

1 July 2021

## BMN LN Mining &amp; Metals



Source: LSE

## Market data

Price (p)	13.9
Valuation (p)	24.0
12m High (p)	24.5
12m Low (p)	10.2
Shares (m)	1,192
Mkt Cap (£m)	166.2

## Company summary

Bushveld Minerals is an AIM-quoted vanadium development and production company. The group's key assets are the Vametco and Vanchem primary vanadium producing operations in South Africa. Bushveld also participates in the development of the downstream, and fast-growing, vanadium-redox flow battery market through its majority-owned Bushveld Energy subsidiary.

## Key forecasts

	2020	2021e	2022e
Sales (\$m)	90.0	132.2	195.7
EBITDA (\$m)	(14.9)	10.0	55.4
EPS (\$/sh)	(0.03)	(0.01)	0.01
FCF (\$m)	(30.5)	(11.4)	17.5
EV/EBITDA (x)	na	26.5	4.8
EV/EBITDA adj* (x)	na	46.0	5.7
P/E (x)	na	na	15.9
FCF yield (%)	na	na	7.7
Net debt (\$m)	33.7	44.5	29.2

\* Equity-attributable adjusted EBITDA

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# Bushveld Minerals\*

## Challenging 2020, but growth thesis remains intact

Bushveld's 2020 results reflect a challenging year during which the group suffered operational interruptions and weak vanadium pricing. The latter more than offset higher production volumes as revenue fell 23% year-on-year. Despite an improvement in unit costs given the higher volumes, this pushed EBITDA negative. Maintenance downtime and industrial action at Vametco in the first half of this year and a delay in receipt of materials for the ongoing refurbishment of Vanchem are unfortunately likely to preclude year-on-year production gains in 2021. However, margins should benefit from a much-improved vanadium price – FeV has strengthened markedly over recent months and is now above our long-term assumption of \$40/kg. A targeted increase in group production to 5,000-5,400t V pa by the end of 2022 (vs Bushveld's downwardly revised guidance of 3,400-3,600t for this year) should yield a more marked improvement in profitability next year, while studies are now underway to determine the most capital efficient path to the company's long-term production goal of c8,400t pa. If achieved, we continue to believe the latter could see EBITDA grow to over \$100m pa, with further upside potential if FeV pricing holds or builds on current robust levels.

- ▶ **2020 results:** Bushveld moved to an EBITDA level loss of \$15m in 2020 (compared with a \$33m profit in 2019), reflecting a 23% fall in revenue as a halving of the realised vanadium price more than offset the benefits of a 24% increase in production volumes. Bottom-line EPS was negative 3 cents accordingly, compared with a positive 5 cents in 2019. The group ended the year with a net debt position of \$34m, including cash resources of \$51m.
- ▶ **Robust balance sheet:** Net debt includes a R125m (c\$9m) revolving credit facility and \$11.5m of convertible notes issued as part consideration for the Vanchem acquisition in 2019. Bushveld's bankers have agreed to relax covenants attached to the credit facility, while the convertible note holders have agreed to convert \$6.5m of their balance. Supported by last year's \$65m funding agreement with Orion, Bushveld thus still appears well placed to finance its near-term growth plans.
- ▶ **2021 investment to bear fruit next year:** Given further interruptions at Vametco in H1 2021 (now thankfully overcome – rates have stabilised following the maintenance downtime) and frustrating delays to the Vanchem refurbishment, no year-on-year production growth is now expected for 2021. But if FeV pricing holds around current levels through H2, we believe Bushveld should return to EBITDA profitability this year. And with the refurbishment of Kiln 3 at Vanchem due for completion by the end of 2021 (which will increase Vanchem's production rate to c2,600t pa), Bushveld is targeting a sustainable group run-rate of 5,000-5,400t pa by the end of 2022. That should yield much more material earnings growth from next year, helped also by a group-wide cost-savings programme that is targeting annualised savings of up to \$4m from 2022.
- ▶ **Studies underway on longer-term expansion:** Bushveld's assets hold potential for far greater growth however, and studies are now underway at both Vametco and Vanchem of the feasibility to increase group production to 6,400-6,800t pa in the medium-term and to c8,400t pa over the longer term. These studies will determine the most capital efficient sequencing of the growth phases between the two businesses, and the likely operating cost impact. Our preliminary analysis points to the potential for these initiatives to grow annualised EBITDA to over US\$100m within the next few years. This analysis assumes our long-term FeV price assumption of \$40/kg. Pricing has recovered sharply over recent months, and spot markets are currently slightly above that level. Given >\$40/kg FeV prices are prevailing at a time when seaborne iron-ore markets are buoyant (which suggests to us that vanadium co-production may be at or near capacity), and that the primary V supply market remains constrained, we believe near to medium-term pricing risk lies to the upside.

