



**BATTERY**  
MINERALS

# Morgans Noosa Conference

July 2017

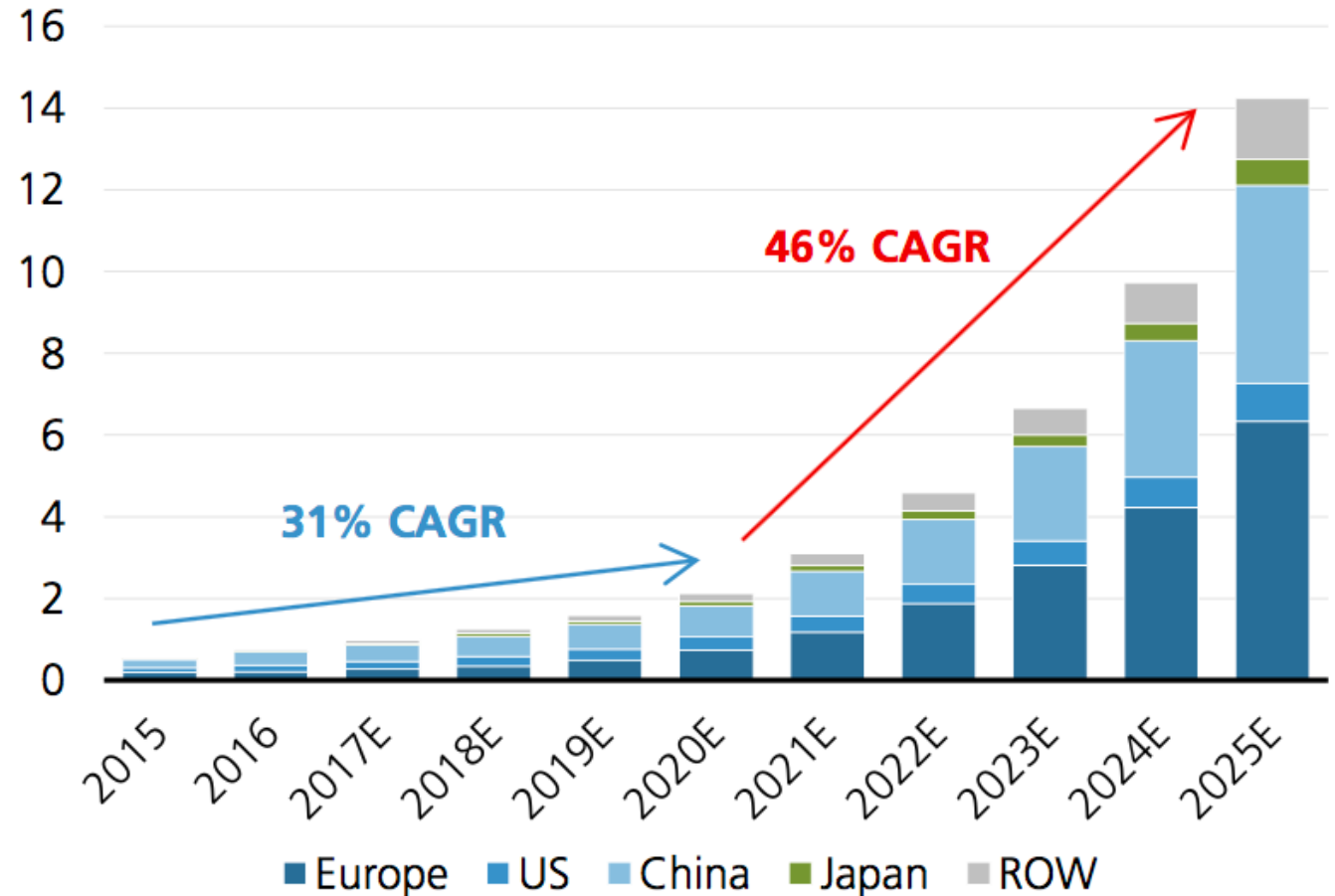




The lithium-ion battery (LiB) market is expected to grow from US\$10bil to +US\$60Bil in the next 10 years

Battery Minerals is ideally positioned to capitalise on demand for input materials

