

BATTERY MINERALS LTD (BAT)

Batting up the order

Battery Minerals Limited (BAT) has commenced early works in the development of the Montepuez Graphite Project in Mozambique, with the Company placing the order for a 1.3Mtpa primary crusher. We model Montepuez growing to a 1Mtpa operation by 2022, so the 1.3Mtpa crusher gives ample room for further growth. BAT has also appointed lead design engineers DRA and Minnovo to do the detailed design work on the Montepuez Process plant, and the Company is hopeful of securing all project approvals by April 2018 and be commissioning the Montepuez plant during the DecQ next year. However, we note that a final investment decision is yet to be made.

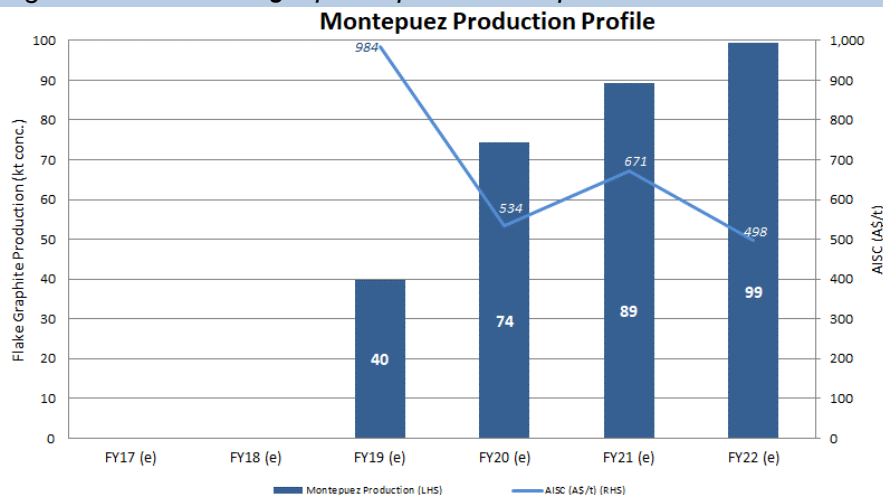
A\$20M raised to fund development at Montepuez and beyond

BAT has recently raised A\$20M at 6 cents per share, which it will use to fund its next phase of growth. The Company has already commenced infill grade control drilling at Montepuez. The 300 hole program (for 10,000m) will concentrate on the Buffalo and Elephant deposits as well as following up thick high-grade intercepts such as 272m @ 9.9% TGC, that fall outside the current resource estimation. BAT will also use the funds to accelerate the Feasibility Study for its secondary asset, nearby at Balama. A 1,000m diamond drill program has commenced and is designed to provide greater confidence in the current 7.4Mt @ 11.8% TGC inferred resource (Total resource, which includes indicated is 16.3Mt @ 10.4% TGC). The DFS is scheduled for completion in mid-2018.

Maintain Speculative Buy

We have updated our model and include the A\$20M capital raise in BAT's cash balance (note that Tranche 2 is scheduled for 12 January 2018). We expect BAT to fund the A\$60M capex for full development of Montepuez through debt and equity (50:50) and therefore model a A\$30M raising at 7 cents per share in CY18. Our NAV remains at \$0.31, with an updated price target of \$0.28 (\$0.29) and a spot NAV of \$0.28. We maintain our Speculative Buy recommendation. The key catalyst risk is binding offtake of the product.

Fig. 1: BAT's flake graphite production profile



Source: Hartleys Estimates

6 Dec 2017

Share Price	\$0.061
Prelim. Valuation	\$0.31
Price Target (12 month)	\$0.28

Brief Business Description:

An advanced stage mineral exploration and development company focussed on the Montepuez Graphite Project in Mozambique. BAT aim to produce anode material for lithium-ion batteries from spherical graphite.

Hartleys Brief Investment Conclusion

Low cost, East African graphite developer with proven management. Two non-binding MoUs have been signed, which may lead to offtake.

