

# Montepuez Graphite Project

## Investor Presentation

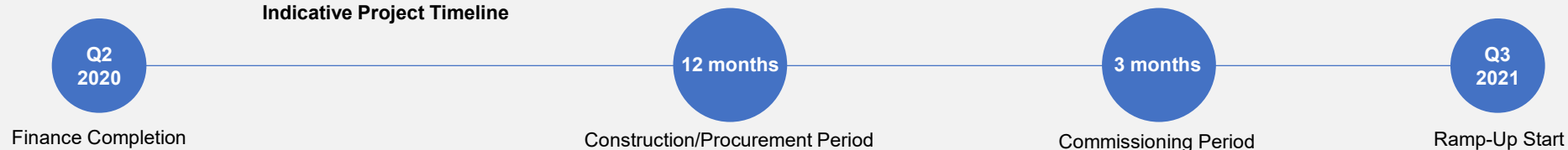
February 2020



# Montepuez Graphite Project Summary

Ore Body <sup>6</sup>		Ore resources of 119.6 million tonnes Ore reserves of 42.2 million metric tonnes	8.1% TGC <sup>1</sup> 9.3% TGC
Operations <sup>6</sup>		Plant feed of 500,000 tpa Product output of +50,000 tpa	12% TGC 96% TGC
OPEX <sup>7</sup>		Opex is in the lowest cost quartile / tonne in the global market	US\$ 356 / tonne <sup>2</sup>
CAPEX <sup>7</sup>		CAPITAL required to achieve steady state operations US\$ 64.5mn	Mine US\$ 44.7mn Other US\$ 19.8mn
Offtake		70% of production is secured by offtake contracts	35 ktpa <sup>3</sup>
Global Markets		Traditional markets: refractories & foundries, expanded graphite, lubricants New markets: LiB <sup>4</sup> , Energy storage systems, domestic, portable	CAGR 7% CAGR 29%
Growth		Graphite market is poised to grow due to a growing demand for EV <sup>5</sup>	35 million EVs to be produced in 2030
Community		Located 60km north west from Montepuez in the Cabo Delgado province, northern Mozambique A robust community engagement programme already established	US\$ 6.4mn Social Investments Budget <sup>8</sup>

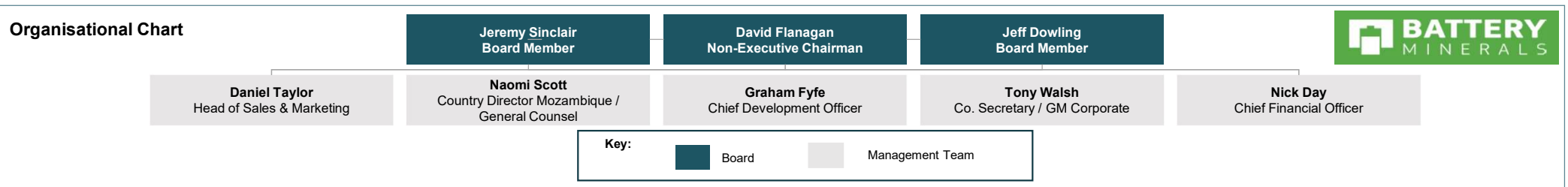
## Indicative Project Timeline



<sup>1</sup> TGC: Total Graphite Content; <sup>2</sup> First 10 year average C1 cost; <sup>3</sup> ktpa: Kilo tonnes per annum; <sup>4</sup> Lithium-ion battery; <sup>5</sup> EV: Electric Vehicles; <sup>6</sup> See 4 December 2018 announcement for full details; <sup>7</sup> See December 2019 Quarterly Report release on 28 January 2020 for details; <sup>8</sup> Community Investment amount capped over LOM

# The Team

Battery Minerals executive team has a combined 100 years of industry experience with extensive experience in Mozambique and African project development and operations



## David Flanagan, Business strategy and management

Over 25 years experience in the multi commodity mining and mineral exploration industry in Australia, Indonesia and Africa



## Graham Fyfe, Project development and execution

Over 30 years of experience in the mining industry, involved in the design and commissioning of multiple mines throughout Africa. Held key roles with De Beers, Fluor, Rio Tinto and Bellzone Mining Plc



## Tony Walsh, Corporate Finance and Governance

30 years of experience in listed companies (ASX, ASIC) with expertise in developing mining operations and project finance. Held key roles with Atlas Iron, Independence Group (IGO) and ASX

## Naomi Scott, Relationship management and sustainable development

20 years of experience working in Africa: 10 years in development aid, 10 years supporting mining companies with risk and compliance. Former CEO of Anglo American in Mozambique



