
# Battery Minerals Limited Presentation

## Benchmark Mineral Intelligence Conference

## 6 February 2019

# Board Management

**Jeff Dowling**
Non-Exec Chairman

**David Flanagan**
Managing Director

**Brett Smith**
Non Exec Director

**Gilbert George**
Non Exec Director

**Paul Glasson**
Non Exec Director

**Ivy Chen**
Non Exec Director

**Ben Vanroon**
Chief Operating Officer

**Nick Day**
Chief Financial Officer

**Nick Stephens**
Head of Marketing

**Naomi Scott**
General Counsel

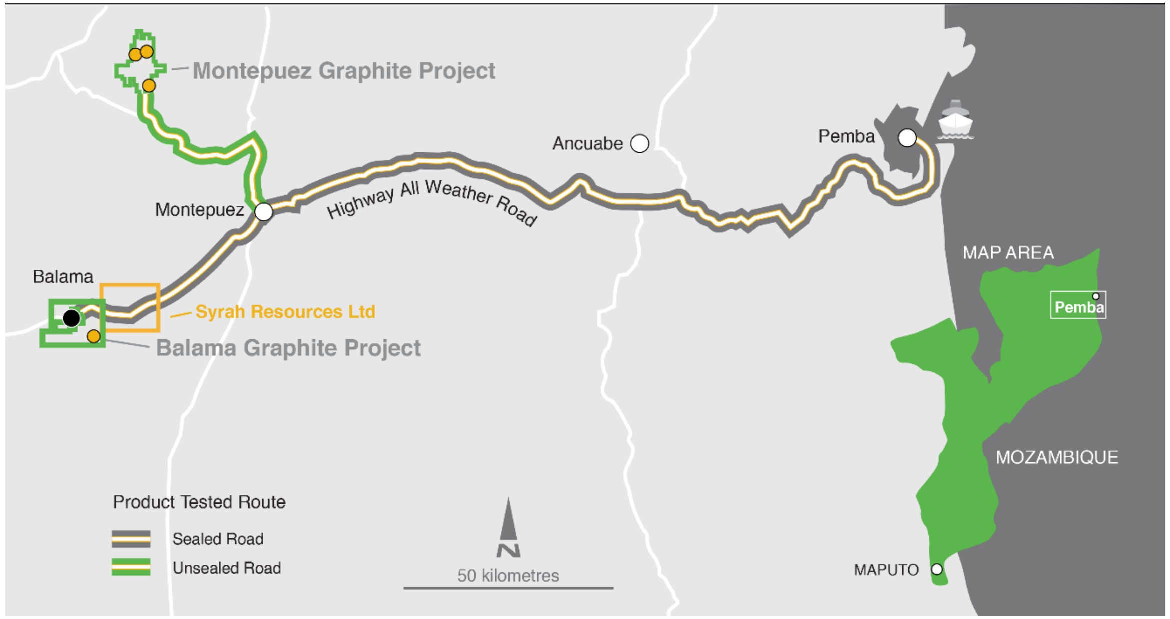
**Tony Walsh**
Company Secretary
& GM Corporate

## Share Price for last 12 months


| Capital Structure | |
|---|---|
| Shares on Issue (ASX Code: BAT) | 1,113.7M |
| Board and Management | >10% fully diluted |
| Share price (as at 25th January 2019) | 2.2cps |
| Market Capitalisation (as at 25th January 2019) | $24.5 million |
| Cash at bank (as at 31st Dec 2018) | $7.2 million |
| Enterprise Value | $17.3 million |
| Top 20 Shareholders | ~40% |
| Listed Options (ASX Code: BATO 10 cents exercise price, expire 23/7/23) | 172.3 million |
| Unlisted Options | 146.7 million |

# Montepuez Graphite Project - Phase 1

| Montepuez Graphite Project [1] | (First Module) |
|---|---|
| Capex to complete | US$39.5 M |
| C1 Opex (concentrate/t first 10yrs) | US$361/t |
| Grade processed | 11% TGC (12% for first 18yrs) |
| Plant Type and Scale | Modular, ~500ktpa |
| Projected Payback | <2 years |
| EBITDA per annum[1] | >US$30 Mpa |
| Metallurgical Recovery weathered | 80% |
| Metallurgical Recovery fresh | 85% |
| Mine Life | +50 years |
| Montepuez Basket Price[3] | US$1,064/t |
| Graphite Concentrate purity | >96% TGC |
| Mineral Resource[2] | 119.6Mt at 8.1% TGC |
| Current Ore Reserve[1] | 42.2Mt at 9.3% TGC |