## 2020 annual results

Despite record group vanadium production and sales in 2020 of 3,631t and 3,842t respectively (up 24% and 61% versus 2019, primarily reflecting the inclusion for a full year of the Vanchem operations that were acquired in late 2019) revenue fell by 23% year-on-year, to US\$90m, owing to a 52% decline in the realised vanadium price.

Group costs per unit sold improved significantly to US\$29/kg V (down from US\$37/kg V in 2019), reflecting the dilution of fixed costs across an increased production volume following the acquisition of Vanchem, but also a reduction in other operating and administrative costs. However, EBITDA slid to a negative \$14.9m (from a \$32.6m profit in 2019) owing mainly to the price driven reduction in revenue.

Bolstered by the \$65m funding package secured from Orion Mine Finance towards the end of the year, Bushveld ended 2021 with cash and cash equivalents of \$50.5m. Net debt was \$33.7m. Cash had reduced to approximately \$31m (unaudited) by the end of June 2021.

Figure 1: Bushveld 2020 results headlines

	Unit	2020	2019	FY20 v 19
Vanadium production	t	3,631	2,931	24%
Sales volumes	t	3,842	2,392	61%
Average sales price (FeV basis)	\$/kg V	23.4	48.9	(52%)
Revenue	\$m	90.0	116.5	(23%)
EBITDA	\$m	(14.9)	32.6	(146%)
EPS	\$/c	(3.0)	5.5	(154%)
Cash inflow/(outflow) from operations	\$m	(17.1)	28.5	(160%)
Net debt	\$m	33.7	7.7	337%
Cash and equivalents	\$m	50.5	34.0	49%

Source: Bushveld Minerals

## Debt covenants relaxed, repayment terms adjusted

Group net debt includes a fully drawn R125m (c\$9m) revolving credit facility (RCF) with Nedbank and \$11.5m of convertible notes issued to the vendors as part consideration for the Vanchem acquisition in 2019.

Post period end Bushveld successfully renegotiated the covenant testing terms required under the RCF such that Nedbank has agreed to waive the covenants for the June 2021 period and relax the December 2021 group net debt to EBITDA ratio from 2.5x to 4.0x. A condition of the waiver is that the RCF is amortised by R5m (c\$0.3m) per month from August 2021, with a 'bullet' payment of R50m (c\$3.4m) due on the maturity date in November 2022.

Moreover, the group has also had positive negotiations with the convertible note holders such that they have agreed to convert into new Bushveld shares \$6.5m of the outstanding \$11.5m balance, with just the remaining US\$5m to be repaid in cash in November 2021.

## 2021 guidance revised down...

Bushveld has revised down its group production guidance to 3,400-3,600t V, from 4,100-4,350t previously, due to unexpected setbacks at both Vametco and Vanchem in the first half of 2021.

As reported previously, Vametco's Q1 performance was adversely impacted by slower-than-expected ramp-up post the successful completion of a planned 35-day

maintenance shutdown. This was compounded by further unforeseen mechanical breakdowns after start-up, followed (again as previously disclosed) by six days of unprotected industrial action in April. Management has thus taken the decision to revise down full-year production guidance for Vametco to 2,300-2,400t (versus 2,700-2,850t previously), with a consequent upwards revision of cash production cost guidance to \$23.7-24.2/kg V (compared with \$20.0-21.3/kg previously).

At Vanchem, delays in securing steel supplies for the Kiln 3 refurbishment has prompted the company to also revise down that operation's 2021 production guidance, to 1,100-1,200t (versus 1,400-1,500t previously). Cash production cost guidance has been adjusted up to \$30.3-31.1/kg (from \$26.20-26.70/kg previously).

