcase to prospective offtake customers the exceptional quality of products the Company plans to commercially produce in the form of supplying samples for customers to undertake their own detailed due diligence testing. With management's links and contacts in the downstream graphite processing sector, the Company is not short of interested parties keen to enter into discussions about future supply.



Additionally the plant, which will commence downstream production on imported graphite will also trial process parcels of graphite from Springdale as the Company undertakes and progresses through resource upgrades and mining feasibility studies in the coming months looking into developing Springdale as a long term supply of graphite for Collie.



It is important to have some level of understanding why Micronising and Spheroidising graphite is so important and why it is undertaken prior to inclusion in high tech battery applications

Whilst most flake graphite concentrates can be made into SPG. Some are better than others

Low bulk density graphite concentrates are undesirable

Springdale graphite concentrates contain low levels of deleterious elements present can be upgraded to 99.95%+ purity which is excellent for battery applications

IG6: "Downstream testwork has shown that these (Springdale) concentrates are ideally suited for micronised graphite for speciality engineered products and for SPG with direct application to BAM and energy markets"

Traditional purification of graphite involving wet processing is a field China has largely monopolised for years. However this process involving substantial amounts of water and chemicals is far from "green" and the polluting practice is rapidly becoming unacceptable to governments and customers alike

## Micronising & Spheriodising Graphite Explained

As few investors would be knowledgeable in the benefits of downstream graphite processing, we believe it is worthwhile attempting to explain, in simplified terms, what the process of Micronising and Spheroidising graphite is and why it is done prior to graphite's inclusion into high tech applications of today.

"Spheroidisation refers to the multistage process of milling, shaping and classifying anodegrade graphite, to produce spherical graphite to very exacting specifications demanded by lithium-ion battery manufacturer" (Hexagon Resources Limited 2018).

"Spherical graphite is manufactured from flake graphite concentrates produced by graphite mines and is the Battery Anode Material (BAM) used in lithium ion batteries. The first part of the process consists of micronising, rounding and purifying flake graphite" (Northern Graphite

Micronising involves reducing the graphite flakes in size down to 10-15microns through a series of cascading jet mills to produce a pre specified target size. The micronised graphite is then rounded and 'snowball' accreted into spheroids (like layers on an onion) through another set of cascade mills with different mill plate settings to between 5 and 20 microns, the size of which is determined on what application it is used for.

The round shape of Spherical Graphite (SPG) is essential to allow uniform effective packing of the graphite in high speed lithium ion battery manufacturing process. I,e. a higher density in the battery provides more sites for the lithium to intercalate with the graphite equating to a higher capacity in addition to a longer life.

### Not All Graphite Concentrates Are The Same

We understand not all graphite concentrates are the same and whilst most flake graphite can be made into SPG, some concentrates are better than others. Concentrates with low bulk density translate to batteries that have a low energy density and are therefore not preferred.

### So How Well does Springdale Fair as a Source of "Suitable Concentrate" for Collie?

Float testwork on both core and RC chips taken from within the resource boundaries has also encouragingly demonstrated the resource has high levels of graphite purity with no reported deleterious minerals evident within the graphite zones. Additional testwork has also demonstrated the graphite can be upgraded to 99.95%+ purity through processing which is excellent for battery test work studies.

Based on this work IG6's Independent technical consultant we note, has been sufficiently confident enough to state that, "These results suggest that with further test work the graphite mineralisation can be processed to produce a saleable product. The shallow, high grade nature of the mineralisation together with the positive indications from metallurgical test work is supportive that the deposit has the potential for eventual economic extraction".

Adding to that, we note the Company itself has confidently stated, "Downstream testwork has shown that these concentrates are ideally suited for micronised graphite for speciality engineered products and for SPG with direct application to BAM and energy markets".

### Processing Graphite Through Traditional Methods is a Dirty Polluting Business Which IG6 Plans to Tackle Head-On With New Patented Greener Technological Concepts

Floatation usually produces concentrates in the range of 94 to 97% TGC. This then has to be purified further to 99.95% TGC for use in high end applications. Unfortunately purification currently comes predominantly in the form of wet processing using hydrofluoric acid (HF), as it is a low cost process which the Chinese have dominated for many years. However, this process potentially releases environmentally damaging fluorides into the environment which adds a whole new level of environmental and safety issues which all adds to the cost of production.