## Forecast EV Sales By Region

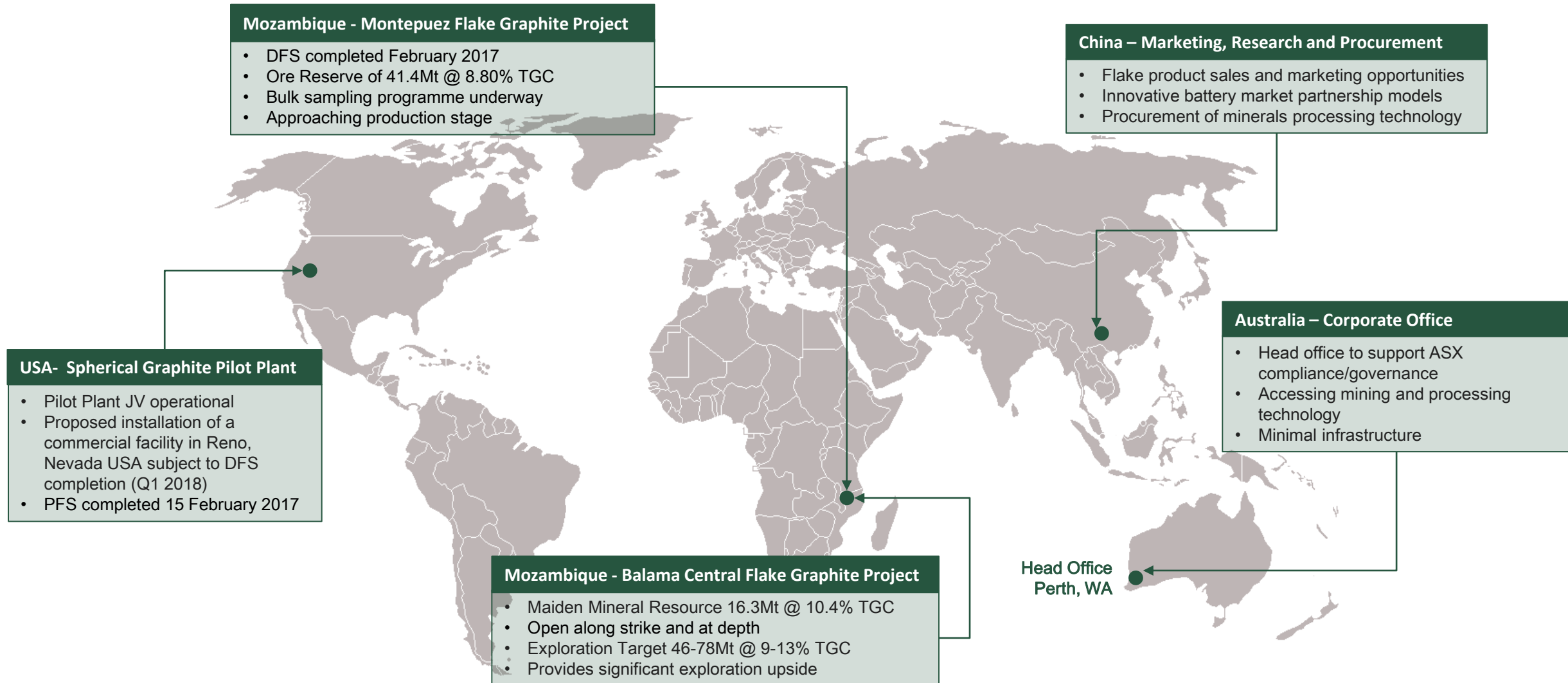


Source: UBS estimates

# A Global Battery Minerals Business



*Battery Minerals has established operations in Mozambique, and is developing upstream processing operations in Reno, Nevada USA. The production elements of the business is supported by its Perth based head office and Asia based marketing office.*



