

Bushveld Minerals

Vanadium PFS

Vanadium focus targets energy storage market

Metals & mining

4 February 2016

Price 3.25p
Market cap £16m

Net cash (£m) at 31 August 2015 6.1
 Shares in issue 486.3m
 Free float 50%
 Code BMN
 Primary exchange AIM
 Secondary exchange N/A

Share price performance



%	1m	3m	12m
Abs	(3.7)	1.6	36.8
Rel (local)	3.4	10.7	57.1
52-week high/low		4.40p	2.08p

Business description

Bushveld Minerals is an AIM-listed junior diversified commodity explorer in the mineral-rich Bushveld Complex in South Africa. Its flagship 64% owned Mokopane project is an iron-titanium-vanadium deposit on the northern limb of the Bushveld Complex. It also has coal, vanadium & tin interests acquired via its 2015 Lemur Resources takeover.

Next event

Edison main PFS note February 2016

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Bushveld (BMN) has announced its Mokopane vanadium pre-feasibility study (PFS). Although the outcome hinges on longer-term vanadium prices (the project is forecast to enter production in 2019), this provides a reasoned approach to vanadium investment not only based on its predominant use as a steel ingredient, but also on the opportunity presented by the nascent energy storage market. With South African vanadium producers struggling against the current low vanadium price, an opportunity may arise for BMN to use excess processing capacity in the area, which could materially reduce its risk profile.

Year end	Revenue (£m)	PBT* (£m)	EPS* (p)	DPS (p)	P/E (x)	Yield (%)
02/13	0.0	(2.3)	(1.0)	0.0	N/A	N/A
02/14	0.0	(1.4)	(0.4)	0.0	N/A	N/A
02/15	0.0	(3.2)	(0.6)	0.0	N/A	N/A

Note: *PBT and EPS are normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Longer-term value still linked to steel...

Reports of the Chinese government moving towards significantly cutting back its steel sector should aid a rebalancing of a global steel sector currently under significant stress. BMN uses a 10-year average US\$7.5/lb V₂O₅ flake price (vs a current US\$3.00/lb price) to support its PFS. We note this as the main risk to the project's value, but also recognise that at the PFS assessment level longer-term pricing can be as relevant, evidenced by our discount rate analysis of mining projects by stage (see our sector report '[Gold US\\$2,070 by 2020](#)' published November 2013).

...but watch energy storage to accelerate demand

A further potential opportunity arises from the nascent energy storage market and vanadium redox battery technology in particular. To strengthen its position in this market, BMN has been launched by its parent as a specific vehicle to capitalise on the potential for vanadium-demand within the green-tech space. [Reports highlight](#) the possible need for green-energy investment to increase c 75% current levels over 2016-2040. This creates an opportunity for vanadium redox-battery technology to fulfil industrial scale energy storage requirements to tackle the problem of inconsistent energy generation and demand.

Valuation: PFS cost level may open door to value

Our forecasts are on hold until we can fully incorporate the findings of BMN's new vanadium PFS into our financial model. For now, we state the PFS's findings verbatim and note its low production cost estimates as one of its stand-out findings. The Mokopane Vanadium PFS details a 30-year LOM, for a 1Mtpa run-of-mine plant producing 9,530tpa of V₂O₅ flakes. Capex comes in at US\$298.1m, average LOM total costs are estimated at US\$3.28/lb and the long-term V₂O₅ price used is US\$7.5/lb. The PFS financial result, in real terms, is an NPV₉ of US\$418.0m (pre-tax), and US\$259.4m (post-tax). The US\$:ZAR rate used was 12.75.

Exhibit 1: Financial summary

	£'000s	2013	2014	2015
Year end 28 February		IFRS	IFRS	IFRS
PROFIT & LOSS				
Revenue		0	0	0
Cost of Sales		0	0	0
Gross Profit		0	0	0
EBITDA		(2,359)	(1,322)	(3,206)
Operating Profit (before GW and except.)		(2,359)	(1,376)	(3,206)
Intangible Amortisation		0	0	0
Exceptionals		0	960	317
Other		0	0	0
Operating Profit		(2,359)	(417)	(2,889)
Net Interest		105	0	0
Profit Before Tax (norm)		(2,254)	(1,376)	(3,206)
Profit Before Tax (FRS 3)		(2,254)	(417)	(2,889)
Tax		0	0	0
Profit After Tax (norm)		(2,254)	(1,376)	(3,206)
Profit After Tax (FRS 3)		(2,254)	(417)	(2,889)
Average Number of Shares Outstanding (m)		235.9	330.4	446.8
EPS - normalised (p)		(1.0)	(0.4)	(0.6)
EPS - FRS 3 (p)		(1.0)	(0.1)	(0.6)
Dividend per share (p)		0.0	0.0	0.0
Gross Margin (%)		N/A	N/A	N/A
EBITDA Margin (%)		N/A	N/A	N/A
Operating Margin (before GW and except.) (%)		N/A	N/A	N/A
BALANCE SHEET				
Fixed Assets		53,637	54,207	55,852
Intangible Assets		53,314	53,981	55,771
Tangible Assets		74	225	80
Investments		249	0	0
Current Assets		1,355	9,318	7,742
Stocks		0	0	0
Debtors		50	141	147
Cash		1,305	9,177	7,596
Current Liabilities		(199)	(344)	(464)
Creditors		(199)	(344)	(464)
Short term borrowings		0	0	0
Long Term Liabilities		0	0	0
Long term borrowings		0	0	0
Other long term liabilities		0	0	0
Net Assets		54,793	63,180	63,130
CASH FLOW				
Operating Cash Flow		(1,958)	(1,188)	(2,943)
Net Interest		105	0	0
Tax		0	0	0
Capex		(2,059)	(1,065)	(1,330)
Acquisitions/disposals		(120)	8,325	0
Financing		5,317	1,797	2,597
Dividends		0	0	0
Net Cash Flow		1,286	7,869	(1,676)
Opening net debt/(cash)		1,555	(1,305)	(9,177)
HP finance leases initiated		0	0	0
Other		1,574	3	94
Closing net debt/(cash)		(1,305)	(9,177)	(7,595)

Source: Company accounts, Edison Investment Research

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