



ASX:HKG

ASX Announcement

23 September 2019

Corporate Update; Next-Generation Graphite Starts Here.

Hexagon Resources Limited (ASX:HKG) (**Hexagon** or the **Company**) would like to provide an update on its corporate strategy, in particular further detail to its downstream graphite transformation business development work program.

This will be addressed in a summary manner in this mornings Investor Call addressing questions from shareholders mainly on the upstream graphite concentrate markets and Hexagon's response in the wake of recent trends and events.

In particular, using these events as a positive transformational step as part of its response to mine sourced (upstream) graphite market concerns and its enhanced downstream graphite processing focus.

FURTHER INFORMATION, please contact:

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Hexagon Resources Limited
Corporate Strategy Update
September 23, 2019

Next-Generation Graphite Starts Here.



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Graphite Upstream

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A Buyers' Market

Product — depressed prices, ongoing and significant oversupply; excess capacity; incumbents can ramp-up/expand production quicker and at lower cost than a new entrant ever could

Mine Development — oversaturated space and limited-value creation opportunities for shareholders until demand and supply are in balance (2023-2024)

Note, HXG sees tremendous demand for upstream development opportunities 2024 onward

Graphite mining at Jixi City Puchen Graphite Co., Ltd. in Jixi, southeastern Heilongjiang Province, China

Source: G&W, 2019



Graphite Downstream

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A Sellers' Market

Products

Multiple product opportunities (not just batteries); strong pricing, robust margins, significant long-term demand, several additional growth opportunities

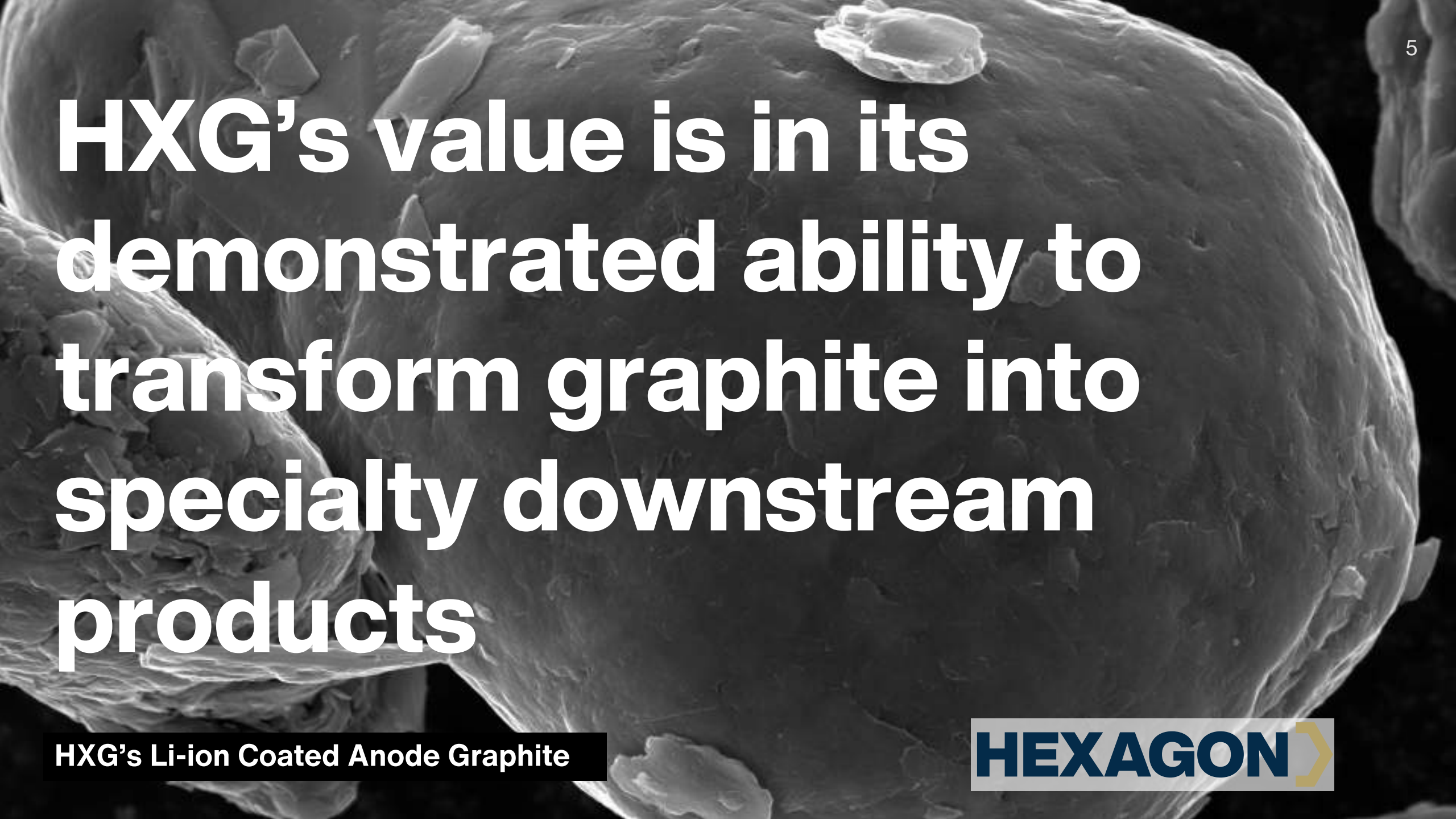
Transformational Technology Manufacturing