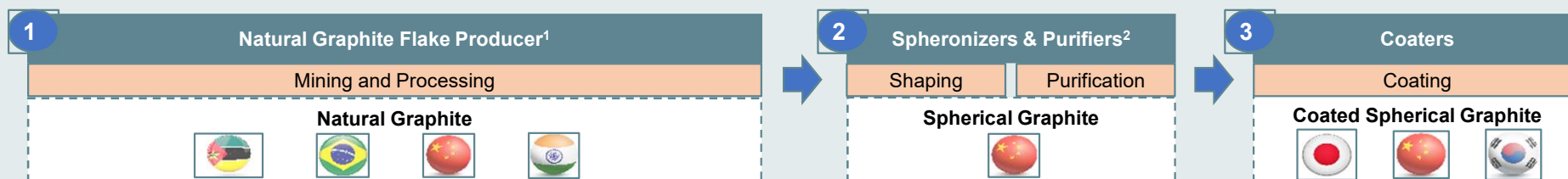
## Daniel Taylor, Pricing economics and offtake negotiations

20 years of experience in international bulk commodities sales and marketing. Access to an extensive global senior network that spans across multiple sectors in the minerals industry



# The Market – Traditional Graphite

Demand for graphite is expected to double in the next five years, driven by LiB manufacturers and traditional markets



Raw natural flake graphite concentrate is sold into traditional markets

## Refractories and Foundries

- Utilize graphite for metallurgy and hot metal casting
- Forecast to be 43% of the total graphite demand in 2023
- CAGR of 7.5% (2019-2023)

## Expanded Graphite

- Flame retardant products, base material for gaskets and seals
- Forecast to be 7% of the total graphite market in 2023
- CAGR of 6% (2019-2023)

## Other traditional uses

- Lubricants, carburisation, friction products, graphite shapes, carbon brushes
- Accounts for 6% of the total graphite demand in 2023
- CAGR of 8.3% (2019-2023)



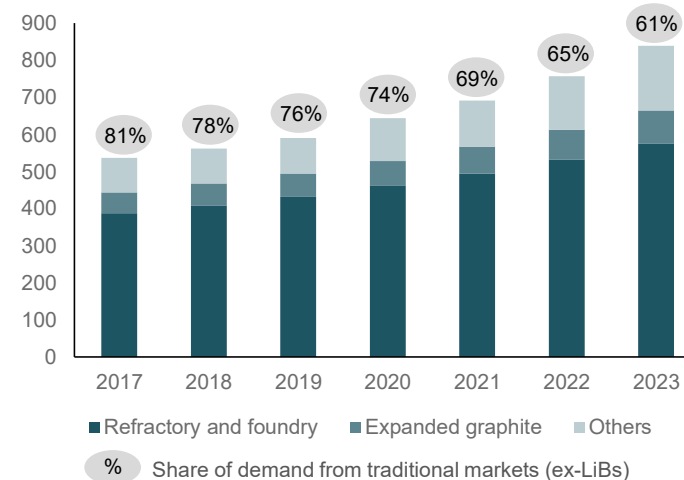
Foundry



Fire retardant

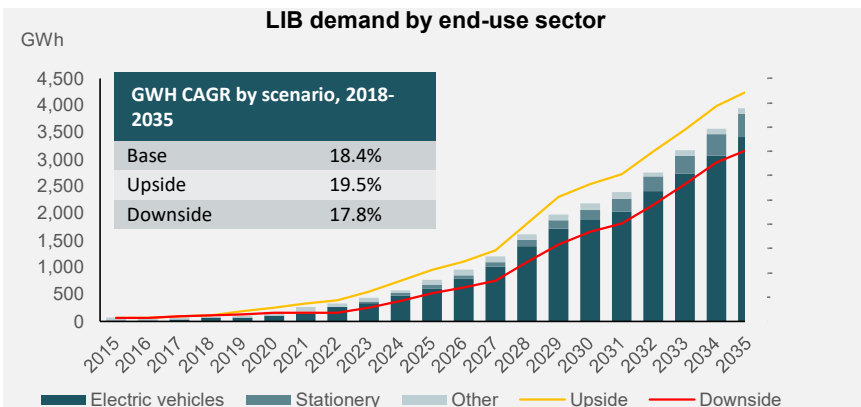
## Traditional Market Demand for Natural Flake Graphite (Ex-LiBs)

Tonnes (000's)