Montepuez Graphite Project - Mozambique Transport Route

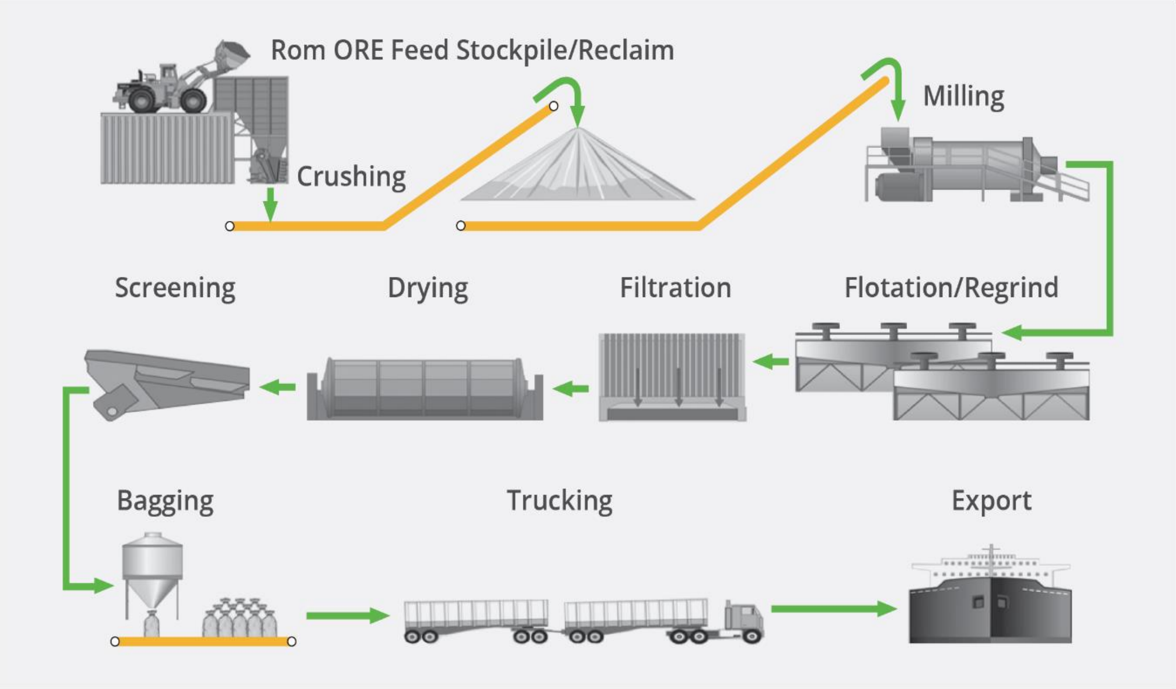
- Time to first exports ~ 15 months from finance
- Origin Capital Mandated to deliver project finance, Technical DD complete, lender engagement underway
- Mining Licence granted, port allocation, offtake agreements in place.  No regulatory impediments to commencing production and exports

1. See ASX announcement on 4 December 2018 for "Increase in Montepuez Graphite Reserve" for detailed disclosure. Ore Reserves 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 18th 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
3. Based on the 31 October 2018 Benchmark Mineral Intelligence (BMI) FOB China graphite prices (spot prices), the basket price of Montepuez 96% TGC graphite concentrate is US$1,064.63/t.

# Montepuez Graphite Project - Resources & Reserves

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

| Montepuez 2018 Mineral Resource Estimate (2.5% TGC Cut-off) [2] | | | |
|---|---|---|---|
| | Total Mineral Resource | | |
| **Type** | M Tonnes | % TGC | Cont. Graphite (1000 tonnes) |
| **Weathered** | 10.3 | 7.7 | 790 |
| **Primary** | 109.2 | 8.1 | 8,870 |
| **Total** | 119.6 | 8.1 | 9,660 |




Montepuez Graphite Project - Process Flowsheet and Transport

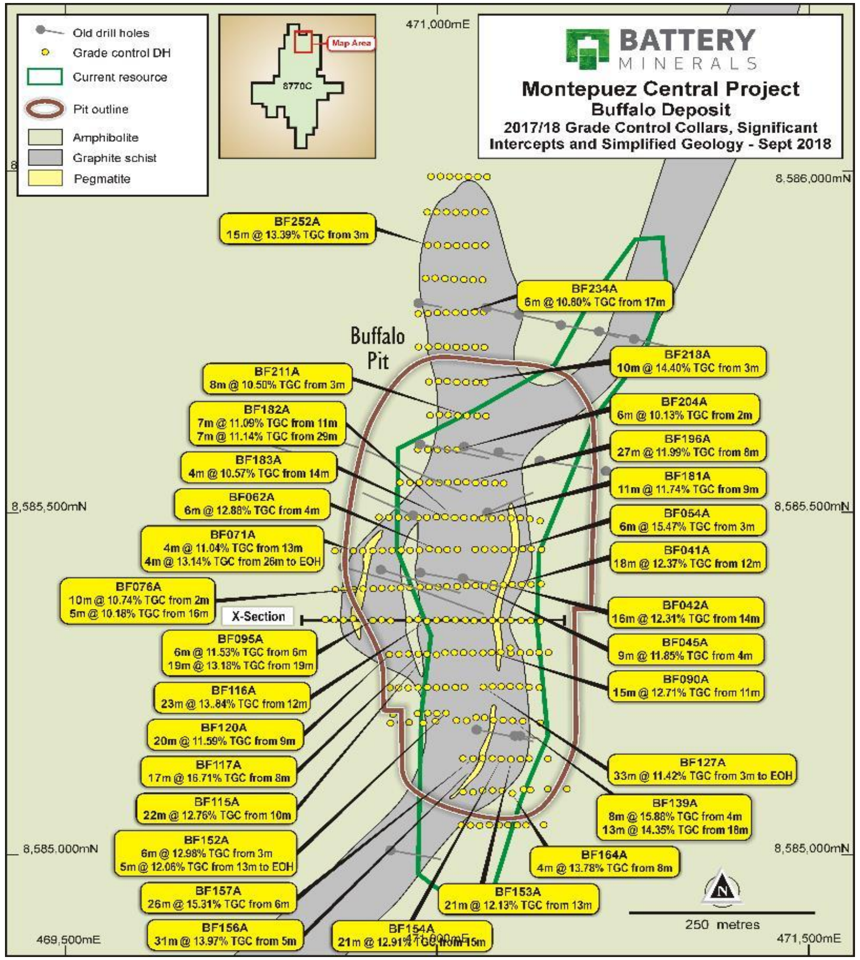
1. See ASX announcement on 4 December 2018 for "Increase in Montepuez Graphite Reserve" for detailed disclosure. Ore Reserves prepared by a competent person in accordance with the JORC Code. All material assumptions underpinning the production target in that announcement continue to apply and have not materially changed
2. See ASX announcement on 18th 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