Insufficient downstream capacity to meet demand; significant growth/early-mover opportunities

Note, concentrate sourcing optionality is critical. Having a sole source of graphite can be a liability, not an asset, to downstream manufacturers

The world's largest Li-ion battery manufacturing facility, Tesla's Gigafactory 1 in Sparks, Nevada, USA
Source: Tesla, 2017





**HXG's value is in its
demonstrated ability to
transform graphite into
specialty downstream
products**

HXG's Li-ion Coated Anode Graphite



HXG Downstream Growth Strategy

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Objectives

1. Value-creative utilisation of HXG's assets
2. Create new and sustained **shareholder value**
3. Maximise value; generate future **cash flows** quickly and efficiently
4. Successfully identify, effectively manage, accurately measure, and develop near-term **downstream market opportunities**
5. Rapidly bring premium **Made-in-USA products** to market
6. Diversify US downstream **Graphite** focus to include **Rare Earth Elements (REEs)**
7. Communicate effectively with stakeholders



Improving stakeholder engagement — Managing Director, Mike Rosenstreich, filming a HXG corporate-update video segment in North America on September 19, 2019

HXG Downstream Growth Strategy

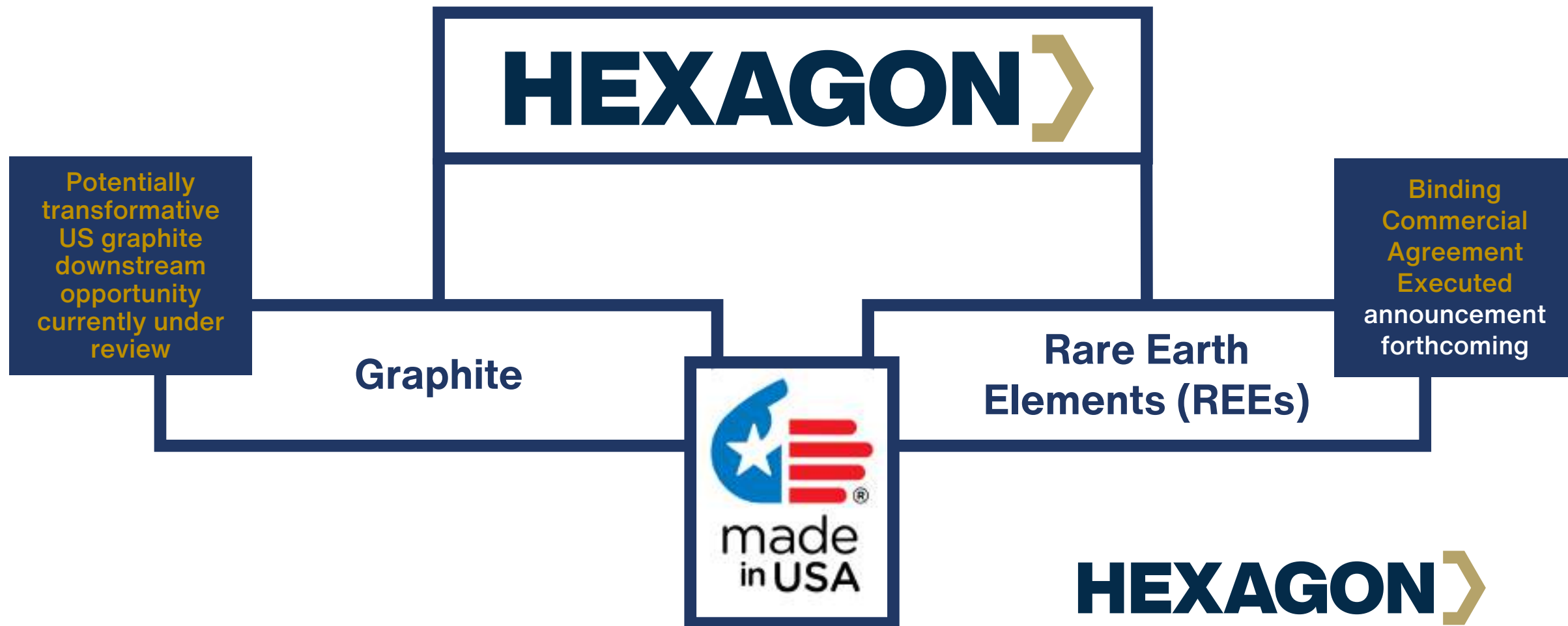
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Go-to-Market Strategy

- Detailed, complete, commercialisable, enduring
- Accelerated qualification timelines, providing significant opportunities as an early-mover
- Commercialising downstream technologies and expertise to transform graphite into high-value end products by building on HXG's significant development work
- Diverse range of battery and energy products
- Deep relationships with leading end users and industry experts
- Increase HXG's enterprise value by partnering with an industry innovator to commercialise a demonstrated key downstream Rare Earth Elements (REEs) technology
- Advancing US-based businesses with leading global commercial partners

HXG Downstream Growth Strategy

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HXG's Antioxidant Conductivity Enhancement Additive



HXG Product Demand Drivers

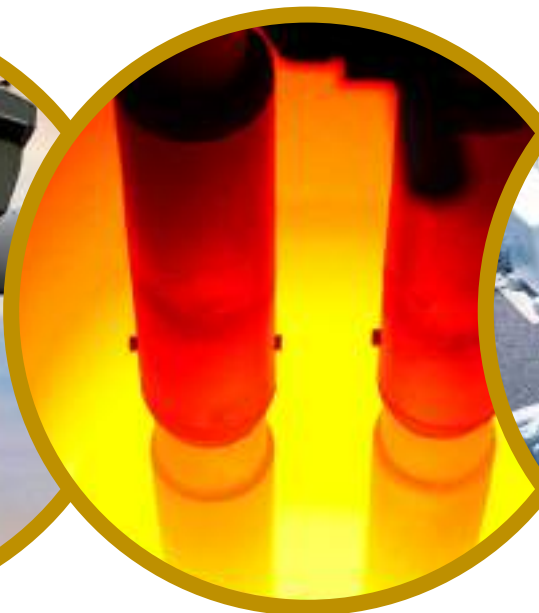
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Defence



