

## Balama Central Graphite Project Scoping Study shows outstanding economics

Battery Minerals Limited (ASX:BAT) is pleased to report it has completed a Scoping Study on the Company's Balama Central Graphite Project located in Mozambique. The Scoping Study describes a project with globally competitive low operating costs and a high value concentrate with potential to deliver strong operating cashflows over a long period.

### **Scoping Study Parameters - Cautionary Statements**

*This Scoping Study has been undertaken to determine the potential viability of an open pit mine and graphite processing plant constructed onsite at the Balama Central Project and to form a view of the order of magnitude potential and a basis on which to complete further studies. The Scoping Study has been prepared to an accuracy level of  $\pm 35\%$ . The results should not be considered a profit forecast or production forecast.*

*The Scoping Study is a preliminary technical and economic study of the potential viability of the Balama Central Project. In accordance with the ASX Listing Rules, the Company advises it is based on low-level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work including infill drilling and appropriate studies are ongoing and they will contribute to our ability to estimate any ore reserves or to provide any assurance of an economic development case. This study does not warrant that reserves will be reported.*

*The total production target is based on Indicated resource exclusively. The Company has concluded that it has reasonable grounds for disclosing a production target.*

*The Scoping Study is based on the material assumptions outlined elsewhere in this announcement. These include assumptions about the availability of funding. While Battery Minerals considers all the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.*

*To achieve the range outcomes indicated in the Scoping Study, additional funding will likely be required. Investors should note that there is no certainty that Battery Minerals will be able to raise funding when needed. It is also possible that such funding may only be available on terms that dilute or otherwise affect the value of the Battery Minerals' existing shares. It is possible that Battery Minerals could fund development of Balama Central from cashflow from its Montepuez graphite project, approximately 60kms north of Balama Central, which is currently in the early stages of construction. It is also possible that Battery Minerals could pursue other 'value realisation' strategies such as sale, partial sale, or joint venture of the Project. If it does, this could materially reduce Battery Minerals' proportionate ownership of the Project.*

*The Company has concluded it has a reasonable basis for providing the forward looking statements included in this announcement and believes that it has a reasonable basis to expect it will be able to fund the development of the Project. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.*

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### Highlights of Balama Central Scoping Study

- **Scoping study highlights the potential to generate significant financial returns from the Balama Central Graphite Project in Mozambique**
- **Key findings of the study include:**
  - **Capex\* US\$50m**
  - **Opex\* US\$372/t (includes blasting costs)**
  - **Payback less than 1.5 years (see Appendix 3 for sensitivity analysis)**
- **Average Ore Grade – 10.6% total graphitic carbon (TGC)**
- **Initial production rate 53,000 – 55,000tpa of graphite concentrate**
- **Mine life of greater than 10 years based on Indicated Resources only**
- **Concentrate grade 97% TGC**
- **Concentrate recoveries of 93%**
- **A product basket price of US\$1,221 FOB per tonne\*\***

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\* - See Appendix 2 for ranges used.

\*\* - Based on January 2018 Benchmark Mineral Intelligence product sales data

Battery Minerals (ASX Code: BAT) is pleased to advise that it has completed a scoping study on its Balama Central Graphite Project in Mozambique.

The study is an interim step towards completing a feasibility study which Battery Minerals expects to finish in mid-2018. The scoping study targeted product specifications, operations costs, capital costs and a development strategy that would ideally complement the Company's other graphite development project, Montepuez. On completing this scoping study, the Company now has sufficient tonnes in the indicated resource category to support a highly commercial second mining operation at Balama Central.

Graphite is the dominant anode material used in manufacturing re-chargeable lithium ion batteries (LiB). With ever-increasing momentum around LiB's and electric vehicles, this is unlikely to change in the medium term. Battery Minerals remains focused on becoming a significant provider of ethically-produced, high-quality material for this market.

Battery Minerals Managing Director David Flanagan said the study showed Balama Central had outstanding potential.

"We have identified a very strong operating and financial balance for Balama Central and while the outcome is extremely strong we still think there is room for further improvements as part of the feasibility studies," Mr. Flanagan said.

"With this robust development strategy now clearly mapped out, we will move to secure our mining concession, progress the detailed engineering and design work and additional offtake agreements."