# Corporate Overview



**David Flanagan**  
Executive Chairman



**Jeff Dawkins**  
Chief Financial Officer



**Cherie Leeden**  
Exec Dir Tech & BD



**Andy Cardoso**  
Mozambique Country Director



**Brett Smith**  
Non Exec Director



**Regina Molloy**  
GM Geology



**Gilbert George**  
Non Exec Director



**Naomi Scott**  
General Counsel



**Paul Glasson**  
Non Exec Director



**Steven Wood**  
Joint Co-Sec



**Tony Walsh**  
Joint Co-Sec & Corporate



**George Gao**  
GM China



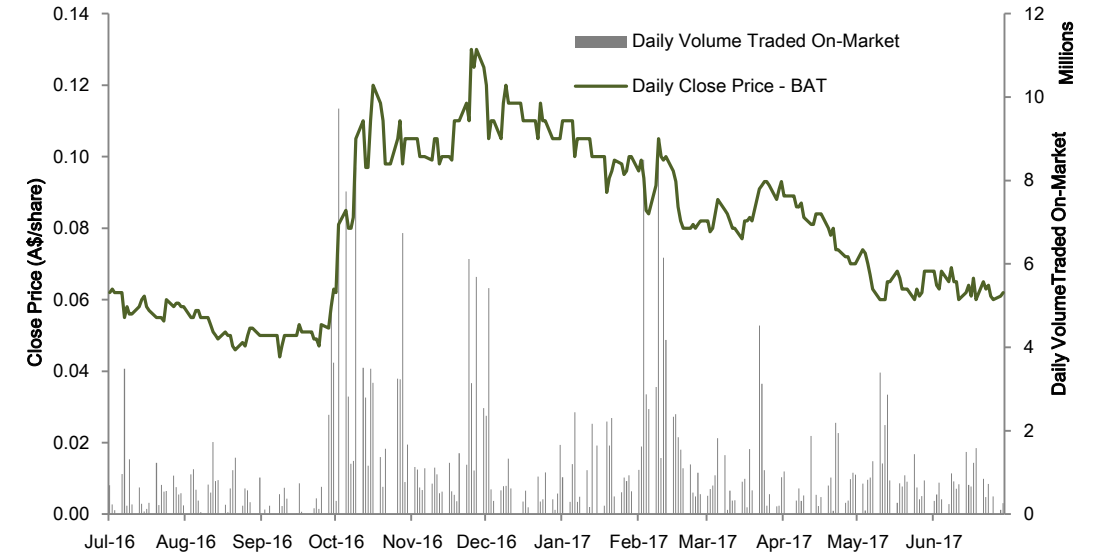
**Graham Fyfe**  
GM Spherical Project



**Steven Cancio-Newton**  
Exploration Manager

*“significant depth of experience in development, construction, operations and corporate”*

## Share Price



## Capital Structure

Shares on Issue	430,062,783
Board and Management	>10% fully diluted
Share price (as at 14 July 2017)	7.3cps
Market Capitalisation	\$31.4 million
Cash at bank (30 June 2017 unaudited)	\$5.4 million
Enterprise Value	\$25 million
Top 20 Shareholders	43%

# Montepuez: Advanced Graphite Project



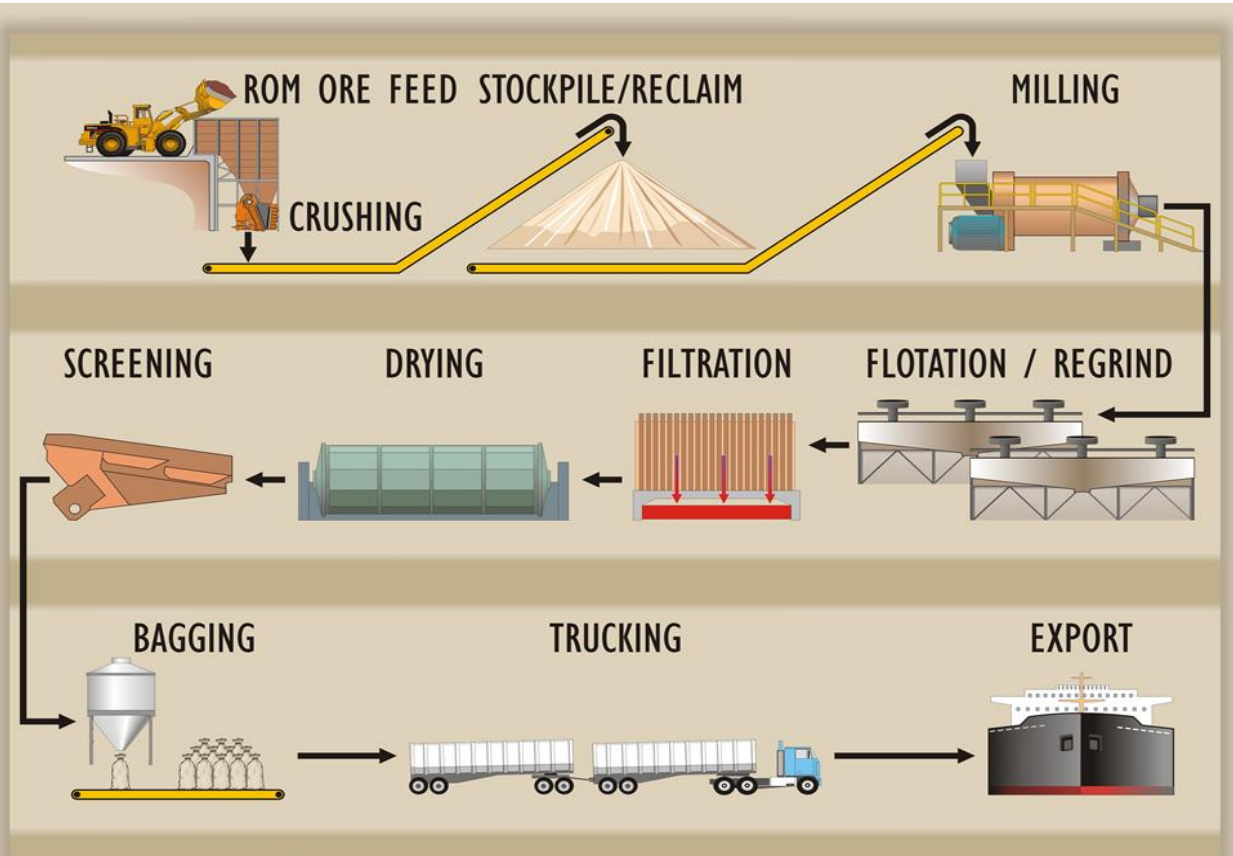
- Completed DFS shows very strong economics
- Ore Reserve Estimate January 2017 of **41.4Mt @ 8.80% TGC** for **3.64Mt** of graphite reported at a cut-off grade of 4% TGC
- Significant resource expansion opportunities
- Current target - construction to start Q1 2018 and first exports Q2 2019
- Bulk sampling programme to highlight potential cost savings and other efficiencies

