



BUSHVELD

PRICE **1.95p**
VALUATION (UPSIDE) **1.70p (-13%) ■ 2.70p (+38%)**

VALUATION RANGE	EPS 23e	EPS 24e
▼ -65% ▼ -60%	▼ NM	▼ NM

Financing package to recapitalise business

18 SEPTEMBER 2023 at 06:07*

Thomas Martin

(+44) 203 430 8435
Thomas.Martin@exanebnpparibas.com

US\$69.5-77.5m financing package alleviates funding concerns

Lower production and higher unit cost guidance in the 2Q trading update underlined the tighter funding position, following the recent change of CEO and inclusion of a 'going concern' statement in the annual report. The funding package agreed with SPR should significantly improve liquidity, enabling investment to underpin future growth. Furthermore, there is medium-term potential for access to lower cost feedstock from SPR which could offer upside to our forecasts. The funding package does, however, come with additional dilution on top of that associated with the recent unwinding of the planned spin-off of Bushveld's energy storage investments into Mustang Energy.

Smaller footprint, but stronger footing

Bushveld arguably had more projects than it could conceivably fund development activity on. We view the disposal of Mokopane, for which we attributed no value, as sensible given the funding constraints. The disposal of a 50% stake in Vanchem appears, in the absence of attractive alternatives, a necessary step to return the business to a more stable footing. With a significantly improved financial outlook, and a smaller, more focused asset base, we look for investment activity to stabilise the asset base and grow production. Higher cost debt can potentially be paid down, reducing financing costs. Closing the funding packages is critical to the investment thesis; we incorporate a 3p/sh price for the proposed Orion partial debt conversion, below the announced 6p/sh, reflecting increases in the share count/share price falls post the initial announcement of the terms.

Reducing valuation range to 1.7-2.7p/sh reflecting asset updates and financing/dilution

Our Core producing and Growth case NAVs fall 45% and 40% respectively in US\$m terms; on a p/sh basis our Core producing asset risked NAV falls to 1.7p/sh and our Growth NAV falls to 2.7p/sh, down 64% and 60% respectively reflecting the increased share count. We provide sensitivities to vanadium prices, discount rates and the price for equity to be issued as part of the announced transactions in this report.

Price (15 September 2023)	1.95p	Performance ⁽¹⁾				
		1w	1m	3m	12m	
Market cap (USDm / GBPm)	49 / 39	Absolute(%)	(4)	(13)	(48)	(61)
Free float (USDm / GBPm)	39 / 31	Rel. Mining(%)	(12)	(25)	(48)	(60)
EV (USDm / GBPm)	177.0 / 143	Rel. MSCI Small Cap(%)	(5)	(13)	(47)	(63)
3m avg volume (USDm / GBPm)	0.2 / 0.2					
Refinitiv / Bloomberg	BMNB.L / BMN LN					
Country	UK					

Financials	12/22	12/23e	12/24e	12/25e	Valuation metrics ⁽²⁾	12/22	12/23e	12/24e	12/25e
EPS, Adjusted (USD)	(0.03)	(0.01)	(0.02)	0.00	P/E (x)	-	-	-	11.2
EPS, Company (USD)	-	-	-	-	Net yield (%)	-	-	-	-
EPS - Refinitiv (USD)	(0.01)	(0.01)	0.00	0.01	FCF yield (%)	(0.7)	(8.1)	7.7	11.1
Net dividend (USD)	-	-	-	-	EV/Sales (x)	1.7	1.2	1.1	0.9
Sales (USDm)	148	149	170	185	EV/EBITDA (x)	-	14.3	5.4	4.1
EBITA, Adj. (USDm)	(20.1)	(3.7)	17.4	29.6	EV/EBITA (x)	-	-	10.4	5.7
Net profit, Adj.(USDm)	(39.0)	(18.5)	(45.1)	8.6	EV/CE (x)	1.2	0.9	1.1	0.9
ROCE (%)	(7.1)	(1.4)	7.2	11.7					
Net Debt/EBITDA, Adj. (x)	-	5.8	1.1	0.5					

Source: BNP Paribas Exane (estimates), Refinitiv (consensus) (1) In listing currency, with dividend reinvested (2) Yearly average price for FY ended 12/22

SPONSORED RESEARCH (Not for Distribution in the US): Exane is receiving compensation from Bushveld to cover and produce research on the stock.* Date and time (London Time) on which the investment recommendation was finalised. It may differ from the date and time of broad dissemination on the website. See Appendix (on p24) for Analyst Certification, Important Disclosures and Non-US Research Analyst disclosures.

Financing package to recapitalise business

Management has reached agreement on a complex package of funding transactions, totalling US\$69.5-77.5m, to recapitalise the business. We believe these transactions will alleviate the funding concerns, which were exacerbated by lower than anticipated production and higher than anticipated costs flagged in the 2Q operational update. Guidance for 2023 was recently reset, with production guidance downgraded 12.6% at the mid-point and group level cost guidance increased 9% in ZAR/kg terms at the mid-point.

Bushveld has signed a binding term sheet with Southern Point Resources (SPR), a South African born investment fund founded by South African mining entrepreneurs and mining finance specialists. Southern Point Resources has investments in group companies which generate >US\$500m revenues and US\$175m EBITDA on a combined basis.

The package of measures is designed to improve the liquidity of Bushveld, enabling investment and underpinning future growth, but at the expense of additional share issuance and asset sales. Although dilutive to our prior forecasts, upon completion the business should be on a much stronger financial footing to maximise value from its remaining assets.

The announced financing measures are inter-conditional and provide immediate working capital which will be repaid through asset sales to SPR, the opportunity to retire certain existing financial instruments, a direct equity investment from SPR into Bushveld and a medium-term marketing/working capital agreement. We summarise the agreements below:

- A ZAR150m (~US\$8.1m) working capital facility, secured against production at the Vanchem plant, to provide near-term liquidity to fund ongoing investment at Vanchem whilst the transactions below are underway.
- The sale of half of Bushveld's 100% interest in Vanchem and Bushveld's 64% interest in the Mokopane project to SPR for a total of up to US\$25m. Payment terms comprise US\$12.5m upon closing of the Vanchem sale, US\$10m on maturity of the working capital facility and a contingent US\$2.5m if the Mokopane sale closes within one year of the conditions precedent being met. The working capital facility will mature 12m from financial close or, if earlier, upon conclusion of three other steps in the recapitalisation (implementation of the asset sales, the SPR new equity investment and conclusion of the marketing and sales agreement).
- An up to US\$12.5m equity investment from SPR into Bushveld at the same price at which a US\$4.5m portion of the Orion convertible debt will convert (announced in May to be 6p/sh, but the Orion convertible debt refinancing has not yet completed and we believe this price could be reset lower).
- SPR will take responsibility for marketing and sales of Bushveld's products for a three-year period on terms comparable to existing agreements, and SPR will provide a US\$25-30m provisional working capital facility. Some existing sales & marketing agreements will be extended to YE 2024 to accommodate frame agreements being entered into.
- The potential future investment by SPR of US\$7-10m, in the form of equity, debt or quasi-debt, to fund recommissioning of kiln-1 at Vanchem to increase output, subject to feasibility studies.

The proposed transactions are inter-conditional, and are also conditional upon the completion of detailed legal agreements, obtaining shareholder approval "to the extent applicable" and obtaining requisite third-party approvals. These third-party approvals

include, but are not limited to, South African exchange control approval, completion of legal due diligence by SPR, and receipt of consent from existing providers of funding to Bushveld (of which Orion Mine Finance is key).

Management noted on the conference call they have been working with Orion through the process to agree the SPR financing, and Bushveld is working with Orion to secure the necessary consents. As part of the SPR financing Bushveld intends to transfer half of its interest in the Vanchem asset, which provides security on a portion of Bushveld's PFA (Production Finance Agreement) with Orion, to SPR.

Potential for future operational improvements and cost reduction

One issue that has impacted uptime and overall production at Vanchem has been the supply of sufficient quantities of on-spec vanadium rich ore.

Historically Vanchem processed vanadium-rich slag from the Highveld Steel complex (a facility which was subsequently mothballed). SPR is in the final stages of acquiring and planning the resuscitation of the Highveld Steel complex, following which SPR envisages supplying vanadium-rich slag to Vanchem for processing. Bushveld notes this would be at much lower cost and offers higher efficiency, which would increase overall output compared to run of mine ore. Although precise terms are not specified, and may not yet be agreed, Bushveld noted it would share in the benefits from any such optimisation.

Bushveld has previously noted the potential to supply vanadium-rich ore from the Mokopane project to Vanchem, reducing longer-term feedstock risk for Vanchem. SPR is undertaking to develop Mokopane post its acquisition of a 64% stake in the project from Bushveld, which in addition to reducing feedstock risk would also lower input costs via an irrevocable life-of-mine supply agreement.

No timeline was provided for these potential developments, which will clearly take some time to complete, but the announced transaction offers the potential for medium to longer term increases in production rates and cost reductions which could be incrementally positive to our assessment of the asset. With no further detail it is not possible to model with any certainty what impact these developments could have, but we note Bushveld's operations, particularly Vanchem, have been sensitive to unit cash operating costs as we show later in this report.

We present in this report near-term cash generation sensitivities to vanadium prices and in the valuation section we present sensitivities to various assumptions including vanadium prices, funding terms and discount rates.

Potential headroom to pay down debt, dependent upon capex plans

The Orion convertible loan refinancing (for which non-binding, investment committee approved terms were announced in May 2023, but which has not yet completed) involves the conversion of the existing ~US\$45m convertible debt due November 2023 into three components:

- 3-year term loan totalling ~US\$27m
- A new ~US\$13.5m convertible loan note
- Conversion of ~US\$4.5m existing convertible loan notes into equity
- A supplemental production finance agreement (PFA) of no more than 0.22% of gross revenues from the Vametco and Vanchem projects

At our base case forecasts following announcement of the SPR transactions Bushveld would not need to draw down the full capacity of the 3-year term loan and could potentially repay it in 2024 following completion of the Vanchem stake sale. We also forecast Bushveld could exercise its early redemption rights for 50% of the new US\$13.5m convertible loan in 2026. Such measures could serve to reduce finance costs, although the PFA (initially announced in 2020 with the addition of a proposed 2023 tranche in connection with the convertible refinancing) is in our view the most costly portion of debt.

The 2020 PFA (~US\$35m outstanding at YE 2022) incorporated the option to repay up to 50% of the loan on each of the first three loan anniversaries. Given the agreement was announced on 30 September 2020 we conclude Bushveld will, unfortunately, not be able to repay a portion of this rather expensive portion of 'debt' under the agreed terms. Discussions should, however, still be ongoing to close the convertible debt refinancing and those discussions could, potentially, be influenced by the agreements with SPR. (Note the PFA is not a conventional debt instrument with interest and repayment terms; in exchange for providing financing to Bushveld, Orion receives payments linked to gross revenues and gross production from Vametco and Vanchem. These agreements effectively provide a royalty to Orion over the life of the facilities, with provisions for payments to fall once production ceilings are reached, and to reduce the percentage of revenues paid at higher vanadium prices.)

The extent to which debt pay down could be accelerated is also dependent upon future capex requirements. It seems likely capex will be required, both to accommodate future growth, but perhaps more critically in the near-term, to reduce unplanned downtime given ongoing plant reliability issues which have negatively impacted cash generation. We have incorporated some modest additional spend in our forecasts, but look for further details on future investment programs, and their anticipated impact upon plant reliability/production, as recently installed CEO Craig Coltman (ex De Beers Consolidated Mines) continues his assessment of the business.

Orion bond conversion price uncertainty

Bushveld management notes 'significant progress' with the Orion convertible loan note refinancing, however, a number of conditions remain outstanding prior to completion, including South African Reserve Bank approval, finalisation of definitive binding documentation and shareholder's approval.

The proposed conversion of US\$4.5m of debt into equity is currently priced at 6p a share, which was a 46% premium to the 30-day VWAP at the time of announcement in May 2023, but is now ~3x the current share price. It is also ~2.3x the price at which the Mustang CLN holders recently acquired a ~17% stake (pre dilution from the SPR financing agreements) in Bushveld.

We see some risk that the Orion debt conversion price could be revised down and incorporate an assumed conversion price of 3p/sh in our base case analysis, with sensitivities included later in this report.

Unit cost gap between Vametco and Vanchem has closed

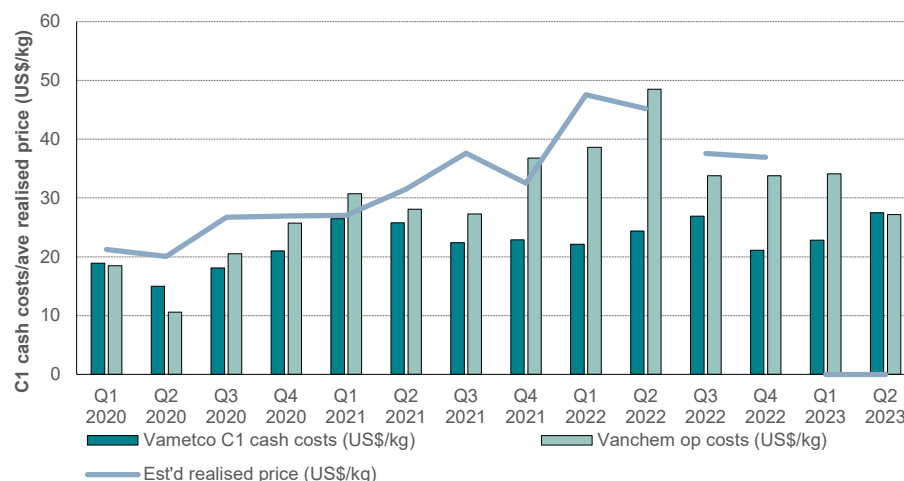
The chart below compares reported quarterly C1 cash costs and our estimate of realised prices. Rising unit costs at Vanchem over the last three years have significantly impacted profitability, whilst Vametco has, on our estimates, delivered robust profitability during the period.

