



ASX Release

20 June 2017

## **UPDATED CORPORATE PRESENTATION**

Hexagon Resources Limited (ASX: HXG) is pleased to present an updated Corporate Presentation which provides an update on the Company's Pre-feasibility Study and its plans to progress the Feasibility Study.

Hexagon's Chairman, Mr Charles Whitfield and Managing Director, Mr Mike Rosenstreich are using this presentation for a series of investor meetings through this week.

Kind regards

Leni Stanley  
Company Secretary

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# PATHWAY TO COMMERCIALISATION

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POSITIVE PRE-FEASIBILITY STUDY  
OUTCOMES AND FEASIBILITY STUDY  
OUTLOOK.

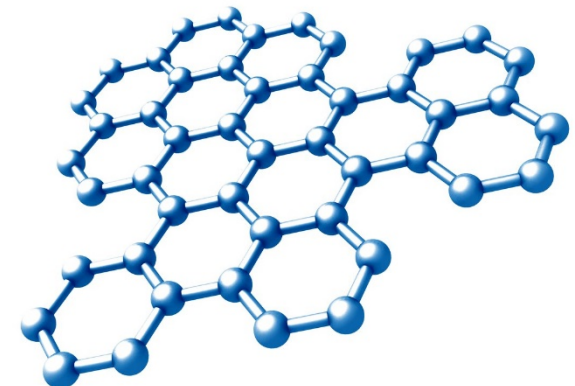
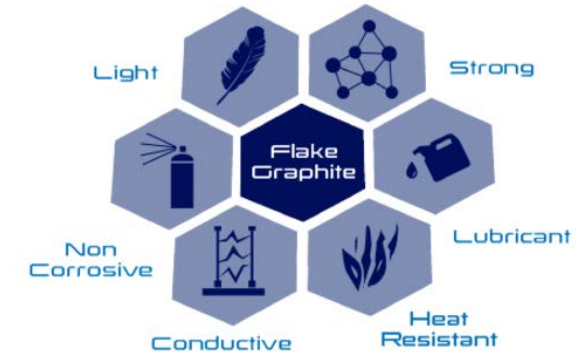
June, 2017

# Company Summary



- **Hexagon Resources Limited** is an Australian based mineral development company focusing on the production of high purity and crystalline flake graphite for use in advanced technologies.
- **Positive Pre-feasibility Study (PFS)** outcomes were reported on 31 May 2017 for the development of the McIntosh Flake Graphite Project in the East Kimberley, Western Australia. The PFS demonstrated viability of a business case based on annual production of ~88kt of high-grade flake graphite concentrate yielding an NPV of A\$261M at an IRR of 46%.
- **Fast-track completion of Feasibility Study (FS)** which includes assessment of several important project improvements and downstream processing options e.g. production of spherical graphite for Li-Ion batteries.
- **Cornerstone procurement source.** The Company aims to be an essential supplier to the energy storage sector and considers that there is huge potential via the switch to Li-ion batteries, increasing rate of uptake of electric vehicles (EVs) and energy storage related to the booming renewable energy sector.
- **Reliable green credentials.** The marketing objective is to become a key link in a procurement chain in the clean energy industry based on large scale high quality graphite production from a safe, stable jurisdiction, close to key customers with “clean environmental” credentials such as a significant renewable energy input into its operating structure.

## FLAKE GRAPHITE PROPERTIES



# Presentation Outline

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**Focus on Pre-feasibility Study (PFS) outcomes and plans to realise major improvements through the Feasibility Study (FS)**

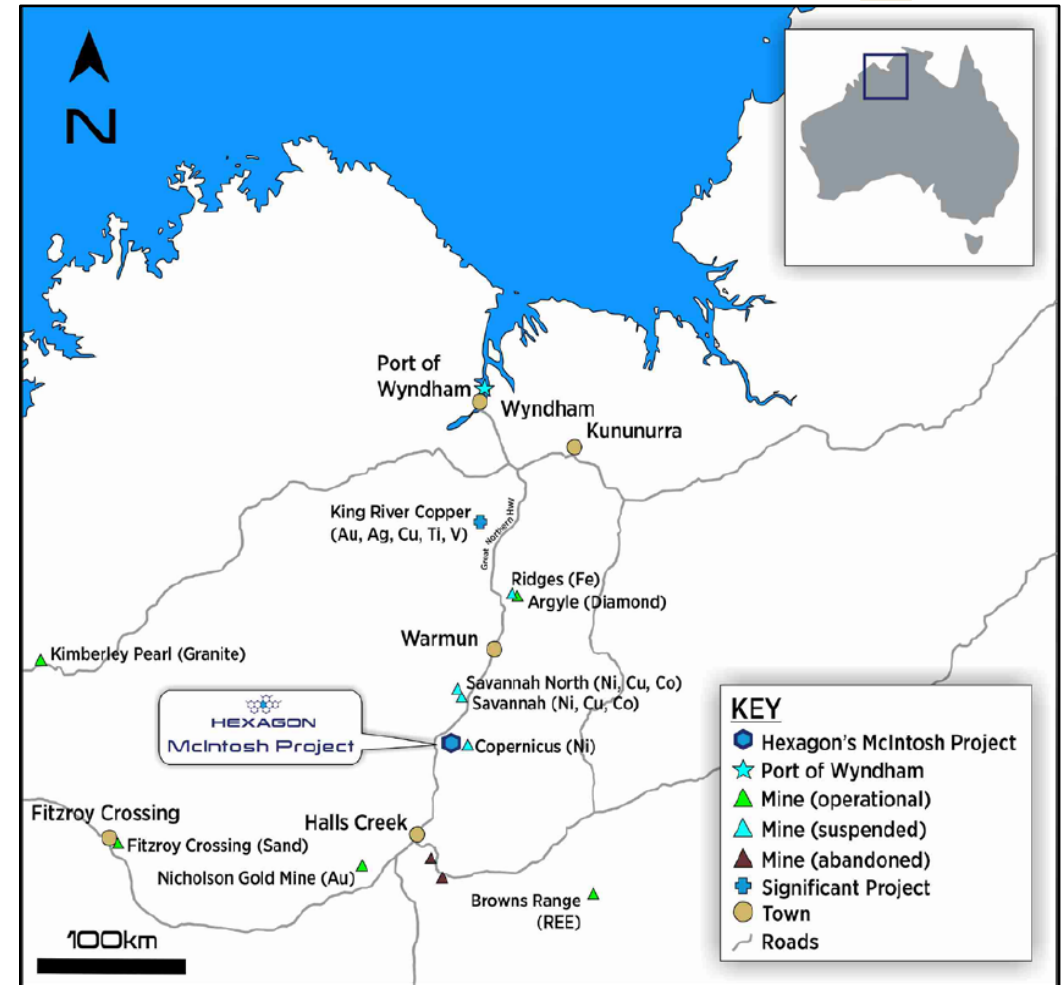
1. Project snapshot
2. Key Pre-feasibility Study outcomes
3. Feasibility Study – improvements and opportunities
  - Project “as is” improvements; and
  - Ore sorting, a “game-changing” opportunity.
4. Project “Report Card”
5. Key milestones on the path to commercialisation
6. Corporate snapshot
7. Important notices
8. Appendices