DFS on Montepuez Graphite Project	
Annual production	-100,000 tonnes of 96% graphite concentrate
Life of Mine (LoM) net revenue	US\$2,156 million
LoM cash generation	US\$809 million
NPV (10% discount rate)*	US\$146 million
IRR*	21.4%
Project payback period	4.75 years
Capex (pre-production)	US\$126 million
LoM concentrate assumed basket price	US\$798/t
LoM operating cash cost	US\$444/t of product (FOB)
Mine life *	30 years

\*Please refer to additional details on slide 18: Disclaimer & Competent Persons Statement

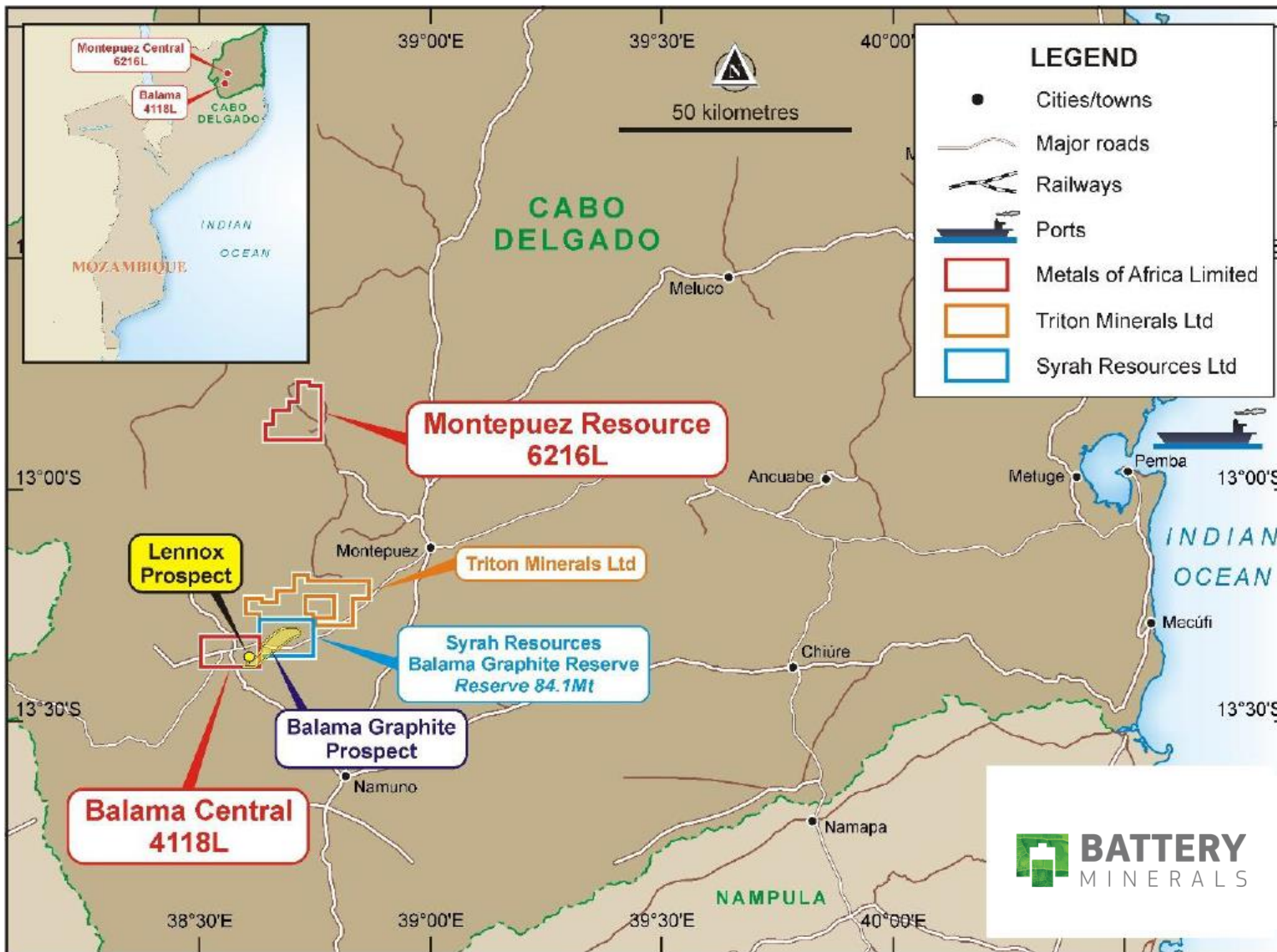


# Montepuez: Advanced Graphite Project



- Simple mining, crushing and screening
- Graphite concentrate produced via flotation and regrind
- Concentrate to be bagged and trucked 260km via existing roads to the coast
- Bags re-packed into containers and loaded onto vessels at Pemba Port
- Commitments in place from logistics providers and government to ensure shipping capacity.
- No capital investment required to expand facilities to manage our project product.

