

ASX ANNOUNCEMENT

6 June 2019

MCINTOSH JOINT VENTURE STATUS AND STRATEGY UPDATE

Hexagon Resources Limited (**ASX: HXG**, Hexagon or the Company) became aware of growing uncertainty amongst investors and potential misperceptions regarding the corporate strategy and the status of the different components of that strategy. Thus, the decision was made to provide a clear update covering the McIntosh Joint Venture (**MJV**) and take the opportunity to discuss the recently acquired US graphite assets and downstream graphite business plans within the Company's overall commercialisation strategy.

1 STRATEGY

Objective

To as quickly as possible establish a cash flow positive business in the graphite industry and ultimately control an integrated upstream to downstream business to realise value from Hexagon's processing expertise and the special mineral attributes contained within its primary sources currently located in Australia and the USA.

Implementation

To date, Hexagon has pursued a dual path to achieve its objective of creating a diversified, premium, graphite focused, vertically integrated business;

- Upstream - focussed around the McIntosh deposits and Joint Venture, funded by Mineral Resources Limited (**ASX: MIN**, MinRes) for the past 12 months and the recently acquired Alabama mineral claims; and
- The Downstream employing innovative flow sheet and cutting-edge technologies to supply a variety of high-end products into deep, premium priced markets.

Hexagon has made inroads into the downstream market which it believes may be the first component of the strategy to produce cashflow and will help to establish the Company in graphite end-markets and build demand that might later be satisfied from the Company's own source projects.

2 UPSTREAM ACTIVITIES

McIntosh Joint Venture

MinRes holds a 51% interest in and manages the MJV, located in the East Kimberley region of Western Australia. Hexagon holds a 49% interest. MinRes is required to complete a Feasibility Study assessing the viability of producing graphite concentrates from McIntosh by 14 November 2019. This is the first of several milestones, culminating in the requirement to achieve Commercial Production by 14 May 2021 to maintain its 51% MJV interest.

The current focus of the MJV partners is metallurgical testwork to define a process flowsheet. Testwork, planned and commissioned by Hexagon, is currently underway in China at a research facility that is highly



experienced in a wide spectrum of graphite processing, from initial concentration to downstream purification, micronising and spheroidising. Subject to the outcomes of this work, the MJV plans to follow-up with “locked-cycle” and pilot scale flotation tests to generate process design criteria as part of the Feasibility Study. Results will be reported as the respective test programs are completed.

McIntosh is an advanced, high quality flake graphite project. Recent “upstream” technical milestones include:

- Completion of a positive prefeasibility study (**PFS**) which generated an unleveraged, pre-tax NPV of A\$272 million (refer ASX Report 31 May 2017)¹;
- A range of technical testwork demonstrating the diverse and sought-after graphite flake attributes;
- Upgrade of the MJV Mineral Resource to 23.8 million tonnes at 4.5% TGC (total graphitic carbon) (Refer ASX Report 5 April 2019)² of which 81% is classified as Indicated; and
- Recovery of another 11 tonnes of drill core sample for further pilot testwork and marketing samples.

Furthermore, two Mining Lease applications were submitted, and constructive negotiations commenced with the Kimberley Land Council on behalf of the Marlarngowem Traditional Owners. As well, the majority of the required flora and fauna survey inputs are complete.

Key elements to completing a feasibility study include field activities such as water and geotechnical drilling as well as study inputs such as detailed engineering, detailed mine optimisation studies and scheduling, environmental management and concentrate offtake.

Charge Minerals LLC (Alabama)

In March 2019 Hexagon acquired an 80% interest in a private USA registered company, Charge Minerals LLC (**CML**). CML holds several Mineral Claim agreements in Alabama including the early stage Ceylon graphite mine project, centred on a historical open pit excavation last worked in 1946.

This is an opportunity to participate in a “sourced-in-USA” flake graphite project in the context of heightened concerns in the US on their ability to source strategic minerals such as graphite for a range of uses including vehicle electrification and defence applications.

