

# Fast-tracking Montepuez & Balama Projects



**BATTERY MINERALS LIMITED**

**March 2018  
Investor Presentation**





1. Construction underway; commissioning in Nov 2018; shipping Q1 2019
2. Strong board & management, developed 10 mines in 10 years
3. Key plant purchased; crushing circuit, ball mill, camp, dryer, float cells
4. Mining licence imminent
5. 4 offtake agreements covering ~80% of Montepuez stage 1.
6. Our customers supply full range of industrial and battery products
7. Fast follower, skilled labour, government, community, market
8. Low technical risk project, incremental growth, modular. Crawl-walk-run
9. Worlds largest graphite endowed region. Exploration potential outstanding
10. Group production target 200ktpa+ by end 2023

# Corporate Overview



**Jeff Dowling**  
Non-Exec Chairman



**Ben Van Rooy**  
Chief Operating Officer



**David Flanagan**  
Managing Director



**Tony Walsh**  
Company Secretary &  
GM Corporate



**Brett Smith**  
Non Exec Director



**Jeff Dawkins**  
Chief Financial Officer



**Gilbert George**  
Non Exec Director



**Andy Cardoso**  
Mozambique Country Director  
(based in Mozambique)



**Paul Glasson**  
Non Exec Director  
(based in China)



**Naomi Scott**  
General Counsel

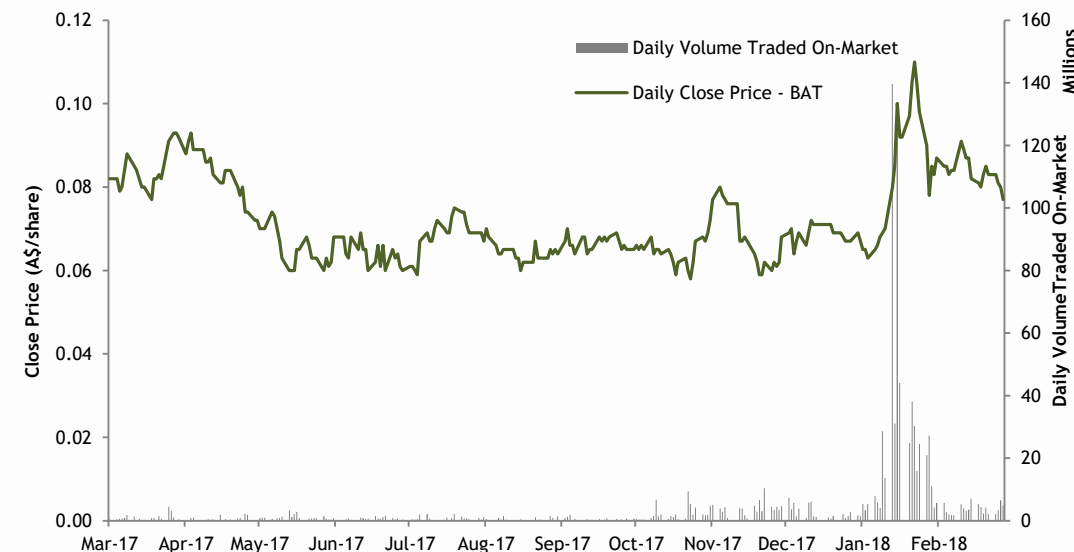


**Ivy Chen**  
Non Exec Director

***“More than 300 years industry experience across board and management”***

***“Proven performers. People that have developed a new mine every year for the last 10years”***

## Share Price



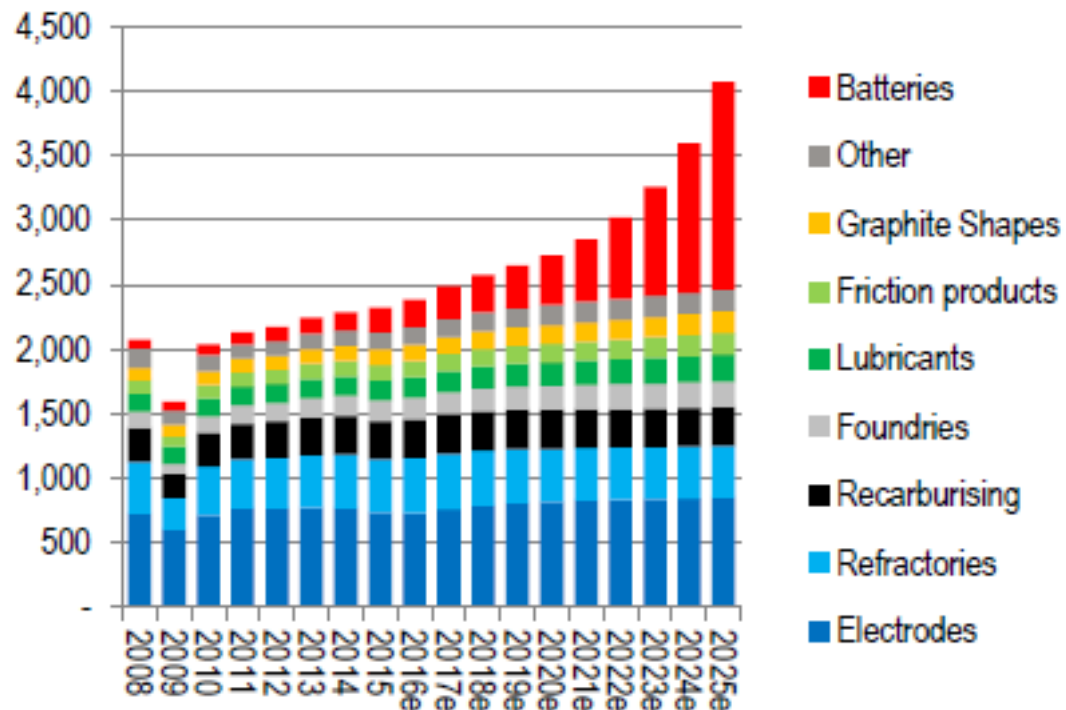
## Capital Structure

Shares on Issue	763.4M
Board and Management	>10% fully diluted
Share price (as at 7 March 2018)	8cps
Market Capitalisation (as at March 2018)	\$61 million
Cash at bank (as at end of January)	\$19 million
Enterprise Value	\$42 million
Top 20 Shareholders	40%
Unlisted Options and performance rights	407M

# Graphite is commodity in demand

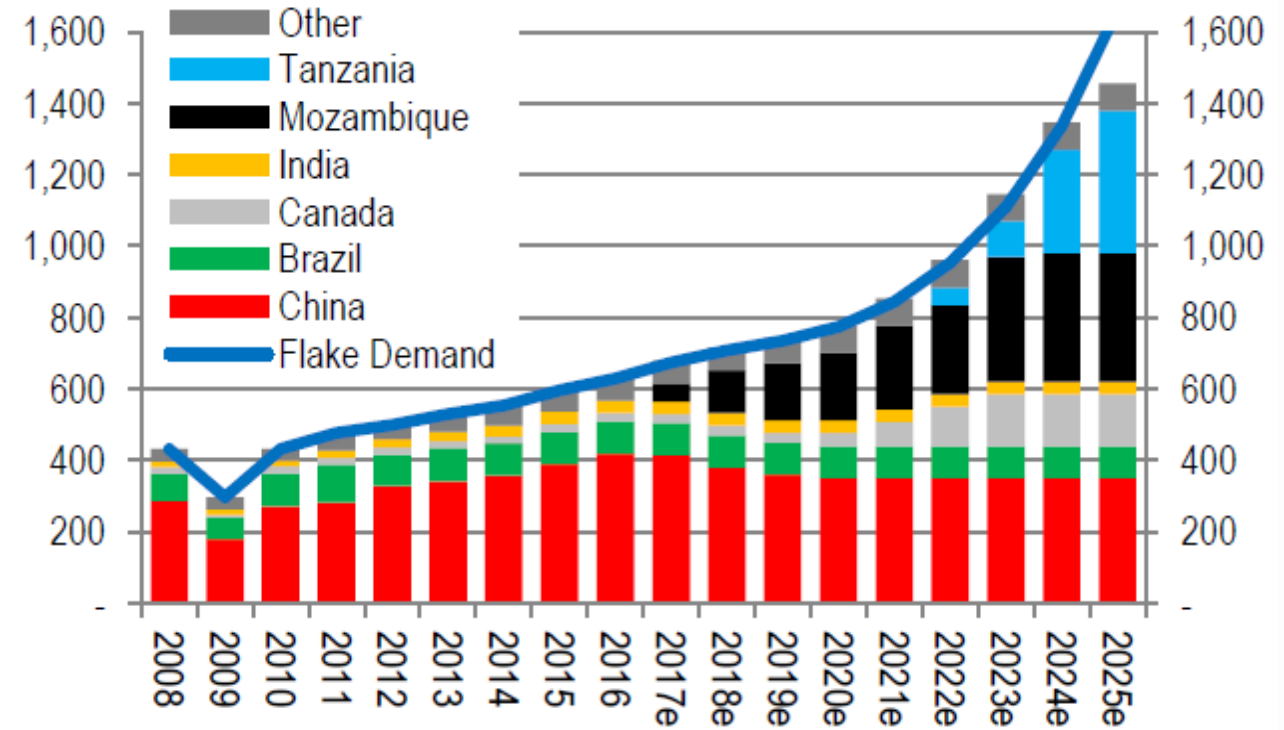
## Prospective Global Graphite Production

**Figure 101: Global Graphite Demand (ktpa)**



Source: Roskill, UBS estimates

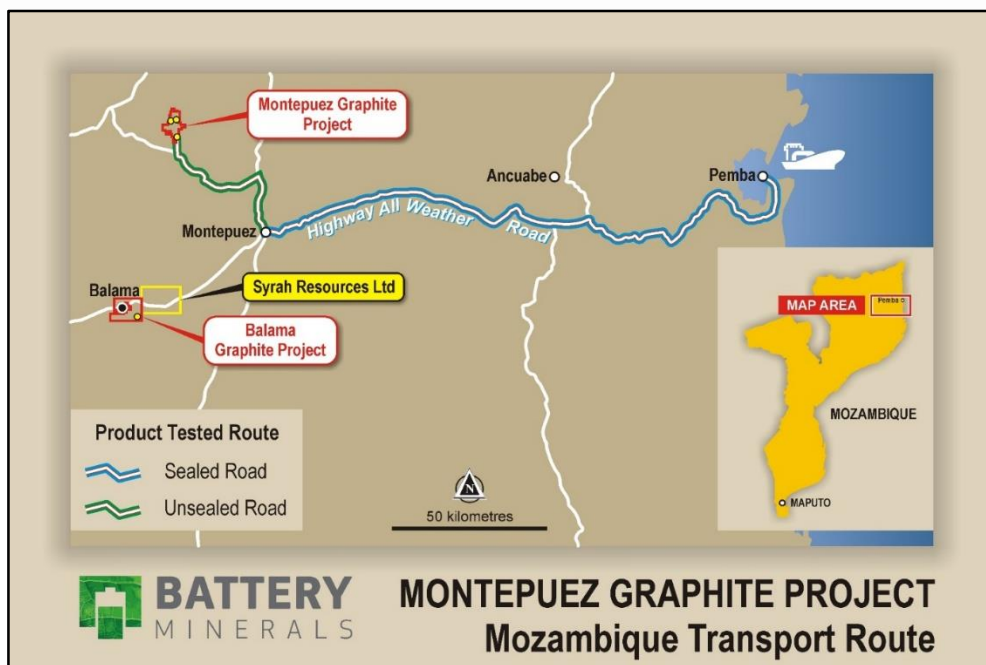
**Figure 114: Flake Graphite Production (ktpa)**



Source: Roskill, company filings, UBS estimates



# Montepuez an Exceptional first Project



Montepuez Graphite Project <sup>2</sup>	VES (First Module)
Annual graphite production	45,000 - 50,000tpa
Capex (pre-production)	US\$42.3 M
Opex (concentrate/t)	US\$337/t
Grade mined	12% TGC
Plant Type and Scale	Modular, ~500ktpa
Projected Payback	<2 years <sup>5</sup>
Net Operating Cash Flow	>US\$20 Mpa <sup>5</sup>
Metallurgical Recovery	>80%
Capital Intensity (US\$/tpa con)	US\$900/t
Mine Life <sup>3</sup>	+10 years <sup>4</sup>
Graphite Concentrate purity	96.7% TGC



- **Timing:** Commissioning Q4 2018, First Exports Q1 2019
- **Proven Logistics:** bulk sample delivered to port in 2017, 260km logistics chain tested and proven
- **Port Allocation approved:** at Pemba Port for 100,000tpa of graphite concentrate
- **Expansion to 100ktpa:** USD 25-29M for additional 45-50,000tpa
- **Indicated & Inferred Resource:** 105.9Mt @ 7.74% TGC @ 2.5% cut-off<sup>1</sup>, Target for additional 3-400Mt at 5-10% TGC<sup>6</sup>
- **Proven and Probably Reserve:** 41.4Mt @ 8.8% TGC @ 4% TGC cut-off<sup>1</sup>

1. See ASX announcement on 15 February 2017 for DFS outcomes. See ASX announcement dated 18 October 2017 for VES outcomes.