# McIntosh Project

## Snapshot

- **High quality Resource** – characterised by favorable metallurgy allowing for production of high purity graphite concentrates for supply into the premium value battery and other advanced technical applications.
- **Positive PFS just completed** – for initial production. Now fast tracking feasibility level development study, offtake and financing options.
- **Operating in a stable jurisdiction** – providing customers both security of supply and the use of sustainable operating practices.
- **Existing infrastructure** – due to already developed mine haul road, sealed highway, mobile-phone coverage and existing port infrastructure.
- **Marketing strategy** – aiming to be the key supplier in larger scale procurement programs.
- **Proven management team** – with experience in battery technology and materials and commercialisation of mineral projects.

Project Location Plan



# McIntosh Project PFS

## Summary of Key Outcomes



PHYSICALS	Unit	Annual Average	Life of Mine (LOM)
Ore Mined	Mt	2.4	14.3
Strip Ratio	W:O	4.3	4.5
Total Mined	Mt	11.3	79.3
Total Mined	Mbcm	4.1	28.7
Head Grade	% TGC	4.25	4.25
Plant Recovery	%	87-93	93
Concentrate	Kt	82.0	573.7
Concentrate Grade	% TGC	98	98

### PFS – Initial development scenario

- **Outcomes** - are positive and provide significant encouragement to explore important opportunities to improve and enhance project economics and margins.
- Platform to complete Feasibility Study and downstream processing test work (Stage 2 Project).

PFS FINANCIAL OUTCOMES	Unit	Life of Mine (LOM)
Site Operating Costs	AUD/t Conc	987
Realisation Costs (FOB)	AUD/t Conc	51
Total Operating Costs	AUD/t Conc	1,038
Start-up Capital (Incl 15% Contingency)	AUD Millions	148
Sustaining Capital	AUD Millions	24.9
Revenue	AUD Millions	1,197
Revenue	AUD/t Conc	2,087
EBITDA	AUD Millions	654
EBITDA Margin	%	51
<b>Pre-tax NPV (Discount rate:8%)</b>	AUD Millions	<b>261</b>
Post-tax NPV (Discount rate:8%)	AUD Millions	175
<b>Pre-tax IRR</b>	%	<b>46</b>
Post-tax IRR	%	36
Payback Period	Years	3

All \$ in this presentation are AUD unless stated otherwise.



# McIntosh Project PFS

## Review Key PFS Elements & Potential Upside



McIntosh Project – Main Access Road.



Emperor Deposit – drill pad and drill collar

# McIntosh Project PFS



## Review Key PFS Elements & Potential Upside

### Overview – “*what have we learned from the PFS?*”

Key objectives of the FS are to:

- **Reduce Operating Costs:**
  - ✓ Power
  - ✓ Mining
  - ✓ Ore sorting
- **Increase Revenue**
  - ✓ Preserve flake size – review grinding regime
  - ✓ Downstream processing to upgrade product
  - ✓ Recover sulphide minerals into saleable product (or just reduce costs)
- **Reduce Capital Costs**
  - ✓ Seek increased contract/BOO partnerships
  - ✓ Second hand or “non-brand” equipment purchases
  - ✓ Ore sorting