# Balama Central: Significant Exploration Upside



- Adjacent to Syrah Resources' Balama Deposit (Ore Reserve of 114.5Mt @ 16.6% TGC for 18.6Mt)
- March 2016 Maiden Mineral Resource Estimate of 16.3Mt at 10.4% TGC for 1,699kt of contained graphite (6% TGC Cut-off)
- Independent exploration target for 43-78Mt at between 9-13% TGC for 3.8-10.1Mt contained graphite
- Potential stand alone project or satellite operation to Montepuez Graphite Project
- Favourable metallurgical results
- Very strong exploration and expansion potential

Please refer to additional details on slide 18:  
Disclaimer & Competent Persons Statement



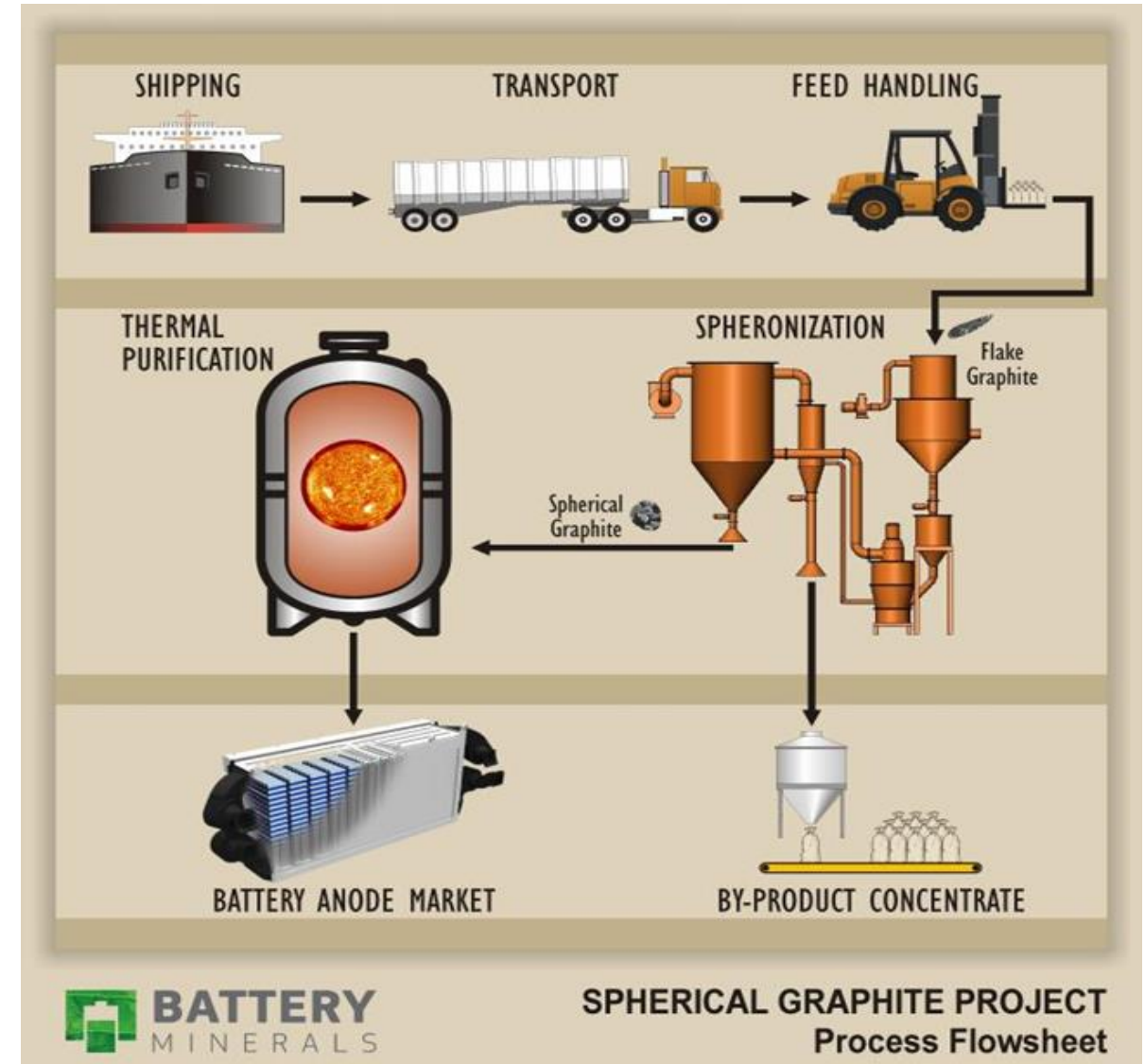
# Spherical Graphite Project

- Purified Spherical Graphite (PSG) Project processes the Battery Minerals flake graphite production
- PFS selected Reno, Nevada USA as optimal location presuming thermal purification
- LiB product at significant annual PSG production level
- Target construction start H1 2018 and deliveries to customers Q2 2019
- Pilot spherical graphite plant remains operational and is generating SPG product for ongoing advanced potential customer test work

	PFS on PSG
Annual production	-20,000t of 99.99% PSG -20,000t recarburiser product
Life of Mine (LoM) net revenue	US\$4,903 million
LoM cash generation	US\$1,558 million
NPV (10% discount rate)*	US\$377 million
IRR*	76.5%
Project payback period	1.5 years
Capex (pre-production)	US\$48 million
LoM concentrate assumed basket price	US\$7,500/t 99.99% PSG US\$700/t recarburiser product
LoM operating cash cost	US\$5,506 per tonne of PSG

\*\*Based on Ore Reserves (see ASX released dated 15 February 2017) prepared by a competent person in accordance with the requirements in Appendix 5A (JORC Code). All material assumptions underpinning the production target in that announcement continue to apply and have not materially changed.