2. Excludes National Ownership (anticipated to be ~5%) and 32% tax rate

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

4. Mine life of +10 years at 12% TGC plus 10+ years at 7-8% TGC

5. BAT has used US \$798/t FOB Pemba as a long term basket price for its concentrate in the Feb 2017 DFS. Current Independent market commentators supported by our detailed market analysis indicates long term pricing in a range US \$847-950/t FOB Pemba.

6. The potential quantity and grade is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.



# Montepuez on track for Nov 2018 commissioning

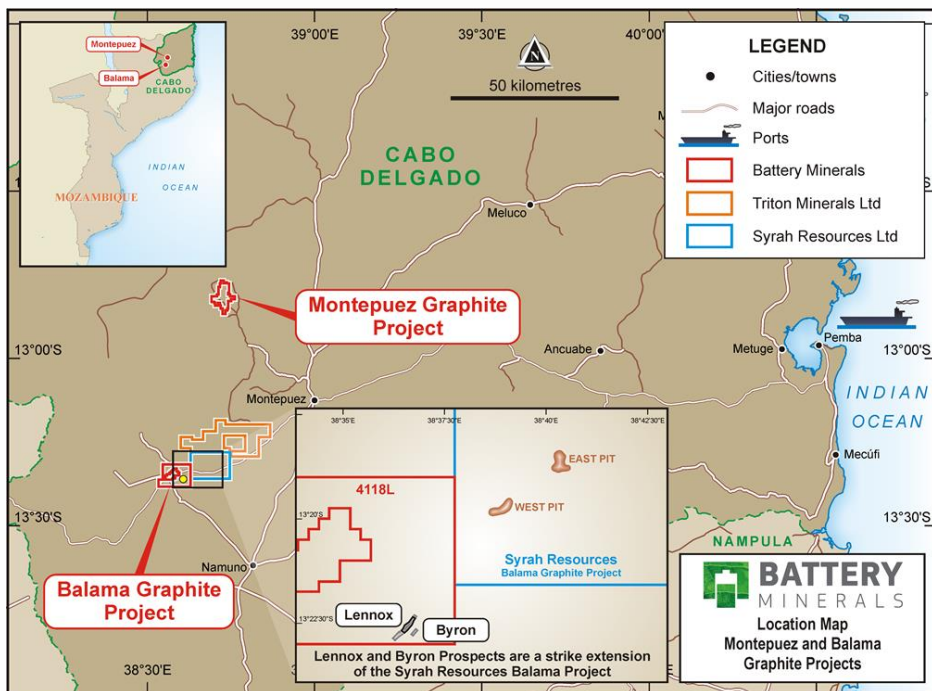


- Temporary construction camp installed
- Construction water dams built and full
- Crushing circuit arrived in-country and in-transit to site
- Site civil works underway
- Camp supply and construction contract awarded
- Contracts awarded for supply of ball mill, floatation cells, re-grind mills, flash dryer and thickener
- Mine Operations Manager appointed





# Balama getting things cranking



Balama Graphite Project <sup>2</sup>	Scoping Study
Annual graphite production	50,000 - 55,000pa
Capex (pre-production)	US\$50 M
Opex (concentrate/t)	US\$372/t
Grade mined	10.6% TGC
Plant Type and Scale	Modular, ~550ktpa
Projected Payback	<1.5 years <sup>5</sup>
Net Operating Cash Flow	>US\$30 Mpa <sup>5</sup>
Metallurgical Recovery	>93%
Capital Intensity (US\$/tpa con)	US\$1221/t
Mine Life <sup>3</sup>	+10 years <sup>4</sup>
Graphite Concentrate purity	96-97% TGC



- **Timing:** Feasibility Study conclude Q3 2018, First Exports planned for Q1 2021
- **Logistics:** bulk sample delivered to port in 2017, 260km logistics chain tested & proven by Montepuez bulk sample
- **Port Allocation:** Discussions on allocation ongoing, capacity is available to cater for Battery Minerals exports of 200ktpa
- **Expansion to 100ktpa:** USD 30-35M for additional 50-55,000tpa
- **Resource:** Indicated Resource 8.9Mt @ 9.3% TGC & Inferred Resource - 7.3Mt @ 11.8% TGC (6%TGC cut off)

1. See ASX announcement dated 1 March 2018 for Balama Central Scoping Study outcomes. All material assumptions underpinning the production target in that announcement continue to apply and have not materially changed

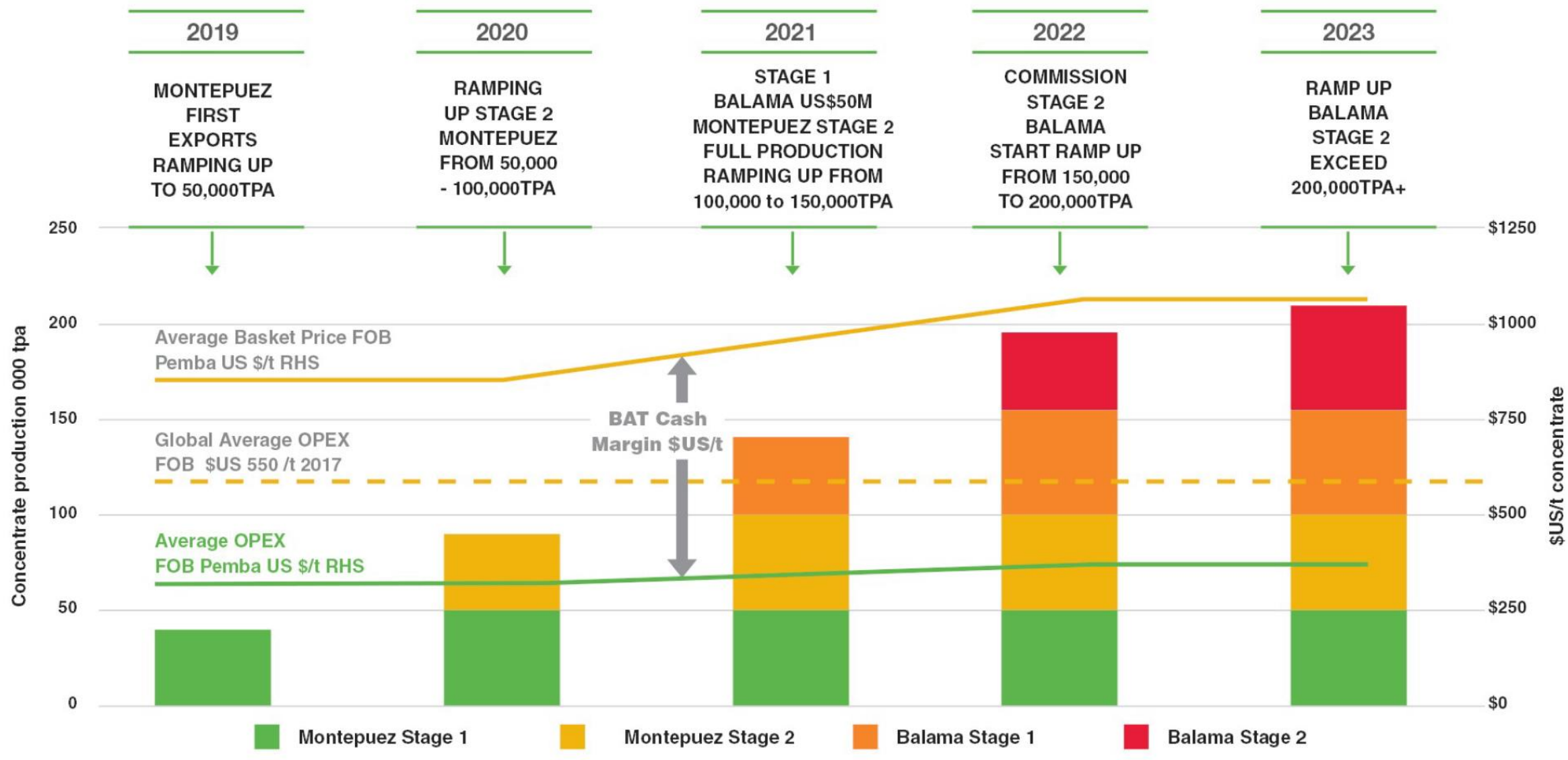
2. Excludes National Ownership (anticipated to be ~5%) and 32% tax rate

3. Based on Indicated Resources only (see ASX release on the Balama Central Concept Study dated 26 October 2017 for details, Table 1 and Competent Person Statement).

4. Mine life of +10 years based on Indicated Resources only

5. BAT has used US \$1,100/t as basket price FOB Pemba for its Balama Central concentrate. The current market basket price for its Balama Central concentrate is greater than US \$1,100/t FOB Pemba.

# The Five Year Plan



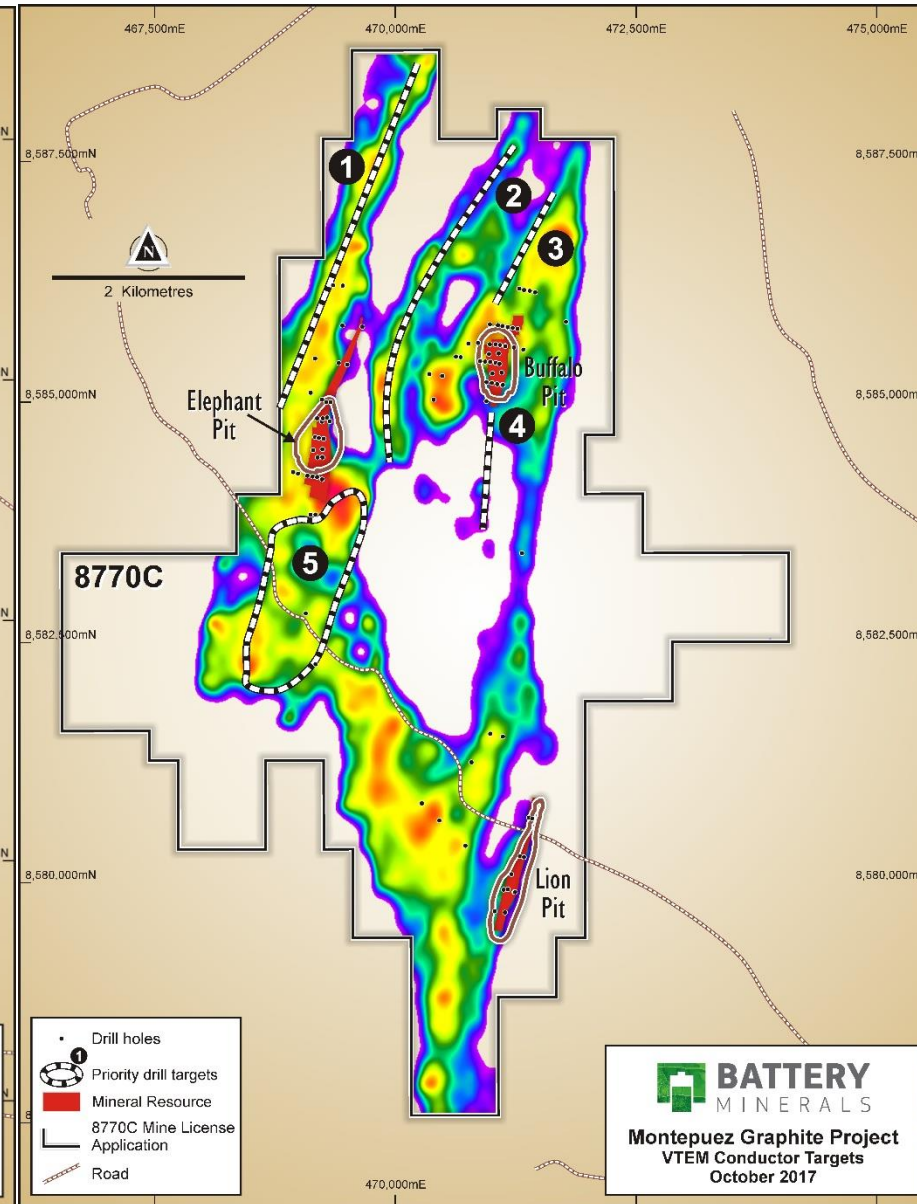
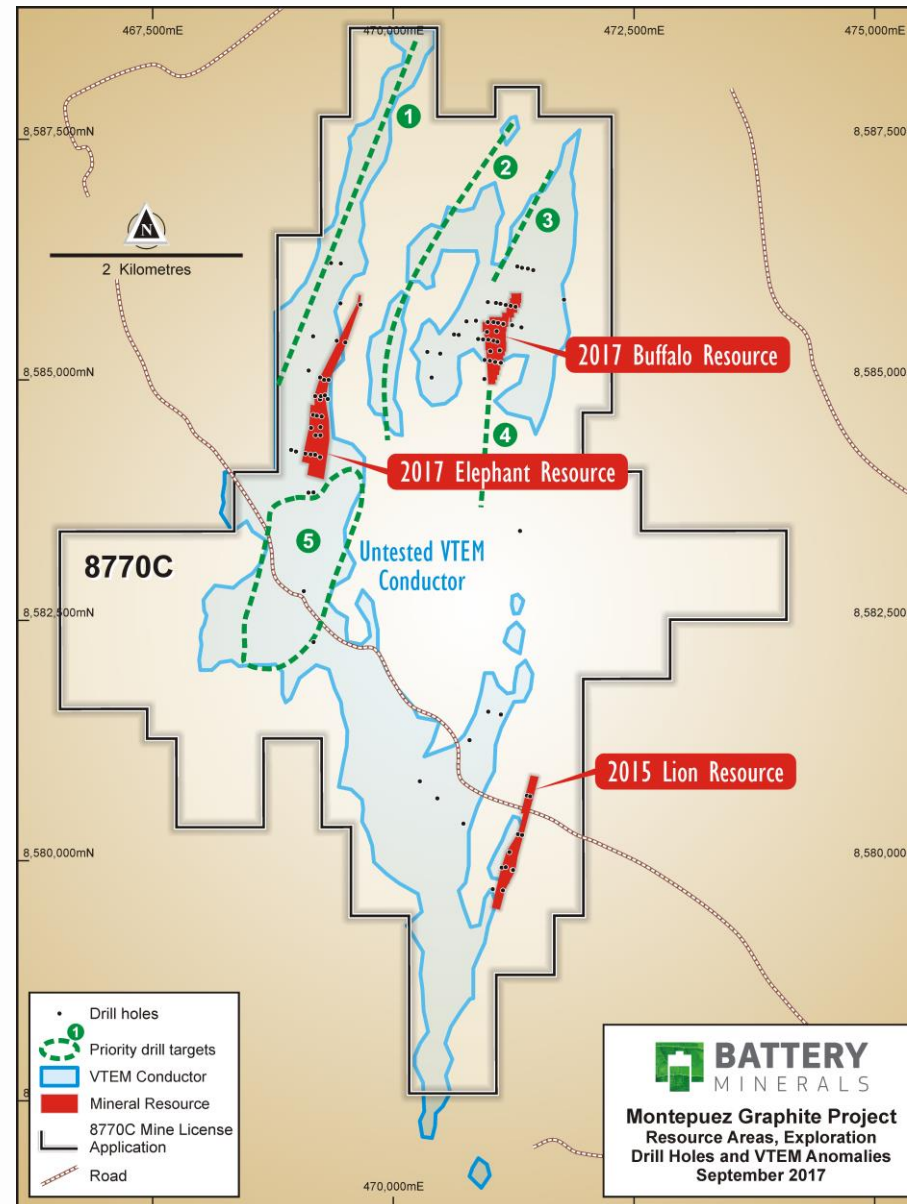