# McIntosh Project PFS

## Mineral Resource & Ore Reserve Estimates

**PFS - Mining Inventory: 14.3Mt at 4.3% TGC comprising:**

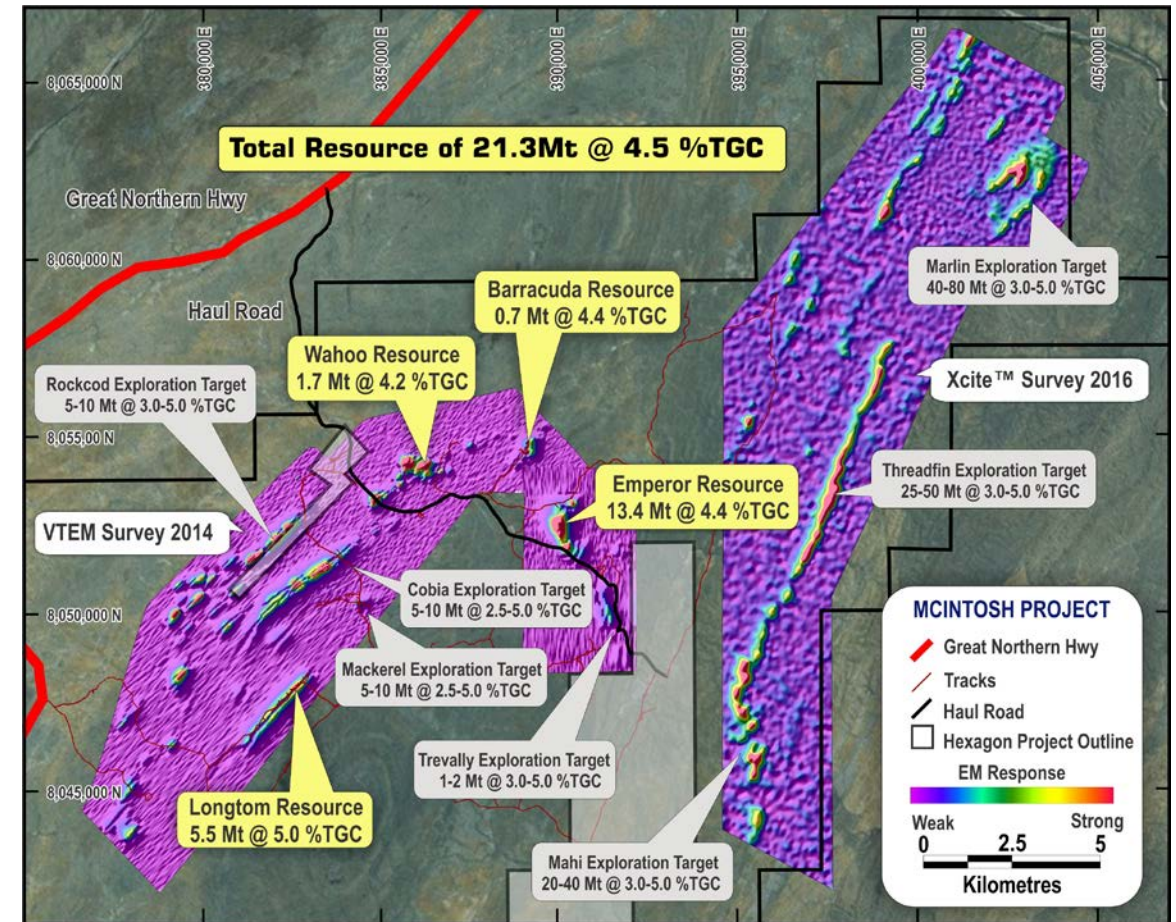
- 11.9Mt at 4.3% TGC – Proven Ore Reserves<sup>1</sup>
- 2.4 MT at 4.2% TGC – Inferred Mineral Resource<sup>2</sup>

**FS – outlook & aims:**

- Modest drilling program to start early July, 2017
- No need to “drill big” – just sufficient to:
  - ✓ Provide geotechnical data;
  - ✓ Metallurgical samples; and
  - ✓ Improve confidence in some resource areas.
- FS – will be based on ore reserve sufficient to verify viability.

**Important Notes:**

1. Refer Appendix 1 & 2 for break down of Mineral Resources and Ore Reserves.
2. There is significant uncertainty related to Inferred Resources but the Company considers that it has reasonable grounds for disclosing a production target which includes a modest proportion of Inferred classified material as set out further below. Notwithstanding, it is important to note that there is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.
3. **Exploration Targets - Cautionary Statement:** The potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration work to estimate a Mineral Resource and it is uncertain if further exploration will result in defining a Mineral Resource.