Chairman & Executives

David Flanagan (Executive Chairman)
Cherie Leeden (Executive Director)

Major Shareholders

Farjoy Pty Ltd 12.6%

Company Address

10 Ord Street
West Perth, WA, 6005

Issued Capital 763.4m
- fully diluted 838.0m

Market Cap A\$46.6m
- fully diluted A\$51.1m

Cash (31 Dec 17e) A\$22.0m

Debt (31 Dec 17e) A\$0.0m

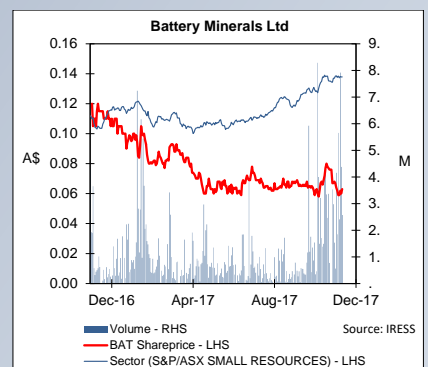
EV A\$24.6m

EV/Resource A\$3.0/t

EV/Reserve A\$6.7/t

Prelim. (A\$m)	CY19e	CY20e	CY21e
Prod. 96% Flake	0.040	0.074	0.089
Op Cash Flw	17.9	45.3	57.9
Norm NPAT	11.50	30.3	37.2
CF/Share (cps)	1.22	3.016	3.916
EPS (cps)	0.98	2.581	3.169
P/E	6.2	2.4	1.9

	Mt	TGC Cont.	Graph.
Resources	105.9	7.67%	8.2 Mt
Reserve	41.4	8.80%	3.6 Mt



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Hartleys has assisted in the completion of capital raisings in the past 12 months for Battery Minerals Limited ("Battery") for which it has earned fees. Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Battery for which it has earned fees and continues to earn fees. Hartleys has a beneficial interest in 4 million options in Battery.