**Renewable
Energy**



**Industrial &
Energy**



Energy Storage



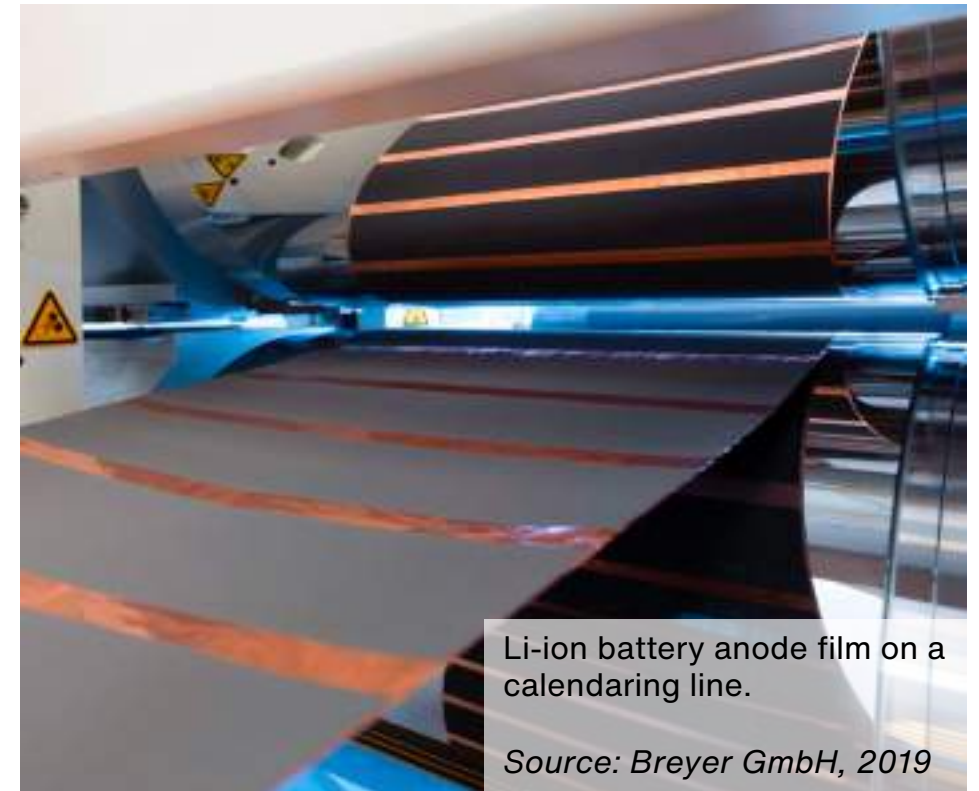
**Electric
Transportation**

HXG Downstream Growth Strategy

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HXG's 'Go-to-Market' US downstream business strategy is based on extensive input and guidance from battery-industry leaders

- Driven by major end users
- Not reliant on upstream development activities
- HXG has gained an intimate knowledge of major potential customers' immediate and future needs; this knowledge and insight is the foundation the Company's downstream business
- With this deep understanding, HXG can better serve the wants and needs of potential customers and, in turn, build long-term trusted business relationships
- Forthcoming business plan de-risks the enterprise and rapidly advances commercial opportunities



Li-ion battery anode film on a calendaring line.

Source: Breyer GmbH, 2019

Battery Customer Requirements

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Source Optionality

Customers require products derived from several different upstream commercial graphite concentrate producers

Product Optionality

Customers require a suite of natural, synthetic and blended specialty graphite products

Familiarity and Safety

Customers require specialty graphite products manufactured by current industry-accepted technologies

Testing Data

Customers require extensive materials and commercial performance testing, utilising standard industry formulations