Recently LMB vanadium prices have fallen to the low US\$30s/kg and although Vanchem's unit cost have been falling, Vametco's unit costs have risen to the high US\$20s/kg driven by falling production, negatively impacting profitability. We forecast Vametco C1 cash costs rising to ~US\$25.2/kg at in H2 2023, see our asset summary CF sheets later in this report for a forecast of C1 cash costs for future years (broadly falling to ~US\$23.4/kg in 2026 with production expansion then rising with inflation). For Vanchem in our base case we forecast C1 cash costs continuing to fall to US\$26.1/kg in H2 2023 reflecting rising production, again for future years see our asset CF summary sheets later in this report (broadly falling to under ~US\$25/kg on rising production then increasing post 2026 with inflation).

Higher production should see unit costs fall, given the ~35-40% share of costs which are fixed across the two key assets, however, as noted above this may require additional capex.

Figure 1: Gap between Vametco and Vanchem cash costs has closed, but partially owing to rising unit costs at Vametco

C1 cash costs vs realised vanadium price (US\$/kg)



Source: BNP Paribas Exane estimates. Note group level realised prices for H1 2023 not yet released.

Higher unit costs increase near-term cash generation sensitivity to vanadium prices

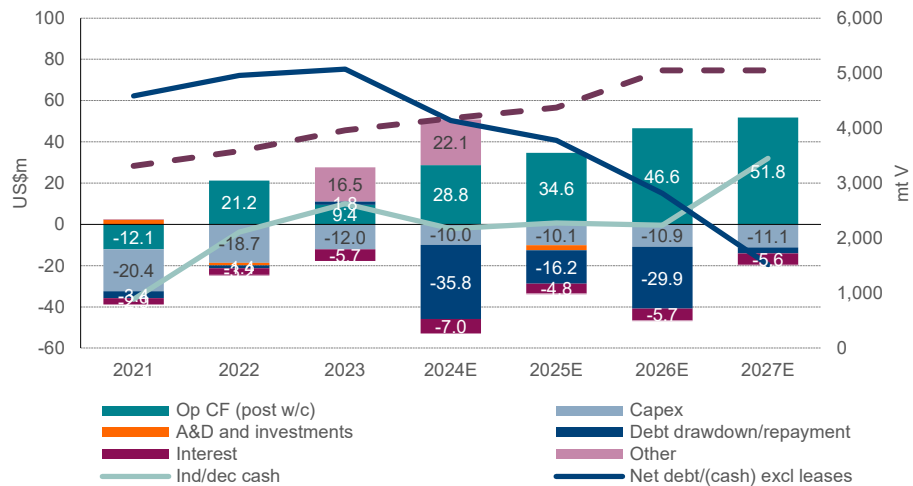
Our base case forecast incorporates a US\$34.7/kg LMB vanadium price for 2023; H1A was US\$36.5/kg and we forecast US\$33/kg for H2. Our base case forecast rises to US\$38.5kg in 2024 and US\$40.7/kg from 2025 (costs and price inflated at 2.5% pa in the long-term). We model Bushveld obtaining an 8% premium to LMB pricing in 2023, falling to 6% in 2024 and 4% in 2025 (2% long-term) reflecting the high proportion of sales into the higher priced US market (2022 realised price premium over LMB was 6% with 11% in H2 2022).

We forecast C1 unit cash costs of ~ZAR485/kg in 2023, or US\$26.3/kg at our forecast FX rate, falling towards ~US\$24.6/kg on average over 2024-27.

We show below the sensitivity of forecast operating cash-flow generation and net debt to a range of vanadium prices; note our net debt forecasts assume the SPR financing, and partial conversion of the Orion debt complete before YE 2023 with completion of the partial disposal of Vanchem in 2024.

We forecast a ~US\$12m cash outflow for investments (excluding the anticipated SPR disposal proceeds) and forecast finance costs of ~US\$5.7m and lease payments of ~US\$1m in 2023, totalling ~US\$19m.

Figure 2: Cash-flow forecast summary chart, net debt and production at base case

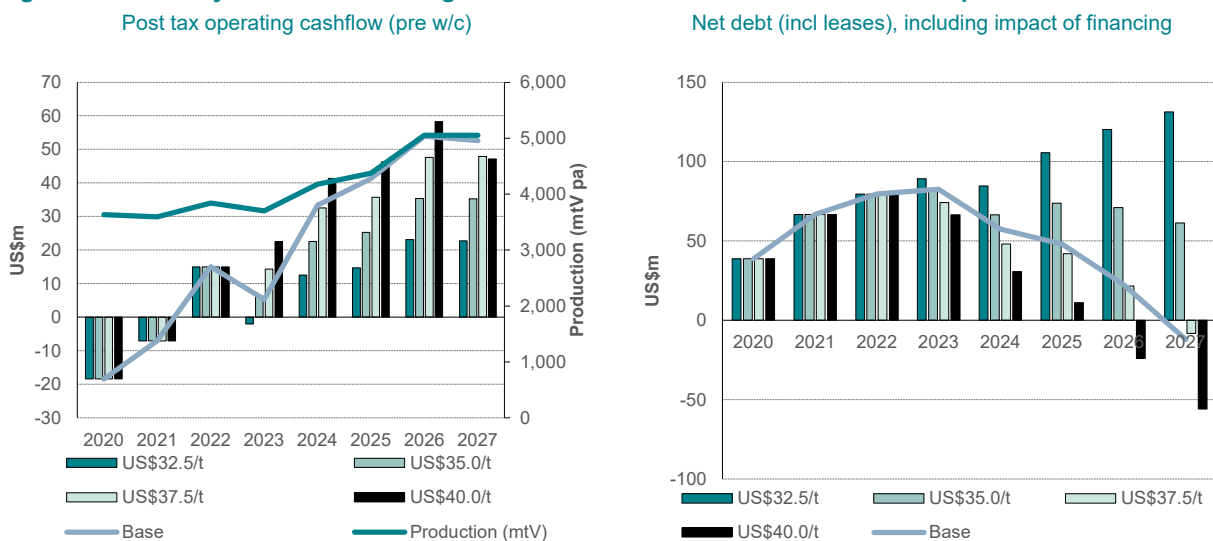


Source: BNP Paribas Exane estimates

The year-end 2022 cash position was ~US\$10.9m which probably did not leave significant headroom over the minimum levels required to run the business. It can be seen from the charts below that operating cash generation would be insufficient to cover outflows on our forecasts even at US\$37.5/kg vanadium prices; LMB vanadium prices averaged US\$36.45/kg during H1 2023 and have since fallen to the low US\$30s/kg. In our view this explains the requirement for near-term action to secure the funding outlook.

At our base case we forecast the business could return to a net cash position by 2027, an improvement vs our prior forecast of 2028, despite lower near-term production rates and higher costs.

Figure 3: Sensitivity of near-term cash generation and net debt outlook to vanadium prices

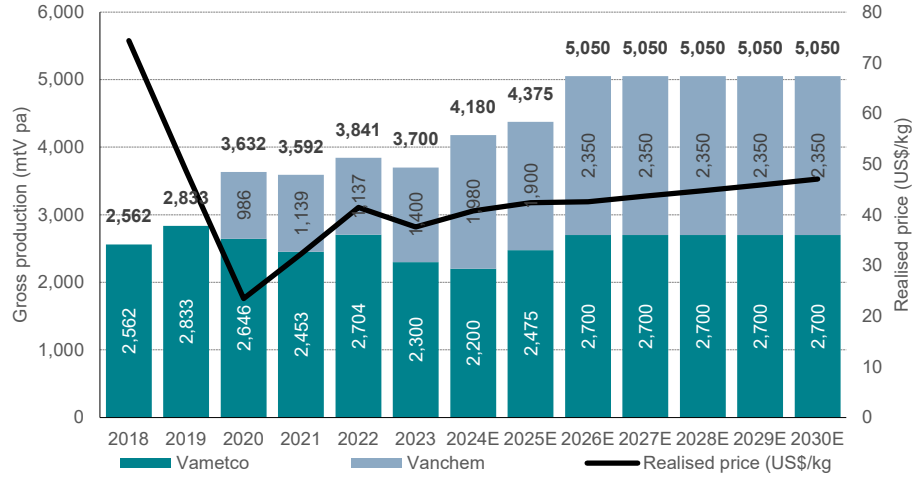


Source: BNP Paribas Exane estimates. Note we hold production and operating cost assumptions flat in this sensitivity analysis; net debt outlook assumes Orion refinancing completes on the agreed terms but at a 3p/sh conversion price, and that the SPR financing package completes also at a 3p/sh price for the raise.

We summarise below our forecasts for production and EBITDA/margins in chart form.

Figure 4: Group production forecast

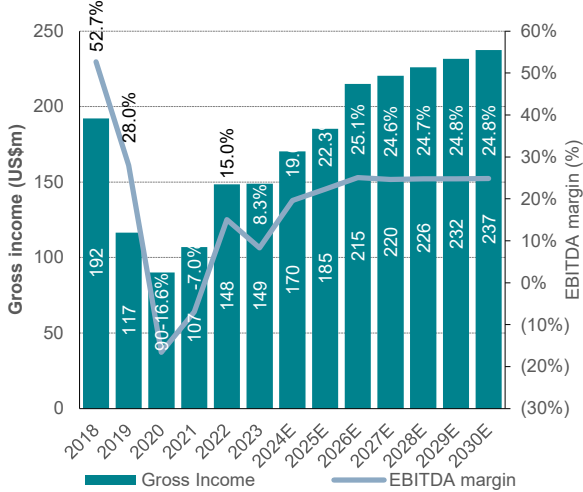
Gross production (mt V pa) and realised vanadium price (US\$/kg)



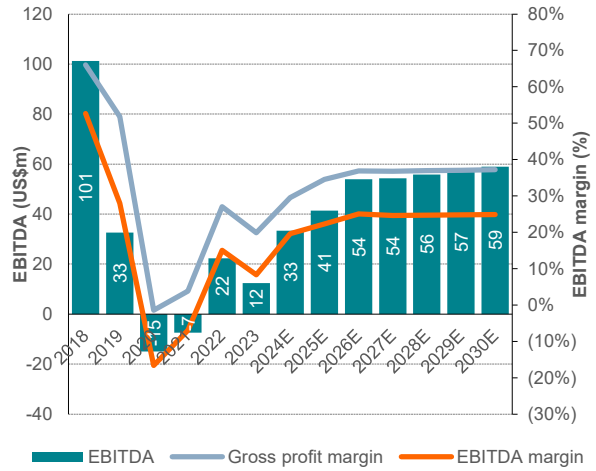
Source: Company, BNP Paribas Exane estimates

Figure 5: Operating issues in 2023 interrupt progress on income and margins

Group gross income and EBITDA margin



Group EBITDA and margins



Source: Company, BNP Paribas Exane estimates

Valuation

Our valuation update incorporates changes to our assessment of the asset base (incorporating latest production and cost guidance and assumptions around some additional capex at Vametco out to 2027), changes to FX assumptions, the proposed SPR financing, changes to the share count following the conversion of Mustang convertible loan notes into Bushveld shares and lower WACC reflecting an anticipated improvement in the financial position post completion of the announced financing activities.

Announced financing agreements should address funding issues

We believe the announced financing agreements should address the concerns expressed in the 'going concern' statement of the 2022 annual report; clearly this assessment is reliant upon completion of the announced transactions on the agreed terms, albeit we model a 3p/sh price for the US\$4.5m portion of the Orion debt to be converted and the SPR equity raise. Using the realised vanadium prices incorporated in the 'going concern' test of US\$36.2/kg in 2023 and US\$35.5/kg in 2024 we forecast the business is comfortably funded to YE 2024.

Base case risked Core NAV of 1.7p/sh rising to 2.7p/sh including growth projects

The table below provides a detailed breakdown of our risked NAV for Bushveld Minerals.

We have rolled forwards our risked NAV discount date to 1st Jan 2024. We model completion of the US\$12.5m SPR equity raise prior to year-end 2023 and the proceeds from this transaction are therefore included in our forecast net debt balance as of 1st January 2024. We model completion of the Vanchem stake disposal in 2024. Our discount rate falls from 16.2% to 14.4%, reflecting the anticipated improvement in the funding position post completion of the announced transactions. We use a consistent approach to calculating discount rates across our mining coverage, incorporating the risk-free rate and equity risk premium with a country risk premium for the country of operations.

Our Core NAV stands at 1.7p/sh and including risked potential from growth projects this rises to 2.7p/sh. Our un-risked NAV, including growth projects, stands at 4.2p/sh.

Figure 6: Risked NAV - detail

Country	Asset	Gross resource modelled (mt V)	Int. %	W.I. Res/vols processed (mtV)	CoS (%)	NAV@ 14.6% as of 1st Jan				
						\$m	\$/kg V (net)	£m	p/sh	Unrisked p/sh
Production										
South Africa	Vametco	58.7	74%	43.42	100%	172	4.0	137	6.8	6.8
South Africa	Vanchem	50.9	50%	25.44	100%	100	3.9	79	4.0	4.0
South Africa	Risked NPV of PFA payments		100%		100%	(42)		-33	(1.6)	(1.6)
Total producing		109.6		68.9		231	3.4	183	9.1	9.1
NPV of overheads (incl selling costs, post tax)						-165		-131	(6.5)	(6.5)
Net cash (debt) excl PFA & restr cash, incl lease liabs						-41		-33	(1.6)	(1.6)
Cash in from future equity raises/debt conversions						0		0	0.0	0.0
Cash return completed post B/S date								0	0.0	0.0
Proceeds from/deferred payments for disposals/acqns								19	0.8	0.8
Core NAV - Prod		109.6		68.9		43		34	1.7	1.7
Development										
Total development						0.0		0.0	0.0	0.0
Core NAV - Prod & Dev		109.6		68.9		43		34	1.7	1.7
Growth projects										
SA/Global	BELCO					Ltd financial detail upon which to ascribe value at this time				
SA/Global	Bushveld Energy				85%	7		6	0.3	0.3
South Africa	Vametco SAG mill & Vanchem refurb kiln 2	18.4	53%	9.8	30%	8	2.8	7	0.3	1.1
South Africa	Vanchem refurb kiln 1	12.8	50%	6.4	50%	13	4.1	10	0.5	1.0
South Africa	Vametco kiln expansion	8.4	74%	6.2	10%	2	2.8	1	0.1	0.7
South Africa	Risked NPV of PFA payments for expansion programs		100%		33%	-6		-4	(0.2)	(0.7)
Total growth projects		39.7		22.4		25	3.6	19	1.0	2.4
Growth projects NAV		149.2		91.3		68	10.1	54	2.7	4.2
Share price									2.0	2.0
Core NAV up/(down)side vs share price									(15%)	(15%)
Expansion program NAV up/(down)side vs share price									33%	106%

Source: BNP Paribas Exane estimates

Changes to risked NAV

The table below summarises the various changes to our risked NAV. Our assessment of NAV for the Core producing assets falls 45% in US\$m terms and falls 40% in US\$m terms including Growth projects. In GBpm terms our risked NAVs fall 47% and 41% respectively.