A summary of the key Balama Central Scoping study findings are shown below:

	February 2018
LoM years	10 years
Annual concentrate production tonnes	55,000t pa
Project payback period years	<1.5 years
Grade of graphite mined (TGC %)	10.6%
OPEX <sup>(1)</sup>	US\$372/t
CAPEX estimate (pre-production)	US\$50 million
Ave Grade of graphite concentrate shipped (TGC %)	96-97%

1. Total cash costs FOB Pemba – all site costs plus transport, excluding royalties (see ranges used in Appendix 2)

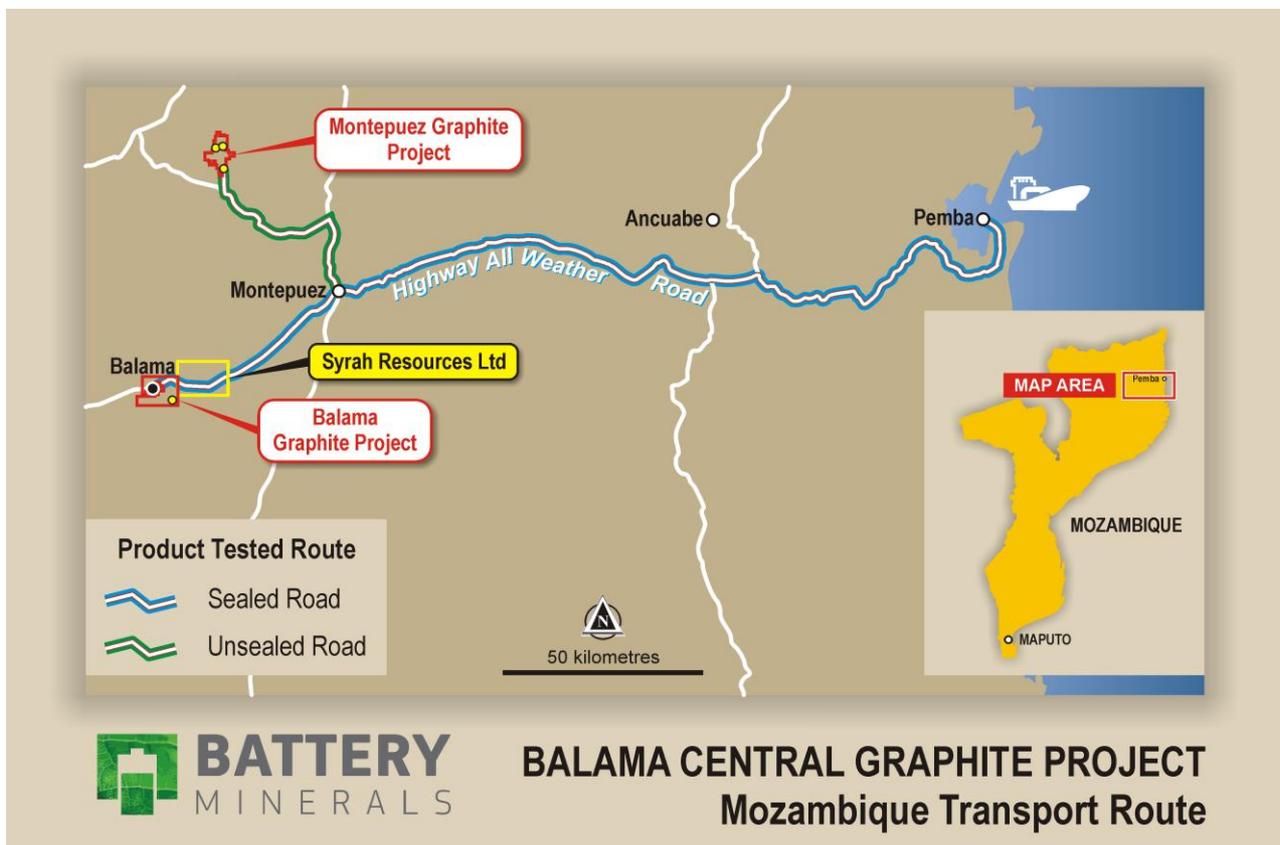


Figure 2. Infrastructure map illustrating proximity to the nearest deep water ports. Note: Last ~50kms to Balama is currently unsealed.