\*\*\*DFS (+/-15%) and PFS (+/- 30%). Refer slide 18 for Competent Person Statement.





# Bulk Sample Programme Underway

- Bulk sampling programme underway to produce spherical purified graphite
  - 1800 tonnes of Montepuez Elephant resource mined and trucked to Pemba,
  - Material crushed, screened and bagged awaiting shipping to flake concentration toll treatment facility
  - Concentrated flake to be spheronized and purified
- ✓ Staffing and employment
  - ✓ Understanding of orebody
  - ✓ Optimise capex and opex
  - ✓ Path to market tested
  - ✓ Refinement and testing of PSG



# *First Phase Commercial Operations*

Based on BAT internal economic assessment

Early stage works for Project Development Target Parameters	First Commercial Phase production – target early cash flow
Mining rate	250,000-300,000tpa
Flake Production Capacity	20,000t at >97-99% TGC
Purified Spherical Graphite Capacity	5,000-10,000tpa of PSG
Capital Cost with contingency (extracted from DFS/PFS)	USD \$57 to \$67M
Flake Operating cost	USD \$450 to 500/t
Purified and Coated Spherical graphite operating cost	USD \$5,000 to 6,000/t
Site Works commence	Q1 2018
Production Commences	Q2 2019



- 2H 2017 – Mozambique mining licence approved
- 2H 2017 – Bulk sample test and process optimisation
- 2H 2017 – Value engineering & procurement
- 2H 2017 – Ongoing targeted exploration activity
- 2H 2017 – Advance offtake agreements
- 2H 2017 – Complete concept study on Balama Central
- 1H 2018 – Commence construction
- 1H 2018 – Spherical Graphite DFS completion and site selection for construction



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## *Appendix*

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# Mozambique: Stable, Friendly Mining Jurisdiction

- ✓ Modern mining act and pro-mining government
- ✓ Mining law gives a 10 year tax stability and minimal percentage variants during mining contract
- ✓ Retro-active laws prohibited by constitution - all mining contracts upheld
- ✓ Stable multi-party democracy since 1994
- ✓ 28 million population
- ✓ Languages – Portuguese
- ✓ Vale, Rio Tinto, South32, Syrah, Kenmare, Gemfields



# Ore Reserve Statement



- Ore Reserve Estimate January 2017 for Buffalo and Elephant deposits is **41.4Mt @ 8.80% TGC** for 3.64Mt of graphite reported at a cut-off grade of 4% TGC
- Two world class deposits provide optionality of product, blending opportunities and development options
- Flake size, creates opportunity for price premium Natural Flake products
- Chemical structure and easy liberation attributes (low impurities) offers unique opportunities
- The graphite resources remain open in every direction ensuring mine life opportunity beyond the currently scheduled 30 years

MONTEPUEZ GRAPHITE PROJECT – ORE RESERVE STATEMENT @ 4% TGC cut-off - January 2017				
Ore Type	Classification	Ore Reserve	TGC	Contained Graphite
		Mt	%	Mt
Weathered	Proved	-	-	-
	Probable	8	8.5	0.68
Fresh	Proved	-	-	-
	Probable	33.5	8.8	2.96
Total	Proved	-	-	-
	Probable	41.4	8.8	3.64

Note: See ASX Announcement dated 15 February 2017 for full details.

Please refer to additional details on slide 18:  
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# Mineral Resource Statement



- Total Mineral Resource for Montepuez deposits (January 2017) is 105.9Mt @ 7.74% TGC for 8.2Mt of graphite reported at a 2.5% TGC cut-off
- Total Mineral Resource for Balama Central (March 2016) is 16.3Mt @ 10.4% TGC for 1,699kt at 6% TGC cut off

## Montepuez Graphite Project

### ELEPHANT RESOURCE @ 2.5% TGC cut-off - January 2017

Classification	Type	Tonnes	TGC	V2O5	Contained Graphite	Contained V2O5
		Mt	%	%	Mt	Kt
Indicated and Inferred	Weathered	7.80	7.70	0.19	0.60	15.00
	Unweathered	59.40	7.50	0.19	4.50	114.00
	Total	67.20	7.50	0.19	5.10	129.00

### BUFFALO RESOURCE @ 2.5% TGC cut-off – December 2016

Classification	Type	Tonnes	TGC	V2O5	Contained Graphite	Contained V2O5
		Mt	%	%	Mt	Kt
Indicated and Inferred	Weathered	5.20	8.14	0.22	0.40	11.30
	Unweathered	33.50	7.90	0.21	2.60	70.90
	Total	38.70	7.93	0.21	3.00	82.20

Note: See ASX Announcement dated titled 'Montepuez Graphite Project Mineral Resource and Ore Reserve Estimate' dated 15 February 2017 for full details.