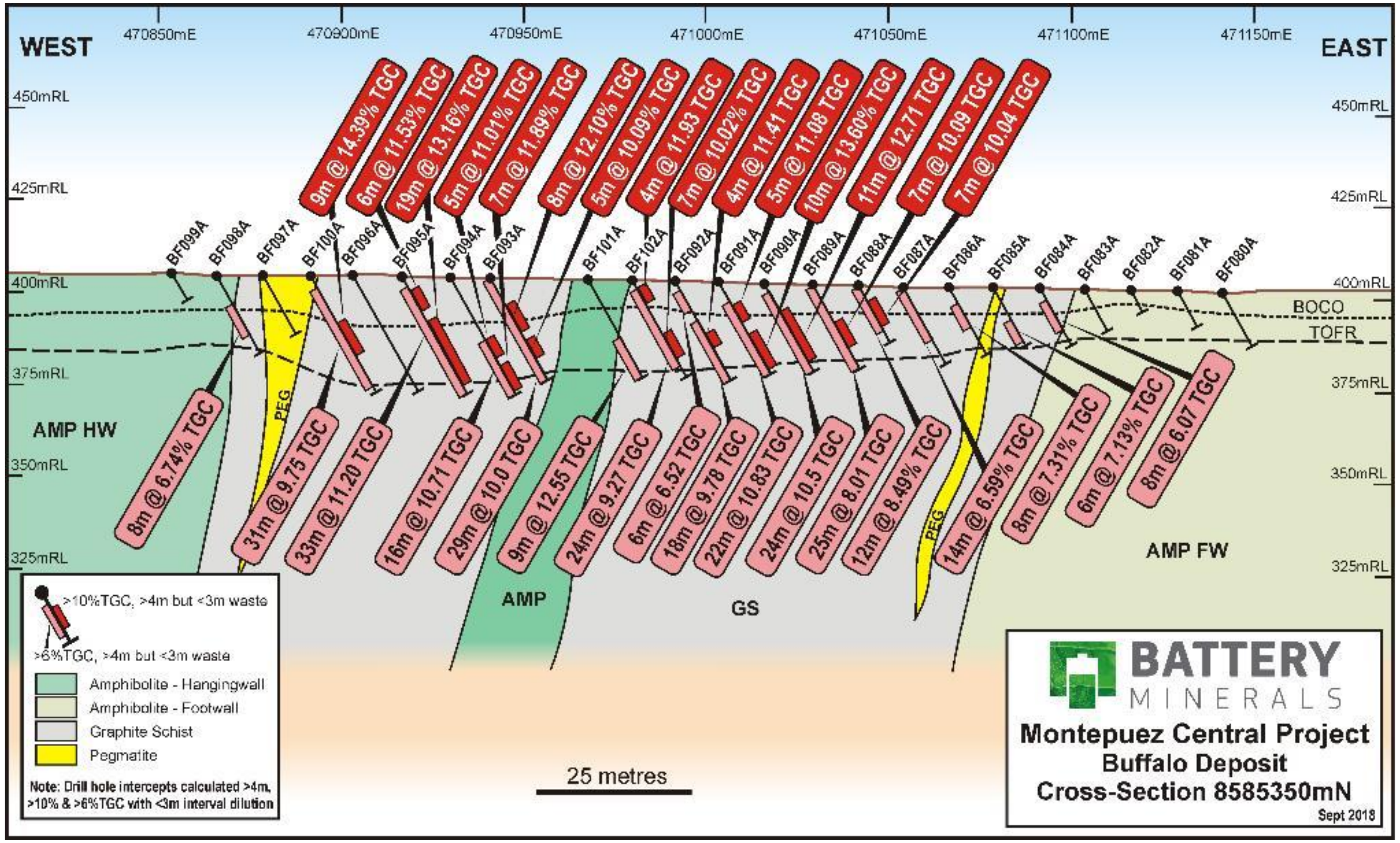
# Pemba Port

- **Port Allocation approved:** at Pemba Port for 100,000tpa of graphite concentrate
- **Pemba Port:** 8-12m deep berthing water, capacity 3 – 4Mtpa cargo and goods
- **Vessels : Geared.** 30,000t to 40,000 vessels, Container and break bulk facilities
- **Shipping Route:** Vessel availability as required as Pemba is located on coastal shipping route between Durban and Dar es Salam
- **Port Authorities** planning expansion of capacity and security for 2020
- Currently loading 12-14 containers per hour (CPH) expanding to 20 CPH