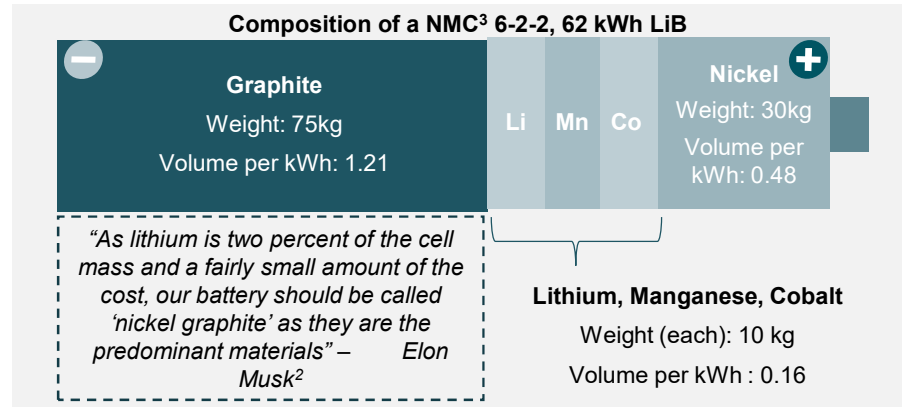


# The Market – LiB

A paradigm shift in the demand for sustainable transportation and energy storage is on the horizon ...



... where graphite will play a central role as an essential mineral towards the manufacturing of LiBs

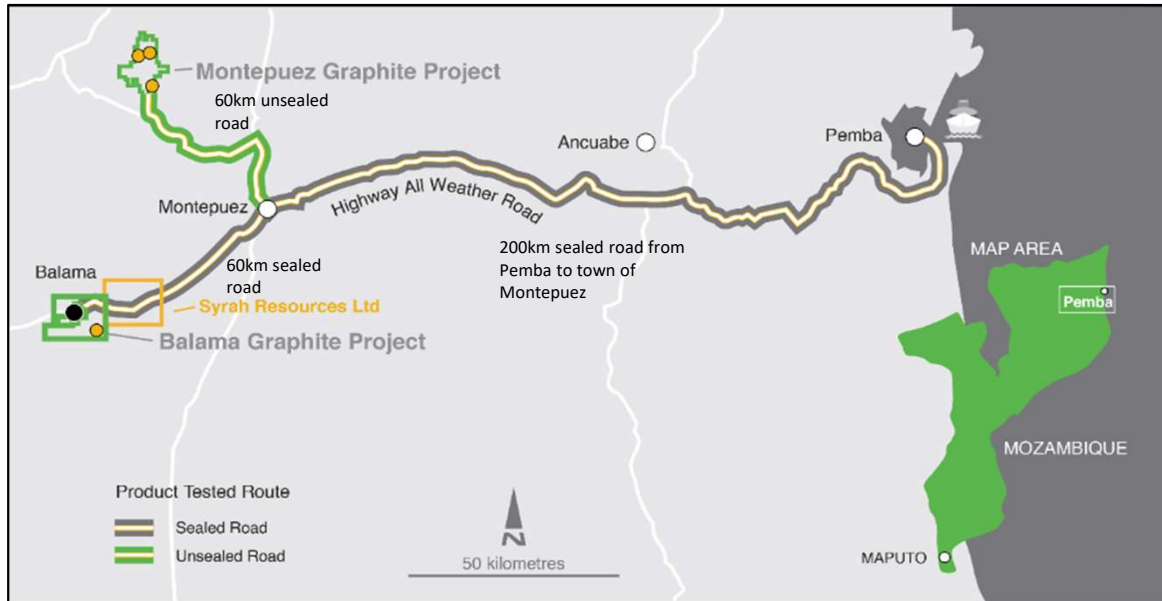


**Coated spherical graphite is used specifically for the manufacturing of the anode in LiBs = 800t natural graphite / 1GWh**

- Electric Vehicles (2019 – 2029)**
- Production is expected to reach 30mn units in 2030 ~1,900 GWh LiB sales
  - LiB demand from EV markets growth ~CAGR of 29%
- Energy Storage (2019 – 2029)**
- Energy storage installations ~150 GWh LiB sales in 2030
  - Stationary storage demand expected to growth ~CAGR of 38%
- Other battery uses (2019 – 2029)**
- Electronics, portable batteries ~100 GWh of LiB sales in 2030
  - Portable electronics market's forecasted CAGR of 4.3%