Half of Bushveld's interest in the Vanchem project, and its entire stake in Mokopane (for which we previously attributed no explicit value as Bushveld was unlikely, in our view, to be able to develop the project in a reasonable timeframe), is being sold for US\$25m. We model Bushveld retaining 100% of the Vanchem share of the liability associated with the PFA, hence this liability associated with the asset is not significantly reduced. We queried how the Vanchem sales price had been arrived at on the conference call, and whether a broader asset marketing program had been undertaken, to which management noted the asset sale formed only part of a much wider financing initiative which should be considered holistically. Although the value apparently attributed to Vanchem as part of the financing package is low versus our NAV, we recognise that funding was required, given lower production and higher costs than previously anticipated, and that an entirely equity funded solution would likely have involved significant dilution and may have been challenging. In the absence of attractive alternatives the disposal of 50% of Vanchem appears to be a necessary price to pay to secure a stable funding position for the business. As previously noted the incoming partner, SPR, may be able to supply feedstock which can deliver improved yields and reduce costs at Vanchem, potentially providing additional benefits which it is not possible to quantify at this time.

On a per share basis, incorporating the impact of the dilution from the Mustang CLN conversion and our assumption that the Orion partial debt conversion and the SPR raise are completed at 3p/sh, the impact is even more significant at -64% and -60% respectively.

Our modelled ~717m increase in the share count over year-end 2022 levels comprises ~118m related to the debt-for-equity swap in conjunction with the Orion convertible loan refinancing, ~270m for the Mustang CLN conversion under the backstop agreement and ~329m for the US\$12.5m of new equity investment from SPR.

Figure 7: Changes in risked NAV

US\$m, GBPm and p/sh

Country	Asset	Δ\$m	Δ%	Δ£m	Δ%	Δp	Δ%
Production							
South Africa	Vametco	8	5%	4	3%	-3.0	-31%
South Africa	Vanchem	(28)	-22%	(24)	-23%	-3.7	-48%
South Africa	Risked NPV of PFA payments	(3)	-9%	(2)	-6%	0.7	28%
Total producing		-22	-9%	-22	-11%	-6.1	-40%
	NPV of overheads (incl selling costs, post tax)	-25	-18%	-17	-15%	1.9	22%
	Net cash (debt) excl PFA & restr cash, incl lease liabs	-5	-12%	-3	-10%	0.6	26%
	Cash in from future equity raises/debt conversions	-4	-100%	-3	-100%	-0.3	-100%
	Cash return completed post B/S date	0	n/a	0	n/a	0.0	n/a
	Proceeds from/deferred payments for disposals/acqns	20	1746%	16	1709%	0.8	1182%
Core NAV - Prod		-36	-45%	-30	-47%	-3.1	-64%
Development							
Total development		0	n/a	0	n/a	0.0	n/a
Core NAV - Prod & Dev		-36	-45%	-30	-47%	-3.1	-64%
Growth projects							
SA/Global	BELCO						
SA/Global	Bushveld Energy	(9)	-57%	(8)	-58%	-0.7	-72%
South Africa	Vametco SAG mill & Vanchem refurb kiln 2	(3)	-28%	(3)	-30%	-0.4	-53%
South Africa	Vanchem refurb kiln 1	6	90%	5	85%	0.1	25%
South Africa	Vametco kiln expansion	0	22%	0	20%	0.0	-20%
South Africa	Risked NPV of PFA payments for expansion	-3	-89%	-2	-85%	0.0	-24%
Total growth projects		-9	-26%	-8	-28%	-1.0	-51%
Growth projects NAV		-45	-40%	-37	-41%	-4.1	-60%

Source: BNP Paribas Exane estimates

We provide valuation sensitivities to assumptions around the equity raise price/Orion debt conversion price, discount rates and vanadium prices below.

Sensitivity to assumptions around new equity

The below tables present our risked Core and Growth NAVs incorporating a range of assumed share prices at which this US\$12.5m raise and the US\$4.5 partial debt conversion is achieved, including our assumed 3p/sh price and the previously announced (May 2023) partial debt conversion price for US\$4.5m of the Orion convertible debt of 6p/sh.

Figure 8: Sensitivity of Core/Growth risked NAV to assumed price for US\$4.5m Orion debt conversion and US\$12.5m of new equity from SPR

p/sh

New equity assumed price (p/sh)	Core risked NAV (p/sh)	Growth risked NAV (p/sh)
1	1.2	1.9
2	1.5	2.4
3	1.7	2.7
4	1.8	2.8
5	1.9	2.9
6	1.9	3.0

Source: BNP Paribas Exane estimates

Cost of capital and vanadium prices are key valuation sensitivities

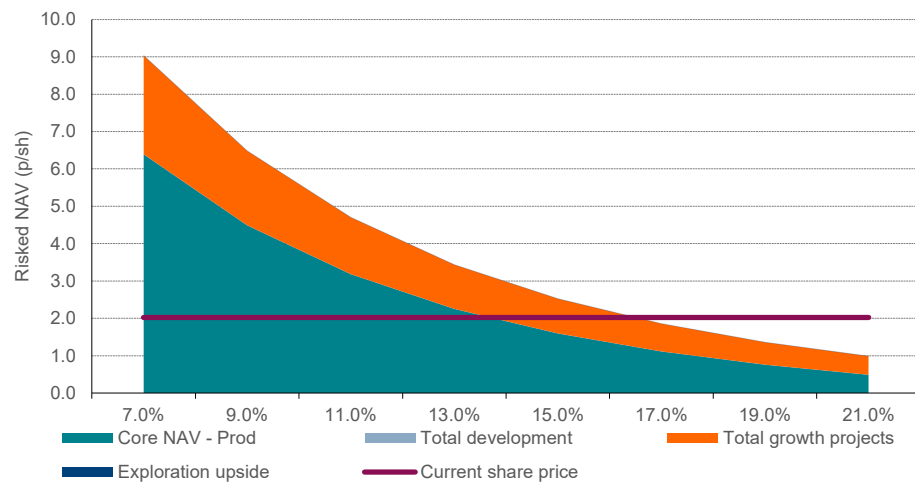
The cost of capital is a key sensitivity for Bushveld given its long asset lives and cash generation is sensitive to vanadium price assumptions. We provide sensitivities to both of these key drivers below.

The chart below shows a significant increase in our risked NAV at lower discount rates (note this includes the impact of the announced financing transactions assuming a 3p/sh conversion price for the Orion debt conversion and SPR equity investment).

Bushveld noted in its SPR financing announcement the potential to retire (partially or entirely) certain existing financing arrangements which could potentially lower debt costs.

Figure 9: Base case Core Producing risked NAV sensitivity to discount rate

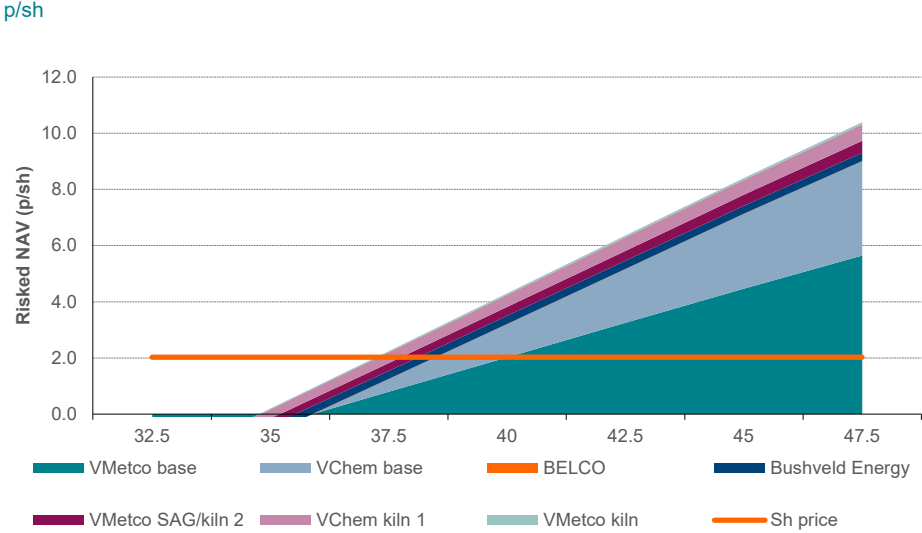
p/sh



Source: BNP Paribas Exane estimates

The sensitivity of our risked NAV to the vanadium price outlook is shown below.

Figure 10: Risked NAV sensitivity to vanadium prices



Source: BNP Paribas Exane estimates

Summary of impact of recent updates

Dilution impact from conversion of Mustang Energy CLNs

Bushveld's VRFB related investments were to be spun-out into a listed SPAC (Mustang Energy) with Bushveld expected to receive US\$19.4m Mustang shares at an assumed price of 20p/sh. Following repeated missed deadlines for Mustang's shares to return to trading, having been suspended since 2021, the Mustang convertible loan note (CLN) holders decided to exercise the backstop arrangements which permitted conversion of £7.15m Mustang convertible loan notes into new Bushveld ordinary shares at the 20-day VWAP. Following recent falls in the Bushveld share price this has resulted in the issuance of 270.4m new Bushveld ordinary shares (17.4% of the enlarged share capital prior to the Orion partial debt conversion and the SPR equity injection).

Following completion of these transactions it was announced that Acacia Resources Ltd holds a 10.28% interest in Bushveld Minerals, up from 2.63%, putting it third on the register (according to Reuters) behind Hargreaves Lansdown and Interactive Investor Trading. In addition Kamran Sattar, CEO of Portillion Capital, disclosed a 4.04% holding but the transaction date for that announcement is later than for the Acacia increase.

As part of the backstop agreement Mustang will transfer its 22.1% interest in VRFB-H, which holds Bushveld's VRFB related investments, to Bushveld and novate to Bushveld its rights under the US\$2.0m loan made to Enerox (in which VRFB-H holds a stake).

Following completion of these transactions Bushveld Minerals will hold 22.1% of VRFB-H directly, and Bushveld Energy (in which Bushveld Minerals holds an 84% interest) will hold 50.5% of VRFB-H. VRFB-H itself owns 40% of Enerox (Garnet holds the remaining 60%); Bushveld Minerals therefore owns a ~25.8% effective interest in Enerox. Enerox owns 100% of Cellcube, a supplier of vanadium redox flow batteries (VRFBs).

Mustang, in its 12th September announcement, stated it continued to negotiate the terms of the acquisition of 100% of the shares in VRFB-H and will make a further announcement at the conclusion of those negotiations.

Garnet recently acquired a 10% stake in Enerox for US\$3.25m, which we use to imply a gross value for Enerox of US\$32.5m in the absence of further financial disclosure about the business.

2Q ops update overview

Bushveld reported H1 production 12% below our forecasts and sales volumes 9% below our forecasts with unit C1 cash costs 7% ahead of our forecasts in US\$/kg. LMB vanadium prices were 1.5% below our forecast in H1 2023.

Guidance for the year was updated, with group production guidance downgraded 12.6% at the mid-point (11.9% at the low end) to 3,700-3,900 from 4,200-4,500 mtV.

Group level cost guidance was increased as follows:

- To US\$26.6-26.9/kg from US\$26.1-27.0/kg, up 1% at the mid-point
- To ZAR481-487/kg from ZAR447-438/kg, up 9% at the mid-point

Vametco production weak; maintenance work required

The weakness was principally driven by performance at Vametco, where production was 14% below our forecasts and as a consequence unit cash costs were 12%/10% ahead of our forecasts (on a US\$/kg/ZAR/kg basis respectively).

Gross Vanchem production of 485mtV was impacted by ~200mtV owing to 5 days of unplanned maintenance of the sulphate recovery plant (SRP), unexpected high levels of rainfall which impacted operation of the barren dam, 7 days of unplanned maintenance of the dust collectors at the refinery and power instabilities as a result of a transformer failure at the local municipality. Additional work is planned in H2 to resolve the SRP and (temporarily resolve) barren dam issues, with additional investment likely in future years to buttress the barren dam.

Production guidance for 2023 has been reduced from ~2,700 mtV to 2,300-2,400 mtV, a ~13% reduction at the mid-point, owing to the SRP and barren dam issues. We model 2,300mtV for 2023 and 2,200 for 2024 (equivalent to ~200mtV/month with 1 month of maintenance), rising to 2,475mtV in 2025 and 2,700mtV from 2026, with investment required to improve reliability.

Production cash cost guidance for Vametco was updated as follows:

- To US\$25.6-25.9/kg from US\$23.6-24.0/kg, up 8% at the mid-point
- To ZAR463-469/kg from ZAR396-402/kg, up 17% at the mid-point

The combination of lower production and higher costs clearly negatively impacts the outlook for cash generation and our valuation, although we anticipate future production increases post investment should positively impact production cash costs on a unit basis.

Vanchem production light owing to plant breakdowns, unscheduled power disruptions and issues with 3rd party ore supply

At Vanchem production was 9% below our forecasts but unit C1 cash costs were only 2% ahead of/in-line with our forecasts (on a US\$/kg / ZAR/kg basis respectively).

Production guidance for 2023 was reduced to 1,400-1,500mtV from 1,500-1,800mtV, a 12% reduction at the mid-point and we model 2023 production at the low end of this range.