# Montepuez Exploration Target - Additional Growth 300-400MT @ 5-10 % TGC

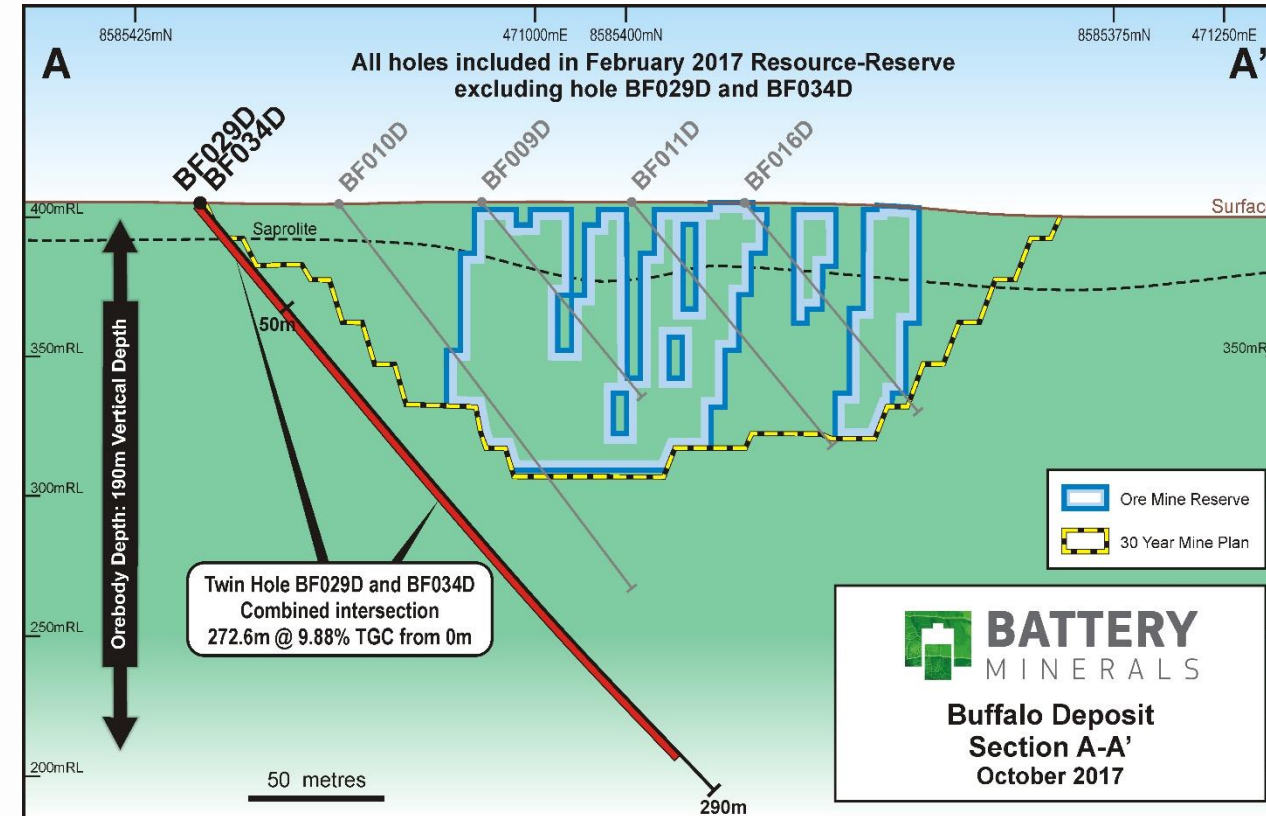
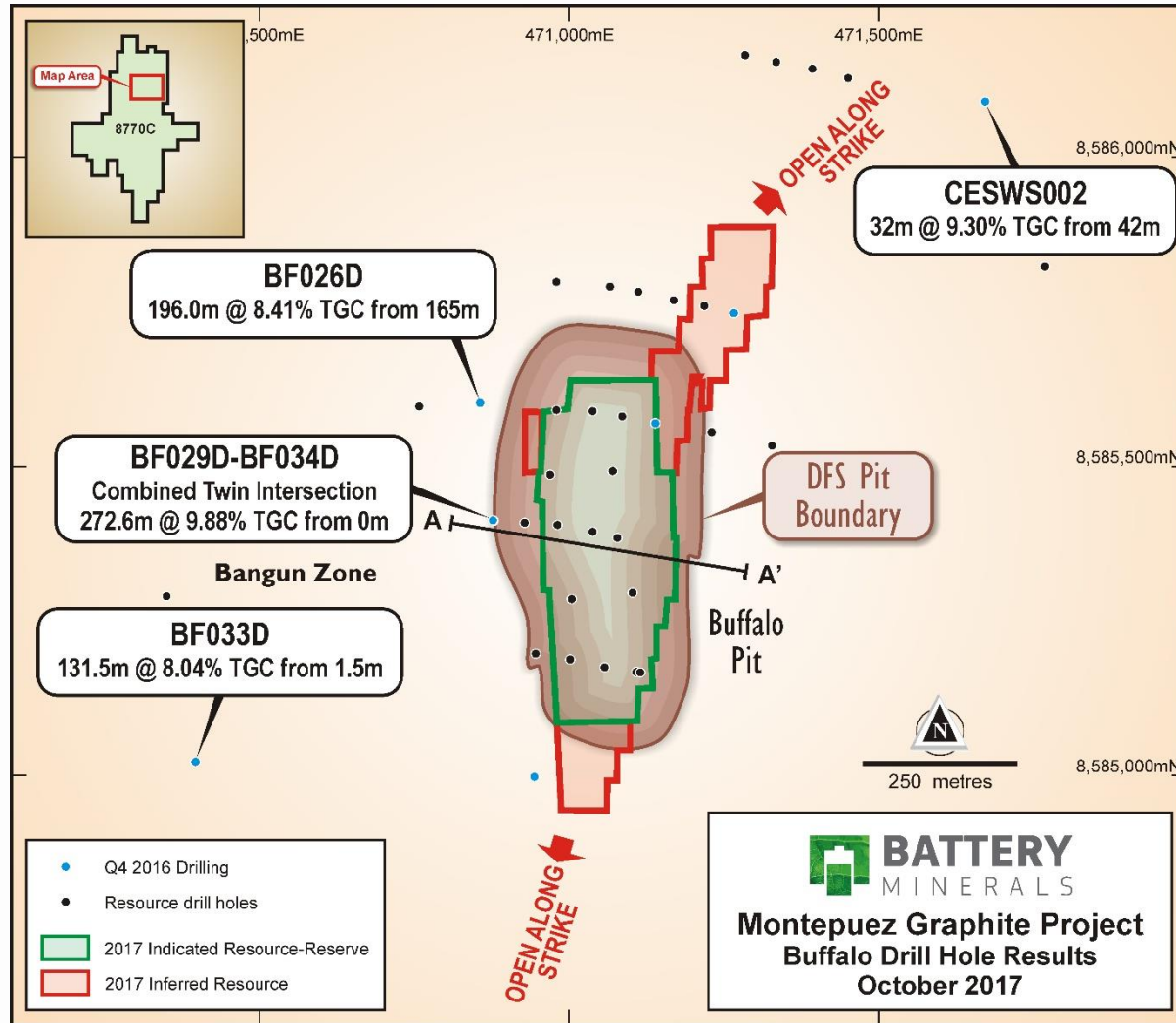


- 5 VTEM target areas
- Only 15-20% of targets have been drilled
- VTEM conductors remain largely untested
- All deposits remain open at depth and along strike
- Potential for 300-400Mt @ 5-10% TGC<sup>1</sup>
- Drilling completed, assays pending

1. The potential quantity and grade is conceptual in nature. There has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.



# Montepuez Exploration Upside



- BF029D/34D - 272.6m @ 9.88% from surface - combined twin intersection.
- BF026D - 196m @ 8.41 % from 165m
- BF033D - 133m @ 8.04% TGC from 1.5m

**Note:** See September 2017 Quarterly Activities Report announced to ASX dated 31 October 2017 for further details and CP statement



# Next 12 months

1. Award key contracts for Montepuez Stage 1
2. M1 construction & commission by Q4 2018
3. Balama Feasibility Study (B1) Q3 2018
4. First Concentrate shipment Q1 2019
5. Montepuez stage 2 construction Start Q2 2019
6. Updated Resources/Reserves all projects
7. Additional offtake agreements for M2
8. Complete financing





# 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.

## Competent Persons Statement

- Battery Minerals Limited released the results of a DFS on its Montepuez Project on 15 February 2017 & its Value Engineering Study (VES) results for Montepuez on 18 October 2017. These releases are available on Battery Minerals' website & ASX.
- 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 Exploration Results, 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 Montepuez 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 VES information is extracted from the ASX announcement entitled 'Lithium Ion Battery anode PFS and Montepuez Graphite DFS confirm robust economics' dated 15 February 2017 and VES results of 18 October 2017, both of which are available at Battery Minerals website in the ASX announcement page.
- See ASX announcements on the Balama Central Scoping Study dated 1 March 2018 and the Concept Study dated 26 October 2017 for details, Table 1 and Competent Person Statement
- Balama Central Preliminary metallurgical testwork: The information in this Presentation that relates to Metallurgy is based on and fairly represent information reviewed by Mr. Sean Richardson, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr. Richardson is an independent consultant. Mr. Richardson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities undertaken. Mr. Richardson consents to the inclusion in the Announcement of the matters based on his information in the form and context in which it appears.
- Any references to Mineral Resource estimates on the Balama Central Project should be read in conjunction with the competent person statements included in the ASX announcements referenced in this report (see 21 March 2016 ASX announcement entitled "Maiden JORC Graphite Resource at Balama Central Project - Mozambique") 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 presentation that relates to Battery Minerals' Balama Central Mineral Resources 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 is extracted from the ASX Announcement titled 'Maiden JORC Graphite Resource at Balama Central Project - Mozambique' dated 21 March 2016 which is 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.





- Board and management biographies
- Graphite Price Trend Jan 2016 to Jan 2018 - Montepuez
- Graphite Price Trend Jan 2016 to Jan 2018 - Balama Central
- Flake Graphite Cost Curve
- Product Marketing Strategy - 4 Offtake Agreements
- Key Milestones for BAT
- Graphite Price Forecast
- Montepuez CAPEX and OPEX
- Montepuez Power, Headcount and Haulage
- Montepuez Project Delivery Schedule
- Montepuez Product size and specification
- Balama CAPEX and OPEX
- Balama Central Product size and specification
- Balama Central Project Delivery Schedule
- Graphite Price drivers (slides 28 to 34)
- Mineral Resources and Ore Reserves (slides 35 to 37)
- Mozambique (slides 38 to 40)

# Board and Management



**Jeff Dowling** *Non-Exec Chairman* Jeff has over 6 ½ years experience as a nonexecutive chairman and non-executive director, and over 30 years experience with Ernst and Young, predominantly leadership roles in audit, risk and finance. Since leaving Ernst and Young 6 ½ years ago Jeff has held non-executive chairman and non-executive director positions with ASX listed companies including NRW, S2 Resources, Sirius Resources, Pura Vida Energy, Atlas Iron and Fleetwood.