Alabama is a very mining and development friendly jurisdiction with strong community, state, and federal-level support for Charge’s project. The founders of CML, who remain involved in the company, have extensive exploration and community relations experience in the Alabama Graphite Belt, as well as strong relationships with major US and international battery-materials customers, including those with ties to the US Department of Defense.

¹ The PFS was announced on 31 May 2017. Hexagon Resources Limited confirms that it is not aware of any new information or data that materially adversely affects the PFS information included in the market announcement dated 31 May 2017 and, in the case of the PFS, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially adversely changed.

² Mineral Resource Estimate of 23.8 Mt at 4.5% TGC reported in accordance with the JORC Code 2012 Edition was announced on 5 April 2019. Hexagon Resources Limited confirms that it is not aware of any new information or data that materially affects the Mineral Resource information included in the market announcement dated 5 April 2019 and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. A 3% TGC cut-off has been used for the 23.8 Mt Indicated and Inferred Resources.



The strategy with the Ceylon Mine Project is to fast-track assessment and development because the graphite mineralisation is exposed in the pit floor, making it readily accessible for bulk sampling and further processing to create samples for graphite marketing purposes. Subject to customer acceptance of either graphite concentrate or further downstream processed materials, additional resource development work and erection of a small-scale qualification concentration plant would follow. This is in contrast with the McIntosh deposits, where the main mineralisation is 20 metres from surface and all samples are generated from drill core making the crucial market-acceptance/sales phase more difficult.

Current activities comprise a comprehensive mapping and trench sampling program which is expected to be completed by the end of June 2019. This will assist to identify sites for bulk sampling with up to 80 tonnes of graphite mineralisation planned to be processed into concentrate at an existing pilot facility to generate concentrate for marketing and further downstream processing to create processed samples, also for market acceptance. In the US there are opportunities for Federal government funding to incubate development opportunities that complement the “critical minerals” sustainable supply narrative, support local employment and have strategic importance to government departments such as the US Department of Defense.

3 DOWNSTREAM ACTIVITIES

The downstream scoping study to establish a Graphite Purifications and Processing Plant (**GPPP**) on a stand-alone basis, as reported to ASX 17 May 2019, clearly highlights a compelling business investment case as summarised in Table 1³ below.

Table 1: Summary of Financial Outcomes from Downstream Scoping Study

	Financial Highlights	
	Geraldton (Australia)	Chelan County (USA)
Pre-tax NPV (10% discount)	A\$0.88 to A\$1.20 Billion	A\$0.92 to A\$1.24 Billion
Post-tax NPV (10% discount)	A\$594 to A\$804 Million	A\$708 to A\$958 Million
Pre-tax Internal Rate of Return	40% to 61%	40% to 58%
Post-tax Internal Rate Return	32% to 48%	35% to 49%
Operating Margin (EBITDA)	51%	54%
Payback period from FID (post-tax)	4 years	4 years
Payback period from full commercial production (post-tax)	2 years	2 years
Operating Cost Product (life of project)	A\$2,618 / Tonne	A\$2,248 / Tonne
Feedstock Price	A\$2,089 / Tonne	
Weighted Ave Basket Price of Products	A\$8,487 / Tonne	
Start-Up Capital Phase 1	A\$23 Million	A\$27 Million
Start-Up Capital Phase 2	A\$118 Million	A\$135 Million
Start-Up Capital Phase 3 (fully funded from operations)	A\$139 Million	A\$153 Million

³ The Scoping Study was announced on 17 May 2019. Hexagon Resources Limited confirms that it is not aware of any new information or data that materially affects the Scoping Study information included in the market announcement dated 17 May 2019 and, in the case of the Scoping Study, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.