## Balama Central Graphite Project

### BALAMA CENTRAL GRAPHITE PROJECT @ 6% TGC cut-off – March 2016

Classification	Tonnes	TGC	Contained Graphite
	Mt	%	Kt
Indicated	8.9	9.3	836
Inferred	7.3	11.8	863
Total	16.3	10.4	1699

Note: See ASX Announcement dated titled 'Maiden JORC Graphite Resource at Balama Central, Mozambique' dated 21 March 2016 for full details.

Please refer to additional details on slide 18:  
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# Summary of Consolidated Study

	PFS on PSG ***	DFS on Montepuez Graphite Project ***
Annual production	-20,000t of 99.99% PSG -20,000t recarburiser product	-100,000 tonnes of 96% purity graphite concentrate
Life of Mine (LoM) net revenue	US\$4,903 million	US\$2,156 million
LoM cash generation	US\$1,558 million	US\$809 million
NPV (10% discount rate)*	US\$377 million	US\$146 million
IRR*	76.5%	21.4%
Project payback period	1.5 years	4.75 years
Capex (pre-production)	US\$48 million	US\$126 million
LoM concentrate assumed basket price	US\$7,500/t 99.99% PSG US\$700/t recarburiser product	US\$798/t
LoM operating cash cost	US\$5,506 per tonne of PSG	US\$444/t of product (FOB)
Mine life **		30 years

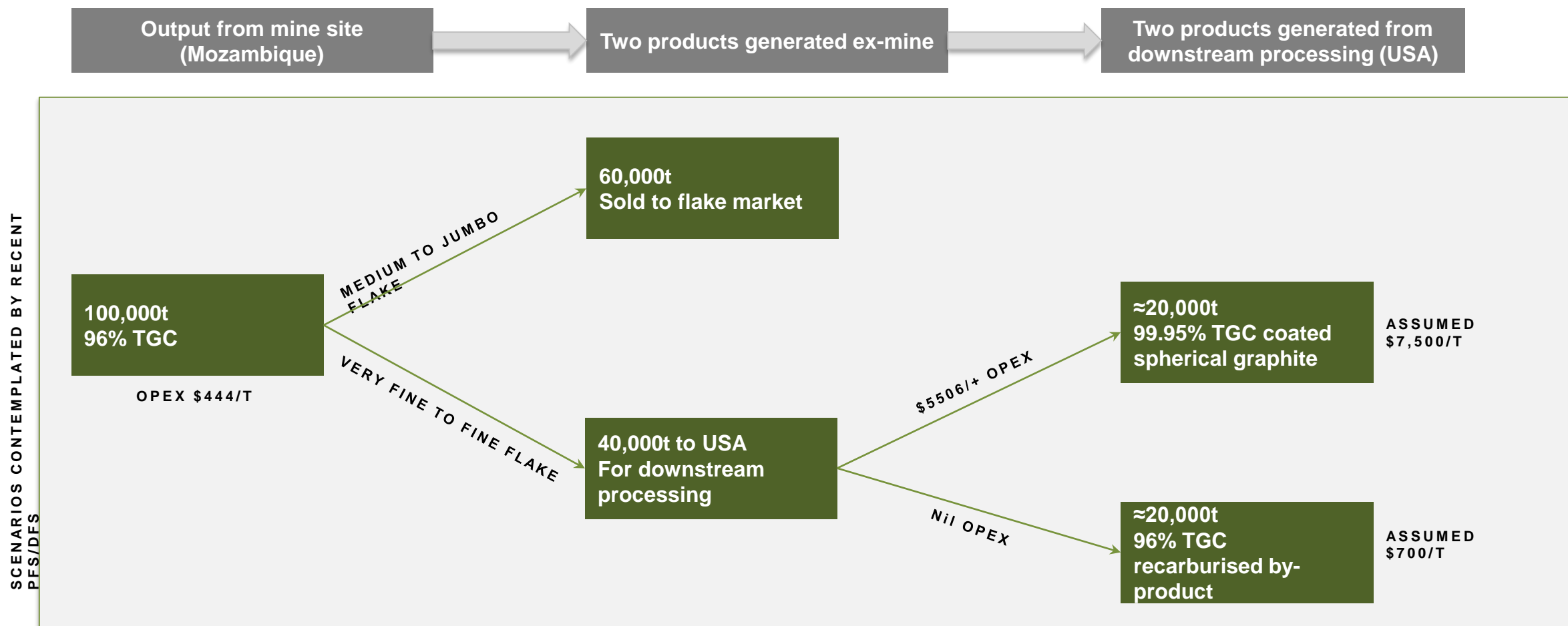
Consolidated Project Outcomes	
Consolidated net revenue	US\$7,120 million LOM (US\$237m per annum)
Consolidated operating cashflow	US\$2,368 million LOM (US\$79m per annum)
Net Present Value (NPV <sub>10</sub> )	US\$524 million
Internal Rate of Return (IRR)	36.2%
Consolidated payback period	3 years
Consolidated capex	US\$168 million