**David Flanagan** *AM CitWA Managing Director* David originally qualified as a geologist at the WA School of Mines and has worked in exploration and mining in Australia, Africa and Asia for the past 25 years. Prior to joining Battery Minerals he was founding Managing Director of Atlas Iron which grew from a \$9M exploration company to Australia's 4<sup>th</sup> largest iron ore producer with a \$3Bn market capitalisation ranked in the ASX 100. David has been recognised with a number of industry and community awards including; Governors Award for Giving 2011, Eisenhower Fellowship 2013, Western Australian of the Year and Business Leader of the Year in 2014, and an Order of Australia 2018.



**Brett Smith** *Non Exec Director* Brett has more than 25 years of experience as a geologist, manager, consultant and director in the resource exploration and mining industry throughout Australia and internationally. His industry experience is broad, dominated by exploration and resource definition. Mr. Smith is currently the Managing Director of Corazon Mining Ltd and Pacific Bauxite Ltd.



**Gilbert George** *Non Exec Director* Gilbert graduated with a Masters Economics from a prestigious Japanese university, Gilbert has a wide range of experience in international business development and management. Formerly a senior bilingual Australian embassy official in Tokyo. He continues to provides strategic advice to companies in Australia, Africa, Japan, the US and Europe and been involved in over \$950 million of new investment in Australia, in the resource, IT, food processing and service sectors. Resource experience includes coal iron ore, gold, uranium, oil and heavy mineral sands. He is the current Chairman of Mindax Limited (ASX: MDX) and holds directorships in Bedley Holdings, Victorian Wave Partners, Ocean Power Technologies and Governor Holdings. He was formerly a director of Tokyo Gas Australia Pty Ltd and Tepco Australia.



**Paul Glasson** *Non Exec Director (based in China)* Mr Glasson is a highly regarded China strategy specialist. He has lived in Shanghai for the past 20 years and is currently Executive Chairman of Satori Investments, a China focused investment advisory and private equity firm. He is a board member of the Australian China Chamber of Commerce (Shanghai) and Life Member of the Australia China Business Council. Paul is well known as a foremost expert on Chinese outbound investment, having been recognised with Deal of the Year by Mines and Money in 2014 for his origination and lead on the Baosteel-Aurizon on-market hostile takeover of Aquila, as well as being Young Leader of Asia by the Boao Forum for three years. He was also the Australia China Business Council's key proponent in engaging with key Chinese government and enterprise from 2008-2014



**Ivy Chen** *Non Exec Director* Ivy is a corporate governance specialist with more than 30 years' experience in mining and resource estimation. She served as the national geology and mining adviser for the Australian Securities and Investments Commission (ASIC) from 2009–2015 and is currently Principal Consultant at CSA Global. Ivy's experience in the mining industry in Australia and China, as an operations and consulting geologist includes open pit and underground mines for gold, manganese and chromite. As a consulting geologist she has conducted mineral project evaluation, strategy development and implementation, through to senior corporate management roles. Ivy has been a member of the VALMIN committee since 2015.



**Ben Van Roon** *Chief Operating Officer* After graduating from the WA School of Mines in 1996, Ben has accumulated 22 years industry experience in operating environments predominantly focused on new projects, open pit mining, ore processing and logistics. He has held senior operating roles with Henry Walker Eltin, Rio Tinto Iron Ore and Mineral Resources Ltd. Prior to Joining Battery Minerals Ben led project execution and process improvement at two new large lithium projects in Western Australia.



**Jeff Dawkins** *Chief Financial Officer* Jeff Dawkins is an Australian Chartered Accountant with over 25 years experience in professional and corporate roles in Australia, London and Singapore predominantly in the mining sector and focussing on capital management, financial modelling, offshore structuring and project financing. Prior to joining Battery Minerals, Jeff was CFO at Blackham Resources for 2 years during which time the Company's Wiluna Gold Project was taken from feasibility to production. Previously Jeff has held the CFO and Company secretary roles of several junior mining companies operating in Australia, Africa and Indonesia including Hanking Mining, Peak Resources, Archipelago Resources and Lynas Corporation.



**Tony Walsh** *Co-Sec & GM Corporate* Tony Walsh has over 30 years' experience in dealing with listed companies, ASX, ASIC and corporate transactions including 14 years with the ASX in Perth where he acted as ASX liaison with the JORC committee, four years as Chairman of an ASX listed mining explorer and as a director of a London AIM listed explorer. Tony is also currently Company Secretary of Atlas Iron Limited (ASX: AGO), Legend Mining Ltd (ASX: LEG) and S2 Resources Limited (ASX: S2R).



**Naomi Scott** *Legal Counsel* Naomi studied Law and International Relations in the UK and the US with specialisations in human rights and post-war policy development. After university, she worked with cross-community relations in Northern Ireland leading up to the Good Friday Agreement, brokering support for the outcomes of the peace process. As part of the United Nations her work brought her to regions of deep political crisis and natural disaster where her focus was conflict resolution and post-war reconstruction as well as working to stimulate trade in various countries. After working closely with World Bank Naomi joined the private sector, supporting mining companies to identify risk and to ensure compliance to international standards in trade. Prior to joining Battery Minerals, Naomi was the Chief Executive Officer of Anglo American in Mozambique. As CEO, she was responsible for all remote exploration, legal compliance, risk analysis and business development for the company.



**Andy Cardoso** *Mozambique Country Director (based in Mozambique)* As part of the Company's strategy to develop Montepuez, Mr Andy Cardoso has been appointed to the role of in-country Project Director. Mr Cardoso is a highly experienced mining and development engineer and executive with over 30 years of experience in project development within African countries including Mozambique, Mali, Ghana and Botswana



**George Gao** *GM China (based in China)* After initially graduating in chemical engineering from Nanjing University of Technology in 1987 George worked in a number of engineering roles for global engineering firms before migrating into sourcing and procurement management in China for bulk commodity, precious metals as well as oil and gas projects across Australia, New Zealand and Africa. George has acted for clients in sourcing equipment as well as part of EPC bidding teams.



**Graham Fyfe** *GM Projects* Since graduating from the University of KwaZulu-Natal Graham in 1991 Graham has worked in a range of process management, construction and operational roles with globally significant resource companies and engineering firms including Anglo American, Fluor and Calibre. He brings a wealth of experience in building and managing processing facilities throughout Africa.

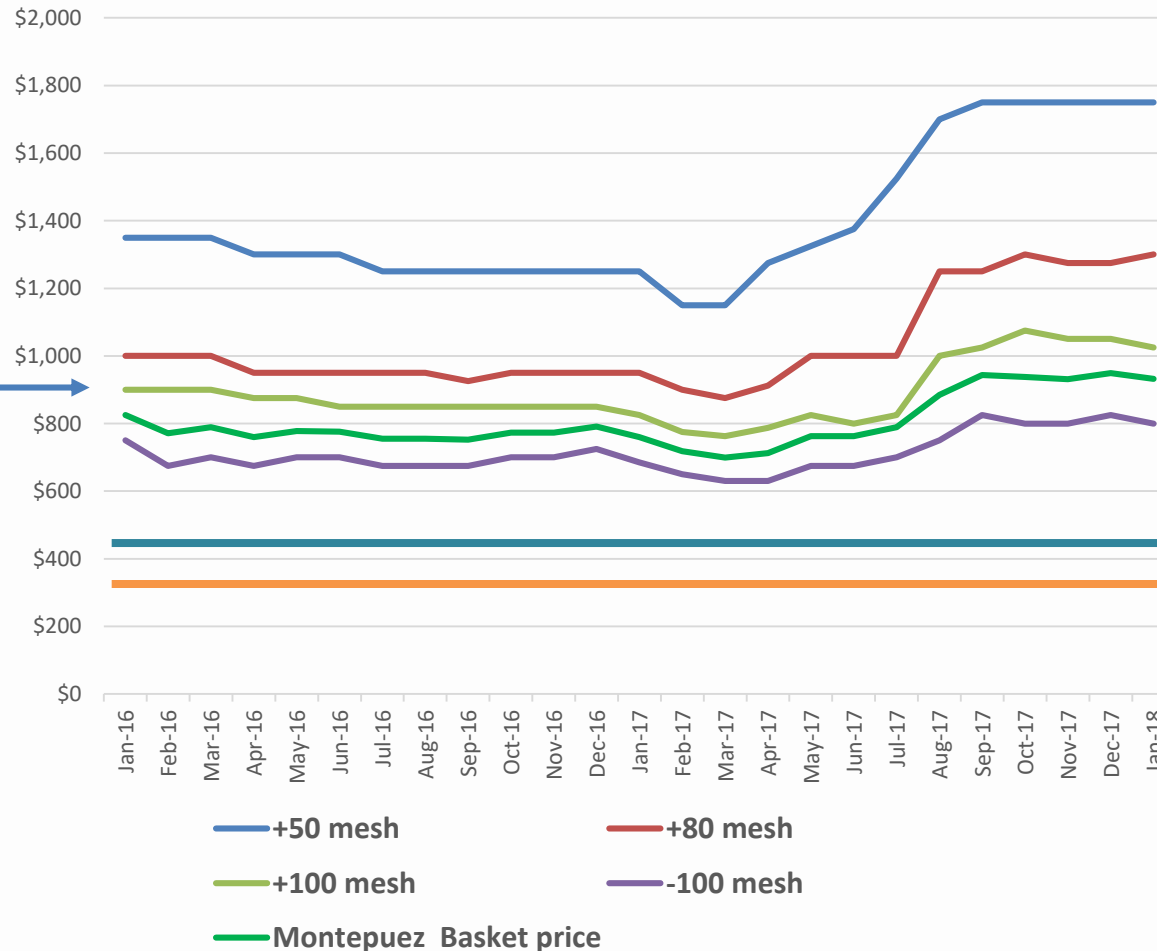


# Graphite Price Trend Jan 2016 to Dec 2017

## Montepuez Basket Price Flake Graphite Price Trend Jan 16 - Jan 18

USD, Metric tonnes

Data source: Benchmark Mineral Intelligence



*Graphite commodity price have steadily improved since March/April 2017*

### Montepuez: Battery Minerals - Flake Graphite Concentrate Sizing

Flake size	Flake size (mesh)	Flake size (micron)	% of concentrate	TGC grade
Fine	-100 Mesh	0 - 150	71.9%	97.0%
Medium	+100 Mesh	+150 -180	10.2%	96.0%
Large	+80 Mesh	+180 -300	13.5%	96.0%
Jumbo	+50 Mesh	+300	4.4%	96.0%

Battery Minerals (Montepuez) delivered US\$440 cost per tonne cif China

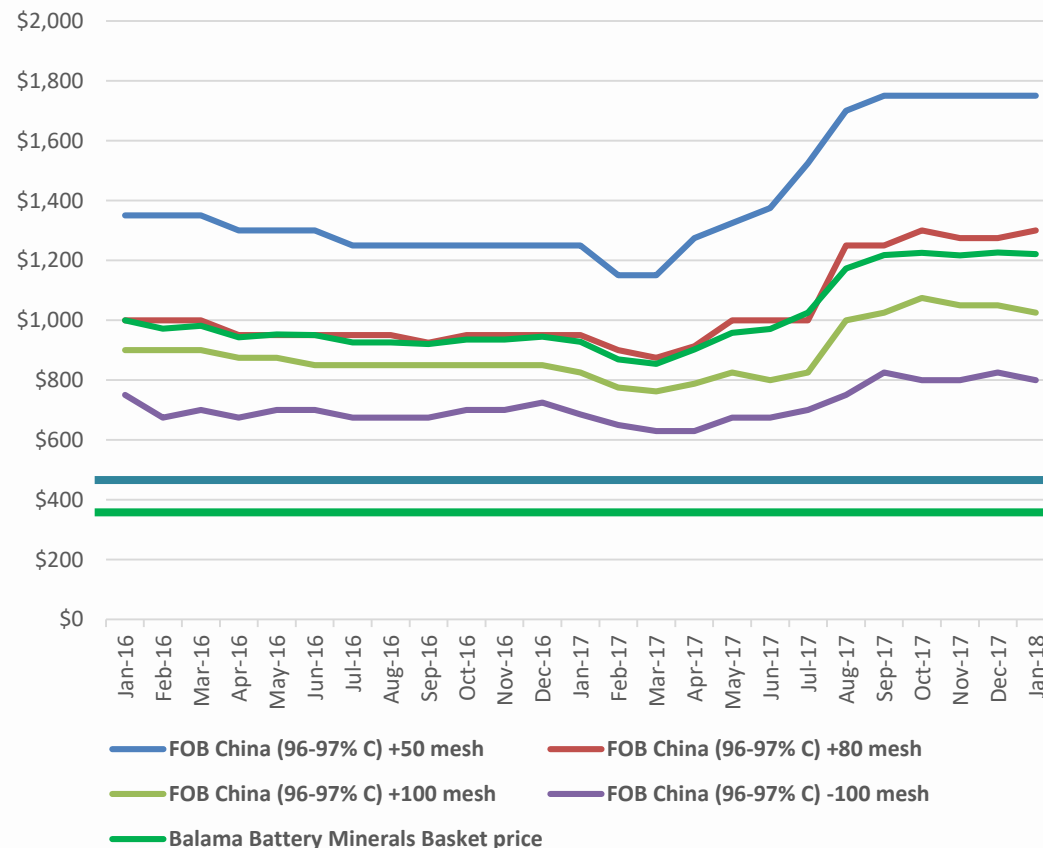
Battery Minerals (Montepuez) Opex US\$337 OPEX cost per tonne FOB Pemba