A number of initiatives were implemented in July 2023 with the aim of getting Vanchem into a sustainable positive cashflow position in the short-term, and to achieve stable production levels of ~180mtV/month in the next 6 months. These involved changing the reagent mix to reduce silica build-up in the kiln, deploying a team from Vametco to Vanchem to improve knowledge sharing and implementing 24/7 shift managers to improve supervision and enable immediate decision-making. The third-party ore supplied was not deemed of adequate quality and Bushveld has installed a magnetic separator at the supplier's site to improve ore quality by reducing the silica content.

The July 2023 production rate of 158mtV, if sustained for 11 months of the year (with a 1 month maintenance shutdown) would imply annual production of ~1,740mtV.

We model production rising to ~1,980 in 2024 assuming the targeted 180mtV/month is achieved during H2 2023 and 1 month of maintenance in 2024. We model 2025 production at 1,900mtV with further growth in 2026 to 2,350mtV.

C1 unit cost guidance for Vanchem was updated as follows:

- To US\$28.1-28.5/kg from US\$29.7-30.8/kg, down 6% at the mid-point

– To ZAR509-516/kg from ZAR498-517/kg, up 1% at the mid-point

Figure 11: H1 operating results comparison vs forecasts

	Reported			Est'd H1 23E	Reported vs		
	H1 22	H2 22	H1 23		H1 23E	H1 22	H2 22
Group level figs							
Production (mtV)	1,641	2,200	1,784	2,036	-12%	9%	-19%
Wtd ave C1 cash cost (US\$/kg)	-28.0	-27.0	-26.6	-24.9	7%	-5%	-2%
Sales (mtV)	1,645	1,939	2,096	2,297	-9%	27%	8%
FX rate (ZAR/US\$)	15.4	17.3	18.2	18.0	1%	18%	5%
Vametco							
Production (mtV)	1,226	1,478	1,167	1,355	-14%	-5%	-21%
C1 cash costs (ZAR/kg)	-353	-411	-450	-403	12%	27%	10%
C1 cash costs (US\$/kg)	-22.9	-23.7	-24.7	-22.4	10%	8%	4%
Vanchem							
Production (mtV)	415	722	617	681	-9%	49%	-15%
C1 cash costs (ZAR/kg)	-665	-586	-549	-539	2%	-17%	-6%
C1 cash costs (US\$/kg)	-43.1	-33.8	-30.1	-30.0	0%	-30%	-11%

Source: Company, BNP Paribas Exane estimates

BELCO electrolyte plant does not yet have orders

We continue to attribute no value for BELCO, which holds Bushveld's investments in a South African electrolyte manufacturing plant (the largest publicly announced plant outside China) which is intended to supply the VRFB industry.

Construction and testing of the plant was completed during H1; hot commissioning has commenced and is anticipated to continue during H2 2023. BELCO has been undergoing a qualification process with VRFB companies for over a year now, however, as of the 2Q operating update no offtakers have yet been secured. Production will commence once stable off-takers for the electrolyte product have been secured.

Given there is limited financial detail available and no customer orders we do not attribute value to BELCO at this time.

Financial statements

Figure 12: Summary operating data

	Unit	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Production (mtV)	mtV	2,833.0	3,631.9	3,592.0	3,841.0	3,700.0	4,180.0	4,375.0	5,050.0	5,050.0
Vametco @ 100% - fully consolidated	mtV	2,833.0	2,646.0	2,453.0	2,704.0	2,300.0	2,200.0	2,475.0	2,700.0	2,700.0
Vanchem @ 100% - fully consolidated	mtV	0.0	985.9	1,139.0	1,137.0	1,400.0	1,980.0	1,900.0	2,350.0	2,350.0
Sales (mtV)	mtV	2,392.0	3,831.4	3,314.0	3,584.0	3,961.0	4,180.0	4,375.0	5,050.0	5,050.0
Vametco @ 100% - fully consolidated	mtV	2,392.0	2,901.0	2,247.8	2,531.6	2,475.3	2,200.0	2,475.0	2,700.0	2,700.0
Vanchem @ 100% - fully consolidated	mtV	0.0	930.4	1,066.2	1,052.4	1,485.7	1,980.0	1,900.0	2,350.0	2,350.0
Sales as % of prod	%	84%	105%	92%	93%	107%	100%	100%	100%	100%
Realised price	US\$/kg	48.7	23.5	32.2	41.4	37.6	40.7	42.4	42.6	43.7
LMB V price (US\$/kgV)	US\$/kg	42.3	25.0	34.5	39.2	34.7	38.5	40.7	41.8	42.8
Realised price as % of LMB (%)	%	115%	94%	93%	106%	108%	106%	104%	102%	102%

Source: Company, BNP Paribas Exane estimates

Figure 13: Income Statement

	Unit	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Revenue from contracts with customers	US\$m	116.5	90.0	106.9	148.4	149.0	170.3	185.4	215.1	220.5
Sale of goods	US\$m	116.4	89.9	106.9	148.4	149.0	170.3	185.4	215.1	220.5
Vametco (US\$m)		117.2	66.6	73.0	108.0	93.3	89.8	104.9	115.0	117.9
Vanchem		0.0	23.3	33.9	44.2	55.6	80.5	80.5	100.1	102.6
Other revs (by deduction)		(0.8)	(0.1)	0.0	(3.8)					
Rendering of services					0.0					
Bushveld Energy	US\$m	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Growth - period on period (%)	%	-39.3%	-22.8%	18.7%	38.9%	0.4%	14.3%	8.8%	16.0%	2.5%
Other income	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% of sales	%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gross Income	US\$m	116.5	90.0	106.9	148.4	149.0	170.3	185.4	215.1	220.5
Growth - period on period	%	-39.3%	-22.8%	18.7%	38.9%	0.4%	14.3%	8.8%	16.0%	2.5%
COGS (incl depr)	US\$m	(56.2)	(91.3)	(102.8)	(108.3)	(119.4)	(120.0)	(121.3)	(135.7)	(139.4)
% of sales	%	-48.2%	-101.4%	-96.2%	-73.0%	-80.1%	-70.5%	-65.4%	-63.1%	-63.2%
o/w depr		-10.388	-17.866	-19.396	-18.475	-16.068	-15.929	-11.784	-11.609	-11.489
COGS excl depr		-45.811	-73.395	-83.387	-89.829	-103.320	-104.063	-109.489	-124.103	-127.933
Gross profit	US\$m	60.3	(1.3)	4.1	40.1	29.6	50.3	64.1	79.4	81.0
Gross profit margin (excl other income) on sale of goods	%	51.8%	-1.4%	3.8%	27.0%	19.9%	29.5%	34.6%	36.9%	36.8%
Other op income	US\$m	0.9	2.3	2.6	2.7	2.7	2.7	2.7	2.7	2.7
Impairments	US\$m	0.0	0.0	(2.4)	(24.0)	0.0	0.0	0.0	0.0	0.0
Selling & distr	US\$m	(7.6)	(4.8)	(6.4)	(9.3)	(8.9)	(10.2)	(11.1)	(12.9)	(13.2)
Other mine opex	US\$m	(3.9)	(4.7)	(3.2)	(2.7)	(2.7)	(2.7)	(2.7)	(2.7)	(2.7)
Idle plant costs	US\$m	(2.9)	(4.2)	(3.4)	(6.7)	(4.0)	(2.0)	(2.0)	(2.0)	(2.0)
Sh based payments	US\$m	0.0	(0.4)	0.4	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Admin expenses	US\$m	(24.7)	(19.8)	(20.9)	(20.0)	(20.1)	(20.4)	(21.1)	(21.9)	(22.7)
Other	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total other op/admin costs		(38.1)	(31.5)	(33.4)	(60.3)	(33.3)	(32.9)	(34.5)	(37.1)	(38.2)
EBIT	US\$m	22.3	(32.8)	(29.3)	(20.1)	(3.7)	17.4	29.6	42.3	42.8
EBIT margin	%	19.1%	-36.5%	-27.4%	-13.6%	-2.5%	10.2%	15.9%	19.7%	19.4%
add back DD&A/impairments		10.4	17.9	21.8	42.4	16.1	15.9	11.8	11.6	11.5
EBITDA	US\$m	32.6	(14.9)	(7.4)	22.3	12.3	33.3	41.3	53.9	54.3
EBITDA margin	%	28.0%	-16.6%	-7.0%	15.0%	8.3%	19.6%	22.3%	25.1%	24.6%
Net interest cost	US\$m	1.9	(4.7)	(12.4)	(13.7)	(17.4)	(16.3)	(12.4)	(9.9)	(6.2)
Net other financial items	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FV gain on deivative liabs		0.0	0.0	9.0	2.9	0.0	0.0	0.0	0.0	0.0
Losses from JV		0.0	0.0	(4.4)	(5.1)	0.0	0.0	0.0	0.0	0.0
Movement in earnout est		(1.5)	(0.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other		60.6	0.0	(1.9)	(0.8)	0.0	(59.6)	0.0	0.0	0.0
Income (loss) before tax	US\$m	83.3	(37.7)	(38.9)	(36.8)	(21.1)	(58.5)	17.2	32.3	36.6
Income tax	US\$m	(14.0)	6.6	4.7	1.3	6.1	17.0	(5.0)	(9.4)	(10.6)
Net income (loss) from continuing operations	US\$m	69.2	(31.1)	(34.2)	(35.4)	(15.0)	(41.5)	12.2	23.0	26.0
Profit (loss) from discontinued operations	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income (loss) for the period	US\$m	69.2	(31.1)	(34.2)	(35.4)	(15.0)	(41.5)	12.2	23.0	26.0
Ave basic NOSH	m	1,125.6	1,164.7	1,201.7	1,267.3	1,467.2	2,005.3	2,005.3	2,005.3	2,005.3
Basic EPS	US\$/sh.	5.50	(2.60)	(2.75)	(3.06)	(1.22)	(2.25)	0.43	0.97	1.12
Dividend paid per share	US\$/sh.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source: Company, BNP Paribas Exane estimates

Figure 14: Balance sheet

		2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Assets										
Intangible assets	US\$m	59.4	59.0	59.3	53.5	54.0	0.5	1.0	1.5	2.0
Property, plant and equipment o/w Right-of-use assets	US\$m	185.3	167.6	153.1	127.4	122.9	88.4	86.2	85.0	84.2
Investment property	US\$m	0.0	4.3	3.5	5.8	5.8	5.8	5.8	5.8	5.8
Financial assets at fair value		2.9	2.8	2.6	2.4	2.4	2.4	2.4	2.4	2.4
		4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	US\$m	0.0	0.0	0.0	0.0	12.0	28.9	24.0	14.6	5.7
Other investments / Inv. in associates & JVs	US\$m	0.0	0.0	7.9	3.2	3.2	3.2	3.2	3.2	3.2
Other non-current assets	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Restr inv										
Interest bearing receivables	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total non-current assets	US\$m	252.0	229.4	222.8	189.2	197.1	126.0	119.4	109.4	100.1
Current tax assets	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trade, inventories and other receivables	US\$m	39.6	44.5	59.3	64.5	58.5	59.5	63.4	71.9	73.6
Restricted inv		6.6	3.1	2.9	0.0	0.0	0.0	0.0	0.0	0.0
Current tax rec		0.5	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Fin assets @ fair value		2.0	22.5	0.0	3.1	3.1	3.1	3.1	3.1	3.1
Cash and cash equivalents	US\$m	34.0	50.5	15.4	10.9	20.8	18.8	19.4	19.0	51.0
Total current assets	US\$m	82.7	121.4	77.9	78.4	82.4	81.4	85.8	94.0	127.7
Total assets	US\$m	334.7	350.8	300.7	267.6	279.5	207.5	205.3	203.4	227.8
Liabilities										
Retirement benefit obligation	US\$m	2.3	2.1	1.9	1.7	1.7	1.7	1.7	1.7	1.7
Env rehab facility		17.8	18.0	18.0	16.6	16.6	16.6	16.6	16.6	16.6
Deferred consideration		7.1	1.8	1.7	1.5	1.5	1.5	0.0	0.0	0.0
Loans		0.0	1.6	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Borrowings - non-current	US\$m	41.8	70.9	67.4	35.3	91.0	69.1	60.1	34.0	31.5
Lease liabilities - non-current	US\$m	4.7	4.4	3.9	6.7	6.7	6.7	6.7	6.7	6.7
Deferred tax liabilities - non-current	US\$m	24.3	11.6	6.0	1.2	0.0	0.0	0.0	0.0	0.0
Other non-current liabilities	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total non-current liabilities	US\$m	98.0	110.3	102.3	63.0	117.5	95.6	85.1	59.0	56.5
Current tax liabilities	US\$m	0.0	0.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0
Trade and other payables	US\$m	15.8	22.1	33.1	45.9	44.1	40.2	37.2	38.0	38.9
Provisions	US\$m	3.4	3.3	3.7	1.7	1.6	2.0	2.1	2.5	2.5
Current borrowings	US\$m	0.0	13.3	10.2	47.9	5.1	0.0	0.0	0.0	0.0
Current lease liabilities	US\$m	0.8	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Deferred consideration										
Other	US\$m	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total current liabilities	US\$m	20.0	43.1	47.6	99.0	54.3	45.7	41.9	43.0	44.0
Total liabilities	US\$m	118.0	153.5	149.9	162.0	171.8	141.3	126.9	102.1	100.6
Equity										
Total S/H equity	US\$m	216.6	197.4	150.8	105.6	107.7	66.1	78.3	101.3	127.3
Total liabilities and equity	US\$m	334.7	350.8	300.7	267.6	279.5	207.5	205.3	203.4	227.8
Net debt/(cash) excl leases		7.7	33.7	62.2	72.3	75.2	50.3	40.6	15.0	(19.5)
Net debt/(cash) incl leases		13.2	38.7	66.7	79.5	82.5	57.6	47.9	22.3	(12.2)