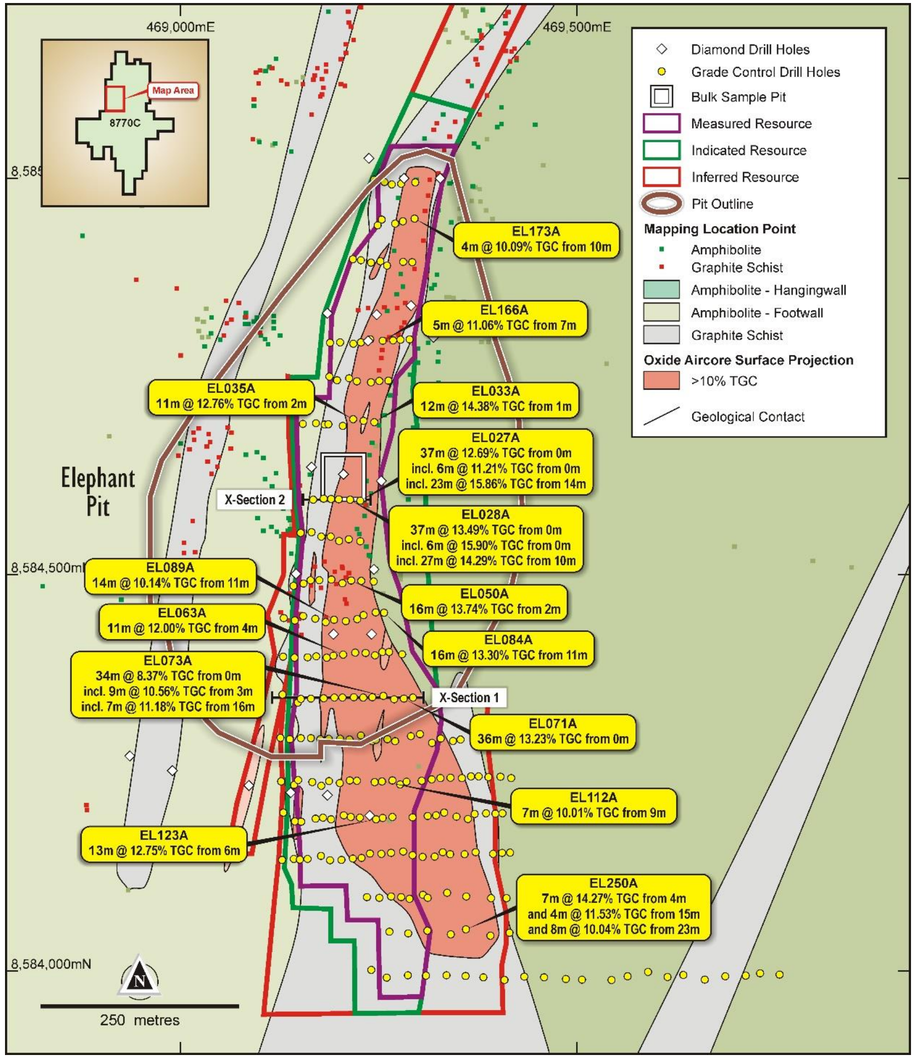


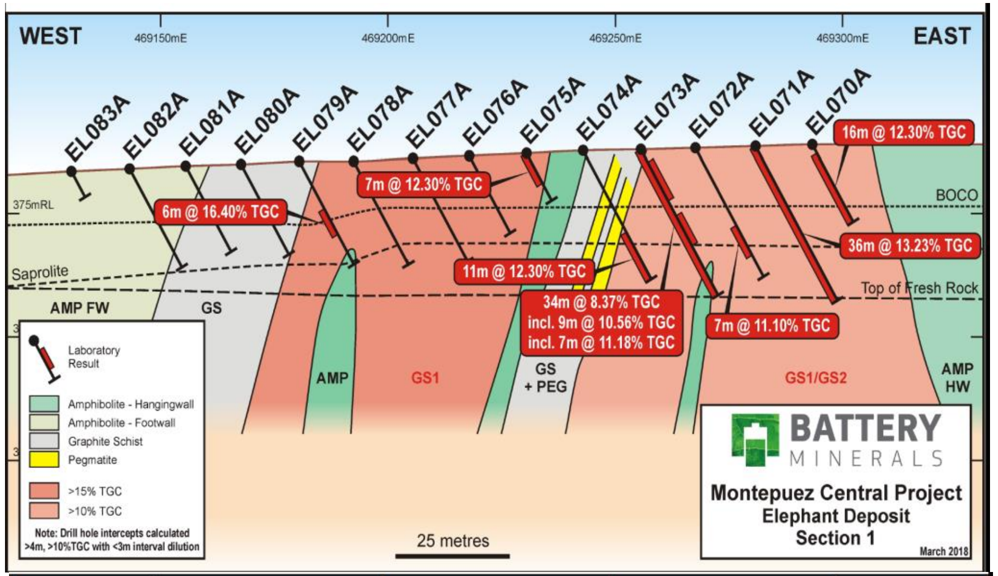
# Buffalo Deposit - RC Grade control - complete