# Graphite Price Trend Jan 2016 to Dec 2017 (cont)

## Balama Central Basket Price Flake Graphite Price Trend Jan 16 - Jan18

USD, Metric tonnes

Data source: Benchmark Mineral  
Intelligence



## Balama Central Graphite Project

- Higher Jumbo and Large flake product
- Higher basket price of over US\$1,200/t

### Balama Central Battery Minerals - Flake Graphite Concentrate Sizing

Flake size	Flake size (mesh)	Flake size (micron)	% of concentrate	TGC grade
Fine	-100 Mesh	0 - 150	37.0%	97.0%
Medium	+100 Mesh	+150 -180	9.0%	96.0%
Large	+80 Mesh	+180 -300	25.0%	96.0%
Jumbo	+50 Mesh	+300	29.0%	96.0%

Battery Minerals (Balama Central) delivered US\$470 cost per tonne cif China

Battery Minerals (Balama Central) Opex US\$370 OPEX cost per tonne FOB Pemba

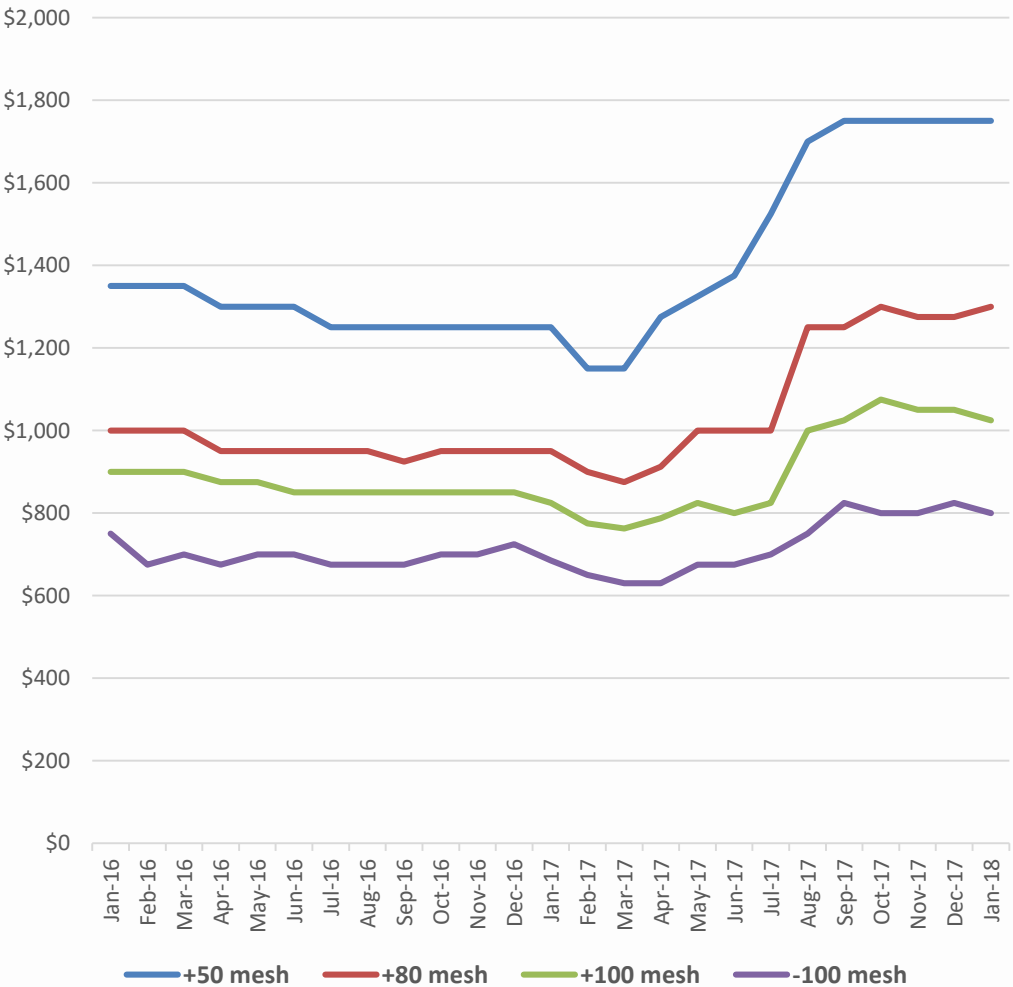


# Flake Graphite Cost Curve

## Flake Graphite Price Trend Jan 16 - Jan 18

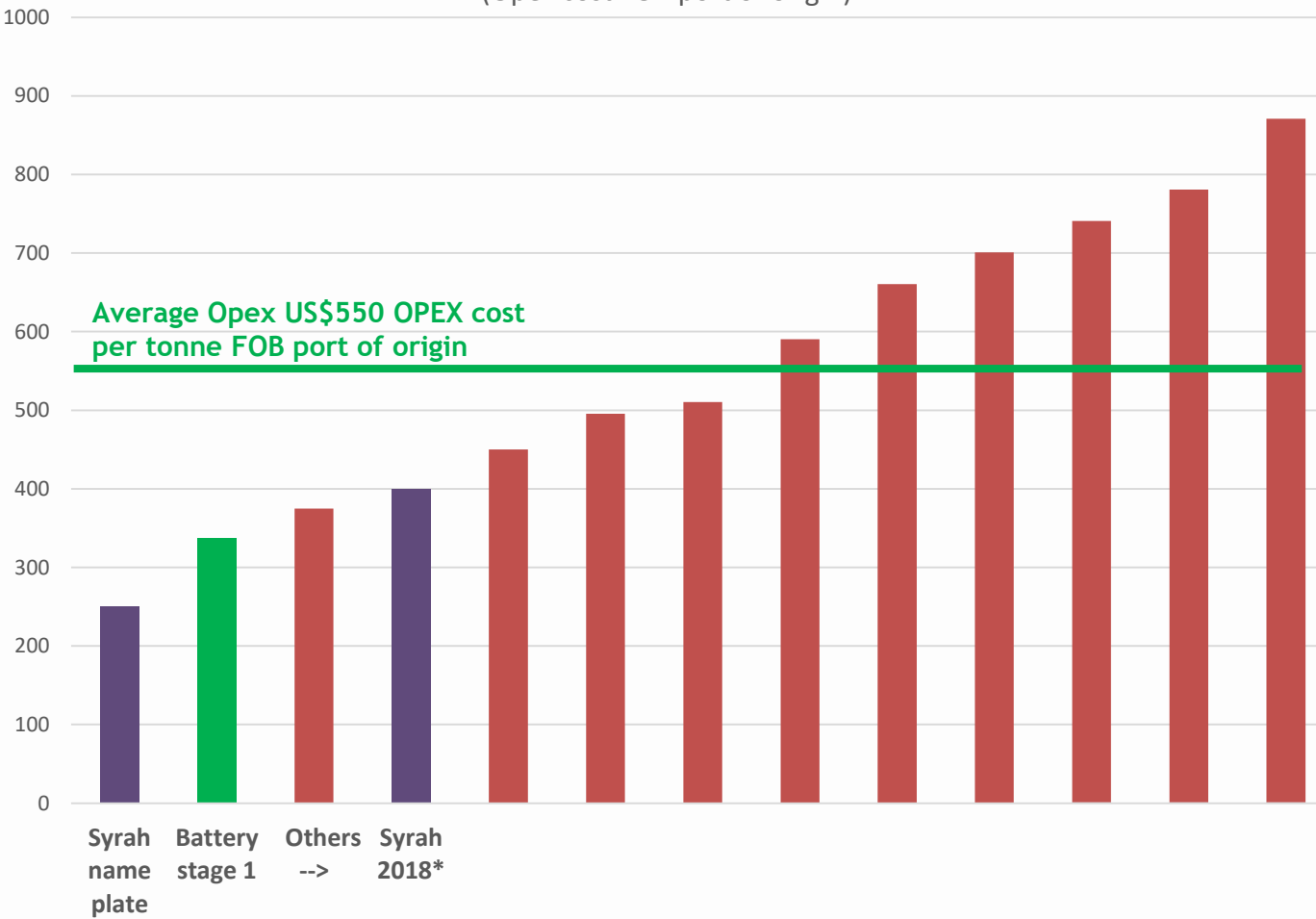
USD, Metric tonnes

Data source: Benchmark Mineral Intelligence



## Flake Graphite Concentrate Cost curve 2017

(Opex cost FOB port of origin)



## **January 2018 - Three Binding Offtake Agreements each for 10,000tpa**

- GEM - Binding offtake agreement for 10,000tpa of graphite concentrate
- Black Dragon - Binding offtake agreement for 10,000tpa of graphite concentrate
- Keshuo - Binding offtake agreement for 10,000tpa of graphite concentrate
- Each binding offtake agreement is initially for three years
- Minimum graphite concentrate grade of 95% TGC

## **December 2017 - Binding Offtake Agreement for up to 11,000tpa**

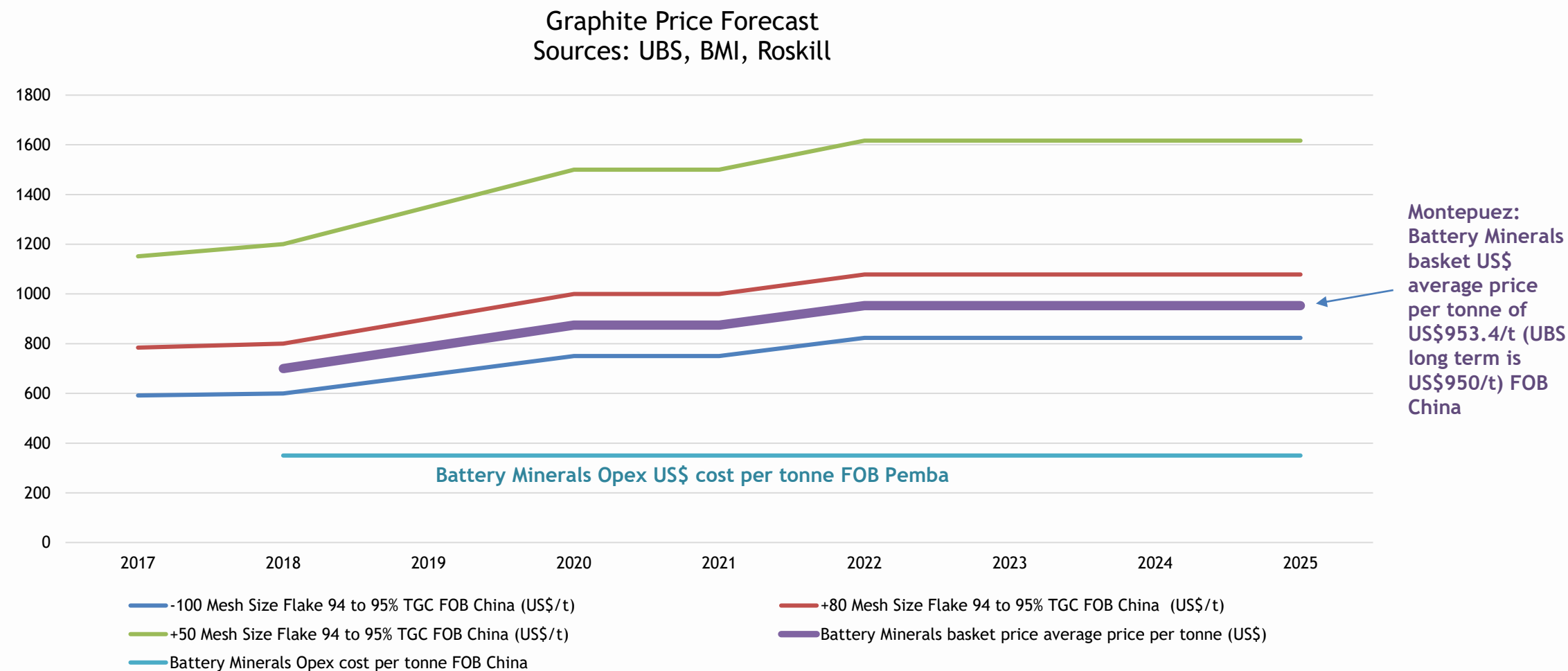
- Three-year deal with Urbix Resources, a US-based graphite processing specialist with an option to renew for another three years.
- Binding agreement for sale of at least 5,000tpa of graphite concentrate at a minimum 95% TGC to US-based graphite processing graphite Urbix Resources
- Urbix has the right to bid for an additional 6,000tpa of graphite concentrate from Montepuez, another 6,000tpa for each of Montepuez expansion and Balama