# Our Projects



<b>Montepuez Graphite Project</b>	<b>50,000tpa graphite flake concentrate at 96%TGC (Stage 1) growing to 100,000tpa (Stage 2) <sup>1</sup></b>
<b>Balama Central Project</b>	<b>58,000tpa graphite flake concentrate at 96%TGC <sup>1</sup></b>
<b>International Airport</b>	<b>Located at Pemba, 2.5hr flight from OR Tambo Airport, Johannesburg</b>
<b>Port Allocation Approved</b>	<b>at Pemba Port for a minimum 100,000tpa of graphite concentrate</b>

<b>Pemba Port</b>	
<b>Berth</b>	<b>8 – 12m deep draft</b>
<b>Capacity</b>	<b>3 – 4 Mtpa cargo and goods</b>
<b>Vessel Size</b>	<b>Geared – 30,000dwt to 40,000dwt</b>
<b>Shipping Route</b>	<b>China / USA / Europe via Durban or Dar es Salaam</b>
<b>Upgrade in Progress</b>	<b>24/7 operations, double capacity, increase security</b>



# Montepuez Graphite Project – Ore Bodies

Project is underpinned by high quality and strategically large resources and reserves providing a +50 life of mine

## November 2018 Ore Reserve Estimate<sup>1</sup>

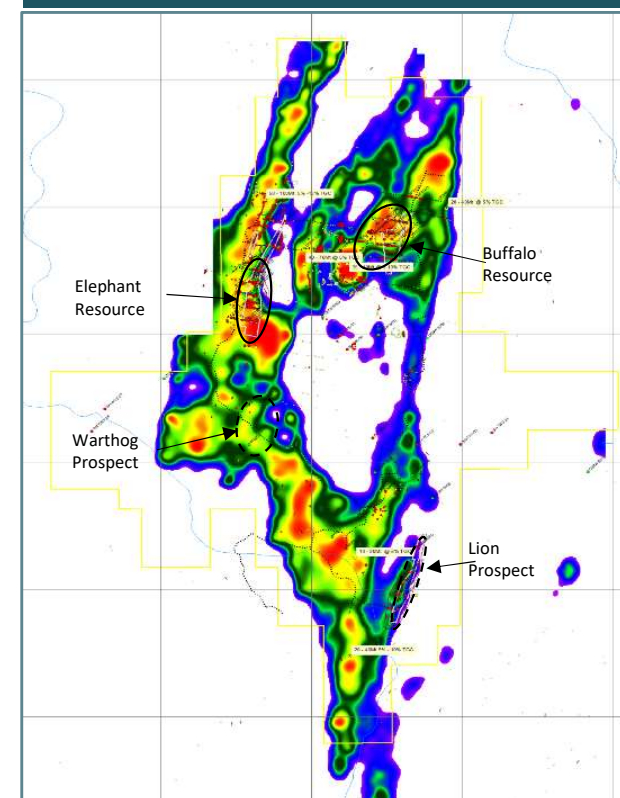
Ore Type	Ore (Mt)	%TGC
Weathered	5.98	8.34%
Fresh	36.21	9.42%
<b>Total</b>	<b>42.19</b>	<b>9.27%</b>

## October 2018 Ore Resource Estimate<sup>2</sup>

Ore Type	Ore (Mt)	%TGC
Weathered	10.3	7.7%
Fresh	109.2	8.1%
<b>Total</b>	<b>119.6</b>	<b>8.1%</b>



## Significant Exploration Upside



1. See ASX announcement on 4 December 2018 for "Increase in Montepuez Graphite Reserve" for detailed disclosure. Mineral Resources 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
2. See ASX announcement on 18<sup>th</sup> October 2018 for "Group Resources Update" for detailed disclosure. Mineral Resources 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

# Montepuez Graphite Project – Stage 1

With Site infrastructure completed, The Project is positioned for construction start and a fast track path to production

## Stage 1 Project Metrics<sup>1</sup>

Plant Feed	500,000	tpa
Grade Processed	12	%TGC
Product Output	+50,000	tpa
Product Grade	96	%TGC
Recovery – weathered ore	80	%
Recovery – fresh ore	85	%

## Project Achievements

Approvals	Mining and Environmental Licenses Approved
Detailed Design	+50% complete
Long Lead Items	Key long lead items ordered
Operations camp	100 person Operations camp constructed and operational
Site Infrastructure	Roads and plant earthworks completed
Tailings Storage Facility	Phase 1 wall completed, securing operational water source
Production Start	15 months from construction start



1. See ASX announcement on 4 December 2018 for "Increase in Montepuez Graphite Reserve" for detailed disclosure. Mineral Resources 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