Battery Minerals (ASX Code: BAT) is pleased to advise that it has completed its Scoping Study on its Balama Central Project with CAPEX being US\$50.1M and OPEX per tonne of concentrate of US\$372/t based on processing ~550,000t of ore at a grade of 10.6%TGC and producing 53,000 - 55,000t pa of graphite flake concentrate at up to 97% TGC.

The objective of the Balama Central Scoping Study was to validate the decision to move into an immediate Feasibility Study, inclusive of environmental and mining concession applications, which is expected to be completed mid-2018.

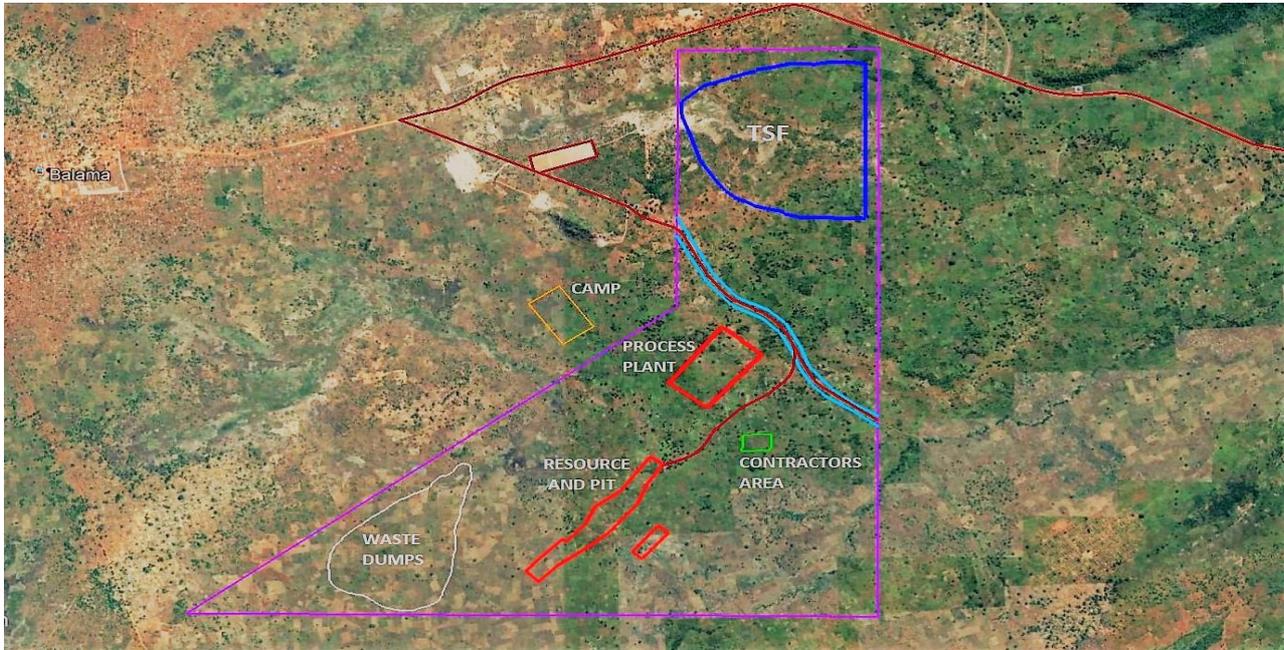


Figure. Mine layout and design showing location of the Mining Pits and waste dumps and mine infrastructure locations for plant ore stockpile, tailings storage facility, water storage dam and permanent camp

## Mine layout and design

The Scoping Study mine infrastructure items have been designed to minimise environmental impact whilst maintaining efficient capital expenditure and ongoing life-of-mine operating costs. The processed tailings will be deposited in the Tailings Storage Facility (TSF) and process water will be utilised from the mine dewatering into the process plant for re-use.