Source: Company, BNP Paribas Exane estimates

Figure 15: Cash flow statement

		2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Profit/(loss) before tax	US\$m	83.3	(37.7)	(38.9)	(36.8)	(21.1)	(58.5)	17.2	32.3	36.6
DD&A (incl right of use assets)	US\$m	10.4	17.9	19.4	18.5	16.1	15.9	11.8	11.6	11.5
Loss from JV	US\$m	0.0	0.0	4.4	5.1	0.0	0.0	0.0	0.0	0.0
Movement in earnout est	US\$m	1.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Remeasurement of fin liabs	US\$m	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
FV gain on derivative liability	US\$m	0.0	0.0	(9.0)	(2.9)	0.0	0.0	0.0	0.0	0.0
Int income	US\$m	(3.6)	(1.1)	(0.9)	(0.5)	(0.5)	(0.6)	(0.6)	(0.6)	(0.8)
Fin costs	US\$m	1.7	5.7	13.3	14.1	17.8	16.9	13.0	10.5	7.0
Impairments	US\$m	0.0	0.0	2.4	24.0	0.0	0.0	0.0	0.0	0.0
Non-cash items in op profit	US\$m				1.1	0.0	0.0	0.0	0.0	0.0
Inc/(dec) provisions	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Income tax (paid)/refunded	US\$m	(8.8)	(3.5)	0.4	(0.6)	(7.0)	0.0	0.0	0.0	(1.7)
Sh based payments	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Other	US\$m	(60.6)	0.0	0.0	(6.9)	0.0	59.6	0.0	0.0	0.0
Op CF (pre w/c)	US\$m	23.9	(18.4)	(7.1)	15.0	5.3	33.3	41.3	53.9	52.6
Changes in working capital	US\$m	4.6	1.3	(5.0)	6.2	4.1	(4.6)	(6.7)	(7.3)	(0.8)
Op CF (post w/c)	US\$m	28.5	(17.1)	(12.1)	21.2	9.4	28.8	34.6	46.6	51.8
Fin income	US\$m	3.6	1.0	0.9	0.3	0.5	0.6	0.6	0.6	0.8
Acqns	US\$m	(30.7)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Proceeds from sale of PPE	US\$m	0.0	0.0	0.0	0.0	0.0	22.5	0.0	0.0	0.0
Purchase of PPE	US\$m	(13.3)	(9.3)	(19.5)	(18.2)	(11.5)	(9.5)	(9.6)	(10.4)	(10.6)
Payment of deferred consideration	US\$m	(3.6)	(1.7)	(3.9)	0.0	0.0	0.0	(2.4)	0.0	0.0
Purchase of investments	US\$m	(4.4)	(1.9)	(10.0)	(1.2)	0.0	0.0	0.0	0.0	0.0
Purchase of expl assets	US\$m	(1.3)	(1.5)	(0.9)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Disposal of fin assets held at FV	US\$m	0.0	0.3	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Sub-lease income received	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Other	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Net cash from investing activities	US\$m	(49.7)	(13.0)	(17.2)	(19.6)	(11.6)	13.1	(12.0)	(10.4)	(10.3)
Change in external borrowings	US\$m	18.6	49.4	(4.7)	(1.4)	1.8	(35.8)	(16.2)	(29.9)	(3.0)
Proceeds from loans	US\$m	0.0	1.6	1.3	0.0	0.0	0.0	0.0	0.0	0.0
Finance costs	US\$m	(0.1)	(3.1)	(2.9)	(3.2)	(5.7)	(7.0)	(4.8)	(5.7)	(5.6)
Acquisition of non-controlling interests	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Transactions in own shares	US\$m	0.0	0.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
Dividends paid to non-controlling interests	US\$m				0.0	0.0	0.0	0.0	0.0	0.0
Dividends to shareholders	US\$m	(4.5)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Leases paid	US\$m	(0.7)	(0.8)	(0.7)	(0.7)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Other	US\$m			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net cash from financing	US\$m	13.3	47.1	(7.0)	(5.3)	12.1	(43.9)	(22.0)	(36.6)	(9.5)
Change in cash	US\$m	(8.0)	17.0	(36.3)	(3.8)	9.9	(2.0)	0.6	(0.4)	32.0
Cash at the beginning of the period	US\$m	42.0	34.0	50.5	15.4	10.9	20.8	18.8	19.4	19.0
FX impact	US\$m	(0.0)	(0.4)	1.2	(0.8)	0.0	0.0	0.0	0.0	0.0
Cash at the end of the period	US\$m	34.0	50.5	15.4	10.9	20.8	18.8	19.4	19.0	51.0

Source: Company, BNP Paribas Exane estimates Note for simplicity we have incorporated the proposed conversion of US\$4.5m of the existing Orion convertible debt into equity as a US\$4.5m equity raise and a corresponding debt repayment.

Figure 16: Summary of H1 2023 forecasts

US\$m, unless otherwise noted

	Reported		Estimated	BNPPE Est vs	
	H1 22	H2 22		H1 23	H2 22
Revenues	76.2	72.2	82.5	14%	8%
EBITDA	15.6	6.7	10.7	59%	(32%)
<i>Margin</i>	20.5%	9.3%	12.9%	4%	(8%)
Op profit	6.1	(26.3)	2.6	110%	(58%)
<i>Margin</i>	8.0%	(36.3%)	3.1%	39%	(5%)
Net debt/(cash) inc. leases	74	80	86	8%	17%

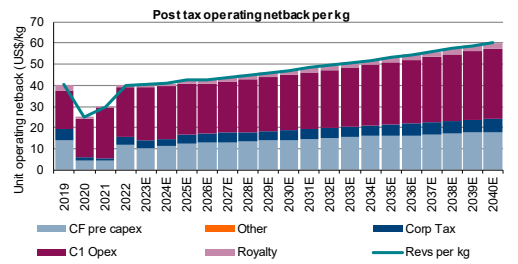
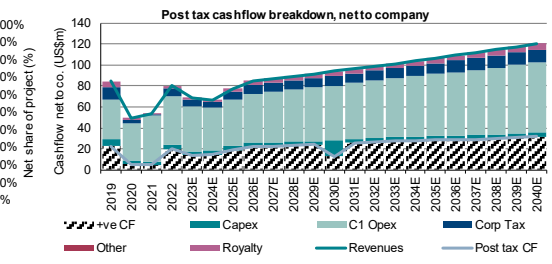
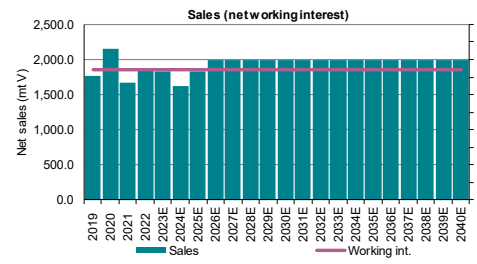
Source: Company, BNP Paribas Exane estimates

Figure 17: Vametco base case cash-flow analysis in US\$

Year	Gross mine/processing facility												Working int. %	Country: South Africa												Vametco Base - net to company					Discount rate: 15.0%	
	LMB V price	Price as % of LMB	Realised V price	Prod pre losses	Production mt V	Sales as % of prod	Sales mt V	Revenues US\$m	Royalty US\$m	Capex US\$m	C1 Opex US\$m	Revs per kg		Royalty US\$m	Royalty US\$/kg	C1 Opex US\$m	C1 Opex US\$/kg	Capex US\$m	Corp Tax US\$m	Corp Tax US\$/kg	Other US\$m	Other US\$/kg	Post tax CF US\$m	Post tax CF US\$/kg	CF pre capex US\$/kg	Rem. NPV (1st Jan) US\$m	Rem. NPV (1st Jan) US\$/kg					
	US\$/kg	%	US\$/kg	mt V	mt V	%	mt V	US\$m	US\$m	US\$m	US\$m	US\$/kg		US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$/kg	US\$m	US\$/kg					
2019	42.3	116%	49.0	3,984	2,833	84%	2,392	114.3	-8.0	-9.7	-51.1	74.0%	2,096	1,770	84.6	40.4	-5.9	-2.8	-37.9	-18.1	-7.2	-11.3	-5.4	0.0	0.0	22.3	10.6	14.1	141.6	2.2		
2020	25.0	95%	23.7	3,721	2,646	110%	2,901	66.6	-2.9	-4.4	-48.3	74.0%	1,958	2,147	49.3	25.2	-2.1	-1.1	-35.7	-18.2	-3.3	-3.1	-1.6	0.0	0.0	5.1	2.6	4.3	136.7	2.2		
2021	34.5	93%	32.2	3,450	2,453	92%	2,248	73.0	-1.2	-4.5	-58.7	74.0%	1,815	1,663	54.0	29.7	-0.9	-0.5	-43.4	-23.9	-3.3	-1.7	-1.0	0.0	0.0	4.6	2.5	4.4	150.8	2.5		
2022	39.2	109%	42.8	3,803	2,704	94%	2,532	108.0	-2.4	-5.1	-63.1	74.0%	2,001	1,873	79.9	40.0	-1.8	-0.9	-46.7	-23.4	-3.8	-8.0	-4.0	0.0	0.0	19.7	9.8	11.7	167.5	2.8		
2023E	34.7	108%	37.5	3,235	2,300	108%	2,475	93.3	-3.5	-5.1	-58.2	74.0%	1,702	1,832	69.1	40.6	-2.6	-1.5	-43.1	-25.3	-3.8	-5.5	-3.2	0.0	0.0	14.1	8.3	10.5	169.4	3.0		
2024E	38.5	106%	40.8	3,094	2,200	100%	2,200	89.8	-2.6	-5.3	-55.2	74.0%	1,628	1,628	66.4	40.8	-1.9	-1.2	-40.8	-25.1	-3.9	-5.5	-3.4	0.0	0.0	14.3	8.8	11.2	178.0	3.2		
2025E	40.7	104%	42.4	3,481	2,475	100%	2,475	104.9	-4.1	-5.5	-59.4	74.0%	1,832	1,832	77.6	42.4	-3.0	-1.6	-44.0	-24.0	-4.1	-7.6	-4.1	0.0	0.0	19.0	10.4	12.6	187.7	3.5		
2026E	41.8	102%	42.6	3,797	2,700	100%	2,700	115.0	-5.0	-5.3	-63.3	74.0%	1,998	1,998	85.1	42.6	-3.7	-1.9	-46.8	-23.4	-3.9	-8.6	-4.3	0.0	0.0	22.1	11.0	13.0	193.3	3.7		
2027E	42.8	102%	43.7	3,797	2,700	100%	2,700	117.9	-5.3	-5.3	-65.4	74.0%	1,998	1,998	87.2	43.7	-3.9	-2.0	-48.4	-24.2	-4.0	-8.7	-4.3	0.0	0.0	22.3	11.2	13.1	196.2	3.9		
2028E	43.9	102%	44.8	3,797	2,700	100%	2,700	120.9	-5.4	-4.8	-67.0	74.0%	1,998	1,998	89.4	44.8	-4.0	-2.0	-49.6	-24.8	-3.5	-8.9	-4.5	0.0	0.0	23.4	11.7	13.5	199.3	4.2		
2029E	45.0	102%	45.9	3,797	2,700	100%	2,700	123.9	-5.5	-4.9	-68.7	74.0%	1,998	1,998	91.7	45.9	-4.1	-2.0	-50.8	-25.4	-3.6	-9.2	-4.6	0.0	0.0	23.9	12.0	13.8	201.6	4.4		
2030E	46.1	102%	47.0	3,797	2,700	100%	2,700	127.0	-5.7	-20.7	-70.4	74.0%	1,998	1,998	94.0	47.0	-4.2	-2.1	-52.1	-26.1	-15.3	-9.5	-4.7	0.0	0.0	12.9	6.4	14.1	203.6	4.6		
2031E	47.3	102%	48.2	3,797	2,700	100%	2,700	130.1	-5.9	-5.0	-72.2	74.0%	1,998	1,998	96.3	48.2	-4.3	-2.2	-53.4	-26.7	-3.7	-9.1	-4.6	0.0	0.0	25.8	12.9	14.8	218.6	5.2		
2032E	48.4	102%	49.4	3,797	2,700	100%	2,700	133.4	-5.7	-5.1	-74.0	74.0%	1,998	1,998	98.7	49.4	-4.2	-2.1	-54.7	-27.4	-3.7	-9.5	-4.7	0.0	0.0	26.6	13.3	15.2	220.9	5.5		
2033E	49.6	102%	50.6	3,797	2,700	100%	2,700	136.7	-5.9	-5.1	-75.8	74.0%	1,998	1,998	101.2	50.6	-4.4	-2.2	-56.1	-28.1	-3.8	-9.7	-4.9	0.0	0.0	27.2	13.6	15.5	222.7	5.9		
2034E	50.9	102%	51.9	3,797	2,700	100%	2,700	140.1	-6.0	-5.2	-77.7	74.0%	1,998	1,998	103.7	51.9	-4.5	-2.2	-57.5	-28.8	-3.9	-10.0	-5.0	0.0	0.0	27.9	13.9	15.9	224.0	6.2		
Totals				thou t	thou t		thou t	US\$m	US\$m	US\$m	US\$m		tonnes	tonnes	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	
2022 +				112,343	79,879		79,882	4,538.3	-199.4	-188.1	-2,532.1		59,110	59,113	3,358.4	56.8	-147.5	-2.5	-1,873.7	-31.7	-139.2	-336.7	-5.7	0.0	0.0	861.2	14.6	16.9	167.5	2.8		
2035+				64,555	45,900		45,900	2,997.3	-136.3	-105.7	-1,661.7		33,966	33,966	2,218.0	65.3	-100.9	-3.0	-1,229.7	-36.2	-78.2	-227.0	-6.7	0.0	0.0	582.2	17.1	19.4				

Notes: Gross cashflows are for Vametco Holdings, which holds a 100% interest in the Vametco mine/processing facility and in which Bushveld Minerals holds a 74% stake.