**Mineral Resources (Yellow boxes) and Exploration Targets<sup>3</sup> (Grey boxes) as at May 2017.**



# PFS – Key Outcomes

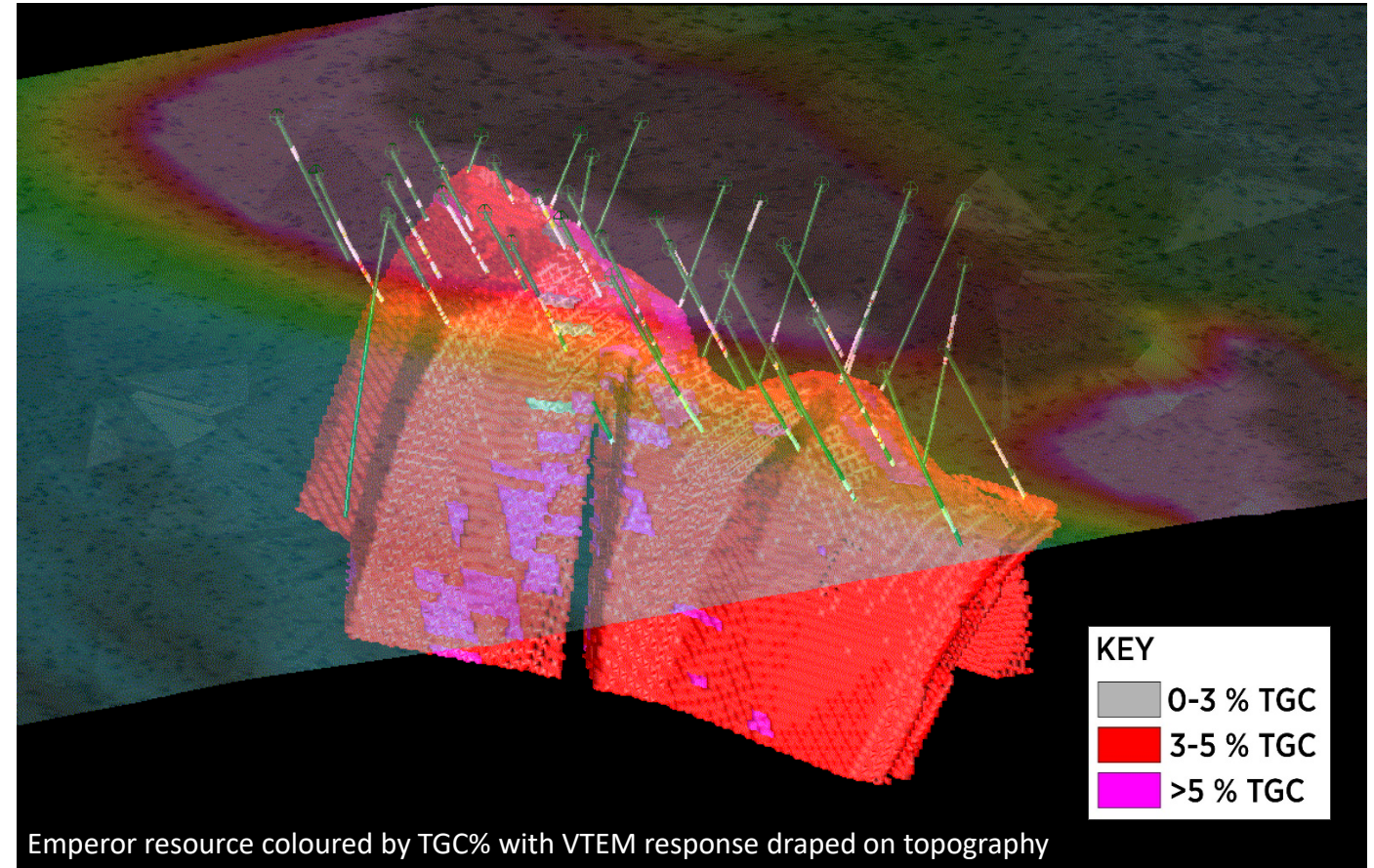
## Mineral Resources & Ore Reserve Estimates



### FS – outlook & aims [Cont.]:

- Exploration Target of 110 to 220Mt can be tested in stages as the Project starts production.
- Excellent correlation between EM anomalies and Mineral Resources.

*“Management focus needs to be on processing and product specification before significantly more expenditure is incurred on increasing or verifying the larger scale resource potential demonstrated by the Exploration Target.”*



**Exploration Targets - Cautionary Statement:** The potential quantity and grade of the Exploration Target is conceptual in nature, there has been insufficient exploration work to estimate a Mineral Resource and it is uncertain if further exploration will result in defining a Mineral Resource.