## Production Target

Under the Scoping Study, it is proposed to mine the Balama Central deposit at an average rate of ~550,000tpa at 10.6% TGC. It is proposed that 100% of this ore will be mined from the Indicated Resources of 8.9MT at 9.3% TGC (see Appendix 1 for further details which references the 21 March 2016 ASX announcement entitled “Maiden JORC Graphite Resource at Balama Central Project - Mozambique” for full details). This study does not warrant that reserves will be reported. See Appendix 4 for details of the material modifying factors underpinning the production target

## Processing Facility

Under the Scoping Study, the Balama Central process plant will initially process run of mine (ROM) ore at an average rate of ~550,000tpa at 10.6% TGC to produce 53,000 to 55,000 tonnes annually of dry graphite concentrate with a grade of approximately 97% TGC. The flowsheet has been developed based

on the results of test work performed on representative samples. The Balama Central process flowsheet is very similar to that of the Montepuez graphite project, it comprises:

- ROM pad, designated stockpile areas and ability to blend ore on pad or in ROM bin.
- Primary jaw crusher and crushed ore stockpile (COS)
- Primary closed-circuit mill.
- Rougher flotation.
- Concentrate regrinding and concentrate cleaning.
- Concentrate filtration.
- Concentrate drying, screening, and bagging.
- Tails thickening and disposal.