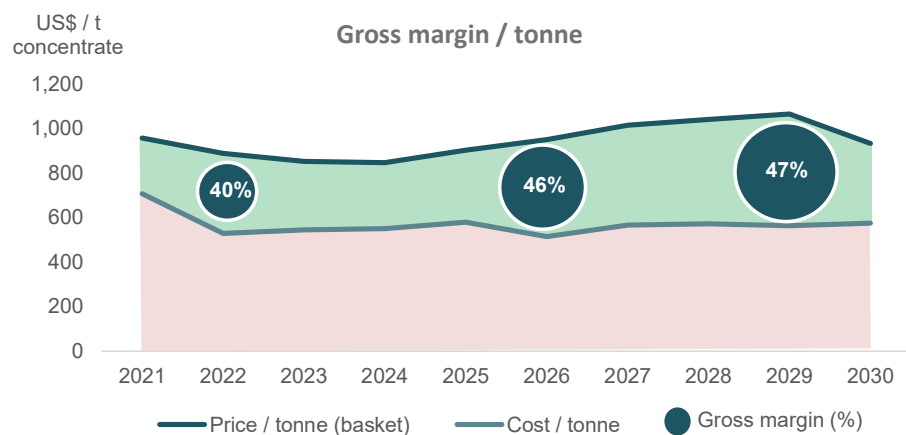
# Montepuez Graphite Project Stage 1 Economics<sup>4</sup>

Low CAPEX and lowest cost quartile OPEX with a year 1 to 10 basket price of US\$ 923/t concentrate = Robust project economics

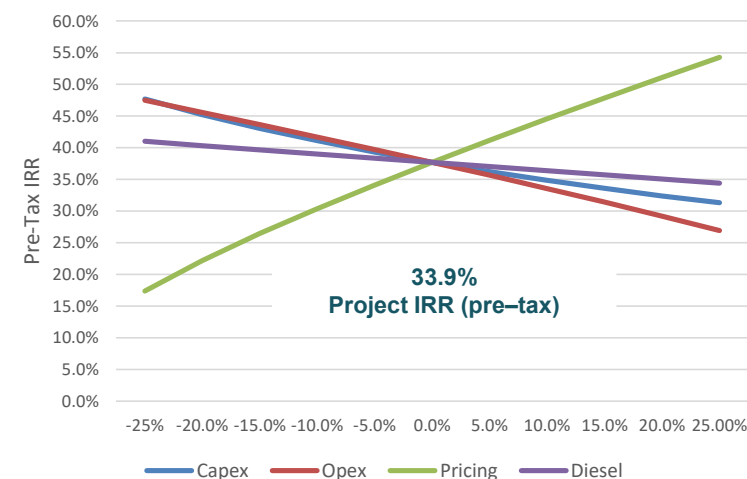
Capital Breakdown <sup>1</sup>	US\$ mn
Process Plant and Power	27.4
Mining Equipment and Light Vehicles	4.0
Earthworks and Roads	0.7
Buildings, offices and workshops	2.6
Owner's Costs	3.7
Pre-production Costs	4.5
Freight	1.8
<b>Total</b>	<b>44.7</b>

Year 1 – 10 Basket Price<sup>2</sup> US\$ 923 / t flake

Year 1 – 10 C1 <sup>3</sup> Cost Breakdown	US\$/t flake
Mining	100
Processing	114
General and Administration	47
Logistics	62
Maintenance	33
<b>Total</b>	<b>356</b>



Sensitivity Analysis - Impacts on Pre-Tax IRR



# Balama Central Graphite Project

Project is underpinned by high grade and quality resources and reserves providing a +35 life of mine

## Balama Central Project Metrics

Plant Feed	500,000	tpa
Grade Processed	12.5	%TGC
Product Output	58,000	tpa
Product Grade	96	%TGC
Recovery	93	%