# McIntosh Project PFS

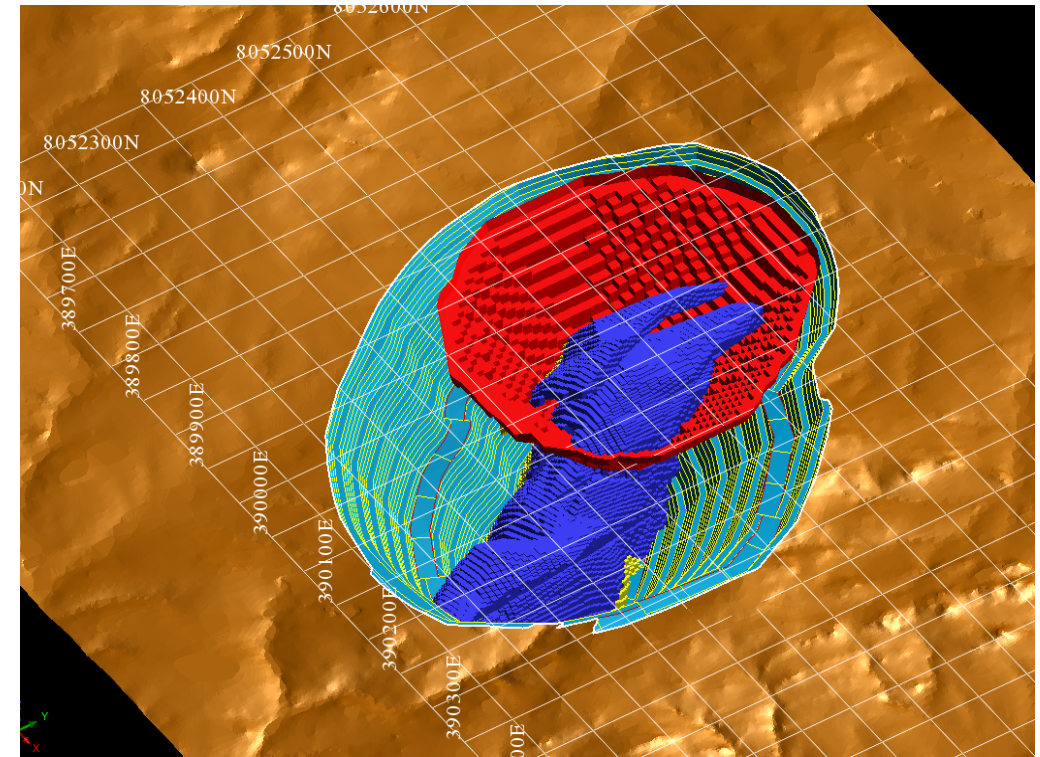
## Mining

### PFS- Mining:

- Ore mined is 14.3Mt at 4.3% TGC
- Ore sources from 4 different deposits
- W:O is 4.5: 1
- Mining Cost is \$19/t ore
- Utilised rudimentary designs and schedules with conservative geotechnical assumptions.

### FS – outlook & aims:

- Aim is to lower mining costs by:
  - ✓ Improve productivity via detailed, iterative design and scheduling process;
  - ✓ Detailed geotechnical input to designs; and
  - ✓ Detailed waste management strategy especially for ARD, such as in-pit waste disposal.



Emperor Pit – Red – is the Stage 1 shell and pale blue is final design.

# McIntosh Project PFS



## Processing

### PFS - Processing:

- Throughput of 2.4Mtpa to produce ~88ktpa of 98% TGC flake graphite concentrate.
- Processing cost of \$13/t ore or \$355/t of concentrate.
- Current design has little consideration for flake size preservation – hence design  $P_{80} < 106$  microns to give flake size distribution in table.

	Fine	Small	Medium	Large	Jumbo
Size -Microns	< 75	+75 - 150	+150 - 180	+180 - 300	+300 - 500
Weight %	27	44	10	17	2

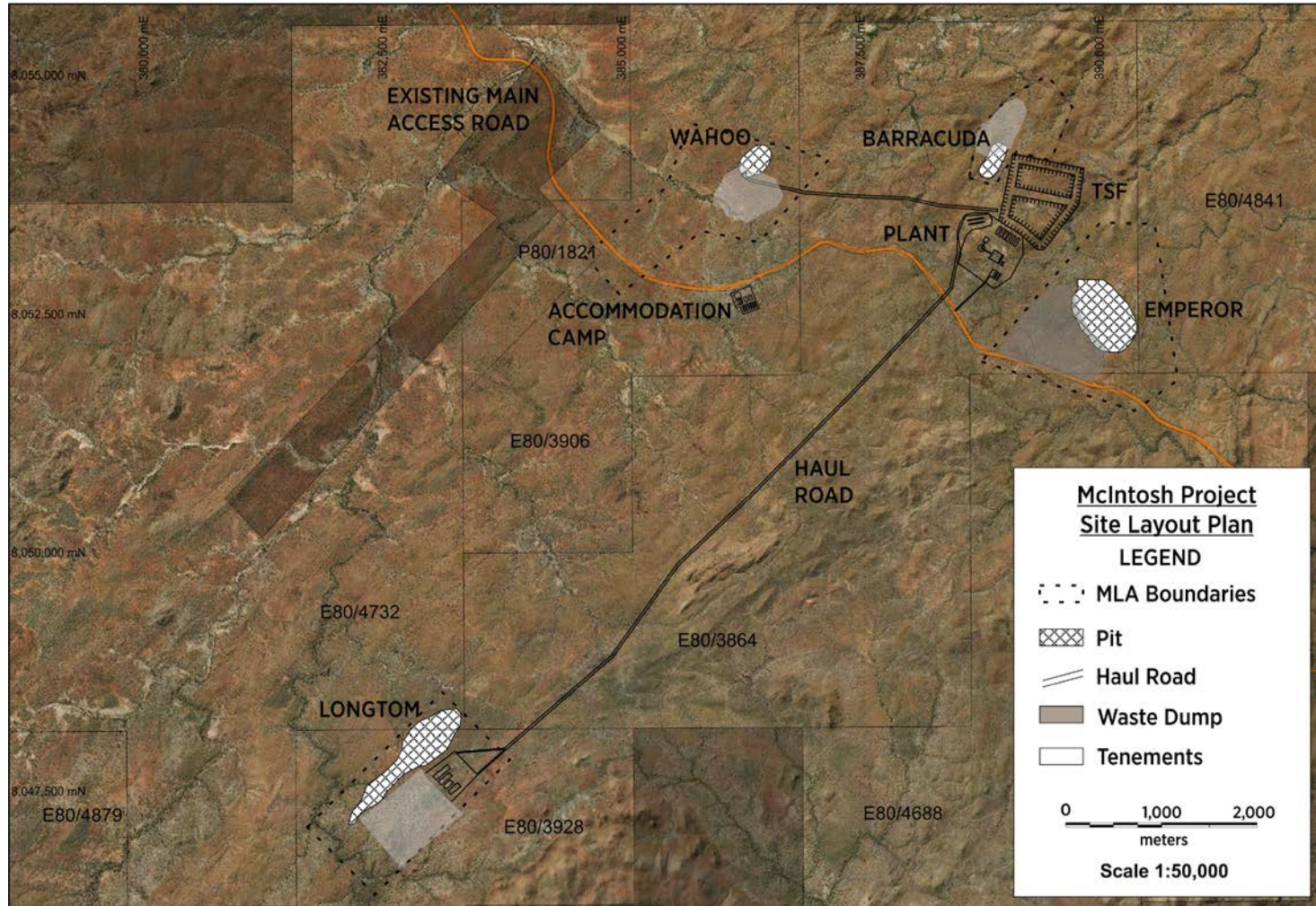
### FS – Outlook & Aims:

- Aim is to lower costs and improve flake size distributions by:
  - ✓ New reagent regime (preliminary test work already positive);
  - ✓ Review of grinding regimes to reduce energy consumption and preserve flake size; and
  - ✓ Recovery of sulphide minerals from tailings stream into a possible saleable product and reduce environmental costs associated with the tails storage facility.