# Key Milestones for BAT

Period	Milestone	Status
2H 2017	• Environmental Impact Assessment	✓ Approved
	• Value engineering	✓ Completed
	• Detailed engineering, early works & procurement	✓ Commenced – contracts signed, Ongoing
	• Port Allocation from government for Pemba port	✓ 100,000tpa export capacity Govt approved
	• Targeted exploration activity	✓ Drill completed, assays pending
	• Balama Central concept study	✓ Completed
	• Customer Engagement	✓ First offtake signed, Ongoing Asian focus
1H 2018	• Additional Offtake Agreements	✓ Three offtake agreements signed in Jan 2018
	• Mozambique mining licence approval	• Application lodged, Govt decision imminent
	• Metallurgical process optimisation	✓ Ongoing
	• Early Works and tendering	• On time and within budget
	• Mine Plan and Commence construction	✓ Planning stage completed, construction started
2H 2018	• Spherical Graphite Urbix testwork completion	
	• Mine construction complete, commence ramp-up	
1Q 2019	• First Concentrate Exports	

*BAT has taken a robust, well-referenced, and conservative approach to graphite commodity price assumptions in the VES, to provide a solid basis for decision making*





CAPEX	
Area	US \$M
Process Plant	20.9
Mining fleet and maintenance workshops	2.1
Camp infrastructure and fitout	2.5
Tailings Storage Facility and other earthworks	2.8
Mine Offices and workshops	2.3
Owners costs	2.4
Pre production Costs	4.5
Other	4.9
<b>TOTAL</b>	<b>42.3</b>

OPEX	
Area	Cost \$/t
Mining	46.32
Processing	128.35
Maintenance	35.07
G&A	65.17
Logistics	61.87
<b>TOTAL</b>	<b>\$336.78</b>

## COST DRIVERS

### CAPEX

- Small Modular Plant – 70 t/h vs 180 t/h (Conventional)
- Smaller TSF
- Cost Effective Buildings
- Modular allows for accelerated expansions and low risk construction and commissioning

### OPEX

- Mine Operating costs greatly reduced – Small owner managed equipment
- Optimised Mining Schedule/Plan
- No Drill & Blast in first 5 years
- No long term stockpiles
- Availability of water from River
- Reduced Logistics Cost (Proven with Bulk Sample)
- Optimised Direct Labour – Lean Overhead Labour

# Montepuez Diesel, Headcount and Haulage

Diesel	
Area	US \$/t
Power Generation Plant	62.6
Power Generation Camp	7.6
Mining Fleet	18.7
Mobile Fleet	3.3
<b>TOTAL</b>	<b>\$92.2</b>
Diesel as % of total OPEX/t	27%

Operations Headcount	
Area	No
Mining	27
Processing	46
Maintenance	25
Admin	41
Security	48
<b>TOTAL</b>	<b>183</b>
% of total OPEX/t	25%
Construction	
<b>Headcount (peak 140)</b>	<b>~105</b>

Haulage	
Area	US \$/t
Montepuez to Pemba Warehouse	21.67
Warehouse to Port	30.75
Pemba Port Fees	9.45
<b>Total Freight FOB Pemba</b>	<b>\$61.87</b>
% of total OPEX/t	19%



# Montepuez Project Delivery Schedule

Montepuez Graphite Project	2017	2018				2019			
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Activity</b>									
Montepuez Graphite Mine									
Value Engineering Study completed									
Project Approvals									
Design									
Procurement									
Construction									
Commissioning									
Ramp Up									
Steady State Production and Shipping									

Note: See ASX announcement dated 18 October 2017 for VES outcomes.

# Montepuez Product size and specification

## Montepuez Flake Graphite Concentrate Sizing

Flake size	Flake size (mesh)	Flake size (micron)	% of concentrate	TGC grade
Fine	-100 Mesh	0 -150	71.9%	97%
Medium	+100 Mesh	+150 -180	10.2%	96%
Large	+80 Mesh	+180 -300	13.5%	96%
Jumbo	+50 Mesh	+300	4.4%	96%



# Balama CAPEX & OPEX



Area	Annual Cost US\$Mil	Unit Cost US\$/t
Labour	4.6	82.88
Power	3.8	68.28
Reagents and Consumables	2.2	39.13
Maintenance Materials	0.7	12.71
General and Administration	2.3	40.99
Product Logistics	3.4	61.87
Mining Earthwork (incl. Drill & Blast)	3.6	60.20
TOTAL	20.5	372.05

CAPEX AREA	US \$Mil Cost
Process Plant	\$19.6
Mining fleet and Maintenance workshops	\$4.2
Camp infrastructure and fit-out	\$2.8
Tailings Storage Facility and Earthworks	\$4.6
Mine Office and workshops	\$2.4
Owners costs	\$2.2
Pre-production Costs	\$4.6
Other	\$9.7
Total Capex	\$50.1

**Note:** See ASX announcement dated 1 March 2018 for Balama Central Scoping Study outcomes.

# Balama Central Project Delivery Schedule

Balama Central Graphite Project	2018				2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Activity												
Scoping Study Completed												
Feasibility Study												
Approvals and Community												
Design												
Procurement and Fabrication												
Construction												
Commissioning												
Ramp Up												

**Note:** See ASX announcement dated 1 March 2018 for Balama Central Scoping Study outcomes.



# Balama Central: Product size and specification

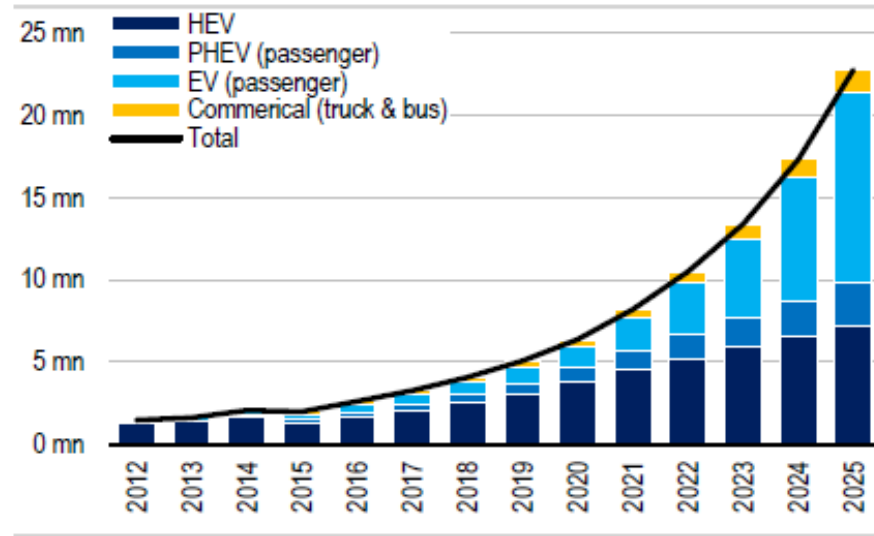
## Balama Central: Flake Graphite Concentrate Sizing

Flake size	Flake size (mesh)	Flake size (micron)	% of concentrate	TGC grade
Fine	-100 Mesh	0 -150	37%	97%
Medium	+100 Mesh	+150 -180	9%	96%
Large	+80 Mesh	+180 -300	25%	96%
Jumbo	+50 Mesh	+300	29%	96%

**Note:** See ASX announcement on the Balama Central Concept Study dated 26 October 2017 for details, Table 1 and Competent Person Statement