\*- Excludes National Ownership (anticipated to be ~5%) and 32% tax rate

\*\* - Based on Ore Reserves (see ASX released dated 15 February 2017) prepared by a competent person in accordance with the requirements in Appendix 5A (JORC Code)

\*\*\* - DFS (+/-15%) and PFS (+/- 30%)

# Process Pathway



Investigating opportunities to

- (1) increase mine concentrate grade from 96% to 99%TGC with use of attrition cells,
- (2) consider initial smaller output to reduce capex and opex, and
- (3) downstream processing of mine output



# Disclaimer & Competent Persons Statement



## Forward Looking Statements

- Statements and material contained in this Presentation, particularly those regarding possible or assumed future performance, resources or potential growth of Battery Minerals Limited, industry growth or other trend projections are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Such forecasts and information are not a guarantee of future performance and involve unknown risk and uncertainties, as well as other factors, many of which are beyond the control of Battery Minerals Limited. Information in this presentation has already been reported to the ASX.

## Cautionary Statement

- The Company advises that a proportion of the production target referred to in this announcement is based on an inferred mineral resource. 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. Further detail around Concept Study included in ASX announcement dated 10 February 2016. The Company confirms that the material assumptions underpinning the production target in the Concept Study have not materially changed since first reported, pursuant to ASX listing rule 5.19.

## Competent Persons Statement

- The Montepuez Graphite Project Maiden Mineral Resource was released to the ASX 16th November 2015 for the Buffalo, Elephant and Lion deposits. This presentation includes a second Mineral Resource announcement exclusively for the Buffalo and Elephant deposits released on 15 February 2017. The Buffalo and Elephant Mineral Resources were updated on 15 February 2017 to include additional drill holes and lithological domains for Ore Reserve conversion as part of the Definitive Feasibility Study.

- In the 15 February 2017 announcement, Ms Cherie Leeden, Managing Director of BAT compiled the information in Section 1 and Section 2 of the following JORC Table 1 and is the Competent Person for those sections. In the 15 February 2017 announcement, two separate Section 3 tables are provided for each of the Buffalo and Elephant Resource estimations and classifications, one prepared by Mr Mark Burnett, an employee of Snowden Mining Industry Consultants (Pty) Limited (Snowden) and is the Competent Person for the Buffalo Resource estimation and one prepared by Mr Robert Dennis, an employee of RungePincockMinarco Limited (RPM) whom is the Competent Person for the Elephant Resource estimation. In the 15 February 2017 announcement, Mr Geoff Davidson compiled information in Section 4 for the combined Buffalo and Elephant Ore Reserve estimate, Mr Davidson is an associate of Snowden and a Fellow of the AusIMM and is the Competent Person for the combined Buffalo and Elephant Ore Reserve. The 15 February 2017 announcement, advised that in assessing the appropriateness of the Ore Reserve estimate, Mr Davidson has relied on various reports, from both internal and external sources, in either draft or final version, which form part of or contribute to the DFS. These reports are understood to be compiled by persons considered by BAT to be competent in the field on which they have reported.

All references to future production and production & shipping targets and port access made in relation to Battery Minerals are subject to the completion of all necessary feasibility studies, permit applications, construction, financing arrangements, port access and execution of infrastructure-related agreements. Where such a reference is made, it should be read subject to this paragraph and in conjunction with further information about the Mineral Resources and Ore Reserves, as well as the relevant competent persons' statements.

Any references to Ore Reserve and Mineral Resource estimations should be read in conjunction with the competent person statements included in the ASX announcements referenced in this presentation as well as Battery Minerals' other periodic and continuous disclosure announcements lodged with the ASX, which are available

on the Battery Minerals' website.

The information in this report that relates to Battery Minerals' Mineral Resources or Ore Reserves is a compilation of previously published data for which Competent Persons consents were obtained. Their consents remain in place for subsequent releases by Battery Minerals of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent.

The information in this Presentation that relates to Mineral Resources and Ore Reserves is extracted from the ASX Announcement titled 'Montepuez Graphite Project Mineral Resource and Ore Reserve Estimate' dated 15 February 2017 and DFS and PFS information is extracted from the ASX announcement entitled 'Lithium Ion Battery anode PFS and Montepuez Graphite DFS confirm robust economics' dated 15 February 2017, both of which are available at Battery Minerals website at <http://www.batteryminerals.com.au> in the ASX announcements page.

Battery Minerals confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the market announcements continue to apply and have not materially changed. Battery Minerals confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.



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