# McIntosh Project PFS

## Site Infrastructure



### PFS – Site Infrastructure:

- Power – “through the fence” supply assumed from first pass EoI.
- Camp and services – all assumed to be new equipment.
- Construct fully lined tails storage facility.
- Existing Main Access Road to Gt Northern Highway.
- Existing Telstra 3G Network coverage.



# McIntosh Project PFS

## Site Infrastructure



Portable solar innovation on display at EMC Perth.

### FS – Outlook & Aims:

- **Power** – is a major cost input and contributor to the Project CO<sub>2</sub> footprint.
  - ✓ Seek to capitalise on recent technical and financial innovation to utilise hybrid solar-diesel systems.
  - ✓ Huge boost to the green credentials of McIntosh product for customers to leverage off.
- **Camp and services** – seek to procure second hand equipment and/or utilise existing local facilities.

# McIntosh Project PFS



## Logistics



Wyndham Port – Main Wharf.

### PFS – Logistics:

- Labour is FIFO ex Perth.
- Concentrate is trucked from site to Port utilising existing sealed highway and experienced operators.
- Fuel – trucked from existing storage facilities at Wyndham Port to Project site via existing services.
- Several undercover concentrate storage options available at Wyndham Port.

### FS – Outlook & Aims:

- **Labour** – seek to diversify to include FIFO ex Darwin and greater local DIDO options.
- **Shipping** – optimise shipping arrangements e.g. link up inbound and outbound services with specialist input.

# McIntosh Project PFS



## Capital Costs

### PFS – Capital Costs:

Capital Item	Start-up Capital	Sustaining	LOM
Mine establishment	11.4	7.1	18.5
Processing Plant	60.3		60.3
Plant Services & Utilities	6.2		6.2
Onsite Infrastructure	12.4	17.8	30.2
Indirect Costs	12.9		12.9
Power Transmission	1.5		1.5
Accommodation Camp	13.6	-	13.6
Bore Field	3.6	-	3.6
Other	0.6	-	0.6
EPCM	6.0		6.0
Owners Costs	0.2		0.2
Contingency	19.3		19.3
	<b>148</b>	<b>24.9</b>	<b>172.9</b>

*Note: Rounding may result in differences in totals*

### FS – Outlook & Aims:

- Aim is to lower capital costs by:
  - ✓ Acquisition of quality used equipment and/or “non-brand” new equipment via tender; and
  - ✓ Seek more BOO opportunities, possibly for crushing and grinding, certain plant services and accommodation camp.

# McIntosh Project PFS



## Operating Costs

### PFS – Operating Costs:

Operational Activity	\$/t Processed	\$/t Concentrate
Mining and ore haulage	19.3	483
Processing	13.4	334
General and Administration	1.7	42
Realisation Costs	2.0	51
Sustainability	0.4	10
Royalties	4.7	117
<b>Total</b>	<b>41.5</b>	<b>1,037</b>

*Note: Rounding may result in differences in totals*

### FS – Outlook & Aims:

- Aim is to lower operating costs significantly by:
  - ✓ Reducing power requirement – e.g. more efficient grinding regime;
  - ✓ Changing the power mix to hybrid solar/diesel to the extent possible; and
  - ✓ Improving process flow sheet performance.

# McIntosh Project PFS



## Revenue

### PFS – Product pricing:

- Current product assumption is a bulk, flake graphite concentrate grading 98% TGC primarily aimed at the battery market due to outstanding electrical test work results achieved to date.
- Assumed price is US\$1,565/t concentrate at an exchange rate of 1A\$=US\$0.75 based on:
  - ✓ Peer company price comparisons;
  - ✓ High-grade, quality product;
  - ✓ Favourable logistics and location; and
  - ✓ Positive demand and market outlook.

### FS – Outlook & Aims:

- To secure offtake – mixture of long and short term contracts, variable price structures and potentially diversified product mix.
- Hexagon is working with battery materials and manufacturing experts to ensure it completes the appropriate test work with the right protocols to fast track customer qualification processes.



# McIntosh Project PFS



## Jurisdiction

**Customers are looking for supply stability. Australia is a favourable source for a range of reasons.....**

- Australia ranks 3<sup>rd</sup> in Global Investment Attractiveness Appeal Index<sup>1</sup>
- Australia has a stable tax, minerals royalty and legal regime – in Australia “you only pay 10% GST and you get your GST/VAT back” ....
- Australia is a low inflation environment.
- Corruption – Australia is ranked 13 out of 176 for perceptions of Govt. corruption compared to other emerging graphite producers e.g. Tanzania 116, Mozambique 142 and Madagascar 145<sup>2</sup>
- Favourable location – close shipping proximity to likely customers in Asia-Pacific region.
- Good standard of regional infrastructure and no local villages etc. to relocate.