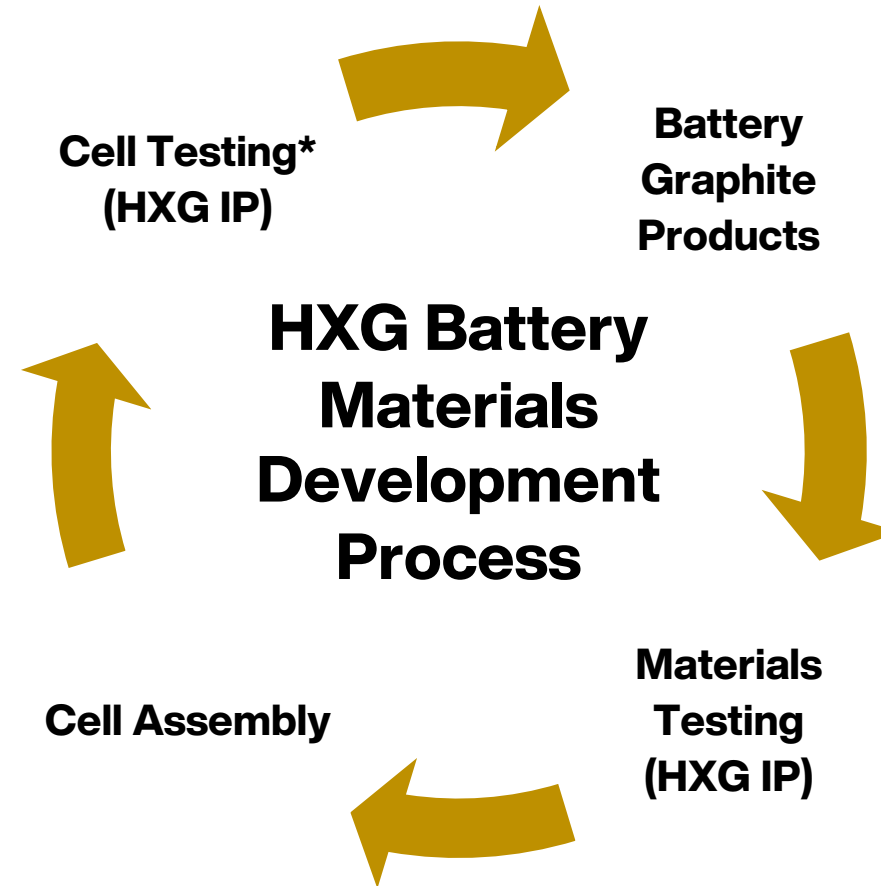
Performance & Scalability

Customers require consistent, high-performance, Made-in-USA products with capacity to scale production

Responding to Current Market Needs

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- HXG's extensive downstream graphite **product testing** is of critical import and will **drive sales** (*will demonstrate commercial suitability, product electrochemical/electric quality and performance, stability, long-term cycling capacity, safety, etc.*)
- The resultant, continually growing product **testing dataset/IP** will become a **core asset** of the Company and is key to **end-user approvals** and purchase orders
- HXG's downstream graphite operations will consist of **natural, synthetic** and **blended** (natural and synthetic) **specialty graphite products** for energy and industrial applications



**18650 and 2170 commercial Li-ion cells*



HXG's Synthetic Graphite

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Responding to Current Market Needs

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Ready to address customers today

HXG's unique, go-to-market strategy is based on commercially available feedstocks, transformed utilising only proven commercial technologies already approved and understood by end users to sell into markets as quickly as possible

Ready to address customers tomorrow

HXG's downstream is underpinned by ongoing commercial development with leading next-generation technologies such as electrothermal fluidised furnace testwork (*i.e. partnering on alternative purification technologies with industry leaders*) to main/increase market share if/when new transformation technologies are adopted by industry

Made-in-USA

Products provide customers a potential competitive advantage (*US content must be disclosed by automobile manufacturers per the US Federal Trade Commission's American Automobile Labeling Act*)