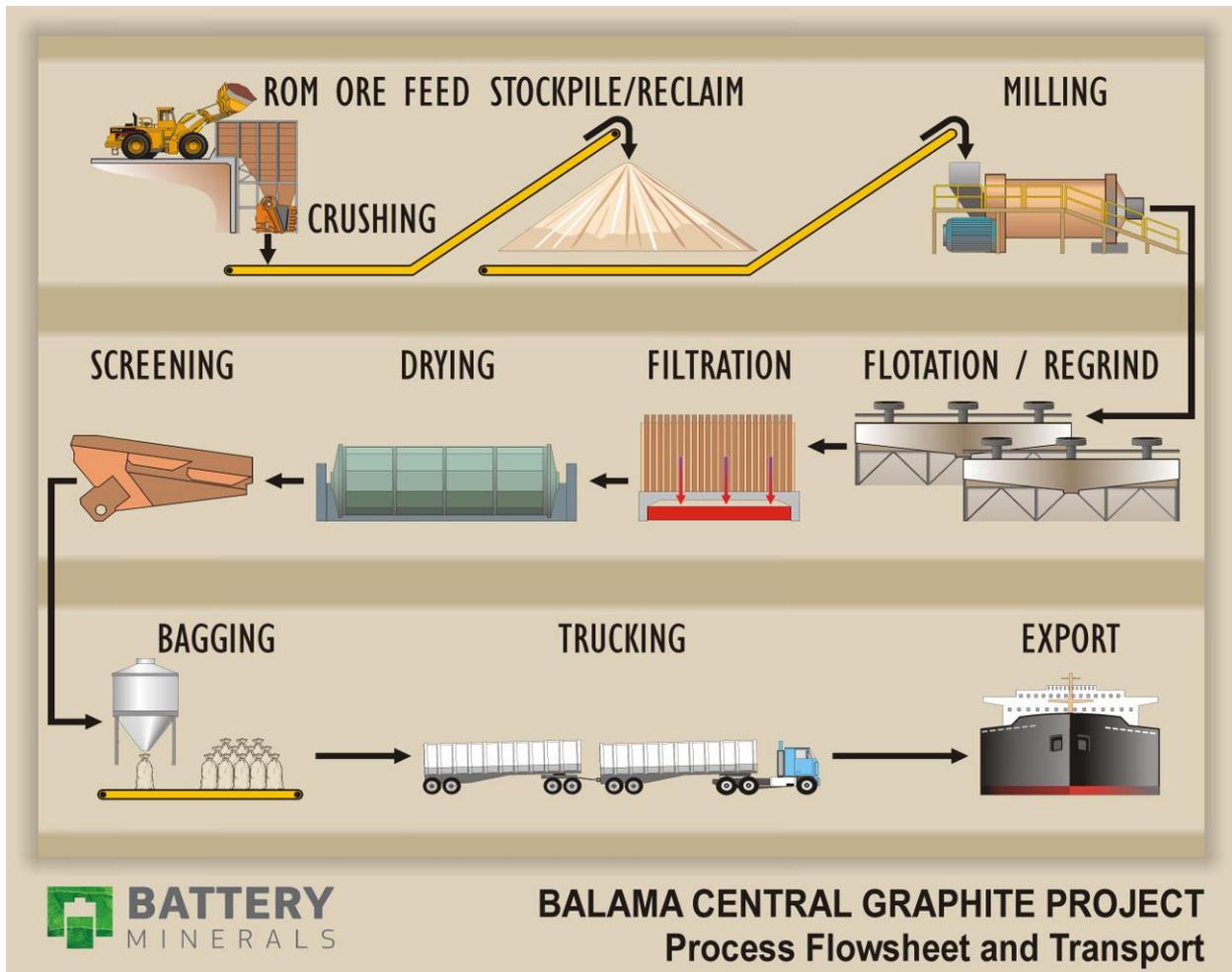


Figure. Diagrammatic flow explaining the Balama Central Graphite Project mine design and flowsheet including transport method.

### Balama Central CAPEX

The total estimated pre-production establishment capital cost for the project is US\$50.1M, including contingency, as summarised in below table (see Appendix 2 for ranges used):

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 other earthworks	\$4.6
Mine Offices and workshops	\$2.4
Owners costs	\$2.2
Pre-production Costs	\$4.6
Other	\$9.7
<b>Total Capex</b>	<b>\$50.1</b>

### Balama Central OPEX

The operating cost summary (average concentrate product) for the project is detailed below FOB Pemba (see Appendix 2 for ranges used).

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 and Earthworks (incl. Drill & Blast)	3.6	60.20
<b>TOTAL</b>	<b>20.5</b>	<b>372.05</b>

### Balama Central Flake Pricing Structure

Flake Size	Flake Size (mesh)	Flake Size (micron)	FOB Pemba (USD/t)	Product Size Split (%)
Fine	-100	-150	800	37%
Medium	+100-80	+150-180	1,025	9%
Large	+80 -50	+180 -300	1,300	25%
Jumbo	+50	+300	1,750	29%
<b>Basket</b>			<b>1,221</b>	

The Benchmark January 2018 sales price per size fraction was applied to the study nominated product size fractions of +300 microns, -300+180 microns, -180 +150 microns and -150 microns. This resulted in a weighted average concentrate “basket” price of US\$1,221 /t flake. The prices used include a US\$100/t reduction to account for shipping to China, resulting in the FOB Pemba prices.

### Project Delivery Schedule

The Project Delivery Schedule for the Balama Central Mine is as follows:

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

## Qualifications on the Balama Scoping Study

The following recommendations are made to provide additional confidence and add value to the development path for Balama.

1. Resource Development  
Further resource development work at Balama should be scheduled and executed. The primary objective should be to prove up additional high grade material, which will have a direct impact on improving the returns on any operation over 600,000 t/y ore processed per annum. The secondary objective should be to increase the ore resource.
2. Metallurgical Testwork  
Further metallurgical testwork campaigns should be completed to determine optimal conditions to maximise recovery and grade respectively and to better understand the impacts of the different ore lithologies on recovery and grade.
3. Feasibility Study  
On completion of points 1 and 2 above a Feasibility Study should be completed to finalise to a more accurate level of confidence the development and operating costs of the Balama resource. The feasibility study should be done to an appropriate level of accuracy to support a reserve determination and mining license application.
4. Community  
Due to the high density of community activities on the resource and license area, the ESIA process should be started as soon as possible to determine the process, impact and cost of transitioning the affected communities from the target mining areas to a mutually acceptable new location. This is a key risk area to project development and should not be ignored or underestimated.
5. Environmental Approval process  
In the December 2017 Quarter, Battery Minerals commenced the environmental approvals process for its Balama Central graphite project.  
As announced in October 2017, Battery Minerals plans to complete a feasibility study on its Balama Central graphite project in the middle of 2018 and will address the abovementioned five recommendations in the Balama Central feasibility study.

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#### Forward Looking Statements

Statements and material contained in this document, 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

Preliminary metallurgical testwork: The information in the Announcement dated 26 October 2017 on the Balama Central Concept Study 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 consented to the inclusion in the Announcement dated 26 October 2017 on the Balama Central Concept Study of the matters based on his information in the form and context in which it appears.