### **...but investment this year to yield higher rates in 2022**

Bushveld has budgeted \$6m of maintenance and optimisation capital expenditure at Vametco for this year, and \$11m to complete the Kiln 3 and other refurbishment at Vanchem by the end of 2021 (the latter down from a previous budget of \$16m).

The group expects that this investment will enable Vametco and Vanchem to produce at a sustainable annualised steady-state rates of c2,800t and c2,600t respectively by the end of next year, and it is accordingly targeting a 2022 group exit production rate of 5,000-5,400t pa.

We think this step-change in production should lower unit costs owing to economies of scale. Together with the implementation of a cost-savings programme aimed at achieving \$2.5-4.0m of annualised savings from 2022, this should result in a material improvement in profit margins from next year.

### **Studies underway on longer-term expansion**

Bushveld has long believed that both Vametco and Vanchem have potential to sustain even higher production levels, and it has commenced prefeasibility studies of the potential to further expand/refurbish each operation to increase production rates to a combined 6,400-6,800t pa medium term and to 8,400t pa long term.

The studies are scheduled for completion in Q4 2021, and the results will guide the company in choosing the most capital efficient sequencing of the targeted growth phases between Vametco and Vanchem. The overarching principle in rolling out this next phase of expansion will be "prioritising the cheapest next vanadium unit".

We await completion of the studies to ascertain the profile of the expansion path and exact capital expenditure requirements. However, we would expect it to result in a further widening of profit margins as volumes are increased.

### **Bushveld Energy continues to progress**

The group's Bushveld Energy subsidiary made significant progress in 2020 in advancing its strategy to promote and participate in the growing vanadium redox-flow battery (VRFB) stationary energy storage sector. It completed investments in two VRFB equipment manufacturers (some since monetised at significant gain for \$13m), signed an electrolyte rental contract and completed the engineering phase for its planned vanadium electrolyte production facility in East London.

Bushveld Energy's 2021 capital expenditure budget of \$9.5m includes Bushveld's share of the vanadium electrolyte plant EPC costs and scaling-up its electrolyte rental model and financing the equity portion of the Vametco mini-grid. It will be funded mainly through the proceeds of the investment sales realised in H1 2021.

## Valuation and forecasts

We have updated our sum-of-the-parts calculation to incorporate the 2020 results, revised 2021 guidance, our now more conservative assumption of the medium to longer-term production expansion sequencing, and updated macroeconomic variables (stronger Rand, and stronger 2021 forecast year-average FeV price).

Our risk-adjusted per-share valuation falls 11% to 24p (from 27p previously), a function of the downwardly revised near-term guidance and our more conservative longer-term expansion schedule. This implies over 70% upside from Bushveld's current share price, with further potential if the FeV price continues to strengthen.

Figure 2: Base-case sum-of-the-parts valuation\*

		Unrisked		Risk	Risked
		US\$m	GBP/sh	multiple	GBP/sh**
Vametco (incl PFA)	NPV <sub>10%</sub>	295	17.6	0.75x	13.2
Vanchem	NPV <sub>10%</sub>	397	23.6	0.50x	11.8
Brits property	nominal	10	0.6		0.6
Bushveld Energy	nominal	25	1.5		1.5
Investments	market	4	0.2		0.2
Corporate-level costs	NPV <sub>10%</sub>	(58)	(3.4)		(3.4)
<b>EV</b>		<b>673</b>	<b>40.0</b>		<b>23.8</b>
Cash	end-2020	51	3.0		3.0
Bank debt	end-2020	(9)	(0.5)		(0.5)
Convertible debt	end-2020**	(40)	(2.4)		(2.4)
<b>NAV</b>		<b>675</b>	<b>40.1</b>		<b>24.0</b>

\*Assumes long-term (from 2022) US\$40/kg V price and R14.50:US\$1 FX rate Source: ARC estimates

\*\*Assumes \$6.5m of Duferco convertible notes converted at prevailing share price

The spot FeV price now exceeds our \$40/kg long-term assumption, but we remain positive on the market outlook. Current pricing levels prevail despite elevated seaborne iron-ore pricing, the latter suggesting to us that vanadium co-production amongst integrated iron-ore-steel operations must be at or near capacity. With the relatively small primary vanadium supply sector constrained by high required incentive prices for new greenfield production, and the demand outlook still strong, we believe the market dynamics thus remain very much constructive.