Gross Opex Capex
US\$/kg -29.9 -2.2



1st Jan NAV sensitivity to discount rate			
Discount rate	US\$m	p/sh	US\$/kg
11.0%	227	9.0	3.83
13.0%	193	7.6	3.27
15.0%	168	6.6	2.84
17.0%	148	5.8	2.50
19.0%	132	5.2	2.23

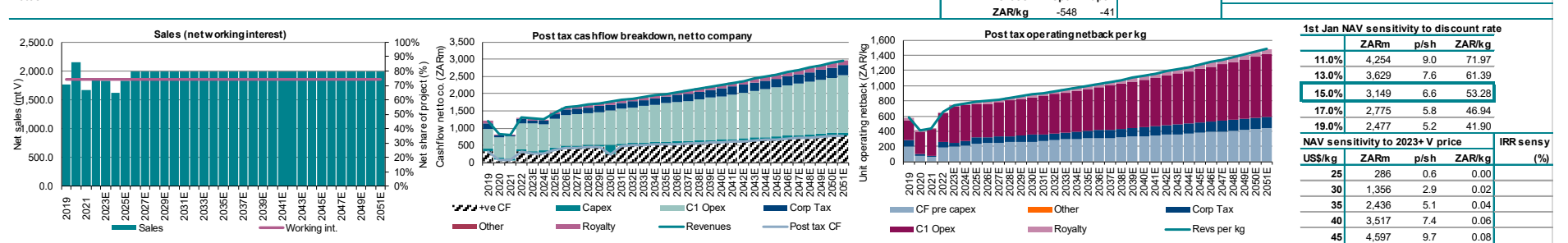
NAV sensitivity to 2023+ V price			
US\$/kg	US\$m	p/sh	US\$/kg
25	15	0.6	0.26
30	72	2.9	1.22
35	130	5.1	2.19
40	187	7.4	3.17
45	245	9.7	4.14

Source: BNP Paribas Exane estimates

Figure 18: Vametco base case cash-flow analysis in ZAR

Year	Gross mine/processing facility											Country: South Africa														Vametco Base - net to company														Discount rate: 15.0%	
	LMB V price	Price as % of LMB	Realised V price	Prod pre losses	Production mt V	Sales as % of prod	Sales mt V	Revenues ZARm	Royalty ZARm	Capex ZARm	C1 Opex ZARm	Working int. %	Production mt V	Sales mt V	Revenues ZARm	Revs per kg ZAR/kg	Royalty ZARm	Royalty ZAR/kg	C1 Opex ZARm	C1 Opex ZAR/kg	Capex ZARm	Corp Tax ZARm	Corp Tax ZAR/kg	Other ZARm	Other ZAR/kg	Post tax CF ZARm	Post tax CF ZAR/kg	CF pre capex ZAR/kg	Rem. NPV (1st Jan) ZARm	Rem. NPV (1st Jan) ZAR/kg											
	US\$/kg	%	US\$/kg	mt V	mt V	%	mt V	ZARm	ZARm	ZARm	ZARm	%	mt V	mt V	ZARm	ZAR/kg	ZARm	ZAR/kg	ZARm	ZAR/kg	ZARm	ZARm	ZAR/kg	ZARm	ZAR/kg	ZARm	ZAR/kg	ZAR/kg	ZARm	ZAR/kg											
2019	42.3	116%	49.0	3,984	2,833	84%	2,392	1,643	-115	-140	-739	74.0%	2,096	1,770	1,216	580	-85	-41	-547	-261	-104	-162	-77	0	0	318	152	201	2,494	38											
2020	25.0	95%	23.7	3,721	2,646	110%	2,901	1,098	-47	-72	-793	74.0%	1,958	2,147	812	415	-35	-18	-587	-300	-54	-51	-26	0	0	86	44	71	2,494	40											
2021	34.5	93%	32.2	3,450	2,453	92%	2,248	1,082	-18	-67	-870	74.0%	1,815	1,663	801	441	-13	-7	-644	-355	-49	-26	-14	0	0	69	38	65	2,760	45											
2022	39.2	109%	42.8	3,803	2,704	94%	2,532	1,763	-39	-85	-1,040	74.0%	2,001	1,873	1,304	652	-29	-14	-770	-385	-63	-128	-64	0	0	315	157	189	3,085	52											
2023E	34.7	108%	37.5	3,235	2,300	108%	2,475	1,718	-65	-95	-1,074	74.0%	1,702	1,832	1,271	747	-48	-28	-795	-467	-70	-101	-59	0	0	257	151	192	3,174	56											
2024E	38.5	106%	40.8	3,094	2,200	100%	2,200	1,686	-49	-99	-1,036	74.0%	1,628	1,628	1,248	766	-36	-22	-767	-471	-73	-103	-63	0	0	268	165	210	3,343	60											
2025E	40.7	104%	42.4	3,481	2,475	100%	2,475	1,970	-76	-103	-1,116	74.0%	1,832	1,832	1,458	796	-56	-31	-826	-451	-76	-142	-77	0	0	357	195	237	3,524	66											
2026E	41.8	102%	42.6	3,797	2,700	100%	2,700	2,160	-94	-99	-1,188	74.0%	1,998	1,998	1,598	800	-70	-35	-879	-440	-73	-162	-81	0	0	414	207	244	3,629	70											
2027E	42.8	102%	43.7	3,797	2,700	100%	2,700	2,214	-100	-100	-1,228	74.0%	1,998	1,998	1,638	820	-74	-37	-908	-455	-74	-163	-82	0	0	419	210	247	3,685	74											
2028E	43.9	102%	44.8	3,797	2,700	100%	2,700	2,269	-101	-90	-1,258	74.0%	1,998	1,998	1,679	841	-75	-37	-931	-466	-67	-168	-84	0	0	439	220	253	3,742	78											
2029E	45.0	102%	45.9	3,797	2,700	100%	2,700	2,326	-104	-92	-1,290	74.0%	1,998	1,998	1,721	862	-77	-38	-954	-478	-68	-173	-87	0	0	449	225	259	3,785	82											
2030E	46.1	102%	47.0	3,797	2,700	100%	2,700	2,384	-107	-88	-1,322	74.0%	1,998	1,998	1,764	883	-79	-40	-978	-490	-287	-178	-89	0	0	242	121	265	3,823	87											
2031E	47.3	102%	48.2	3,797	2,700	100%	2,700	2,444	-110	-93	-1,355	74.0%	1,998	1,998	1,808	905	-81	-41	-1,003	-502	-69	-171	-86	0	0	485	243	277	4,105	98											
2032E	48.4	102%	49.4	3,797	2,700	100%	2,700	2,505	-106	-95	-1,389	74.0%	1,998	1,998	1,854	928	-79	-39	-1,028	-514	-70	-178	-89	0	0	499	250	285	4,149	104											
2033E	49.6	102%	50.6	3,797	2,700	100%	2,700	2,568	-110	-97	-1,424	74.0%	1,998	1,998	1,900	951	-82	-41	-1,053	-527	-72	-183	-91	0	0	511	256	291	4,182	110											
2034E	50.9	102%	51.9	3,797	2,700	100%	2,700	2,632	-114	-98	-1,459	74.0%	1,998	1,998	1,948	975	-84	-42	-1,080	-540	-73	-188	-94	0	0	523	262	298	4,207	117											
Totals				thou t	thou t		thou t	ZARm	ZARm	ZARm	ZARm		tonnes	tonnes	ZARm	ZAR/kg	ZARm	ZAR/kg	ZARm	ZARm	ZAR/kg	ZARm	ZARm	ZAR/kg	ZARm	ZAR/kg	ZARm	ZAR/kg	ZAR/kg	ZARm	ZAR/kg										
2022 +				112,343	79,879		79,882	84,923	-3,736	-3,520	-47,384		59,110	59,113	62,843	1,063	-2,765	-47	-35,064	-593	-2,605	-6,299	-107	0	0	16,111	273	317	3,085	52											
2035+				64,555	45,900		45,900	56,285	-2,560	-1,985	-31,205		33,966	33,966	41,651	1,226	-1,894	-56	-23,092	-680	-1,469	-4,263	-125	0	0	10,933	322	365													

Notes: Gross cashflows are for Vametco Holdings, which holds a 100% interest in the Vametco mine/processing facility and in which Bushveld Minerals holds a 74% stake.



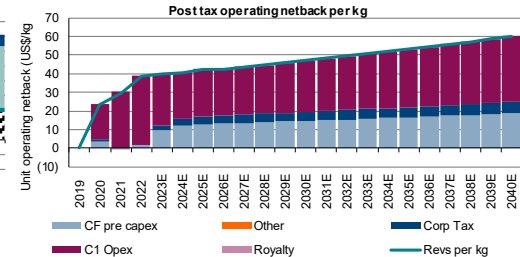
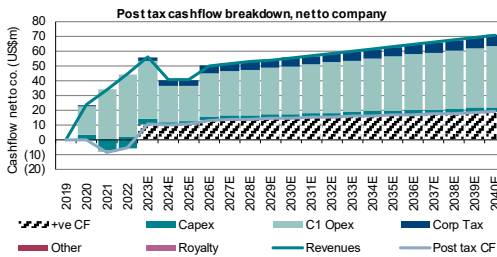
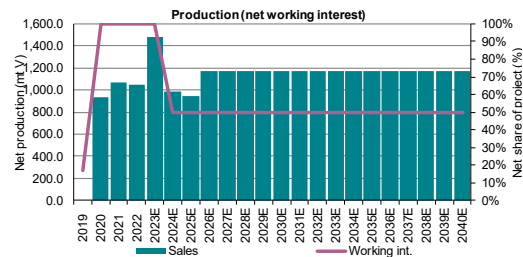
Source: BNP Paribas Exane estimates

Figure 19: Vanchem base case cash-flow analysis in US\$

Year	Gross processing facility										Working int. %	Country: South Africa Vanchem Base - net to company														Discount rate: 15.0%						
	LMB V price	Price as % of LMB	Realised V price	Sales as		Sales	Revenues	Royalty	Capex	C1 Opex		Production	Sales	Revenues	Revs per kg	Royalty	Royalty	C1 Opex	C1 Opex	Capex	Corp Tax	Corp Tax	Other	Other	Post tax CF	Post tax CF	CF pre capex	Rem. NPV (1st Jan)	Rem. NPV (1st Jan)			
	US\$/kg	%	US\$/kg	mt V	%	mt V	US\$m	US\$m	US\$m	US\$m		mt V	mt V	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	
2019	42.3	116%	49.0	0	#DIV/0!	0	0	0	0	0	16.7%	0	0	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	1.6
2020	25.0	95%	23.7	986	94%	930	23	0	-4	-19	100.0%	986	930	23	23.6	0	0	-19	-19.1	-4	-1	-1.2	0	0.0	0	-0.4	3.3	54	1.8			
2021	34.5	93%	32.2	1,139	94%	1,066	33.9	0.0	-7.7	-34.9	100.0%	1,139	1,066	33.9	29.8	0.0	0.0	-34.9	-30.6	-7.7	0.0	0.0	0.0	0.0	-8.7	-7.6	-0.9	62.6	2.2			
2022	39.2	109%	42.8	1,137	93%	1,052	44.2	0.0	-7.9	-42.3	100.0%	1,137	1,052	44.2	38.9	0.0	0.0	-42.3	-37.2	-7.9	0.0	0.0	0.0	0.0	-6.0	-5.3	1.7	81.7	2.9			
2023E	34.7	108%	37.5	1,400	106%	1,486	55.6	0.0	-3.4	-39.1	100.0%	1,400	1,486	55.6	39.7	0.0	0.0	-39.1	-27.9	-3.4	-2.7	-2.0	0.0	0.0	10.5	7.5	9.9	100.5	3.7			
2024E	38.5	106%	40.8	1,980	100%	1,980	81	0	-4	-49	50.0%	990	990	40.3	40.7	0.0	0.0	-24.5	-24.7	-2.1	-3.8	-3.8	0.0	0.0	9.9	10.0	12.1	103.2	4.1			
2025E	40.7	104%	42.4	1,900	100%	1,900	80	0	-4	-49	50.0%	950	950	40.2	42.4	0.0	0.0	-24.4	-25.6	-2.1	-3.7	-3.9	0.0	0.0	10.1	10.7	12.8	106.9	4.4			
2026E	41.8	102%	42.6	2,350	100%	2,350	100	0	-5	-59	50.0%	1,175	1,175	50.0	42.6	0.0	0.0	-29.3	-24.9	-2.6	-5.1	-4.3	0.0	0.0	13.1	11.2	13.4	110.9	4.7			
2027E	42.8	102%	43.7	2,350	100%	2,350	103	0	-5	-60	50.0%	1,175	1,175	51.3	43.6	0.0	0.0	-30.0	-25.5	-2.6	-5.3	-4.5	0.0	0.0	13.4	11.4	13.6	112.1	5.0			
2028E	43.9	102%	44.8	2,350	100%	2,350	105	0	-5	-61	50.0%	1,175	1,175	52.6	44.7	0.0	0.0	-30.7	-26.2	-2.7	-5.5	-4.7	0.0	0.0	13.7	11.6	13.9	113.1	5.3			
2029E	45.0	102%	45.9	2,350	100%	2,350	108	0	-5	-63	50.0%	1,175	1,175	53.9	45.9	0.0	0.0	-31.5	-26.8	-2.7	-5.6	-4.7	0.0	0.0	14.1	12.0	14.3	114.0	5.7			
2030E	46.1	102%	47.0	2,350	100%	2,350	110	0	-6	-65	50.0%	1,175	1,175	55.2	47.0	0.0	0.0	-32.3	-27.5	-2.8	-5.7	-4.8	0.0	0.0	14.4	12.3	14.7	114.5	6.1			
2031E	47.3	102%	48.2	2,350	100%	2,350	113	0	-6	-66	50.0%	1,175	1,175	56.6	48.2	0.0	0.0	-33.1	-28.2	-2.8	-5.8	-5.0	0.0	0.0	14.8	12.6	15.0	114.7	6.5			
2032E	48.4	102%	49.4	2,350	100%	2,350	116	0	-6	-68	50.0%	1,175	1,175	58.0	49.4	0.0	0.0	-33.9	-28.9	-2.9	-6.0	-5.1	0.0	0.0	15.2	13.0	15.4	114.4	7.0			
2033E	49.6	102%	50.6	2,350	100%	2,350	119	0	-6	-70	50.0%	1,175	1,175	59.5	50.6	0.0	0.0	-34.8	-29.6	-2.9	-6.1	-5.2	0.0	0.0	15.6	13.3	15.8	113.7	7.4			
2034E	50.9	102%	51.9	2,350	100%	2,350	122	0	-6	-71	50.0%	1,175	1,175	61.0	51.9	0.0	0.0	-35.7	-30.3	-3.0	-6.3	-5.4	0.0	0.0	16.0	13.6	16.2	112.4	8.0			
Totals				thou t		thou t	US\$m	US\$m	US\$m	US\$m		tonnes	tonnes	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	US\$m	US\$/kg	
2022 +				19,497		19,498	2,817	0	-143	-1,674		27,977	27,978	1,458	52.1	0	0.0	-878	-31.4	-77	-142	-5.1	0	0.0	361	12.9	15.7	82	2.9			
2035+				9,435		9,435	1,560	0	-74	-912		12,925	12,925	780	60.3	0	0.0	-456	-35.3	-37	-81	-6.3	0	0.0	206	16.0	18.8					

Notes: Gross cashflows are for 100% of the Vanchem processing facilities in which Bushveld Minerals holds a 50% stake following the sale of 50% to SPR announced in September 2023.