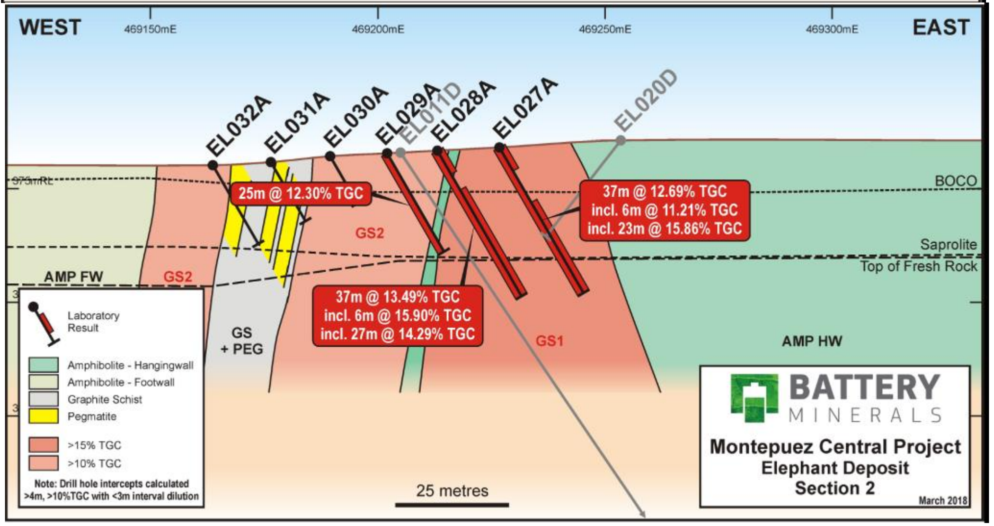


# Elephant Deposit - RC Grade control - complete



# Community Engagement - on track

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