Figure 3: Unrisked NAV<sub>10%</sub> (GBP) sensitivity to vanadium price and FX rate

		Ferrovanadium price (US\$/kg V)						
		30	35	40*	45	50	55	60
USD/ZAR rate	14.00	15	26	38	50	62	74	86
	14.50*	17	28	40	52	64	76	88
	15.00	19	30	42	54	66	78	90
	15.50	20	32	44	56	68	80	92
	16.00	22	34	45	57	69	81	93

\*Valuation base-case assumptions

Source: ARC estimates

Our revised operational and financial forecasts are summarised in Figures 4-8. Our 2021 earnings estimates are lowered (the negative revision to production and cost guidance offsetting our firmer FeV pricing estimate), but we still envisage a return to modest profitability at the EBITDA level this year, before a more material improvement in margins next year. Our longer-term forecasts beyond 2022 are more speculative, as they incorporate our own 'guestimates' on the production growth profile (and corresponding capex schedule) of expansion initiatives ahead of the results of studies of those plans that are due by the end of this year.

Figure 4: Summary operational forecasts and macro assumptions

		2019	2020	2021E	2022E	2023E	2024E	2025E
Vanadium production	t V	2,931	3,631	3,500	4,800	6,000	7,000	8,000
Sales volumes	t V	2,490	3,842	3,671	4,893	6,070	7,052	8,039
Vanadium price (FeV basis)	US\$/kg V	47.77	23.40	36.00	40.00	40.00	40.00	40.00
C1 cash production costs	US\$/kg V	18.11	19.46	26.17	22.50	20.25	18.58	17.85
All-in group cash costs*	US\$/kg V	37.00	29.00	35.90	29.29	26.24	24.40	23.29
South African Rand	ZAR:USD	14.40	16.46	14.50	14.50	14.50	14.50	14.50

\*Including royalties, selling & distribution costs, G&A and sustaining capex, but excluding depreciation

Source: ARC estimates

Figure 5: Summary Bushveld Minerals consolidated income statement

Year-end 31 Dec		2019	2020	2021E	2022E	2023E	2024E	2025E
Revenue	US\$m	116.5	90.0	132.2	195.7	242.8	282.1	321.6
Cost of sales	US\$m	(56.2)	(91.3)	(111.5)	(133.2)	(151.5)	(162.8)	(175.3)
Selling and distribution costs	US\$m	(7.6)	(4.8)	(5.9)	(8.0)	(9.8)	(11.4)	(12.9)
Administrative and other costs	US\$m	(31.4)	(29.0)	(23.5)	(20.5)	(19.0)	(17.5)	(16.0)
<b>Operating profit/(loss)</b>	<b>US\$m</b>	<b>22.3</b>	<b>(32.8)</b>	<b>(7.7)</b>	<b>35.0</b>	<b>63.4</b>	<b>91.4</b>	<b>118.4</b>
Net finance costs	US\$m	1.9	(4.7)	(5.3)	(5.5)	(4.9)	(2.7)	(2.6)
Exceptional non-cash items	US\$m	59.1	(0.2)	0.0	0.0	0.0	0.0	0.0
<b>Profit/(loss) before tax</b>	<b>US\$m</b>	<b>83.3</b>	<b>(37.7)</b>	<b>(13.0)</b>	<b>29.5</b>	<b>58.5</b>	<b>88.7</b>	<b>115.8</b>
Tax	US\$m	(14.0)	0.5	0.0	(9.5)	(19.0)	(34.9)	(45.2)
<b>Net profit/(loss)</b>	<b>US\$m</b>	<b>69.2</b>	<b>(37.2)</b>	<b>(13.0)</b>	<b>20.0</b>	<b>39.5</b>	<b>53.8</b>	<b>70.6</b>