## Project Achievements

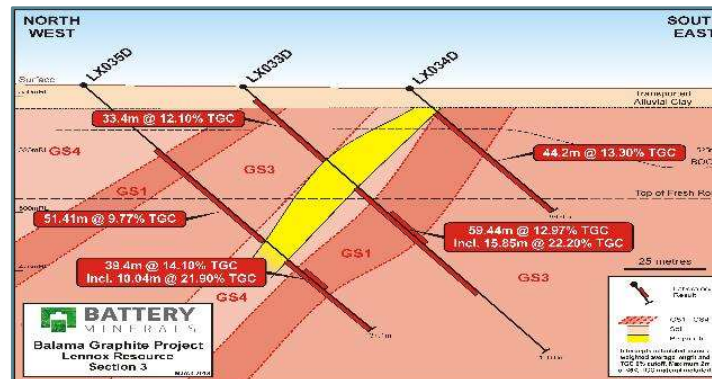
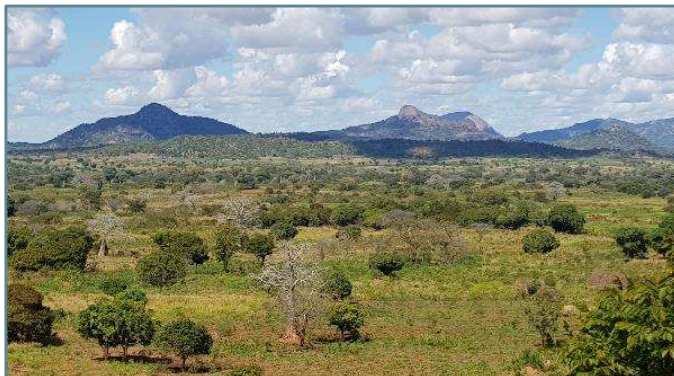
Approvals	Mining and Environmental Licenses submission in June 2019
Feasibility Study	Completed in December 2018
Project Capex	US\$69.4mn
Opex	US\$363 /t concentrate
Feasibility Study	Completed

## November 2018 Ore Reserve Estimate<sup>1</sup>

Ore Type	Ore (Mt)	%TGC
Weathered	5.44	10.74%
Fresh	14.21	11.19%
<b>Total</b>	<b>19.66</b>	<b>11.06%</b>

## October 2018 Ore Resource Estimate<sup>2</sup>

Ore Type	Ore (Mt)	%TGC
Weathered	7.4	12.88%
Fresh	25.5	10.00%
<b>Total</b>	<b>32.9</b>	<b>11.06%</b>



# Our Community

Battery Minerals will continue to make key social and environmental interventions in the local community over the life of mine

## Food Security

- Support improved crop production capability through land preparation
- Develop robust storage facilities
- Support farmers by procuring produce



## Health

- Upgraded Mirate Health Centre facilities – completed
- Food support to clinic – ongoing
- Perform baseline surveys
- Provide basic first aid training



## Education

- Built fully equipped school – completed
- Provide teaching materials
- Assist in curriculum expansion
- Provide job training and technical internships



## Training

- Committed to employ 75% of workforce locally
- Conducted a census to assess skill levels, and developed strategy to promote upskilling
- Employing innovative mobile teaching methods



## Infrastructure

- Improve local roads from mine site to Montepuez
- Provide boreholes to communities with identified needs – completed and ongoing



Battery Minerals plans to enter into partnerships and commission a reputable local monitoring and evaluation company to assess environmental and social risks and develop strategies to mitigate effects on flora, fauna and the local community



### Impacto (Environmental Project and Studies)

- Partnership to develop strategies to mitigate effects on flora and fauna
- One of the foremost and reputable Mozambican environmental consultancy



### University in Pemba

- Partnership established to provide continuous independent risk assessments
- providing sponsored students with learning opportunities



### Chamber of Mines of Mozambique (CMM)

- CMM is a vehicle through which the mining sector engages with Government and the broader society in Mozambique



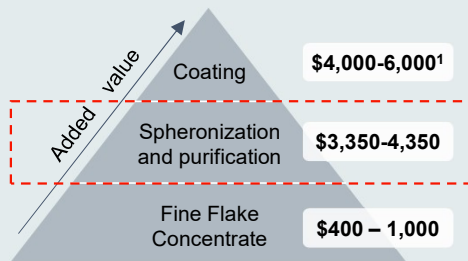
### Multi-stakeholder platform (MSP)

- Cabo Delgado MSP is a platform that promotes inclusive sustainable development
- Battery Minerals is the only mining company to participate in the platform

# The Value of Vertical Integration

The anode pre-cursor value chain is currently controlled by China, an opportunity exists to enter this valuable vertically integrated with the increased participation of strategic non-Chinese customers who rely on anode pre-cursor material supply

## Added value to investors through increased margins



Operational cost synergies result in higher margins being captured through vertical integration