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 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 report that relates to Battery Minerals' 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 announcement 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.

#### Notes to this announcement:

- Mineral Resources quoted in this announcement are based on Mineral Resources included in Battery Minerals' ASX release dated 21 March 2016 - Maiden JORC Graphite Resource at Balama Central Project - Mozambique) prepared by a competent person in accordance with the requirements in Appendix 5A (JORC Code).
- Operating Cost projections excludes provision for National Ownership (anticipated to be ~5%), Community investment and 32% corporate income tax rate and 20% mineral resource rent tax.
- Mineral Resources quoted in this announcement are based on Mineral Resources included in Battery Minerals' ASX release dated 21 March 2016) prepared by a competent person in accordance with the requirements in Appendix 5A (JORC Code)
- Accuracy on Scoping study numbers is +/-35%
- \$ - OPEX, CAPEX and any basket price for graphite concentrate are all in US dollars

## Appendix 1 – Balama Central Mineral Resources

Battery Minerals published its updated Mineral Resources for the Balama Central Project on 21 March 2016 (see 21 March 2016 ASX announcement entitled “Maiden JORC Graphite Resource at Balama Central Project - Mozambique” for full details)

### Balama Central Graphite Project March 2016 Mineral Resource Estimate (6% TGC Cut-off) Balama Central Resource

Indicated Mineral Resource					
Type	Tonnage Mt	TGC %	V <sub>2</sub> O <sub>5</sub> %	Contained Graphite kt	Contained V <sub>2</sub> O <sub>5</sub> kt
Weathered	2.1	9.9	0.17	205	4
Primary	6.9	9.2	0.15	631	11
<b>Total</b>	<b>8.9</b>	<b>9.3</b>	<b>0.16</b>	<b>836</b>	<b>15</b>

Inferred Mineral Resource					
Type	Tonnage Mt	TGC %	V <sub>2</sub> O <sub>5</sub> %	Contained Graphite kt	Contained V <sub>2</sub> O <sub>5</sub> kt
Weathered	2.0	12.2	0.27	244	5
Primary	5.3	11.7	0.28	619	15
<b>Total</b>	<b>7.3</b>	<b>11.8</b>	<b>0.27</b>	<b>863</b>	<b>20</b>

Total Mineral Resource					
Type	Tonnage Mt	TGC %	V <sub>2</sub> O <sub>5</sub> %	Contained Graphite kt	Contained V <sub>2</sub> O <sub>5</sub> kt
Weathered	4.1	11.0	0.22	449	9
Primary	12.2	10.3	0.21	1,250	25
<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 dated 21 March 2016 ASX announcement entitled “Maiden JORC Graphite Resource at Balama Central Project - Mozambique” for full details.

#### March 2016 Mineral Resource Estimate (6% TGC Cut-off) Notes:

1. Totals may differ due to rounding, Mineral Resources reported on a dry in-situ basis.
2. Flake sizes for the Mineral Resource are tabulated in Tables 2 to 4 below.
3. The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Robert Dennis who is a full-time employee of RPM and a Member of the AusIMM and AIG. Mr. Dennis has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to qualify as a Competent Person as defined in the JORC Code (2012).
4. All Mineral Resources figures reported in the table above represent estimates at 14 March 2016. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
5. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code – JORC 2012 Ed).
6. Reporting cut-off grade selected based on other known economically viable deposits around the world.
7. TGC = total graphitic carbon.

## Appendix 2 - Balama Central CAPEX estimate ranges

Range of estimated costs:

CAPEX - AREA	US \$mil Est. Low	US \$mil Est. High	US \$mil Est. Cost
Process Plant	\$17.7	\$21.6	<b>\$19.6</b>
Mining fleet and maintenance workshops	\$3.8	\$4.6	<b>\$4.2</b>
Camp infrastructure and fit-out	\$2.5	\$3.1	<b>\$2.8</b>
Tailings Storage Facility and other earthworks	\$4.1	\$5.0	<b>\$4.6</b>
Mine Offices and workshops	\$2.2	\$2.6	<b>\$2.4</b>
Owners costs	\$2.0	\$2.4	<b>\$2.2</b>
Pre-production Costs	\$4.1	\$5.1	<b>\$4.6</b>
Other	\$8.8	\$10.7	<b>\$9.7</b>
<b>Total Capex *</b>	<b>\$45.2</b>	<b>\$55.1</b>	<b>\$50.1</b>