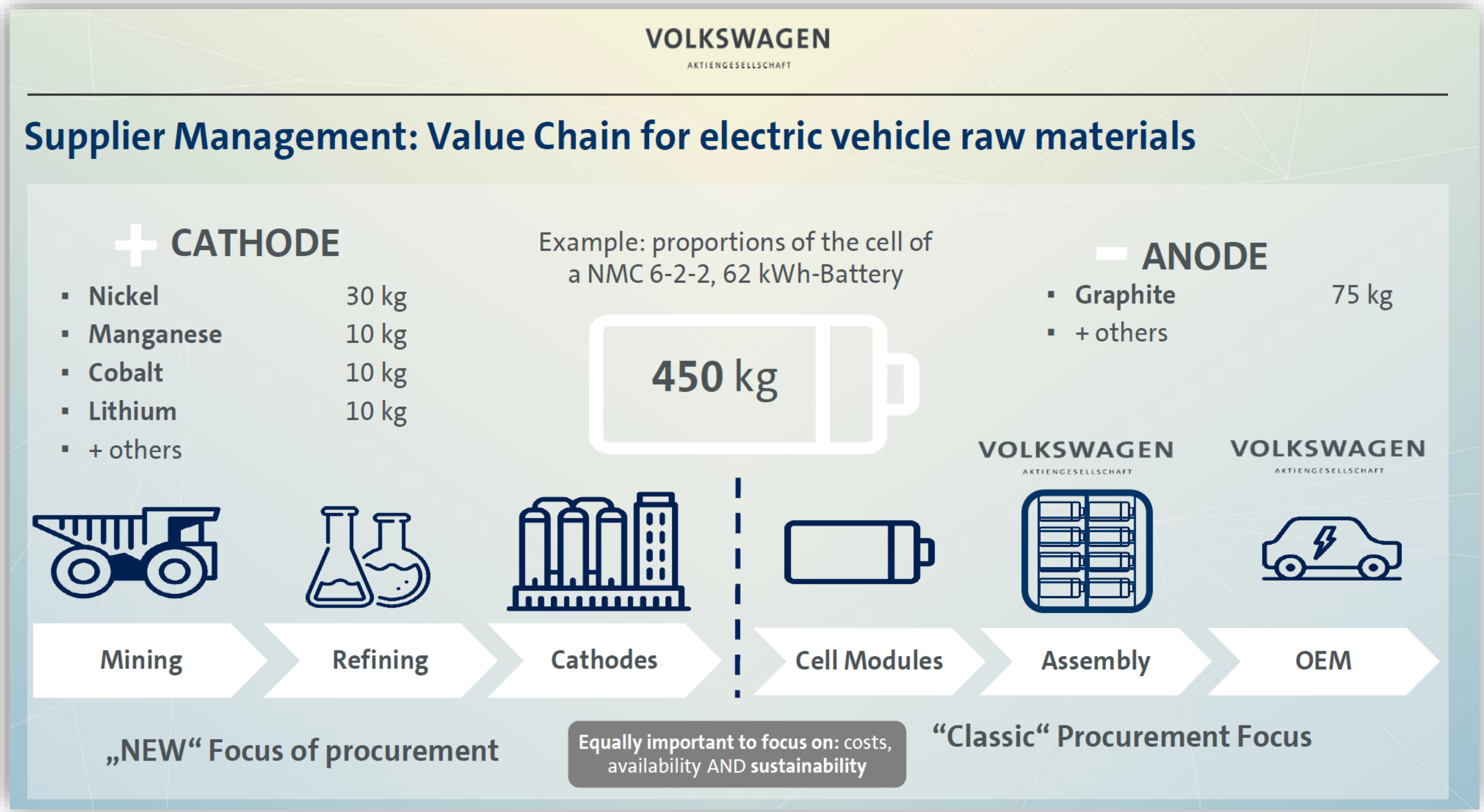
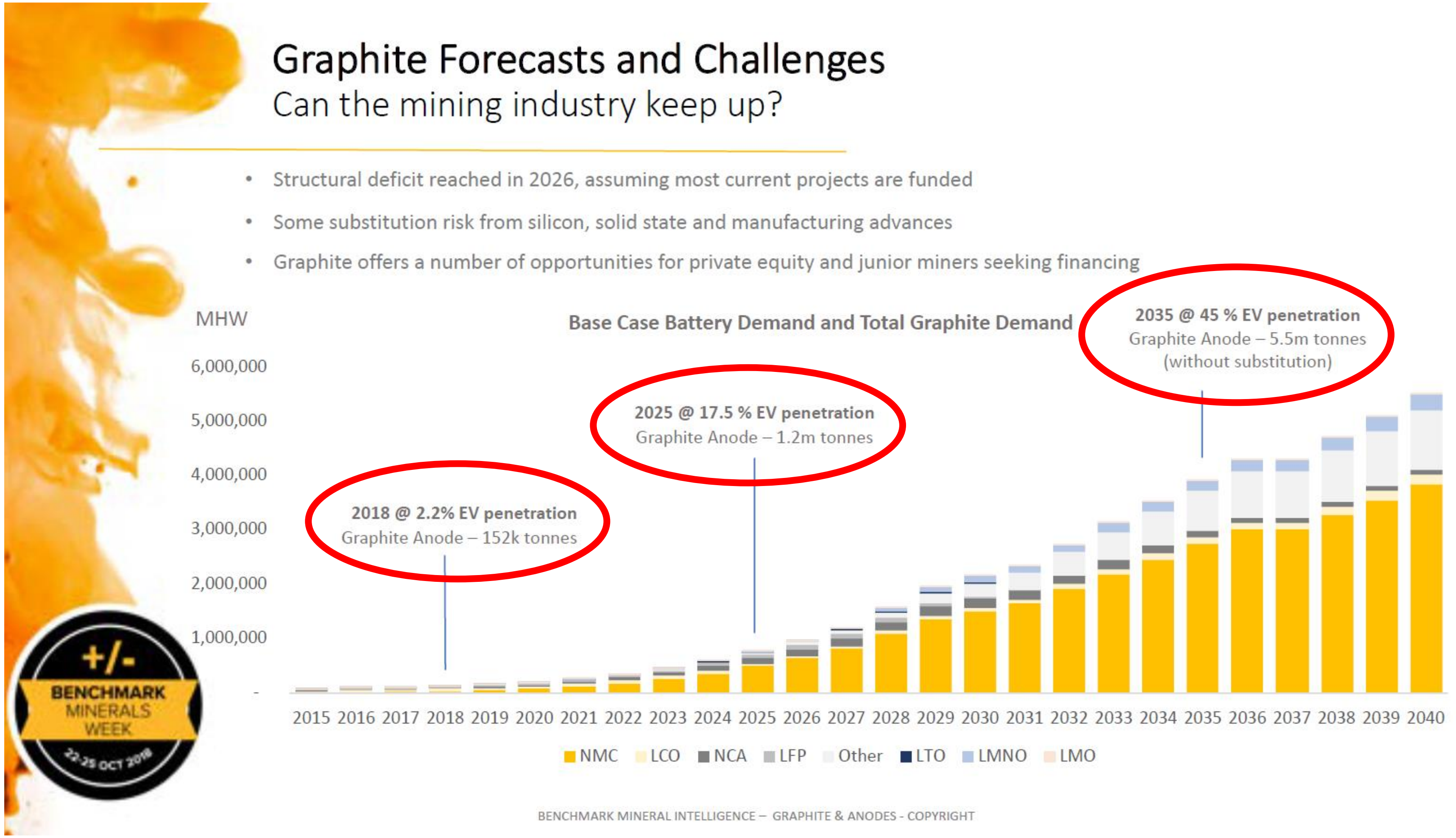
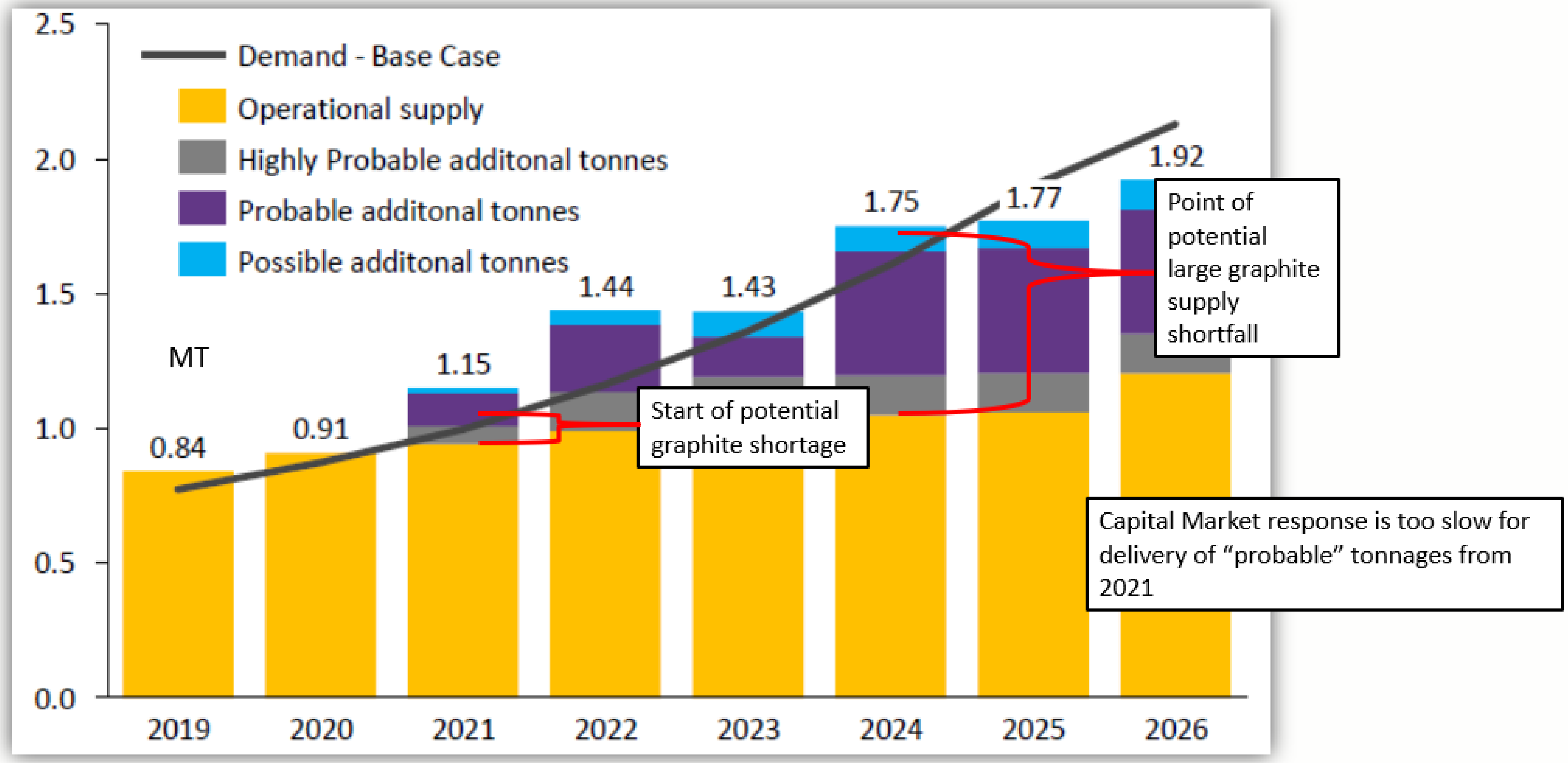
# Graphite in Electric Vehicles- VW