IG6 plans to tap into its management's intellectual knowledge and knowhow to develop greener processing solutions involving high temperature purification rather than the traditional heavily polluting wet processing route

IG6 Taking Aim To Take Advantage of the Graphite Industry's Far From Perfect Environmental Track Record by Applying Intellectual Knowledge to Develop Greener Processing Solutions Demanded by Both Governments & End Consumers Alike

Not alone in recognising this "not so green" issue, IG6 management utilising, their experience and advanced intellectual knowledge in this field plan to test both an alternative wet processing method that does not use HF and also develop an alternative purification process involving thermal treatment in a high temperature furnace. Traditionally the high temperature purification route has been deemed to be too higher cost when compared that of the traditional wet processing route, which has historically been a big barrier to its development. However with end users, governments and offtakers now demanding to know how green even their sourced raw materials are the time has now finally come for change.

# **Share Price Target**

We are of the current opinion that placing a price target valuation on IG6 is premature at this early stage in the Company's life. We are mindful that the Company having just listed 2 months ago is still establishing activities at Springdale embarking upon resource and exploration drilling aiming to upgrade the project's current JORC Inferred resource to Indicated & Measured categories. This will allow for mining feasibility studies to be undertaken to generate some meaningful initial capital requirements and simulated production figures. Similarly at Collie, the Company is underway, be it in the early stages, of constructing its R&D facility from which we expect to see capital development and production forecasts to be generated in the coming weeks.

Therefore in the current absence of any mining and production figures to allow standard financial modelling to occur on the likes of simulated projected cash flows we have decided not to place a price target on IG6 at this point.

It is however worth looking at the current market capitalisations of IG6's sector peers with broadly similar graphite projects at similar of more advanced stages of development at this time. This crude but nevertheless useful exercise clearly indicates IG6 to be far from fully priced.

Recognising complexity in trying to value the Company at this point we need to acknowledge that IG6 also has a substantial amount of intangible asset value that should be at least acknowledged, notably in the areas of management's intellectual property and knowhow.

	International Graphite	Black Rock Mining	Ecograf	Evolution Energy Minerals	Magnis Resources	NextSource Materials (Energizer)	Nouveau Monde	Renascor	Talga Resources	Syrah Resources
Ticker (ASX & TSX)	IG6	BKT	EGD	EV1	MNS	NEXT	NOU	RNU	TLG	SYR
Market Cap (A\$M) 3/06/22	60	195	169	61	367	255	535	465	410	1070
Mineral Resource (Mt)	15 (2.6 MT HG)	212	31	20	174	141	120	87	55.3	107
Mineral Resource Grade (TGC%)	6% (17.5% HG)	7.8%	9.9%	9.9%	5.4%	6.1%	4.3%	7.5%	17.5%	16%
Measured / Indicated / Inferred	1	MII	П	II	MII	MII	MI	MII	II	Reserve
Planned Mine Life (Yrs)	+10	16	18	18	15	30	25.5	40	7	+20
Stage of mine development	Scoping	DFS	DFS	DFS	DFS	Under construction	Trial mining	DFS	Trial mining	Operational
Permitting status	In progress	Fully permitted	Fully permitted	Fully permitted	Fully permitted	Fully permitted	Fully permitted	Fully permitted	Fully permitted	Operational
Project	Springdale	Mahenge	Epanko	Chilalo	Nachu	Molo	Matawinie	Siviour	Vittangi	Balama
Country	Australia	Tanzania	Tanzania	Tanzania	Tanzania	Madagascar	Canada	Australia	Sweden	Mozambique
Downstream graphite business stage	R&D facility SPC and micronising	MOU with POSCO for graphite concentrate sale for use in BAM	Battery anode materials based on imported graphite	Expandable graphite toll treatment, China Micronised graphite, Tanzania	JV ownership of 2 planned battery plants in feasibility stage	Partner with TESLA for turnkey plant. Child and Japan technology	Pilot SPG operating Pilot purification	Battery anode material studies completed	BAM, coated materials and anodes Pilot battery plant operational	BAM and coated materials
Downstream graphite business status	Scoping and PFS	MOU sales	DFS finalising Funding	Part DFS Toll treatment agreement	Pilot and feasibility	Feasibility	Stage 1 demo plant in construction	DFS seeking funding	DFS complete Demonstration plant complete	Implementation and construction
Location of downstream	Collie, Western Australia	POSCO, Korea	Australia	China Tanzania	New York, USA Townsville, Aust	USA	Canada	Australia	Sweden	USA