\* - In February 2017 Battery Minerals completed a Definitive Feasibility Study (DFS) and in October 2017 completed an optimised Value Engineering Study (VES) on its Montepuez graphite project, located approximately 60kms north of Balama Central. The above CAPEX numbers for Balama Central are based on these studies and the Balama Central scoping study. Note: The second phase of Balama Central for an additional 50,000 to 55,000tpa of graphite concentrate is expected to have a CAPEX of US\$30 to US\$35 million, subject to the same qualifications to this scoping study and material modifying factors underpinning any production target outlined in this announcement.

## Balama Central OPEX

Range of estimated costs:

Area	US \$mil Est. Low	US \$mil Est. High	Est Annual Cost \$mil	Unit Cost US\$/t
Labour	4.1	5.0	<b>4.6</b>	82.88
Power	3.4	4.2	<b>3.8</b>	68.28
Reagents and Consumables	2.0	2.4	<b>2.2</b>	39.13
Maintenance Materials	0.6	0.8	<b>0.7</b>	12.71
General and Administration	2.0	2.5	<b>2.3</b>	40.99
Product Logistics	3.1	3.7	<b>3.4</b>	61.87
Mining and Earthworks (incl. Drill & Blast)	3.3	4.0	<b>3.6</b>	60.20
<b>TOTAL OPEX *</b>	<b>18.5</b>	<b>22.6</b>	<b>20.5</b>	<b>372.05</b>

\* - In February 2017 Battery Minerals completed a DFS and in October 2017 completed an optimised VES on its Montepuez graphite project, located approximately 60kms north of Balama Central. The above OPEX numbers for Balama Central are based on these studies and the Balama Central scoping study.

### Appendix 3 - Sensitivity Analysis on Payback period

#### Graphite Price

Graphite Flake Price	Payback - years
-10%	1.82
-5%	1.67
0%	1.55
5%	1.44
10%	1.35

#### Capital Costs

Capital Costs	Payback - years
-10%	1.40
-5%	1.47
0%	1.55
5%	1.62
10%	1.69

#### Operating Costs

Opex	Payback - years
-10%	1.48
-5%	1.51
0%	1.55
5%	1.58
10%	1.62

#### Recovery

Recovery	Payback - years
-10%	1.80
-5%	1.66
0%	1.55
5%	1.45
10%	1.36

#### **Appendix 4 - Material modifying factors underpinning the production target**

The following should be read in conjunction with the “Qualifications on the Balama Scoping Study” included in the body of this announcement.

##### Sampling techniques

- Bulk sample was extracted by hand from an open pit
- Top soil and overburden was removed
- Representative ore was extracted by shovel and bagged at the site
- Representative ore was identified by the company geologist
- Pit measurement was used to define the extraction area

##### Metallurgical factors or assumptions

- The metallurgical process is a standard process for graphite flotation
- The technology is well tested and used extensively in the industry
- Material tested is representative of the weathered oxidized graphite ore in the resource.
- Further testwork planned to validate other lithologies performance prior to further studies
- 500kg sample processed through the ALS pilot plant system to determine floatation factors, recovery and grade of flake

##### Environmental factors or assumptions

- Further environmental work on waste products will be completed during the next phase of the project development plan

##### Mining Factors or assumptions

- Open pit mining techniques of drill, blast and haul used as the basis for the mining study
- Overall slope angle: 45 degrees
- Resource Category: Measured and Indicated (Assessment excludes Inferred Resources)
- Mining Dilution 5%
- Mining Recovery 95%
- Strip ratio: 1 ore to 1.6 waste

##### Infrastructure Factors or assumptions

- Mine development includes Approval for trucking from mine site to port using bulka bags and containers
- Port access via the Port of Pemba, Mozambique. The Company has already secured a port allocation of 100,000tpa for Port of Pemba. Securing additional port capacity is subject to the execution of the relevant port access agreements with government authorities.
- Container shipping from Port of Pemba to potential customers in Asia, Europe and North America