Gross	Opex	Capex
US\$/kg	-85.2	-7.6



1st Jan NAV sensitivity to discount rate		
	US\$m ked p/sh	US\$/kg
11.0%	127	5.0
13.0%	111	4.4
15.0%	98	3.9
17.0%	87	3.5
19.0%	79	3.1

NAV sensitivity to 2023+ V price			IRR sensy (%)
US\$/kg	US\$m	p/sh	
25	2	0.1	0.09
30	38	1.5	1.36
35	74	2.9	2.64
40	110	4.3	3.92
45	146	5.8	5.21

Source: BNP Paribas Exane estimates

Investment case, valuation and risks

Bushveld

Investment case

Bushveld holds a significant position within the global primary vanadium production market, operating 2 of the 4 processing facilities and 1 of the 3 operating mines globally. We believe Bushveld has considerable asset value potential following recent investments, but successful implementation of the proposed convertible debt refinancing and continued production ramp-up is required to unlock this value.

Valuation methodology

We utilise a DCF based valuation when assessing Bushveld Minerals.

Risks

To the upside:

The share price for the partial conversion of the Orion debt and the SPR equity investment may be above the 3p/sh we have modelled.

The production ramp-up, particularly at Vanchem, may proceed more rapidly than we have modelled.

Load shedding may have a less material impact on operations than modelled

Vanadium pricing may be higher than we have modelled; it hit >US\$80/kg in 2018.

Unhedged FX exposure (principally ZAR/US\$) may have a positive impact upon financial results.

It may be possible to contain operating costs below the levels we have modelled. Future agreements to secure feed from Highveld and/or Mokopane could result in feedstock costs for Vanchem below our forecasts.

To the downside:

It may not be possible to complete the proposed financing agreements on the agreed terms. The share price for the partial conversion of the Orion debt and the SPR equity investment may be below the 3p/sh we have modelled.

Funding may not be available in the amounts/or the terms required.

Production ramp-up may disappoint versus our forecasts, potentially driven by a greater than anticipated impact from load-shedding.

Vanadium pricing may be lower than we have modelled; it hit <US\$25/kg in 2019.

Unhedged FX exposure (principally ZAR/US\$) may adversely impact financial results.

Although agreements have been secured in the near-term, it may not be possible to secure sufficient volumes of third-party ore for processing at Vanchem on the terms modelled.

Operating costs could move above the levels we have modelled.

Bushveld pays the Orion PFAs (production finance agreements) on 100% of Vametco and Vanchem production/revenues, but only has a net economic interest of 74% in Vametco and 50% in Vanchem.

DISCLOSURE APPENDIX

Analyst Certification

I, Thomas Martin, (authors of or contributors to the report) hereby certify that all of the views expressed in this report accurately reflect my personal view(s) about the company or companies and securities discussed in this report. No part of my compensation was, is, or will be, directly, or indirectly, related to the specific recommendations or views expressed in this research report.

Non-US Research Analyst Disclosure

The research analysts at Exane SA (including its branches in the United Kingdom, the European Economic Area or Switzerland) named below were involved in preparing this research report. They are not associated persons of BNP Paribas Securities Corp. and thus they are not registered or qualified in the U.S. as research analysts with the Financial Industry Regulatory Authority (FINRA) or the New York Stock Exchange (NYSE). These non-U.S. analysts are not subject to FINRA Rule 2241 concerning communications with a subject company, public appearances and trading securities held by a research analyst account.

Thomas Martin Exane SA London
branch

BNP Paribas SA and Exane SA Affiliates Involved in Preparation of the Research Report

Exane SA is authorised by the Autorité de contrôle prudentiel et de résolution (“ACPR”) and regulated by the Autorité des Marchés Financiers (“AMF”) in France.

Exane SA branches based in the European Economic Area are authorized by the ACPR and regulated by the local relevant regulator.

Exane SA Geneva Branch is authorized and regulated by the Swiss Financial Market Supervisory Authority (“FINMA”)

Exane SA, London Branch is deemed authorised and regulated by the Financial Conduct Authority. Details of the Financial Services Contracts Regime, which allows EEA-based firms to operate in the UK for a limited period to carry on activities which are necessary for the performance of pre-existing contracts, are available on the Financial Conduct Authority’s website.

BNP Paribas Securities Corp. is regulated by FINRA (CRD# 15794) and the Securities and Exchange Commission in the United States.

Research Analyst Compensation

The research analyst(s) responsible for the preparation of this report receive(s) compensation based upon various factors including overall firm revenues, which may include investment banking activities and/or sales and trading activities.

Sponsored Research

The subject Company of this Research report has commissioned Exane to cover its stock and, consequently, Exane has received compensation from the Company for the preparation and dissemination of this research report.

Research Analyst-Specific Disclosures

The research analyst(s) responsible for the preparation of this report (or members of their household) may have a relationship with the companies covered by this research report, as described in the numbered disclosures below. The table immediately below indicates which, if any, of these disclosures apply to the research analyst(s) responsible for preparation of this research report.

Research Analyst(s)	Companies	Disclosures
NONE		

1 – The research analyst(s) responsible for the preparation of this report or a member of his/her household has/have a financial interest in the securities of the subject company/ies, as indicated in the previous table.

2 – The research analyst(s) responsible for the preparation of this report or a member of his/her household serve(s) as an officer, director or advisory board member of the subject company/ies indicated in the previous table.

3 – The research analyst(s) responsible for the preparation of this report received compensation from the subject company/ies indicated in the previous table in the past twelve months.

Exane-Specific Regulatory Disclosures

Exane SA (including Exane SA branches, based in the United Kingdom, in the European Economic Area and in Switzerland), (collectively, "Exane") has relationships with many companies. The numbered disclosures below identify relationships that Exane has with the company(ies) that are the subject of this research report and that must be disclosed under applicable rules.

Companies	Disclosures
Bushveld	6; 9; 12

- 1 – Exane beneficially owns 1% or more of a class of common equity securities of the subject company/ies.
- 2 – Exane managed or co-managed an offering of securities for the subject company/ies in the past 12 months.
- 3 – Exane received compensation for investment banking services from the subject company/ies in the past 12 months.
- 4 – Exane expects to receive or intends to seek compensation for investment banking services from the subject company/ies in the next 3 months.
- 5 – Exane is a market maker and/or liquidity provider in the securities of the subject company/ies.
- 6 – Exane, received compensation for products and services other than investment banking services from the subject company/ies in the past 12 months.
- 7 – Exane had an investment banking, client relationship with the subject company/ies in the last 12 months.
- 8 – Exane had a non-investment banking securities services, client relationship with the subject company/ies in the last 12 months.
- 9 – Exane had a non-securities services, client relationship with the subject company/ies in the last 12 months.
- 10 – Exane beneficially owns at least 0.5% long or short position of the subject company/ies.
- 11 – Exane received compensation from a Private Equity firm to carry out a bespoke work related to the subject company/ies in the past 12 months.
- 12 – Exane received or expects to receive compensation for non-investment banking services from the subject company/ies in the past 12 months or in the next 3 months
- 13 – Sections of this report, with the research summary, target price and rating removed, have been presented to the subject company/ies prior to its distribution, for the sole purpose of verifying the accuracy of factual statements.
- 14 – Following the presentation of sections of this report to this subject company, some conclusions were amended.
- 15 – A member for Exane senior management is a member of the Board of the issuer.

BNP Paribas-related disclosures

BNP Paribas SA (including BNP Paribas SA branches and affiliates and BNP Paribas Securities Corp.), (collectively, "BNPP") has relationships with many companies. The numbered disclosures below identify relationships that BNPP has with the company(ies) that are the subject of this research report and that must be disclosed under applicable rules.

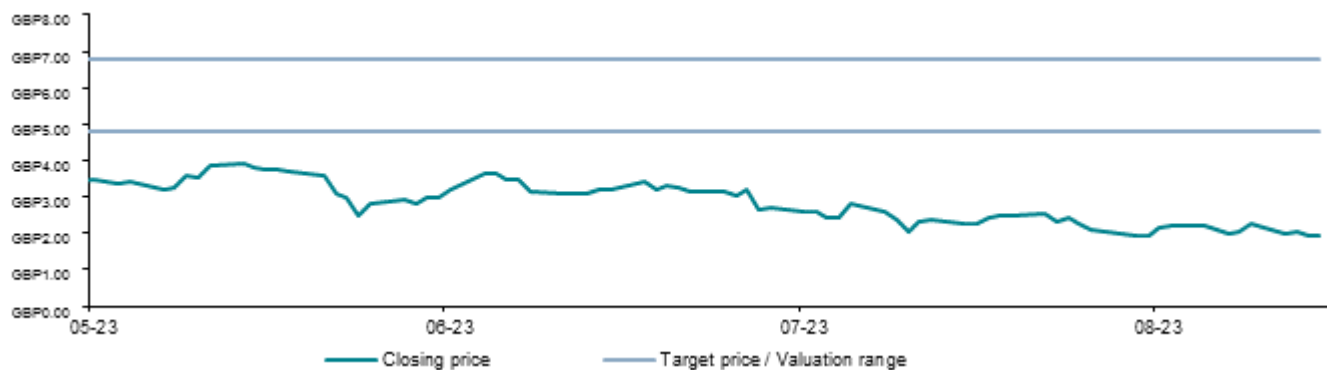
Companies	Disclosures
Bushveld	4; 5

- 1 – BNPP beneficially owns 1% or more of a class of common equity securities of the subject company/ies.
- 2 – BNPP managed or co-managed an offering of securities for the subject company/ies in the past 12 months.
- 3 – BNPP received compensation for investment banking services from the subject company/ies in the past 12 months.
- 4 – BNPP expects to receive or intends to seek compensation for investment banking services from the subject company/ies in the next 3 months.
- 5 – BNPP is a market maker and/or liquidity provider in the securities of the subject company/ies. BNPP is willing to sell to and/or buy from clients, the common equity of the subject company/ies on a principal basis.
- 6 – BNPP, received compensation for products and services other than investment banking services from the subject company/ies in the past 12 months.
- 7 – BNP Paribas Securities Corp. had an investment banking, client relationship with the subject company/ies in the last 12 months.
- 8 – BNP Paribas Securities Corp. had a non-investment banking securities services, client relationship with the subject company/ies in the last 12 months.
- 9 – BNP Paribas Securities Corp. had a non-securities services, client relationship with the subject company/ies in the last 12 months.
- 10 – BNPP beneficially owns at least 0.5% long or short position of the subject company/ies.
- 11 – BNPP received compensation from a Private Equity firm to carry out a bespoke work related to the subject company/ies in the past 12 months.
- 12 – Sections of this report, with the research summary, target price and rating removed, have been presented to the subject company/ies prior to its distribution, for the sole purpose of verifying the accuracy of factual statements.
- 13 – Following the presentation of sections of this report to this subject company, some conclusions were amended.
- 14 – A member for BNPP senior management is a member of the Board of the issuer.

Price and Ratings Chart

Bushveld

Historical closing price & target price (as of 15/09/2023)



Source: BNP Paribas Exane

Historical rating & valuation range changes

Date & Time of dissemination (UTC)	Rating	Valuation Range	Closing Price* at dissemination date	Key changes	Analyst(s) covering the stock
26 May 2023 05:40			3.48GBP	Enter sponsored list	T. Martin

The latest company-specific disclosures, valuation methodologies and investment case risks for all other companies covered by this document are available on <http://cube.exane.com/compliance>.

LONDON

Branch of Exane SA
10 Harewood Avenue
London NW1 6AA
UK
Tel: (+44) 207 039 9400
Fax: (+44) 207 039 9440

PARIS

Exane SA
6 Rue Ménars
75002 Paris
France
Tel: (+33) 1 44 95 40 00
Fax: (+33) 1 44 95 40 01

FRANKFURT

Branch of Exane SA
Senckenberganlage 19
60325 Frankfurt
Germany
Tel: (+49) 69 42 72 97 300
Fax: (+49) 69 42 72 97 301

MADRID

Branch of Exane SA
Calle Emilio Vargas, 4
28043 Madrid
Spain
Tel: (+34) 91 114 83 00
Fax: (+34) 91 114 83 01

MILAN

Branch of Exane SA
Diamante Tower
Piazza Lina Bo Bardi 3
20124 Milan
Italy
Tel: (+39) 02 89 63 17 13
Fax: (+39) 02 89 63 17 01

STOCKHOLM

Branch of Exane SA
Hovslagargatan 3
111 48 Stockholm
Sweden
Tel: (+46) 8 5663 9820
Fax: (+46) 8 5063 9751

NEW YORK

BNP Paribas Securities Corp.
787 Seventh Avenue
New York, NY 10017
USA
Tel: (+1) 212 841 2000

SAN FRANCISCO

BNP Paribas Securities Corp.
180 Montgomery Street
San Francisco, CA 94104
USA
Tel: (+1) 415 772 1300

All Exane research documents are available to all clients simultaneously on the Exane website (<http://cube.exane.com>). Most published research is also available via third-party aggregators such as Bloomberg, Refinitiv, Factset and Capital IQ. Exane is not responsible for the redistribution of research by third-party aggregators.