# Benchmark Minerals Intelligence – Megafactory Capacity Oct 18

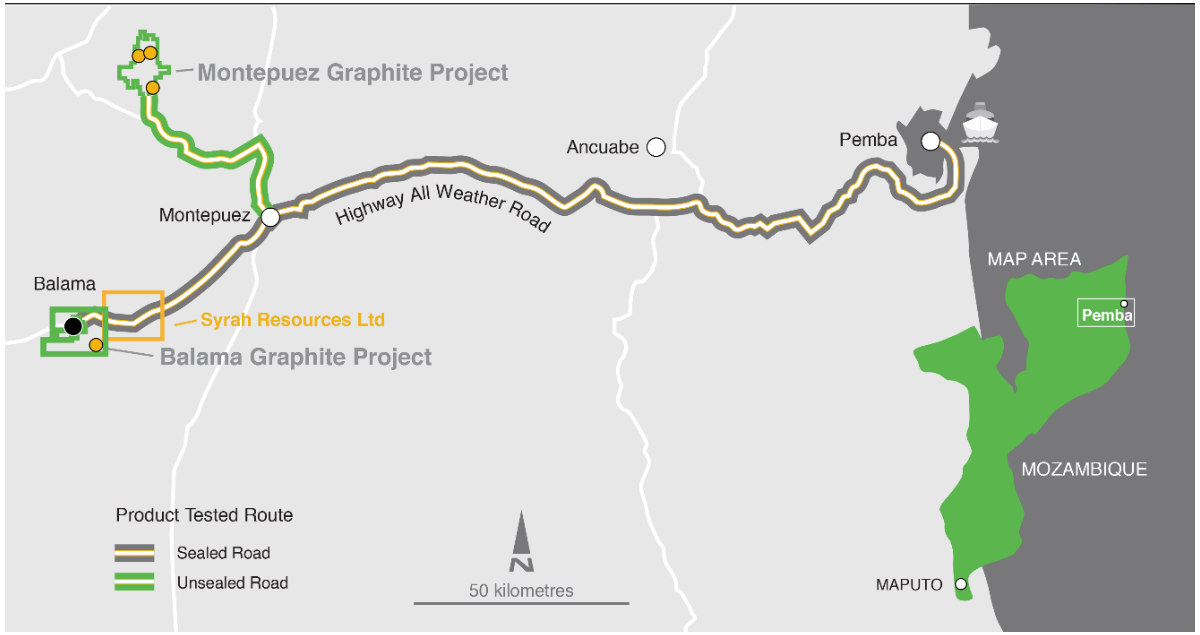


# Benchmark Minerals Intelligence Flake Supply - Demand Balance



# Balama Central Graphite Project - Feasibility Study

| Balama Central Graphite Project | Feasibility Study Dec 2018 |
|---|---|
| Annual graphite production | 58,000pa |
| Capex (pre-production) | US$69.4 M |
| Opex (concentrate/t first 8 yrs) | US$363/t |
| Grade Processed | 12.5% TGC |
| Plant Type and Scale | Modular, ~550ktpa |
| Projected Payback | ~2.3 years |
| Net Operating Cash Flow | >US$30 Mpa |
| Metallurgical Recovery | >93% |
| Mine Life | +35 years |
| Balama Central Basket Price[3] | US$1,106/t |
| Graphite Concentrate purity | +96% TGC |
| Mineral Resource[2] | 32.9Mt at 10.2% TGC |
| Ore Reserves[1] | 19.7Mt at 11.1% TGC |