1. Fraser Institute Global Mining Survey 2017

2. Transparency International “Corruption Perceptions Index 2016”

# McIntosh Project PFS

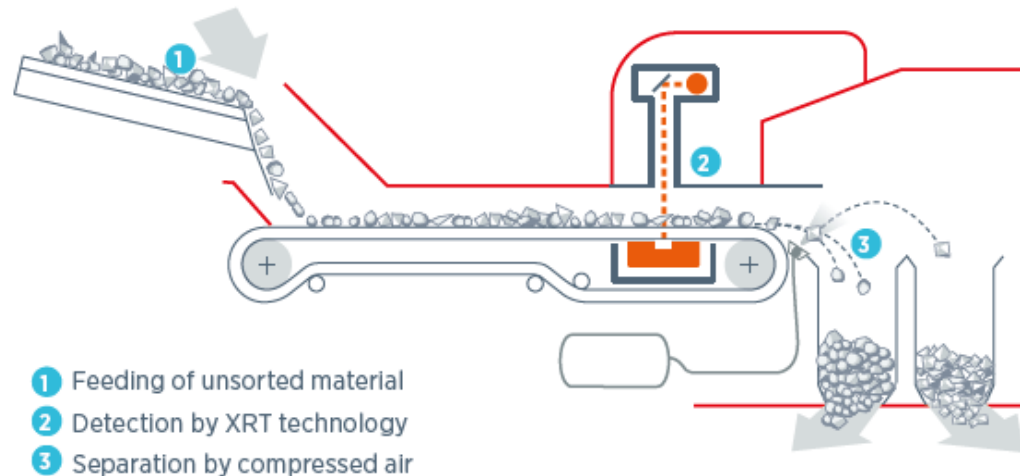


## The potential “Game Changer”

### FS Outlook - Ore Sorting

Initial test work by Tomra has demonstrated “ore” material can be separated into 3 streams using a combination of electromagnetic and X-ray sensors:

- Low Density Conductive – graphite stream;
- Low Density Non-Conductive – silica and waste stream; and
- High Density Conductive – sulphides and pyroxene (sulphide circuit/waste stream).



Figures are from “Tomra Sorting Solutions Com XRT 2.0”

# McIntosh Project PFS



## The potential “Game Changer”

### FS Outlook - Ore Sorting

***“If further test work proves successful this would impact positively on all aspects of the Project – from mining to processing to environmental management.”***

- The opportunities under investigation include:
  - ✓ Smaller scale plant - reduce the scale of the required processing equipment - saving on capital costs;
  - ✓ Lower operating costs – with preconcentration, less material passes through the main plant and perhaps also less abrasive material which may also improve processing efficiency;
  - ✓ Lower water and power inputs; and
  - ✓ Reduce downstream or collateral effects e.g. acidification of tailings by rejecting high-sulphide material prior to grinding.

Key issue to determine is the relative mass and graphite distribution between the “ore” and waste streams. This test work is in progress.

# McIntosh Project PFS

## Report card – so far.....

“McIntosh is a very solid Project, but we are hard markers. The NPV may be \$261M, but to date our performance on the PFS has been at a solid ‘C’ rating. We clearly have the capacity to improve this to a ‘B+’ or an ‘A’ as we seek to commercialise this...”

Student: Project - McIntosh Report Card

Subject	Assessment		Comments
	PFS Grade	Likely FS Grade	
Resources/Reserves	C	B	Few more tonnes needed. Enough for FS - keep it up!
Mining	C	B	More effort! - Geotech + Schedules
Processing	D	B	Try harder! Lots of opportunities.
Infrastructure	C	B/A	Good Start. Focus on power
Logistics	B	A	Good work - more improvement.
Capital Costs	C	B	More effort needed.
Operating Costs	D	B	More effort - lots of opportunities
Jurisdiction	A	A	Just continue to vote.
Overall Grade	C	B+	O.K. but can do much better!
Include Ore Sorting		A	Excellent potential.

Comments: Complete ore sorting test work. Focus on customers and downstream testwork.



# Board of Directors & Senior Management



## **Charles Whitfield - Chairman**

Mr. Whitfield is the Principal Investment Officer at Drumrock Capital, an investment firm providing capital and advisory services to start-up and early round companies. He has undertaken board and supporting roles in several companies in the specialty resource and new energy space. He was formerly a Managing Director with Citigroup where he held the position of head of the corporate equity solutions group (Asia Pacific). Prior to this, he worked for Deutsche Bank where he was 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) in 1998 and his Bachelor of Economics from The University of Exeter (U.K).



## **Mike Rosenstreich - Managing Director**

Mr Rosenstreich joined Hexagon as Managing Director on 17 March, 2017. He is an international mining executive offering 30 years' experience as a geologist, corporate and technical manager and merchant banker. He has extensive experience in bringing mining projects from exploration into operations including organising financing and offtake agreements. Prior to joining hexagon he ran Keystone Resource Development a resources focussed corporate advisory business. From 2004 to 2013 he was founding Managing Director of Bass Metals Ltd which he led from IPO, through new discoveries of polymetallic (Cu-Pb-Zn-Ag-Au) deposits, feasibility studies, financing, development and mining – selling zinc, lead and precious metals concentrates. This followed 6 years with NM Rothschild & Sons as a resources banker and 13 years as an exploration and mining geologist.