SUMMARY MODEL

Battery Minerals Ltd BAT								Share Price \$0.061	
Key Market Information									
Share Price								\$0.061	
Market Capitalisation - ordinary								A\$51m	
Net Cash (Debt)								\$22.0m	
Market Capitalisation - fully diluted								A\$51m	
EV								A\$73m	
Issued Capital								763.4m	
Options								74.6	
Issued Capital (diluted for options)								838.0m	
Issued Capital (diluted inc. options and new capital)								1251.7m	
Valuation								\$0.31	
12month price target								\$0.28	
P&L	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22		
Net Revenue	A\$m	0.0	0.0	46.1	85.9	101.9	112.5		
Total Costs	A\$m	-4.2	-8.5	-23.7	-36.7	-42.5	-46.5		
EBITDA	A\$m	-4.2	-8.5	22.4	49.1	59.4	66.0		
- margin		-	-	49%	57%	58%	59%		
Depreciation/Amort	A\$m	-1.2	-3.7	-7.3	-9.0	-10.3	-12.1		
EBIT	A\$m	-5.4	-12.1	15.1	40.2	49.2	53.9		
Net Interest	A\$m	0.2	0.3	0.2	0.2	0.4	0.8		
Pre-Tax Profit	A\$m	-5.2	-11.8	15.3	40.3	49.5	54.7		
Tax Expense	A\$m	0.0	0.0	-3.8	-10.1	-12.4	-13.7		
Normalised NPAT	A\$m	-5.2	-11.8	11.5	30.3	37.2	41.0		
Abnormal Items	A\$m	0.0	0.0	0.0	0.0	0.0	0.0		
Reported Profit	A\$m	-5.2	-11.8	11.5	30.3	37.2	41.0		
Minority	A\$m	0.0	0.0	0.0	0.0	0.0	0.0		
Profit Attrib	A\$m	-5.2	-11.8	11.5	30.3	37.2	41.0		
Balance Sheet	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22		
Cash	A\$m	20.8	23.6	5.0	20.6	32.3	74.6		
Other Current Assets	A\$m	0.0	0.0	5.7	10.6	12.6	13.9		
Total Current Assets	A\$m	20.8	23.6	10.7	31.1	44.8	88.5		
Property, Plant & Equip.	A\$m	1.1	36.9	49.2	49.0	61.9	58.7		
Exploration	A\$m	8.4	18.4	21.6	22.6	23.6	24.6		
Investments/other	A\$m	0.0	0.0	0.0	0.0	0.0	0.0		
Tot Non-Curr. Assets	A\$m	9.4	55.2	70.8	71.6	85.5	83.3		
Total Assets	A\$m	30.3	78.8	81.5	102.8	130.4	171.7		
Short Term Borrowings	A\$m	-	-	-	-	-	-		
Other	A\$m	0.3	0.7	1.9	2.9	3.3	3.6		
Total Curr. Liabilities	A\$m	0.3	0.7	1.9	2.9	3.3	3.6		
Long Term Borrowings	A\$m	-	30.0	20.0	10.0	0.0	0.0		
Other	A\$m	-	-	-	-	-	-		
Total Non-Curr. Liabil.	A\$m	-	30.0	20.0	10.0	0.0	0.0		
Total Liabilities	A\$m	0.3	30.7	21.9	12.9	3.3	3.6		
Net Assets	A\$m	29.9	48.1	59.6	89.9	127.0	168.1		
Net Debt	A\$m	-20.8	6.4	15.0	-10.6	-32.3	-74.6		
Cashflow	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22		
Operating Cashflow	A\$m	-4.6	-8.1	17.9	45.3	57.9	65.0		
Income Tax Paid	A\$m	0.0	0.0	-3.8	-10.1	-12.4	-13.7		
Interest & Other	A\$m	0.2	0.3	0.2	0.2	0.4	0.8		
Operating Activities	A\$m	-4.4	-7.8	14.3	35.4	45.9	52.1		
Property, Plant & Equip.	A\$m	-2.0	-39.5	-19.6	-8.8	-23.2	-8.8		
Exploration and Devel.	A\$m	-2.5	-10.0	-3.3	-1.0	-1.0	-1.0		
Other	A\$m	0.0	0.0	0.0	0.0	0.0	0.0		
Investment Activities	A\$m	-4.5	-49.5	-22.9	-9.8	-24.2	-9.8		
Borrowings	A\$m	0.0	30.0	-10.0	-10.0	-10.0	0.0		
Equity or "tbc capital"	A\$m	20.0	30.0	0.0	0.0	0.0	0.0		
Dividends Paid	A\$m	0.0	0.0	0.0	0.0	0.0	0.0		
Financing Activities	A\$m	20.0	60.0	-10.0	-10.0	-10.0	0.0		
Net Cashflow	A\$m	11.1	2.7	-18.6	15.6	11.7	42.3		
Shares	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22		
Ordinary Shares - End	m	759.0	1172.6	1172.6	1172.6	1172.7	1172.7		
Ordinary Shares - Wted	m	592.3	965.8	1172.6	1172.6	1172.7	1172.7		
Diluted Shares - Wted	m	617.6	965.9	1172.7	1172.7	1172.7	1172.7		
Ratio Analysis	Unit	31 Dec 17	31 Dec 18	31 Dec 19	31 Dec 20	31 Dec 21	31 Dec 22		
Cashflow Per Share	A\$ cp	-0.7	-0.8	1.2	3.0	3.9	4.4		
Cashflow Multiple	x	-8.2	-7.5	5.0	2.0	1.6	1.4		
Earnings Per Share	A\$ cp	-0.9	-1.2	1.0	2.6	3.2	3.5		
Price to Earnings Ratio	x	-7.0	-5.0	6.2	2.4	1.9	1.7		
Dividends Per Share	AUD	-	-	-	-	-	-		
Dividend Yield	%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Net Debt / Net Debt + Equity	%	-229%	12%	20%	-13%	-34%	-80%		
Interest Cover	X	23.7	36.7	na	na	na	na		
Return on Equity	%	na	na	19%	34%	29%	24%		
Analyst: Paul Howard +61 8 9268 3045 *tbc capital* could be equity or debt. Our valuation is risk-adjusted for how this may be obtained. Sources: IRESS, Company Information, Hartleys Research								Last Updated: 06/12/2017	

VALUATION

Our sum of parts valuation for BAT is based on discounted cashflows for the Montepuez Graphite Project. We model cashflows for the project with discount rates appropriate for the stage of production. We model Montepuez in line with Company guidance, presentations, the February DFS and have updated as per the Value Engineering Study (VES). Our model assumes operations commence in the MarQ CY2019 as per the VES with 40ktpa concentrate produced, and transitions to 100ktpa by FY22 with a modest increase in capex of US\$27M. We assume 10 years mining 12% TGC material and a further 10 years mining 7.5% TGC material.