HXG Competitive Advantages

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Go-To-Market Strategy

Speed to Market & Revenues

Product Diversification; Addressing Multiple Markets Now

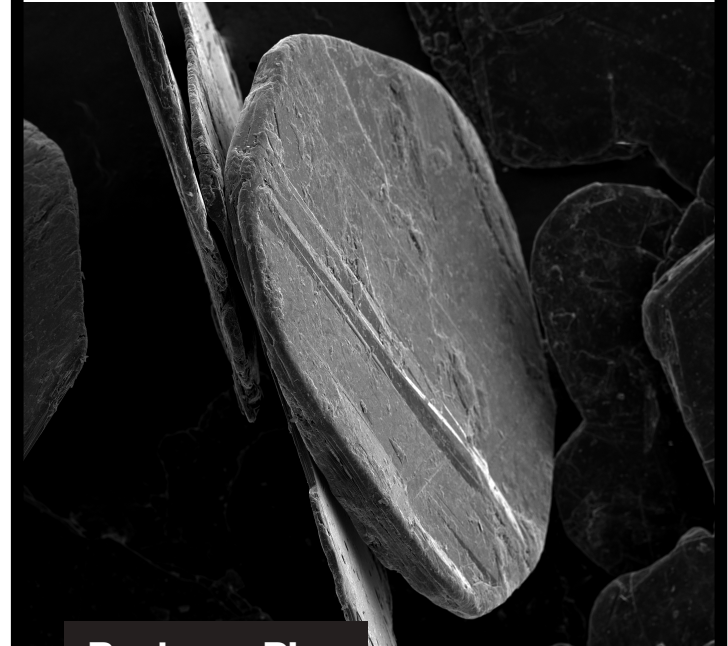
Accelerated Qualification Timelines

Leading Technical Expertise & Commercial Partners

Established Relationships with Industry & End Users

Comprehensive Testing Data Library

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Business Plan

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HXG's Expanded Graphite

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HXG Competitive Advantages

Speed to Market & Revenues

- Commercialising downstream technologies and expertise to transform graphite into high-value end products by building on HXG's significant development work
- Utilising established downstream technologies already accepted by end users
- Technical and commercial partners in place
- Defined suite of commercially available precursors
- Early-mover advantage

Product Diversification Addressing Multiple Markets Now

- Diverse range of energy and industrial products
- Targeting deep, high-growth, high-margin market sectors, including electric vehicles, energy storage, industrial and energy applications, renewable energy, and defence
- Suite of natural, synthetic and blended graphite products

HXG Competitive Advantages

Accelerated Qualification Timelines

- Commercialising downstream technologies and expertise to transform graphite into high-value end products by building on HXG's significant development work
- Utilising established downstream technologies already accepted by end users
- Technical and commercial partners in place
- Defined suite of commercially available precursors
- Extensive testing data based on what end users require to engage

Leading Technical Expertise & Commercial Partners

- Downstream graphite product commercial laboratory
- Battery graphite commercial formulations laboratory
- Battery assembly commercial scale-up partner
- Long-term cycling commercial partner

HXG Competitive Advantages

Established Relationships with Industry & End Users

- Business strategy is based on extensive input and guidance from battery-industry leaders
- Extensive knowledge of major potential customers' immediate and future needs
- Relationships with world-leading battery manufacturers and electric vehicle companies
- Strong end-user-driven marketing programme

Comprehensive Testing Data Library

- Will become a core asset (IP) of the Company
- Testing data library is of critical import to end users for product selection and will drive sales
- Data library is key to end-user approvals and purchase orders
- All development and testing data is interconnected and builds upon itself

A scanning electron micrograph (SEM) of HXG graphite material, showing a dense network of thin, needle-like or fibrous structures. The fibers are interconnected, forming a complex, porous-looking network. The lighting highlights the texture and three-dimensional nature of the material.

HXG Graphite Downstream Technical Accomplishments

Battery-Grade Purification

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Produced $\geq 99.99\%$ C purified natural-flake graphite concentrate via thermal purification

- *Battery applications require a net purity of $\geq 99.95\%$ C*

Applications: all high-value downstream graphite products

Li-ion Coated Anode Graphite

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Manufactured Li-ion battery anode graphite materials

- *Purified natural graphite concentrate to $\geq 99.99\%$ C*
- *Milled (sized)*
- *Spheroidised (shaped; high yield)*
- *Surface treated (coated)*
- *Produced sizes ranging from D_{50} 7 to 25 microns*
- *Performance testing in Li-ion cells*

Application: Li-ion batteries

Cathode Conductivity Enhancement Graphite

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Manufactured battery cathode conductivity enhancement graphite (CEG) materials

- *Purified natural graphite concentrate to $\geq 99.99\%$ C*
- *Produced expandable graphite (graphite intercalation)*
- *Produced expanded graphite (thermal shock)*
- *Milled expanded graphite into high-performance CEG*
- *Produced and tested both standard and high-performance CEG products*