Potential downstream participation for Battery Minerals

## High Purity and Anode Precursor Material Testwork

<b>Urbix</b>	<b>MOU signed to assess developing purification operation in Mozambique</b>
<b>Purification Process</b>	<b>Low temperature , 80 °C, non-HF chemical process, with no impact on flake morphology</b>
<b>Spheroidizing Process</b>	<b>Non-Chinese, high recovery machine</b>
<b>Purification Preliminary Results</b>	<b>Grades of 99.95% TGC achieved across all flake sizes</b>
<b>Spheroidization Preliminary Results</b>	<b>Recoveries of &gt;75% achieved, TAP density &gt; 1g/cm<sup>3</sup></b>
<b>Other</b>	<b>High purity Montepuez flake successfully used in USA Dept of Energy nuclear applications grant funded test program</b>
<b>Path Forward</b>	<b>Bulk testwork programme planned once Urbix pilot plant operational – Q3, 2020</b>



Flake Concentrate

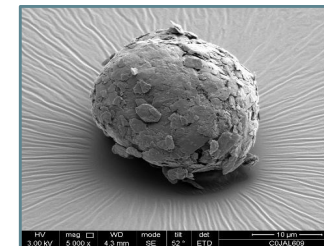


Graphite Concentrate @ 96%TGC



proprietary innovative purification and spheroidisation technology

Purified Spherical Graphite @ +99.95% TGC



Spherical Graphite

Sources: BMI Price Assessment September 2019, Battery Minerals, TWA Analysis;

<sup>1</sup> Market pricing estimates sourced from the public domain as prices for coated SPG are typically agreed upon between the buyer and seller

# Our Path Forward

Battery Minerals is positioned to respond to the growing, diversified graphite market

## Fund The Project

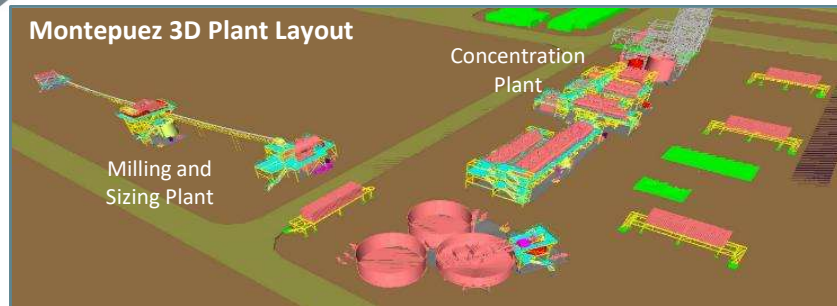
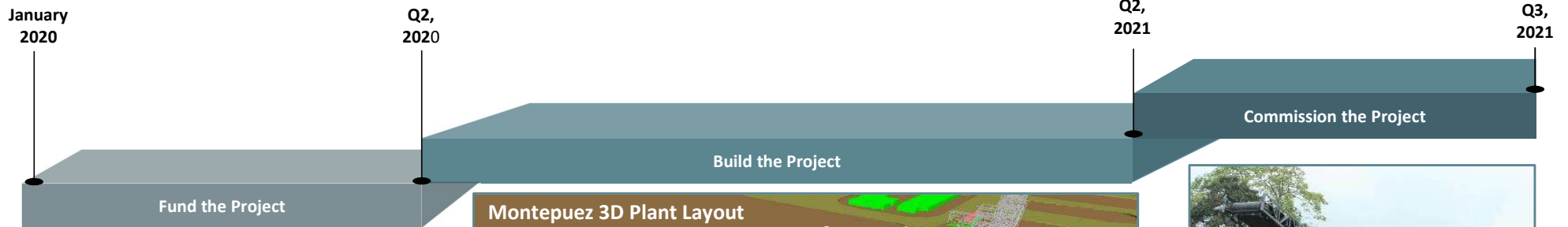
- ThirdWay Africa appointed as lead financial advisor<sup>1</sup>
- ThirdWay specialises in securing funding for African projects
- All due diligence and associated documentation completed
- Funding process started

## Build the Project

- Complete due diligence
- Appoint EPCM
- Appoint key vendors and specialists
- Complete outstanding long lead items fabrication
- Undertake construction
- Develop the mine pits

## Commission the Project

- Wet commission the process plant
- Complete staff recruitment and training
- Implement require environmental processes
- Hand over operations to Suni Resources



<sup>1</sup> Refer Company ASX Announcement 29 August 2019

# Disclaimer

## 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.
- Battery Minerals confirms that all the material assumptions underpinning the production targets for its Montepuez and Balama Central graphite projects and any of the forecast financial information derived from these production targets, in the 4 and 12 December 2018 ASX announcements, on these projects continue to apply at the date of release of this presentation and have not materially changed. Battery Minerals confirms that it is not aware of any new information or data that all material assumptions and technical parameters underpinning the estimates in the 4 and 12 December 2018 announcements continue to apply and have not materially changed.