Due to a lack of dialogue around the downstream PSG strategy and given the recent developments in MoU for offtake, we have temporarily removed the PSG stream from our model. While this reduces the valuation, the PSG stream carries technological risk and is an area where BAT management has not ventured previously. We believe BAT's focus on mining at Montepuez is a good approach and see opportunity for it to add the PSG strategy back in at a later date, once the Company can demonstrate its ability to mine and market its graphite.

While a Concept Study have been released for Balama Central, we have not modelled this as a standalone project. Using similar parameters as Montepuez, Balama Central generates an NPV₁₄ of A\$200M. We have therefore ascribed a nominal value of A\$200M for BAT's other assets (including Balama Central) and exploration.

Our updated valuation have removed the PSG downstream plans, as we believe BAT will initially focus on mining at Montepuez before perusing the production of PSG

Fig. 2: Hartleys Sum of Parts Valuation for BAT

Valuation	\$m	\$/shr
95% Montepuez (pre-tax NAV at disc. rate of 12%)	307.1	0.25
Other Assets/Exploration e.g. Balama Central	200.0	0.16
Forwards	0.0	0.00
Corporate Overheads	-82.2	-0.07
Net Cash (Debt)	22.0	0.02
Tax (NPV future liability)	-61.9	-0.05
Options & Other Equity	7.4	0.01
TOTAL	392.4	0.31

Source: Hartleys estimates

Our valuation for BAT is \$0.31

PRICE TARGET

Our price target is based on 40Ktpa production at Montepuez in FY19, increasing to ~100Ktpa by FY22. We have included weighting for the base case at consensus and spot pricing and also model a net cash scenario. Our twelve month price target is \$0.28 (down from \$0.29), based on a blended scenario analysis.

Fig. 3: Price Target

Price Target Methodology	Weighting	Spot	12 mth out
NPV base case, assuming significant equity dilution	50%	\$0.31	\$0.36
NPV at spot commodity and fx prices	25%	\$0.32	\$0.37
Net cash	25%	\$0.03	\$0.03
Risk weighted composite		\$0.24	
12 Months Price Target		\$0.28	
Shareprice - Last		\$0.061	
12 mth total return (% to 12mth target + dividend)		362%	

Source: Hartleys Estimate

Our 12-month price target is \$0.28

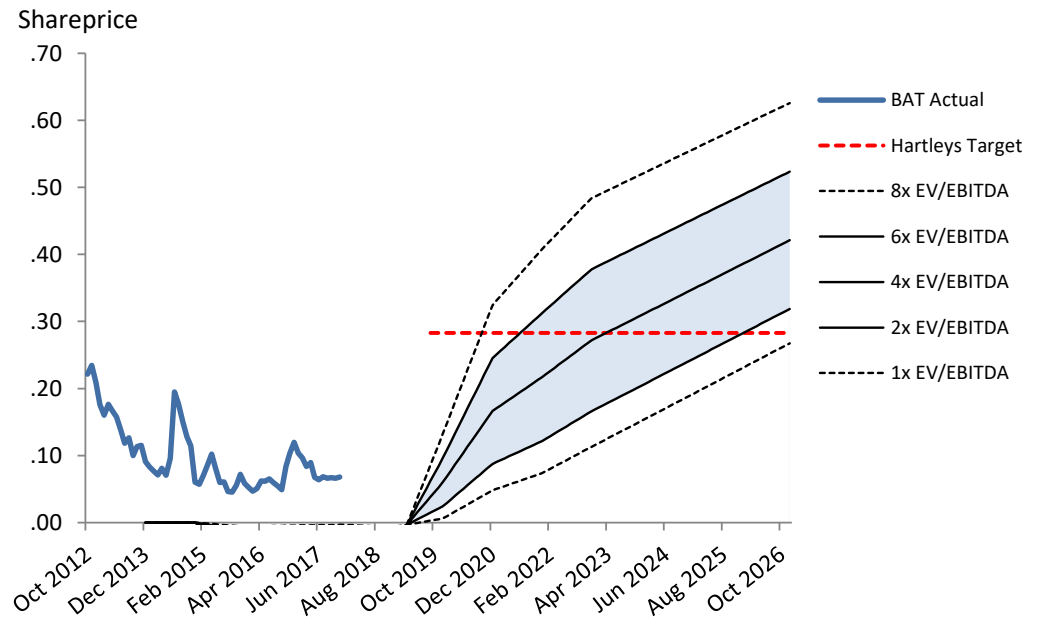
Fig. 4: Key assumptions and risks for valuation