Right: Table of Listed Graphite Sector Peers

Source: IG6 June 2022 company presentation

\* The Fraser Institute has recently announced WA as the worlds #1 resource investment jurisdiction We place a justifiable positive weighting to the fact that all of the Company's assets and operations are located within Western Australia, a Tier 1 mining friendly low sovereign risk jurisdiction\*. This is unlike a great deal of IG6's peers who have graphite mining projects in much higher perceived sovereign risk African countries such as Mozambique, Tanzania and Madagascar.

We also believe it pertinent to point out that Springdale Graphite Project vendor Comet Resources Limited (Matt O'Kane being the current Managing Director of Comet serving also as Non Executive director for IG6) is escrowed for two years. Similarly all pre-IPO seed stock is subject to escrow between 12 and 24 months.



# Share Price Target cont.

Taking all of this into consideration and with a current low capitalisation of circa \$50m when compared against sector peers (see table 2 sourced from IG6's June presentation), we envisage early exploration success from current drilling at Springdale in the second half of 2022 coupled with expected good news on the progress of Collie which should be sufficient to justify a series of incremental positive share price re-ratings.

Also noteworthy is that approximately half of the total shares on issue are currently held in escrow ranging from 12 to 24 months from listing, with the majority escrowed for 24 months.

We are therefore comfortable to place a **Speculative BUY on IG6** at this stage, acknowledging it is just too early to place a meaningful share Price Target on the Company at this time.

# **Board & Management**

### Mr Phillip Hearse - Executive Chairman

Mr. Hearse is a metallurgist who has gained over 40 years experience on numerous international resources projects. He has held operational and technical roles at Broken Hill, Bougaineville Copper, Queensland Nickel (QNI) and Gove Alumina before subsequently holding executive positions with private engineering companies.

Mr Hearse is currently owner and Managing Director of Battery Limits Pty Ltd, a private leading graphite metallurgy and process engineering firm that has assisted numerous listed graphite companies undertake Definitive Feasibility Studies on graphite production and downstream graphite processing as well as providing market intelligence.

### Mr Andrew Worland - Non Executive Director

Mr Worland is a mining finance and marketing executive who has over 20 years of experience in the WA mining sector. In addition to his directorship with International Graphite, he is currently President & CEO and Corporate Secretary for private Canadian miner LeadFX Inc and chairman of ASX listed Besra Gold Limited.

Andrew's commodity experience includes exploration, development and operations in lead, zinc, nickel, cobalt, gold, iron ore molybdenum, copper and uranium.

### Mr David Pass - Non Executive Director

Mr Pass is a metallurgist with over 30 years experience in the mining industry. This experience includes minerals processing, process design, project due diligence and operational management experience, the bulk with Barrick Gold.

Working with Phillip Hearse, David also holds the role of CEO for Battery Limits Pty Ltd. Previously David was a senior executive for Moly Mines Limited.

### Mr Matthew O'Kane - Non Executive Director

Mr O'Kane is an experienced minerals industry executive and company director with 25 years of experience in the mining, commodities and automotive sectors. Matthew has previously held senior leadership roles in Australia, Asia and the USA in both developed and emerging markets.

He has served on boards of mining companies in Canada, Hong Kong and Australia. Matthew is currently a non executive director for ASX listed Reach Resources Limited and a previous non executive director of ASX listed Pursuit Minerals Limited.



# Risks Associated with Investing in International Graphite Limited

Potential investors need to be aware that investment in International Graphite Limited (ASX:IG6), like all investments in junior resource companies, is of a highly speculative nature. Normal share market risk conditions apply including commodity prices, currency fluctuations, sentiment, supply and demand and general economic outlook. Normal exploration, development and production risks also apply as well as operating, environmental and native title risks.

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**Specific Disclosure:** The report has been reviewed by IG6 for factual accuracy.

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