## Competent Persons Statement

- 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 Announcements dated 18 October 2018 and 4 December 2018 respectively, both of which are available at Battery Minerals website in the ASX announcement page.
- See ASX announcements on the Balama Central Feasibility Study dated 12 December 2018 for details, Table 1 and Competent Person Statement
- 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 ASX announcement dated 29 March 2018 entitled "Resources double at Balama Central graphite project in Mozambique" for full details and Competent Persons Statement) 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 in the ASX announcement dated 29 March 2018 and entitled "Resources double at Balama Central Graphite Project in Mozambique" which is available at Battery Minerals Limited website [www.batteryminerals.com.au](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.
- 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.
- Battery Minerals Limited released a vanadium mineral resource on 29 April, 2019. All material assumption underpinning this mineral resource continue to apply at the date of this release and have not materially changed.

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- This ASX Announcement does not constitute an offer to acquire or sell or a solicitation of an offer to sell or purchase any securities in any jurisdiction. In particular, this ASX Announcement does not constitute an offer, solicitation or sale to any U.S. person or in the United States or any state or jurisdiction in which such an offer, tender offer, solicitation or sale would be unlawful. The securities referred to herein have not been and will not be registered under the United States Securities Act of 1933, as amended (the "Securities Act"), and neither such securities nor any interest or participation therein may not be offered, or sold, pledged or otherwise transferred, directly or indirectly, in the United States or to any U.S. person absent registration or an available exemption from, or a transaction not subject to, registration under the United States Securities Act of 1933.

# Appendix - Resource and Reserve Details

## Montepuez Graphite Project

Montepuez Graphite Project <sup>1</sup> November 2018 Ore Reserve Estimate			
Deposit	Ore type	Ore (Mt)	TGC (%)
Buffalo	Weathered	3.58	8.31
	Fresh	16.80	10.06
	<b>Subtotal</b>	<b>20.38</b>	<b>9.75</b>
Elephant	Weathered	2.41	8.39
	Fresh	19.41	8.87
	<b>Subtotal</b>	<b>21.82</b>	<b>8.82</b>
TOTAL	Weathered	5.98	8.34
	Fresh	36.21	9.42
	<b>TOTAL</b>	<b>42.19</b>	<b>9.27</b>

Montepuez 2018 Mineral Resource Estimate (2.5% TGC Cut-off) <sup>2</sup>			
Total Mineral Resource			
Type	Mt	% TGC	Cont. Graphite (1000 tonnes)
Weathered	10.3	7.7	790
Primary	109.2	8.1	8,870
<b>Total</b>	<b>119.6</b>	<b>8.1</b>	<b>9,660</b>

## Balama Central Graphite Project

Ore Reserve Estimate (6% TGC cut-off grade) <sup>3</sup>			
Pit	Ore type	Ore (Mt)	TGC (%)
Lennox	Weathered	3.36	11.09
	Fresh	8.19	11.70
	<b>Total</b>	<b>11.55</b>	<b>11.52</b>
Byron	Weathered	2.08	10.18
	Fresh	6.02	10.49
	<b>Total</b>	<b>8.11</b>	<b>10.41</b>
Total	Weathered	5.44	10.74
	Fresh	14.21	11.19
	<b>Total</b>	<b>19.66</b>	<b>11.06</b>

Total Mineral Resource <sup>4</sup>				
Domain	Type	Tonnage	TGC	Cont. Graphite
		Mt	%	kt
High Grade GS1 (>10% TGC)	Weathered	3.2	15.7	498
	Primary	9.1	15.7	1,429
	<b>Sub-Total</b>	<b>12.3</b>	<b>15.7</b>	<b>1,927</b>
Medium Grade (6 to 10% TGC)	Weathered	4.2	6.9	288
	Primary	16.4	6.9	1,142
	<b>Sub-Total</b>	<b>20.6</b>	<b>6.9</b>	<b>1,430</b>
<b>Total</b>	<b>Total</b>	<b>32.9</b>	<b>10.2</b>	<b>3,357</b>

<sup>1</sup> See ASX announcement on 4 December 2018 for "Increase in Montepuez Graphite Reserve" for detailed disclosure.

<sup>2</sup> See ASX announcement on 18<sup>th</sup> October 2018 for "Group Resources Update" for detailed disclosure.

<sup>3</sup> See ASX announcement on 12 December 2018 for "Maiden Reserve for Balama" for detailed disclosure.

<sup>4</sup> See ASX announcement on 29 March 2018 for "Mineral Resource Doubles at Balama" for detailed disclosure.



# THANK YOU



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