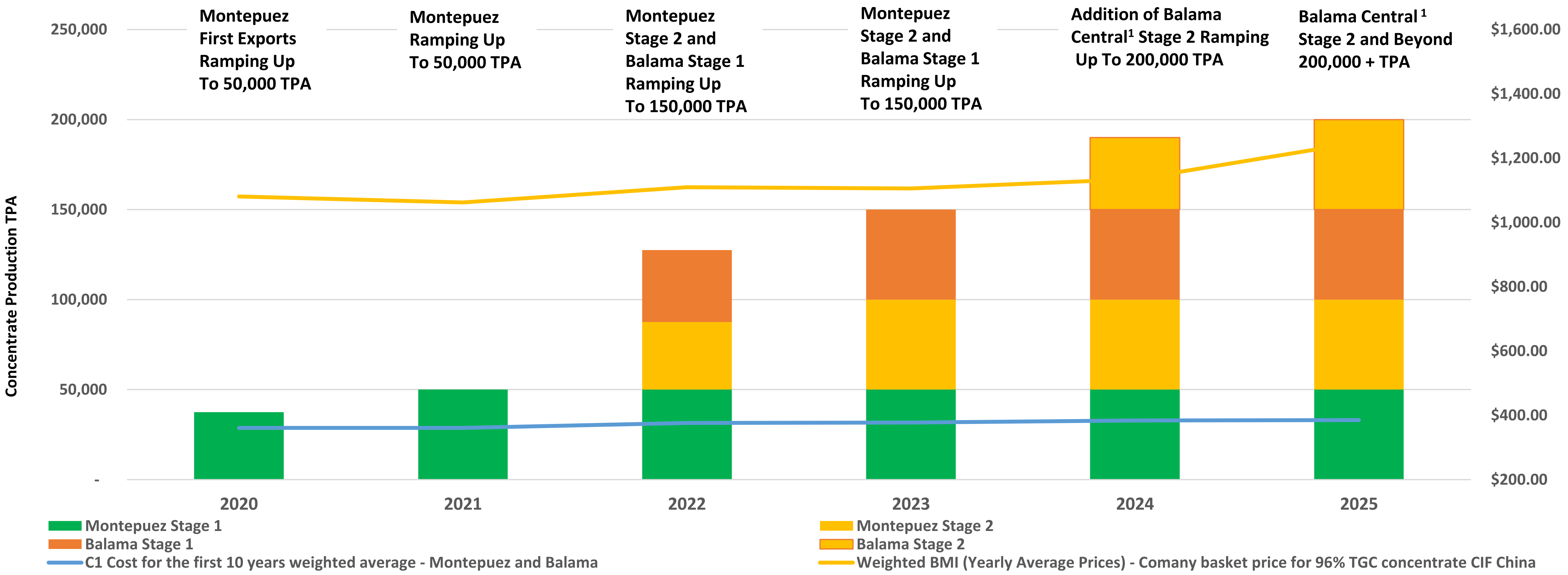



Balama Central Graphite Project - Mozambique Transport Route

- **ESIA:** Due to be completed and submitted early 2019
- **Mining License Application:** To be submitted in 2019

1. See ASX announcement on 12 December 2018 for “Maiden Reserve for Balama” for detailed disclosure. Ore Reserves 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 29th March 2018 for “Mineral Resource Doubles at Balama” 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
3. Based on the latest Benchmark Mineral Intelligence (BMI) CIF China forecast graphite prices for 2022

# Battery Minerals - Production Profile




Note 1: Battery Minerals Limited completed a feasibility study and announced a maiden Ore Reserve estimate for its Balama Central Graphite Project in December 2018. The decision to invest in Stage 1 and Stage 2 of the Balama Central Graphite Project will be subject to the completion of all necessary feasibility studies, permit applications, construction, financing arrangements, port access and execution of infrastructure-related agreements.
Note 2: The ramp start date for Montepuez included in this slide are subject to Montepuez project finance being finalised in H1 2019.

# Purification and Spheroidisation Testwork

- Testwork programme undertaken by URBIX
- Progress todate
  - Purification success with Urbix environmentally friendly, low temp <80°C, non-HF, process **with no impact on flake morphology**

| Sample Fraction | Initial purity, %TGC | Final Purity, %TGC |
|---|---|---|
| -43 micron | 95.2 | 99.95 |
| -150 +43 micron | 97.1 | 99.97 |
| +300 micron | 94.3 | 99.95 |
| -300 +180 micron | 93.6 | 99.98 |

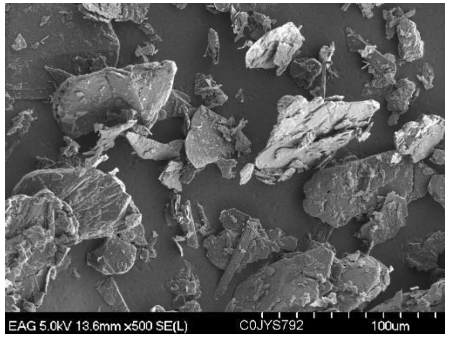
  - Spheroidising testing complete – analysis in progress
- Programme completion – end 2018

Montepuez flake identified with high crystallinity, ultra low Boron content, unique flake morphology and URBIX Purification technology together opening potential new markets

- Nuclear, Concrete, Composites, and military applications

- Montepuez flake used by URBIX in US Department of Energy
- Grant for Nuclear Grade Graphite Development

- Urbix Pilot Plant:
  - Capacity – 24,000 tpa+ Purified Flake Graphite
  - High overall recoveries +75% for PSG

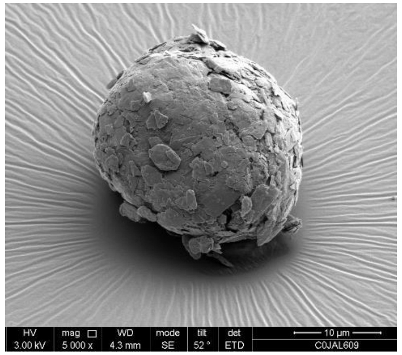


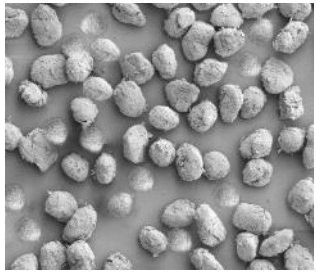
Flake Concentrate

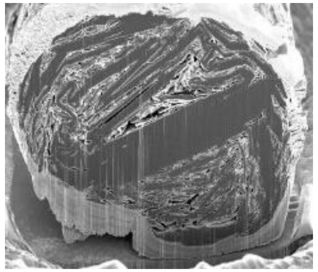
Graphite Concentrate @ ± 95%TGC

Urbix proprietary innovative purification and spheroidisation technology

Purified Spherical Graphite @ +99.95% TGC

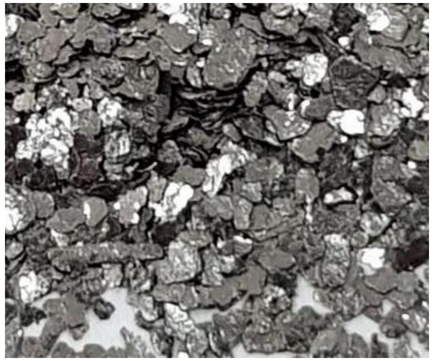

Spherical Graphite





# Next Steps

1. Complete Montepuez project finance
2. Complete detailed engineering and procurement
3. Award remaining construction contracts
4. Urbix, Anode and other downstream Scoping Study
5. Construct process plant and remaining infrastructure
6. Start mining processing and exporting
7. Investigate Vanadium and other opportunities
8. Complete construction of Montepuez within 12 – 15 months of project finance being finalised



# Disclaimer & Competent Persons Statement

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## 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 target, 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 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.

- 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.

## Important Notice

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