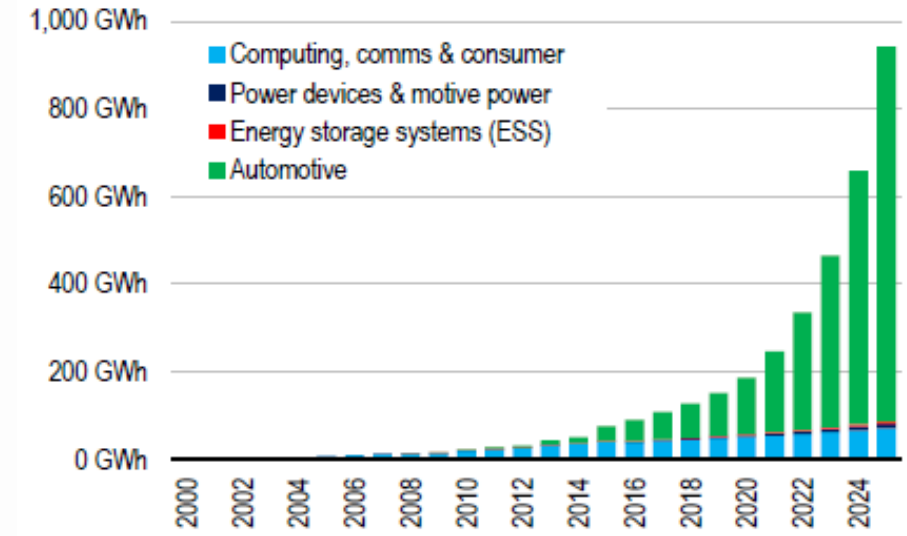
# Graphite Price drivers

**Figure 105: UBS Electric Vehicle Sales (millions)**



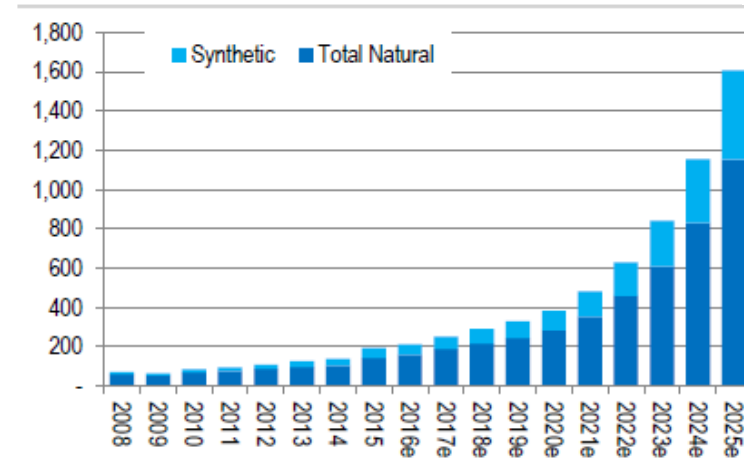
Source: Roskill, UBS estimates

**Figure 106: Rechargeable battery demand by type of use**



Source: Roskill, UBS estimates

**Figure 109: Battery Anode Feedstock Demand (ktpa)**



Source: Roskill, public filings, UBS estimates

Graphite Price Drivers  
Source – UBS June 2017



Figure 5 Total graphite demand by market segment, kt

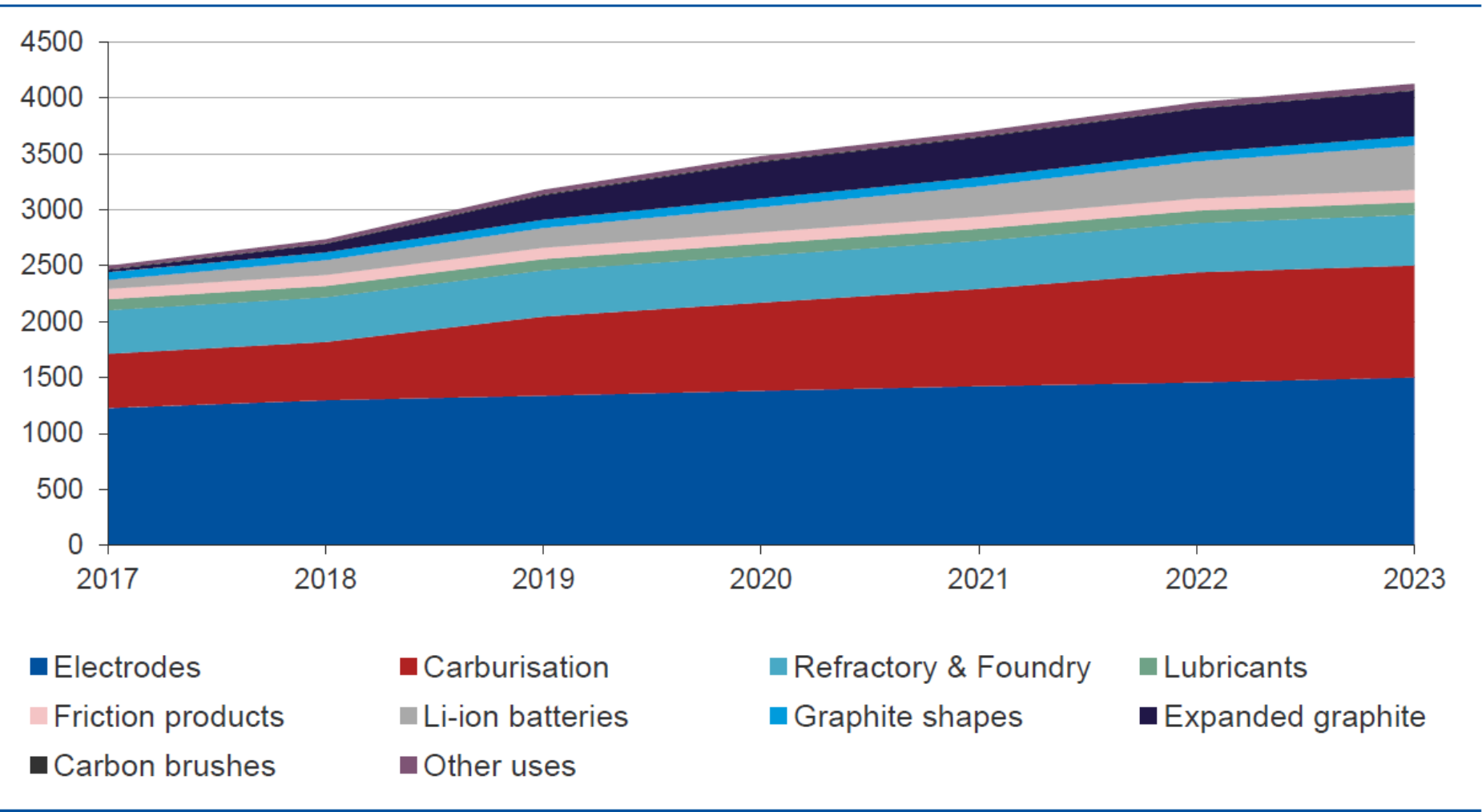


Figure 8 Graphite demand by source, kt

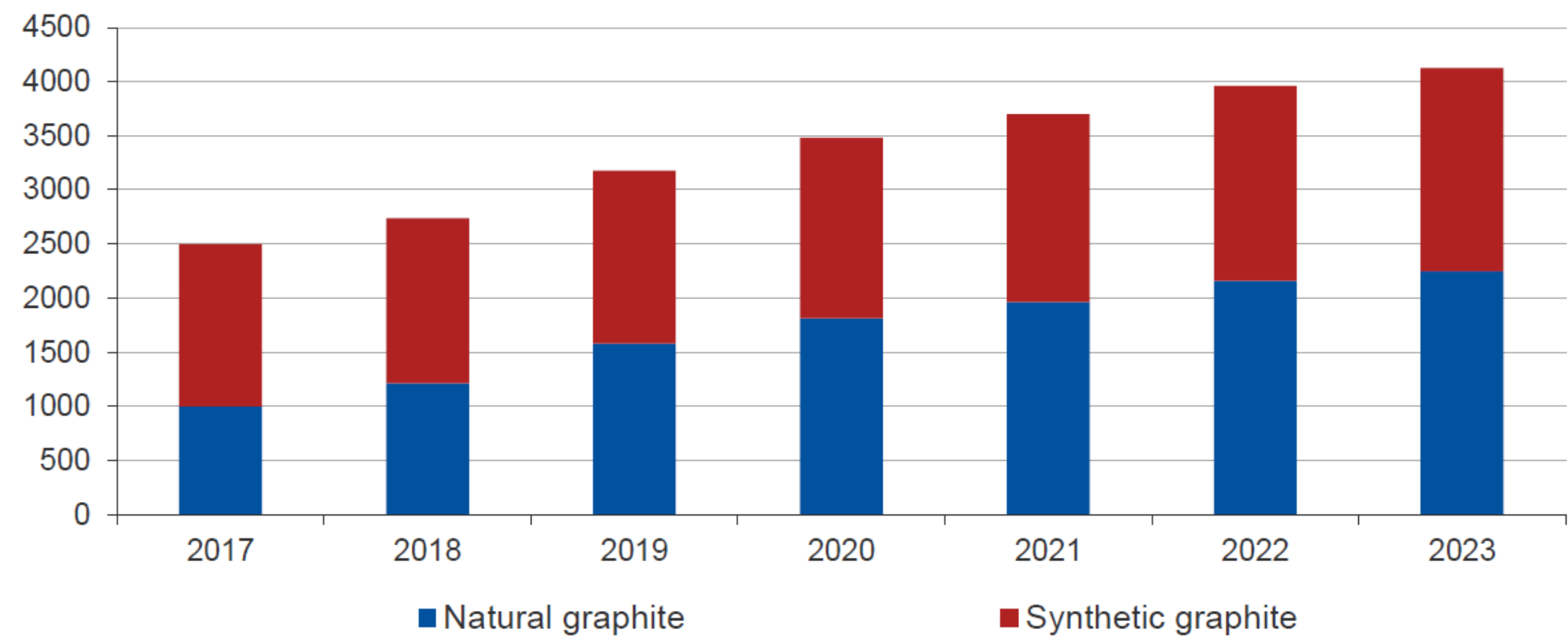
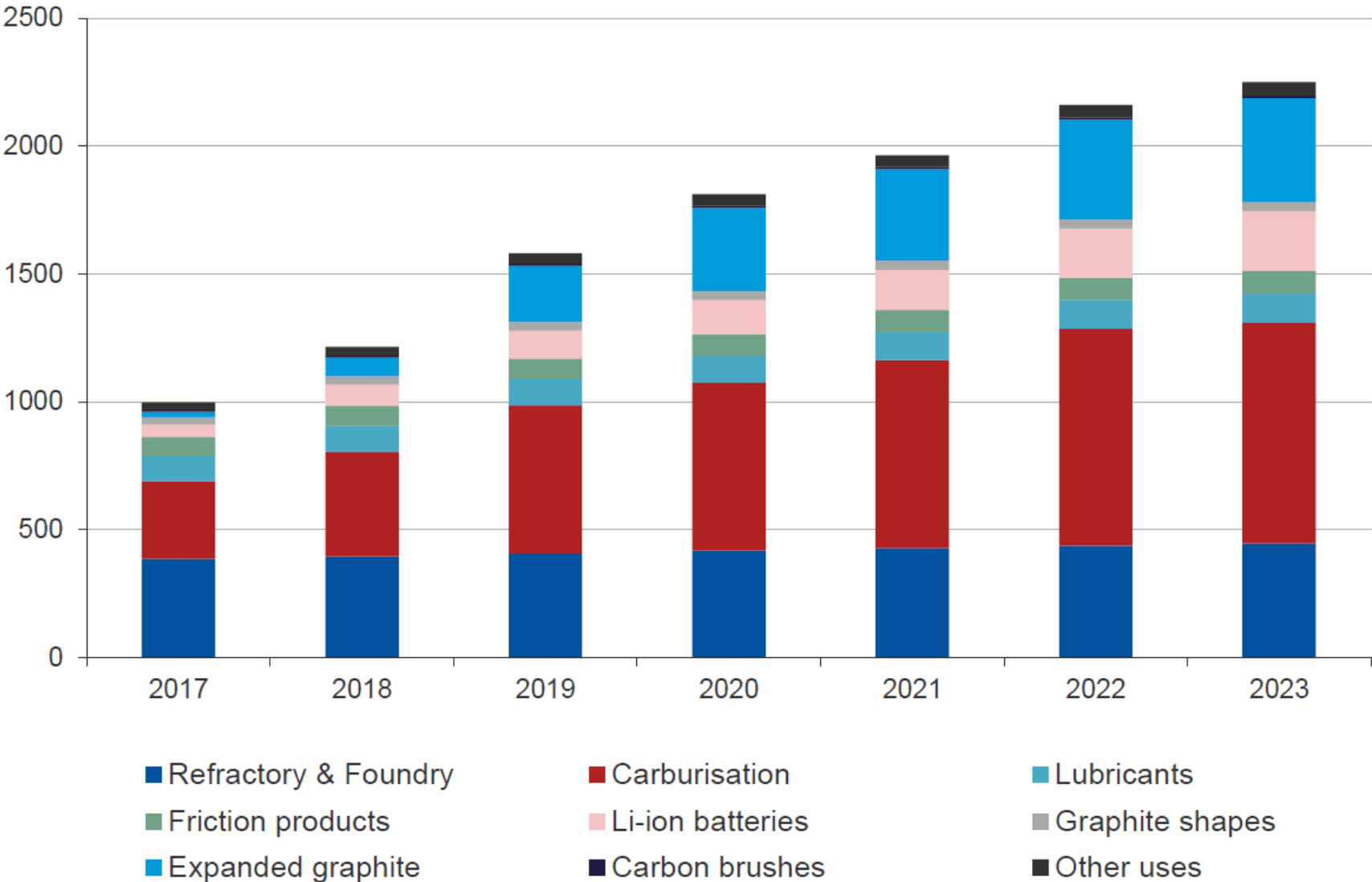


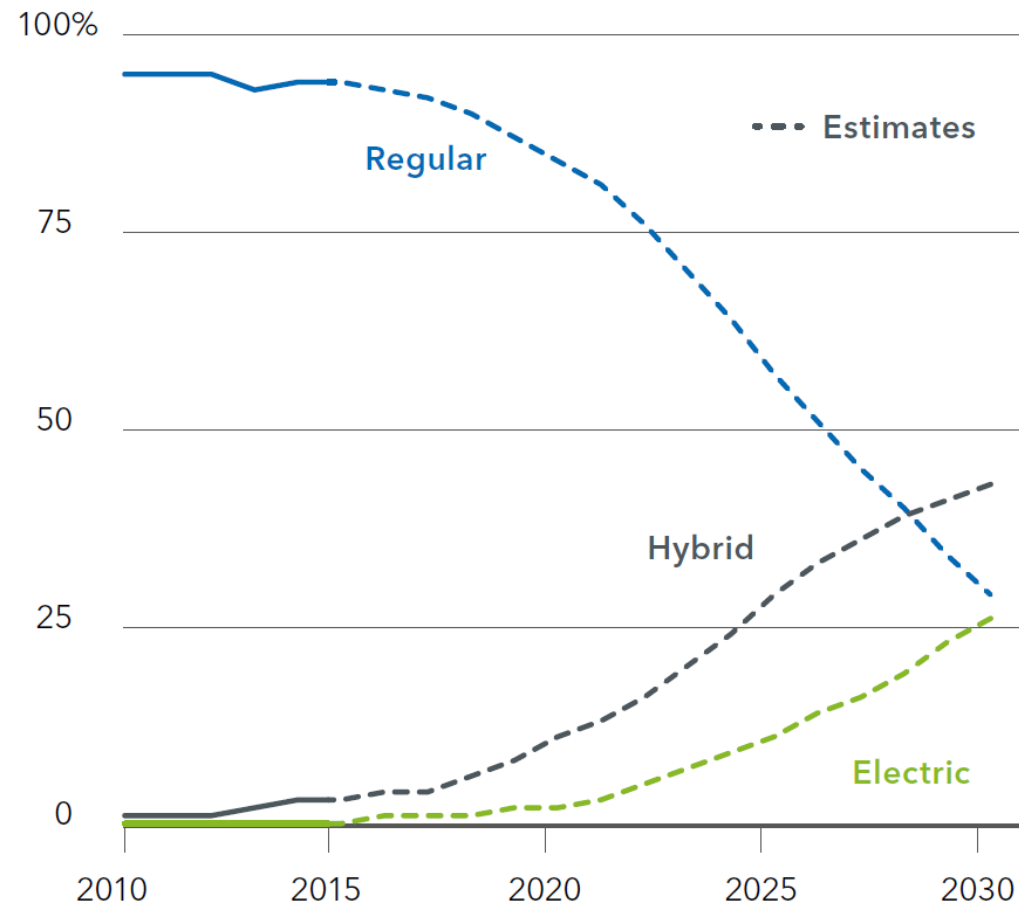
Figure 9 Natural graphite end use demand, kt





## Under the hood

Breakdown of global car sales by engine type, 2010-2030



Sources: BlackRock Investment Institute and LMC Automotive, April 2017.

Notes: Regular refers to internal combustion engine while electric indicates battery electric engines. Figures after 2015 are estimates.

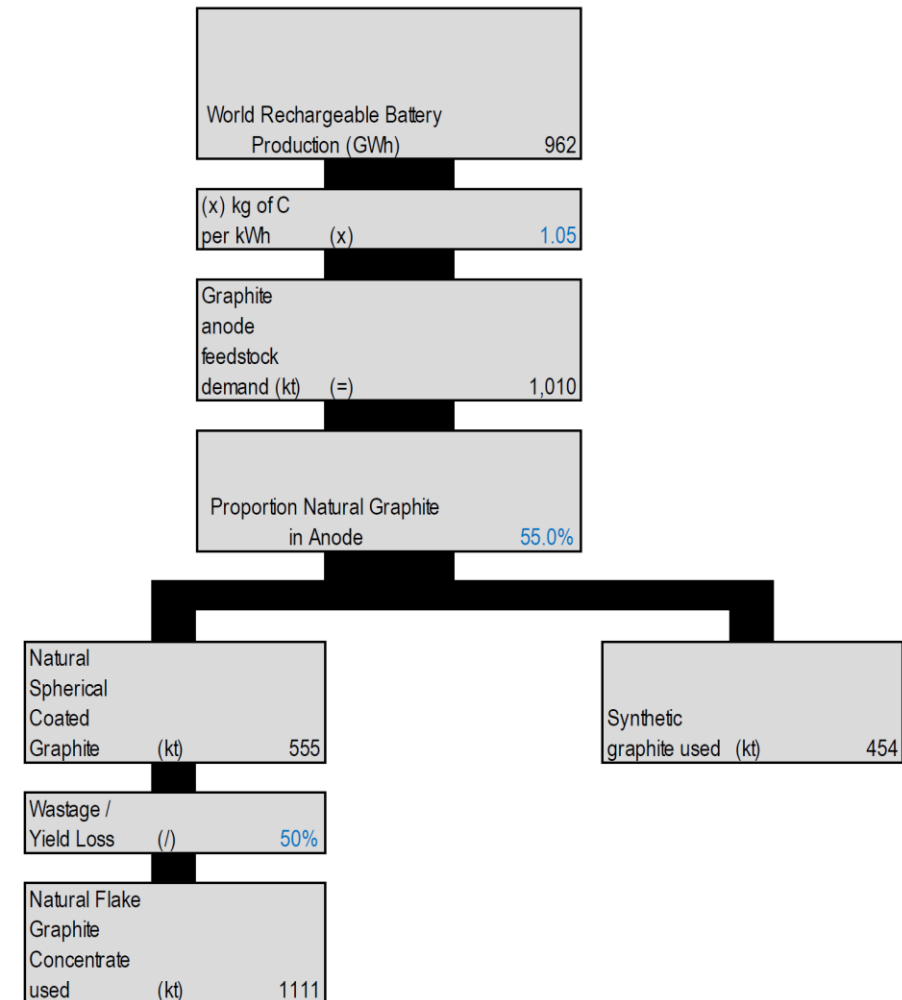
Source – Blackrock Investment  
Institute April 2017