## **Garry Plowright - Non-Executive Director**

Mr Plowright has extensive experience in the resource sector, with a background in mining law and administration, as well as regulatory process and mine development. Mr Plowright has held board and senior management positions in both Australia and South Korea. More recently, Mr Plowright has specialised in land access strategies and negotiations with Native Title and Traditional Owner groups in Western Australia.



# The Path to Commercialisation

## Corporate Snapshot – Hexagon Resources Limited (ASX:HXG)



Shares on Issue	246.3M
Options on issue (unlisted)	17.9M
Share price (24/4/17)	A\$0.11
Market Capitalisation	A\$27M
Top Twenty	43.4%
Cash (31/3/17) Does not include the Hengda settlement	A\$2.0M
Investments (2M BMR shares) * BMR recently raised funds at US\$0.5/share	A\$1.3M*

*“the share price decline since December reflects shareholder disappointment in not meeting expectations such as timing of the PFS, as well as a broader market “risk-off” sentiment. Interestingly, the top ten has remained stable. The Board is making important progress to reset that credibility gap....”*



# The Path to Commercialisation



## Next steps on the Path

1. Deliver PFS late May 2017 – positive outcomes ✓
2. Management & Board changes ✓
3. Settlement of Hengda dispute ✓
3. Off-take & Financing – **in progress**
4. Feasibility Study – **started**
  - Downstream processing work – Spheronisation: test work in progress in China
  - Modest drill program to commence early July
  - Test work planning in progress – some work commenced
  - Permitting – in progress
  - Anticipate 6 – 8 month feasibility study time line.

**Plan to run as much Feasibility, financing and product marketing work in parallel as possible**

*“HXG’s Board & Management is focused on commercialising the McIntosh Project to deliver value to shareholders.”*

# Important Notices

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## Competent Person

The information within this report that relates to exploration results, Exploration Target Estimates, geological data and Mineral Resources at the McIntosh Project is based on information compiled by Mr Shane Tomlinson and Mr Mike Rosenstreich who are both employees of the Company. Mr Rosenstreich is a Fellow of The Australasian Institute of Mining and Metallurgy and Mr Tomlinson is a Member of the Australian Institute of Geoscientists. They both, individually have 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 they consent to the inclusion of this information in the form and context in which it appears in this report.

## Technical Detail

This Report aims to provide a high level summary of various technical aspects of the Company's projects. For more details on the underlying technical parameters the reader is referred to the ASX Reports on the Hexagon Resources Limited website, [www.hexagonresources.com](http://www.hexagonresources.com).

## Forward-Looking Statements

This document includes forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Hexagon Resources Limited's planned development and exploration programmes and other statements that are not historical facts. When used in this document, the words such as "could," "plan," "estimate," "expect," "intend," "may," "potential," "should," and similar expressions are forward-looking statements. Although Hexagon Resources Ltd believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

# Appendix 1: Mineral Resource



**McIntosh Flake Graphite Project Mineral Resource as at May 2017 reported by deposit and above a 3% TGC cut-off grade.**

Deposit	JORC Classification	Material Type	Tonnes (Mt)	TGC %	Contained Graphite (Kt)
Emperor	Indicated	Oxide	-	-	-
		Primary	8.2	4.3	352
	Inferred	Oxide	-	-	-
		Primary	5.3	4.5	235
	Indicated + Inferred	Oxide + Primary	13.4	4.4	587
Longtom	Indicated	Oxide	0.7	4.7	34
		Primary	3.5	5.0	173
	Inferred	Oxide	-	-	-
		Primary	1.3	5.2	67
	Indicated + Inferred	Oxide + Primary	5.5	5.0	274
Wahoo	Indicated	Oxide	0.1	4.2	3.5
		Primary	1.1	4.2	44
	Inferred	Oxide	0.1	4.1	3.4
		Primary	0.5	4.2	22
	Indicated + Inferred	Oxide + Primary	1.7	4.2	70
Barracuda	Inferred	Oxide	0.2	4.5	11
		Primary	0.5	4.4	21
	Inferred	Oxide + Primary	0.7	4.4	32
Total	Indicated + Inferred	Oxide + Primary	21.3	4.5	964

*Please refer to ASX Release “Pre-Feasibility Study Confirms Viability of Hexagon’s McIntosh Flake Graphite Project” dated 31 May, 2017 for full details.*

*Note: Rounding may result in differences in totals for tonnage and grade*

# Appendix 2: Ore Reserve



McIntosh Flake Graphite Project Ore Reserve as at May 2017 reported by deposit and undertaken at a nominal 3% TGC cut-off grade.

Deposit	JORC Classification	Pit Stage	Tonnes (Mt)	TGC %	Contained Graphite (Kt)
Emperor	Probable	Stage 1	3.3	4.0	130
		Stage 2	4.4	4.2	182
	Probable		7.6	4.1	313
Longtom	Probable	Stage 1	1.2	4.9	578
		Stage 2	2.2	4.7	104
	Probable		3.4	4.8	162
Wahoo	Probable	Stage 1	0.5	4.2	21
		Stage 2	0.4	3.7	15
	Probable		0.9	3.9	36
<b>Total</b>	<b>Probable</b>		<b>11.9</b>	<b>4.3</b>	<b>511</b>

*Please refer to ASX Release “Pre-Feasibility Study Confirms Viability of Hexagon’s McIntosh Flake Graphite Project” dated 31 May, 2017 for full details.*

*Note: Rounding may result in differences in totals for tonnage and grade*

The Ore Reserve estimate is inclusive of the Mineral Resource estimate reported in Appendix 1.





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