Applications: all major commercial battery cathodes chemistries (Li-ion, primary lithium, alkaline, and lead acid)



Antioxidant Conductivity Enhancement Additive

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Manufactured antioxidant conductivity enhancement additives for graphite electrodes

- *High-performance purified natural graphite additive to increase electrical and thermal performance, while extending life in synthetic graphite electrodes in electric-arc furnace (EAF) steel production*
- *Details forthcoming*

Application: graphite electrodes for EAF furnaces

Expandable & Expanded Graphite

Manufactured expanded/expandable graphite materials

- *Purified natural graphite concentrate to $\geq 99.99\%$ C*
- *Produced expandable graphite (graphite intercalation)*
- *Produced expanded graphite (thermal shock exfoliation) with significant expansion factor*

Applications: flame-retardant/fire-suppression building materials, thermal management systems, sealing, ceramics, plastics, geothermal/energy and batteries

Synthetic Industrial Diamonds

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Manufactured synthetic industrial diamonds

- *High Pressure High Temperature (HPHT) synthesis of cultured diamonds produced from natural graphite flake*

Applications: various industrial applications (*cutting, grinding and polishing media*) and active and passive semiconductor devices

Charles Whitfield

Chairman

The Principal Investment Officer at Drumrock Capital, Mr. Whitfield has extensive experience in both the battery resource sector and in the development of specialty mineral projects and companies. Previous to joining Hexagon, Charles undertook the turnaround and progression into profitable operation of ASX-listed Galaxy Resources Ltd, a producer of lithium for the battery industry.

Previously, Mr. Whitfield served as Managing Director of Citigroup where he served as Head of the Corporate Equity Solutions Group (Asia Pacific). Prior to this, he worked for Deutsche Bank where he served as head of the Strategic Equity Transactions Group (Asia Pacific).

Mr. Whitfield received his Masters in Business Administration (majoring in Finance and Strategy) from Columbia Business School (New York) and his Bachelor of Economics from The University of Exeter (UK).



Mike Rosenstreich

CEO & Managing Director

Mr. Rosenstreich is an international mining executive with more than 30 years' experience, including 13 years as an exploration and mine geologist with Homestake Gold and Dominion Mining, 6 years Corporate Finance with Rothschild Australia, 9 years as founding Managing Director of ASX-listed Bass Metals Ltd. from pre-IPO stage, exploration success and more than 5 years of base and precious metals production, and 3 years as Principal at Keystone Resource Development, providing corporate, technical and financial consulting services.

During this time he has been involved in a wide range of commodities from gold and base metals to industrials such as tantalum, feldspar and mineral sands across the globe. He joined Hexagon in early 2017 and has been instrumental in charting the Company's path to creating a downstream energy graphite and critical materials business.

Mr. Rosenstreich is a Fellow of the AusIMM and a member of the AICD. He holds a BSc (Hons) in Geology (Otago) and Masters in Mineral and Energy Economics (Macquarie).



Dr. Gareth Hatch

Senior Technical Advisor

Dr. Hatch is the CEO, Chairman and Co-Founder of Innovation Metals Corp. (IMC) and co-inventor of the RapidSX™ technology to separate and purify rare-earth elements (REEs). He was previously Interim CEO and Director of TSX Venture-listed Alabama Graphite Corp, and Director of Technology at Dexter Magnetic Technologies. Dr. Hatch holds five US patents on various inventions based on REE permanent magnets.

Dr. Hatch has a BEng (Hons) in materials science & technology and a PhD in metallurgy & materials, both from the University of Birmingham. He is a Fellow of the Institute of Materials, Minerals & Mining, a Fellow of the Institution of Engineering & Technology and is a Chartered Engineer through the UK Engineering Council.

During 2014-2016, Dr. Hatch led a major US-DoD-funded research program, overseeing research on new processes for critical materials. He is a member of a NATO STO strategy team on REEs and is a member of the Canadian ISO TC/298 Mirror Committee on standards for REEs.



HXG's Graphite Concentrate



Contact

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