# Graphite Price drivers

## How much graphite is needed for electric car take-up?

- A typical EV or HEV has a 30-100kWh battery pack (Tesla Model 3 have >60kWh)
- Each battery requires ~1.1kg of graphite per kWh.
  - A Nissan Leaf with a 24kWh battery would need 27kg of graphite
  - A Tesla Model S with a 85kWh battery would require ~94kg of graphite.
  - A Chevrolet Bolt with a 60kWh battery has 63kg of graphite
- UBS assumes on average in each EV or HEV contain 50kg of graphite that means each 1m vehicle sales per annum need ~50ktpa of graphite in the anode.
- 2016 Annual car sales ~94m vehicles (72m passenger), so 1m vehicle sales would represent around 1% of world car sales. If 30% of current car sales were EVs, then we need ~1.1Mtpa of graphite. The current graphite market is ~2.4Mtpa, of which natural flake is ~650ktpa. Thus if EVs + HEVs take up a reasonably chunky position of the car market, then the mine supply of natural flake graphite will likely need to grow multi-fold.
- UBS model sales of 11.5m BEV, 7.2m HEV & 2.7m PHEV in 2025e.
- This needs 555,000 tonnes of natural spherical coated graphite which with wastage requires 1.11mil tonnes of natural flake graphite concentrate

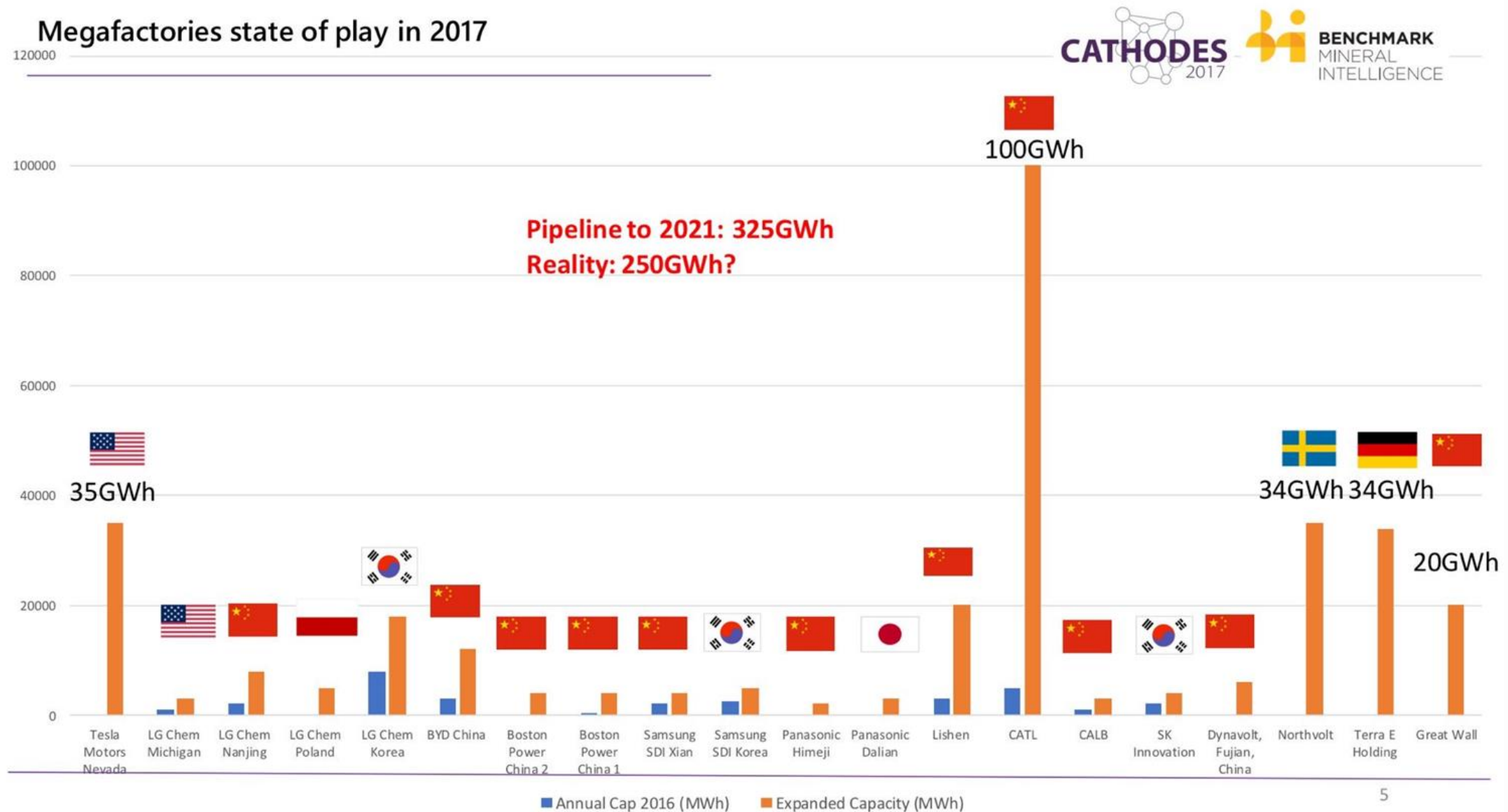
Figure 110: Modelling Graphite demand in Batteries for 2025e



Source: Roskill, company filings, UBS estimates

# This is why we are in graphite! Demand will exceed supply by 2020

## Mega Chinese anode plant projects alone exceed current supply





# Montepuez Ore Reserves and Mineral Resources



- 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
- Total Mineral Resource January 2017 for Buffalo and Elephant deposits is **105.9Mt @ 7.74% TGC** for **8.2Mt** of graphite reported at a 2.5% TGC cut-off
- 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 entitled 'Montepuez Graphite Project Mineral Resource and Ore Reserve Estimate' dated 15 February 2017 for full details.<sup>1</sup>

# Montepuez Mineral Resource Statement



Total Mineral Resource January 2017 for Buffalo and Elephant deposits is **105.9Mt @ 7.74% TGC for 8.2Mt** of graphite reported at a 2.5% TGC cut-off

ELEPHANT RESOURCE @ 2.5% TGC cut-off - January 2017						
Classification	Type	Tonnes	TGC	V205	Contained Graphite	Contained V205
		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
	<b>Total</b>	<b>67.20</b>	<b>7.50</b>	<b>0.19</b>	<b>5.10</b>	<b>129.00</b>

BUFFALO RESOURCE @ 2.5% TGC cut-off - December 2016						
Classification	Type	Tonnes	TGC	V205	Contained Graphite	Contained V205
		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
	<b>Total</b>	<b>38.70</b>	<b>7.93</b>	<b>0.21</b>	<b>3.00</b>	<b>82.20</b>

Note: See ASX Announcement dated entitled 'Montepuez Graphite Project Mineral Resource and Ore Reserve Estimate' dated 15 February 2017 for full details.<sup>1</sup>

1. See ASX announcement dated 15 February 2017 – Montepuez Ore Reserves & Mineral Resources. Please refer to additional details on slide entitled Disclaimer & Competent Persons Statement

Total Mineral Resource for Balama Central is **16.3Mt @ 10.4% TGC** for 1.7Mt of graphite reported at a 6.0% TGC cut-off and includes Indicated Resources of 8.9Mt @ 9.3% TGC for 836Kt of graphite reported at a 6.0% TGC cut-off

BALAMA CENTRAL GRAPHITE PROJECT <sup>1</sup>					
March 2016 Mineral Resource Estimate (6% TGC Cut-off)					
Class	Tonnage	TGC	V2O5	Cont. Graphite	Cont. V2O5
	Mt	%	%	Kt	Kt
Indicated	8.9	9.3	0.16	836	14
Inferred	7.3	11.8	0.27	863	20
<b>Total</b>	<b>16.3</b>	<b>10.4</b>	<b>0.21</b>	<b>1,699</b>	<b>34</b>

Note: See ASX Announcement on 21 March 2016 entitled "Maiden JORC Graphite Resource at Balama Central Project - Mozambique" for full details.

1. See ASX announcement dated 21 March 2016 entitled "Maiden JORC Graphite Resource at Balama Central Project - Mozambique" for full details. Please refer to additional details on slide entitled Disclaimer & Competent Persons Statement



**Corporate Tax** - 32%

## Investment Incentives / protection

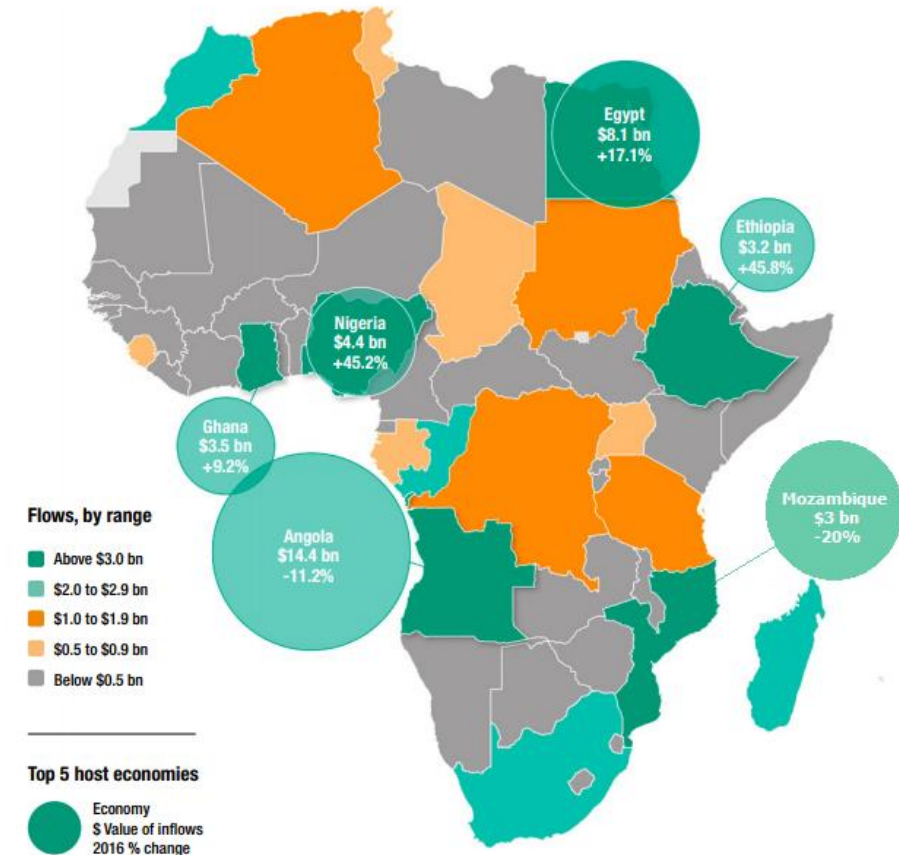
- Legal protection for investors (incl. property/ intellectual rights)
- No restrictions on loans/interest payments abroad
- Tax incentives for projects (exemption from payment of customs duties and tax stability for 10 years)

**Sovereign risk:** Near-term liquidity challenges due to increase of public debt and fall in mineral prices, however strong growth is anticipated over the long term to support sovereign risk rating

**Regulatory:** Mozambique's mining law revised in 2014 guaranteeing security of tenure and allowing companies to repatriate profits

Further pro-business reforms including deregulation and decentralisation of political power anticipated

Source: UNCTAD



Year	FDI in US\$ Billions
2013	6
2014	4.9
2015	3.87
2016	3.09
Next 5 years	Over 20

# Mozambique: a favourable jurisdiction

- Montepuez Mining Licence Application Submitted: Approval imminent
- **Environmental Impact Assessment** completed and accepted
- July 2017: A secured allocation of **100,000tpa port capacity** with Portos e Caminhos de Ferro de Moçambique (CFM) at port of Pemba.
- CFM has also undertaken to work with Battery to ensure that Battery will have **sufficient stockpile and warehouse capacity** at port of Pemba.
- Investigating **downstream** opportunities in Mozambique
- **Government** pro-actively engaging resources companies to invest in-country
- Battery has the support of and is committed to supporting its **local communities** and government development plans



Please refer to additional details on slide 7: Disclaimer & Competent Persons Statement

## OVERVIEW

Stable multi-party democracy since 1994

Population - 27 million

## ECONOMY

One of Africa's fastest growing economies

## STRATEGIC POSITION

Access to markets – China, India as well as Europe

Strategic access to markets in SADC - 270m people

## RESOURCES

Energy - Hydro, Gas and Thermal

Minerals - Coal, Gold, Graphite, Heavy Sands,

Rare Earths, Precious Stones