Source: ARC estimates

Figure 6: Summary Bushveld Minerals consolidated cash flow statement

		2019	2020	2021E	2022E	2023E	2024E	2025E
Operational CF before WC changes	US\$m	23.9	(18.4)	10.0	45.9	67.0	79.4	93.9
Working capital changes	US\$m	4.6	1.3	(6.7)	9.3	(6.6)	5.6	(8.6)
<b>Cash flow from operations</b>	<b>US\$m</b>	<b>28.5</b>	<b>(17.1)</b>	<b>3.3</b>	<b>55.2</b>	<b>60.4</b>	<b>85.0</b>	<b>85.4</b>
Capex and investment in associates	US\$m	(17.7)	(11.2)	(26.8)	(37.5)	(35.5)	(21.8)	(6.5)
Other investing inflow/(outflow)	US\$m	(32.0)	(2.2)	12.0	(0.2)	0.3	0.1	0.7
<b>Cash flow from investing activities</b>	<b>US\$m</b>	<b>(49.7)</b>	<b>(13.3)</b>	<b>(14.8)</b>	<b>(37.6)</b>	<b>(35.1)</b>	<b>(21.7)</b>	<b>(5.8)</b>
Net borrowings	US\$m	18.6	49.4	(9.2)	(7.9)	(36.0)	(1.0)	(1.0)
Dividends to minorities	US\$m	(4.5)	0.0	0.0	0.0	0.0	(0.7)	(0.8)
Other	US\$m	(0.8)	(2.0)	(3.5)	(2.3)	(12.6)	(2.8)	(3.3)
<b>Cash flow from financing activities</b>	<b>US\$m</b>	<b>13.3</b>	<b>47.4</b>	<b>(12.8)</b>	<b>(10.2)</b>	<b>(48.6)</b>	<b>(4.5)</b>	<b>(5.1)</b>
Increase/(decrease) in cash	US\$m	(8.0)	17.0	(24.2)	7.4	(23.3)	58.9	74.4

Source: ARC estimates

Figure 7: Summary Bushveld Minerals consolidated balance sheet

		2019	2020	2021E	2022E	2023E	2024E	2025E
Cash	US\$m	34.0	50.5	26.3	33.7	10.4	69.3	143.7
P,P&E	US\$m	185.3	167.6	167.1	184.2	197.1	195.9	181.7
Intangible assets	US\$m	59.4	59.0	59.0	59.0	59.0	59.0	59.0
Other assets	US\$m	56.1	78.8	75.2	69.3	77.2	71.5	80.1
<b>Total assets</b>	<b>US\$m</b>	<b>334.8</b>	<b>355.9</b>	<b>327.6</b>	<b>346.2</b>	<b>343.7</b>	<b>395.7</b>	<b>464.5</b>
Payables	US\$m	15.7	22.1	15.3	18.7	20.7	20.7	52.2
Debt	US\$m	41.8	85.8	70.8	62.9	26.9	25.9	24.9
Other liabilities	US\$m	36.2	34.0	30.7	30.3	30.3	30.3	30.3
<b>Total liabilities</b>	<b>US\$m</b>	<b>93.7</b>	<b>141.9</b>	<b>116.8</b>	<b>111.9</b>	<b>77.9</b>	<b>76.9</b>	<b>107.4</b>
Total equity	US\$m	241.1	214.0	210.8	234.4	265.9	318.8	357.1
<b>Total liabilities &amp; equity</b>	<b>US\$m</b>	<b>334.8</b>	<b>355.9</b>	<b>327.6</b>	<b>346.2</b>	<b>343.7</b>	<b>395.7</b>	<b>464.5</b>

Source: ARC estimates

Figure 8: Key financial measurements and ratios

		2019	2020	2021E	2022E	2023E	2024E	2025E
EBITDA	US\$m	32.6	(14.9)	10.0	55.4	86.0	114.4	139.1
EBITDA margin	%	28	na	8	28	35	41	43
EPS	US\$/sh	0.05	(0.03)	(0.01)	0.01	0.03	0.04	0.05
Net profit margin	%	53	na	na	8	13	16	18
Free cash flow	US\$m	(21.3)	(30.5)	(11.4)	17.5	25.2	63.3	79.5
Net debt/(cash)	US\$m	7.7	33.7	44.5	29.2	16.5	(43.4)	(118.8)
EV/EBITDA (fully consolidated)	x	8.1	na	26.5	4.8	3.1	2.3	1.9
EV/EBITDA (equity attributable)	x	12.3	na	46.0	5.7	3.6	2.7	2.2
P/E	x	3.5	na	na	15.9	7.3	5.3	4.0
FCF yield	%	na	na	na	7.7	11.0	27.7	34.7

Source: ARC estimates

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