This highlights one of the major challenges, namely raising the funds to establish a Qualification Plant, c.A\$25 million and then the c.A\$130 million for a commercial scale plant. The Company is exploring a range of options to reduce these capital costs and fund the overall downstream business. This includes possible strategic partnership with co-investment, potential grant money or possibly acquiring a related downstream enterprise with cash flow and customers to “cornerstone” the build-out of a business similar to that outlined in the Scoping Study. This process has been in progress for some six months and with A\$4.2 million cash at hand, as at end of May 2019, the Company is sufficiently funded to advance its activities including the underlying downstream Feasibility Study and financing discussions over the next 9 to 12 months.

Downstream Strategy Implementation

Hexagon has critical strengths which it has and will continue to contribute or co-ordinate to successfully implement its downstream strategy, including:

- i. Outstanding technical and commercial team that has acquired a unique expertise in the development of an innovative downstream flowsheet for natural flake graphite to produce specific premium materials as directed by deep graphite market insights and contacts in Asia, Europe and the USA markets.
- ii. Growing footprint in the USA which HXG regards as a key market for its products. Leveraging off its existing technical partnership with NAmLab⁴, HXG has recently announced that the US is its preferred location for the development of the GPPP and that it has retained several US based executives with significant graphite and battery materials marketing experience to develop sales opportunities.
- iii. An active and ongoing testwork program to further verify and support the planned processed graphite products reported in the Scoping Study outcomes. Ongoing discussions with several end-user groups on technical collaborations and sales agreements related to both the potential source projects, McIntosh and Ceylon.

4 CONCLUSION

Hexagon considers that there is a clear and highly value accretive path forward to develop a downstream graphite business underpinned by quality source projects such as McIntosh and possibly the Ceylon Mine Project in Alabama. Capturing additional, significant margins from further processing of graphite concentrates has always been an important part of the commercialisation strategy and, following the scoping study, represents a significant market opportunity.

The scoping study compiled on a standalone basis, not reliant on any source, provided an increased understanding of the graphite market structure and customer preferences, and highlighted a highly attractive and robust business case. Although standalone, the McIntosh Project has the potential to be an important element to this strategy, possibly supplemented by the new Ceylon Mine Project.

The relative timing on the development of the Upstream to the Downstream may vary, but it is important to note that the earlier implementation of the downstream business would provide a potential offtake partner for the McIntosh Project and subject to a positive feasibility study, the financing of any upstream developments by CML.

⁴ Hexagon has a confidentiality obligation not to disclose the identity of the organisation referred to as NAmLab. It is a well credentialed, ISO accredited test work and speciality graphite processing facility based in the USA.



5 COMPETENT PERSONS' ATTRIBUTIONS

Exploration Results and Mineral Resource Estimates

The information within this report that relates to exploration results, Exploration Target estimates, geological data and Mineral Resources is based on information compiled by Mr Mike Rosenstreich and is subject to the individual consents and attributions provided in the original ASX reports referred to in the text of this report. Mr Rosenstreich is an employee of the Company and is a Fellow of The Australasian Institute of Mining and Metallurgy. He has sufficient experience relevant to the styles of mineralisation and types of deposits under consideration and to the activities currently being undertaken to qualify as a Competent Person(s) as defined in the 2012 edition of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves*, and he consents to the inclusion of this information in the form and context in which it appears in this report.

Metallurgical Test Work Outcomes

The information within this report that relates to metallurgical test work outcomes and processing of the McIntosh material is based on information provided by a series of independent laboratories. Mr Rosenstreich (referred to above) managed and compiled the test work outcomes reported in this announcement. A highly qualified and experienced researcher at NAmLab planned, supervised and interpreted the results of the test work. Mr Michael Chan also reviewed the metallurgical test work outcomes. Mr Chan is a Metallurgical Engineer and a Member of the Australasian Institute of Mining and Metallurgy. Mr Chan and the NAmLab principals have sufficient experience relevant to the style of mineralisation and types of testwork under consideration and to the activities currently being undertaken to qualify as a Competent Person(s) as defined in the 2012 edition of the *Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves*, and have consented to the inclusion of this information in the form and context in which it appears in this report.

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