Assumption	Risk of not realising assumption	Downside risk to valuation if assumption is incorrect	Comment
Graphite prices are higher than BAT's estimates	Med	High	Our valuation is sensitive to commodity price assumptions.
Offtake agreements not yet in place but assumed	Med	Extreme	Without offtake, the project won't get off the ground. A positive that MOUs have been signed
Economic mine life of 20 years	Low	Med (although also could be upside)	We believe our mine life assumptions are realistic based on current resources. Mine life could be decreased to obtain higher grades.
Debt funding	Med	Extreme	We assume the project can be debt funded. We assume an interest rate of 12%.
Equity funding	High	Extreme	We assume BAT can raise the equity to fund Montepuez
First production	High	Moderate	We assume first full scale production in early-CY19
<i>Conclusion</i>	<i>Given the lack of transparency in graphite pricing, we view BAT as a moderate risk. No offtake agreement and lower assumed pricing is the biggest threat to our valuation, in our view.</i>		

Source: Hartleys

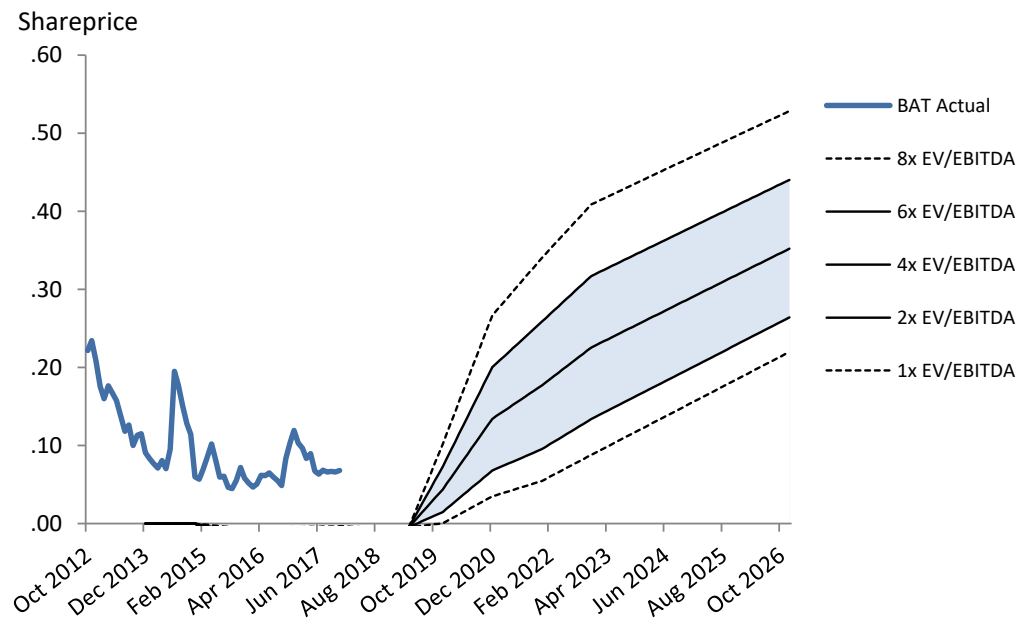
EV/EBITDA BANDS

Fig. 5: Using Hartleys base case commodity forecasts



Source: Hartleys Estimates, IRESS

Fig. 6: Using spot commodity prices



Source: Hartleys Estimates, IRESS

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Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

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