Important notice: Please refer to our complete disclosure notice and conflict of interest policy available on <http://cube.exane.com/compliance>

This research is produced by one or more of EXANE SA (including Exane SA branches, based in the United Kingdom, in the European Economic Area and in Switzerland) and BNP Paribas Securities Corp. EXANE SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution ("ACPR") and regulated by the Autorité des Marchés Financiers ("AMF"). Exane SA branches based in the European Economic Area are authorized by the ACPR and regulated by the local relevant regulator. Exane SA Geneva Branch is authorized and regulated by the Swiss Financial Market Supervisory Authority ("FINMA"). Exane SA, London Branch is deemed authorised and regulated by the Financial Conduct Authority. Details of the Financial Services Contracts Regime, which allows EEA-based firms to operate in the UK for a limited period to carry on activities which are necessary for the performance of pre-existing contracts, are available on the Financial Conduct Authority's website.

BNP Paribas Securities Corp. is registered and regulated by the Financial Industry Regulatory Authority ("FINRA") and the U.S. Securities and Exchange Commission. In accordance with the requirements of Financial Conduct Authority COBS 12.2.3R and associated guidance, of article 313-20 of the AMF Règlement Général, and of FINRA Rule 2241, Exane's policy for managing conflicts of interest in relation to investment research is published on Exane's web site (cube.exane.com). Exane also follows the guidelines described in the code of conduct of the Association Française des Entreprises d'Investissement ("AFEI") on managing conflicts of interest in the field of investment research. This code of conduct is available on Exane's web site (<http://cube.exane.com>).

This research is solely for the private information of the recipients. All information contained in this research report has been compiled from sources believed to be reliable. However, no representation or warranty, express or implied, is made with respect to the completeness or accuracy of its contents, and it is not to be relied upon as such. Opinions contained in this research report represent BNPP's and/or Exane's current opinions on the date of the report only. BNPP and/or Exane are not soliciting an action based upon it, and under no circumstances is it to be used or considered as an offer to sell, or a solicitation of any offer to buy.

While BNPP and/or Exane endeavour to update its research reports from time to time, there may be legal and/or other reasons why BNPP and/or Exane cannot do so and, accordingly, BNPP and/or Exane disclaim any obligation to do so.

This report is provided solely for the information of professional investors who are expected to make their own investment decisions without undue reliance on this report and BNPP and/or Exane accept no liability whatsoever for any direct or consequential loss arising from any use of this report or its contents.

(i) this research is intended for general circulation; (ii) this research does not take into account the specific investment objectives, financial situation or particular needs of any particular person; and (iii) advice should be sought from a financial adviser regarding the suitability of the investment product, taking into account the specific investment objectives, financial situation or particular needs of any person in receipt of the research, before the person makes a commitment to purchase the investment product.

This report may not be reproduced, distributed or published by any recipient for any purpose. Any United States person wishing to obtain further information or to effect a transaction in any security discussed in this report should do so only through BNP Paribas Securities Corp., which has distributed this report in the United States and, subject to the above, accepts responsibility for its contents.

For Institutional and Accredited Investors in Singapore who receive this report, please contact BNP Paribas, acting through its Singapore Branch (company registration number: S71FC2142G; address: 10 Collyer Quay, 34/F Ocean Financial Centre, Singapore 049315; tel: (65) 6210 1288; fax: (65) 6210 1980) for all matters and queries relating to this report.

BNPP has acquired VERNER INVESTISSEMENTS, the parent company of Exane. VERNER INVESTISSEMENTS is wholly owned and controlled by BNPP, which holds 100% of the share capital and voting rights of VERNER INVESTISSEMENTS.

BUSHVELD

Price at 15 Sep. 23: 1.95p

Mining - United Kingdom

1.70p (-13%) | 2.70p (+38%)

Company description

Bushveld produces a range of vanadium products from its mining and processing operations in South Africa. It operates two of the world's four operational vanadium ore processing facilities (Vametco and Vanchem), and one of only three operating primary vanadium mines (the Vametco mine). Vanadium is a metal primarily used in steel production, which is increasingly being used globally in utility scale battery storage systems (Vanadium Redox Flow Batteries - VRFBs).

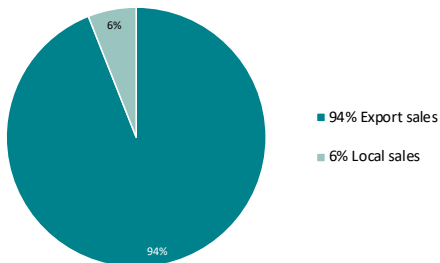
Management

Fortune Mojapelo, CEO
Tanya Chikanza, Financial Director

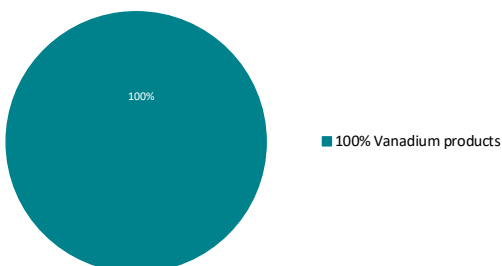
Ownership structure

Hargreaves Lansdowne	20.0%
Orange Trust	6.0%
Bruno Bolfo	5.0%
Barclays Wealth	4.0%
Grafton Commodity Trading	3.0%
Acacia Resources	3.0%
Baker Steel	2.0%
Other Shareholders	57.0%

Revenues



Revenues



Analyst

Thomas Martin (+44) 203 430 8435
Thomas.Martin@exanebnpparibas.com

Peer group YTD performance

Stock	Price (15 Sep. 23)	YTD performance in EUR (%)	
		Abs.	Rel. Sector
First Quantum M (=)	CAD 35.8	27.5	42
Freeport (+)	USD 40.4	7.1	19
BHP Group (=)	p 2,382	3.9	16
Antofagasta Plc (-)	p 1,492	2.9	15
Rio Tinto (=)	p 5,289	0.1	11
Barrick (=)	USD 16.6	(1.7)	9
Glencore (+)	p 456	(6.3)	4
Aurubis (=)	EUR 69.0	(8.3)	2
Imerys (+)	EUR 29.9	(8.7)	2
Eramet (=)	EUR 73.2	(10.1)	0.1
Vale (-)	USD 14.3	(11.0)	(1)
Newmont (+)	USD 40.3	(12.7)	(3)
Norsk Hydro (=)	NOK 63.0	(16.0)	(6)
South32 (=)	p 172	(19.1)	(10)
Boliden (=)	SEK 310.9	(20.9)	(12)
Anglo American (=)	p 2,303	(23.1)	(14)
Bushveld (SR)	p 1.95	(58.6)	(54)

Sector calendar



LONDON
(+44) 207 039 9400

FRANKFURT
(+49) 69 42 72 97 300

MILAN
(+39) 02 89 63 17 13

NEW YORK
(+1) 212 841 2000

PARIS
(+33) 1 44 95 40 00

MADRID
(+34) 91 114 83 00

STOCKHOLM
(+46) 8 5663 9820

SAN FRANCISCO
(+1) 415 772 1300

Price at 15 Sep. 23: 1.95p

Valuation range (p): 1.70 (-13%) | 2.70 (+38%)

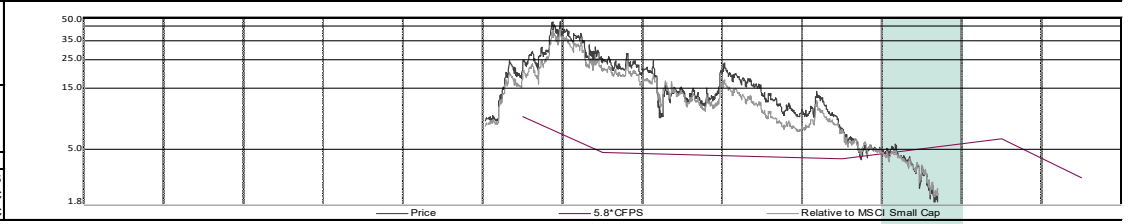
BUSHVELD

Refinitiv / Bloomberg: BMNB.L / BMN LN

Analyst: Thomas Martin (+44) 203 430 8435

Mining - United Kingdom

Company Highlights		USDm / EURm	
Enterprise value	177 / 166		
Market capitalisation	49 / 46		
Free float	39 / 36		
3m average volume	0.2 / 0.2		
Performance (*)			
	1m	3m	12m
Absolute	(13%)	(48%)	(61%)
Rel. Sector	(25%)	(48%)	(60%)
Rel. MSCI Small Cap	(13%)	(47%)	(63%)
12m Hi/Lo: 5.5p -65% / 1.93p +1%			
CAGR			
	2019/2023	2023/2025	
EPS restated	NC	NC	
CFPS	NC	NC	



Price (yearly avg from Dec. 18 to Dec. 22) 22.7 27.6 14.3 14.1 7.7 2.0 2.0 2.0

PER SHARE DATA (USD)

	Dec. 18	Dec. 19	Dec. 20	Dec. 21	Dec. 22	Dec. 23e	Dec. 24e	Dec. 25e
No of shares year end, basic, (m)	1 119,728	1 153,643	1 190,758	1 260,459	1 287,818	2 005,302	2 005,302	2 005,302
Avg no of shares, diluted, excl. treasury stocks (m)	2 163,636	2 279,205	1 164,710	1 201,683	1 267,299	1 467,189	2 005,302	4 010,604

EPS reported, Gaap 0.01 0.03 (0.03) (0.03) (0.03) (0.01) (0.02) 0.00

EPS company definition 94.7% NS (4.2%) (12.3%) 59.0% (78.2%) NS

EPS restated, fully diluted 0.1 0.2 0.1 0.1 0.1 0.0 0.0 0.0

% change NC 94.7% NS (4.2%) (12.3%) 59.0% (78.2%) NS

Book value (BVPS) (a) 0.1 0.2 0.1 0.1 0.1 0.0 0.0 0.0

Net dividend NC NC NC NC NC NC NC

STOCK MARKET RATIOS

P / E (P / EPS restated) 21.6x 12.9x NC NC NC NC NC 11.2x

P / E relative to MSCI Small Cap 14.7x 33.7x NC NC 10.5x NC 1.9x 3.8x

P / CF 4.6% (4.0%) (12.4%) (13.8%) (0.7%) (8.1%) 7.7% 11.1%

FCF yield 2.61x 2.22x 1.32x 2.07x 1.77x 0.72x 2.16x 1.56x

P / BVPS NC NC NC NC NC NC NC

Net yield NC NC NC NC NC NC NC

Payout 1.67x 3.96x 3.37x 3.20x 1.69x 1.19x 1.06x 0.91x

EV / Sales 3.2x 14.2x NS NS NS 14.3x 5.4x 4.1x

EV / Restated EBITDA 3.4x 20.8x NS NS NS NS 10.4x 5.7x

EV / Restated EBITA 4.7x 29.2x NS NS NS NS 14.6x 8.1x

EV / NOPAT 7.0x NS NS NS 80.6x 39.9x 9.6x 7.7x

EV / Capital employed (incl. gross goodwill) 2.2x 1.7x 1.1x 1.4x 1.2x 0.9x 1.1x 0.9x

ENTERPRISE VALUE (USDm)

Market cap 321 462 304 342 251 177 180 169

+ Adjusted net debt (42) 13 40 70 80 71 38 21

+ Other liabilities and commitments 2 2 2 2 2 2 2 2

+ Revalued minority interests 45 50 48 49 55 60 97 103

- Revalued investments 0 0 0 12 5 5 5 5

P & L HIGHLIGHTS (USDm)

Sales 192 117 90 107 148 149 170 185

Restated EBITDA (b) 101 33 (15) (10) (2) 12 33 41

Depreciation (6) (10) (18) (19) (18) (16) (16) (12)

Restated EBITA (b) 95 22 (33) (29) (20) (4) 17 30

Reported operating profit (loss) 95 22 (33) (29) (20) (4) 17 30

Net financial income (charges) (9) 61 (5) (5) (12) (17) (76) (12)

Affiliates 0 0 0 (4) (5) 0 0 0

Other 0 0 0 0 0 0 0 0

Tax (38) (14) 7 5 1 6 17 (5)

Minorities (19) (7) 1 1 (4) (4) (4) (4)

Net attributable profit reported 30 62 (31) (33) (39) (18) (45) 9

Net attributable profit restated (c) 30 62 (31) (33) (39) (18) (45) 9

CASH FLOW HIGHLIGHTS (USDm)

EBITDA (reported) 101 33 (15) (7) 22 12 33 41

EBITDA adjustment (b) 0 0 0 (2) (24) 0 0 0

Other items 0 (0) (0) 2 17 0 0 0

Change in WCR (25) 5 1 (5) 6 4 (5) (7)

Operating cash flow 76 37 (14) (12) 22 16 29 35

Capex (30) (49) (12) (24) (19) (12) (10) (13)

Operating free cash flow (OpFCF) 46 (12) (26) (37) 3 4 19 22

Net financial items + tax paid (29) (6) (6) (2) (4) (13) (7) (5)

Free cash flow 17 (18) (32) (39) (1) (9) 11 17

Net financial investments & acquisitions 0 (4) (2) 6 (1) 0 23 0

Other 0 (23) 6 3 (4) 0 0 0

Capital increase (decrease) 23 0 0 0 0 17 0 0

Dividends paid 0 (4) 0 0 0 0 0 0

Increase (decrease) in net financial debt (40) 50 28 30 7 (8) (34) (17)

Cash flow, group share 45 24 (21) (10) 11 (1) 26 26

BALANCE SHEET HIGHLIGHTS (USDm)

Net operating assets 105 245 227 212 181 177 149 150

WCR 38 33 49 29 22 18 22 29

Restated capital employed, incl. gross goodwill 143 278 275 242 203 195 171 179

Shareholders' funds, group share 130 183 165 118 69 68 22 31

Minorities 30 34 32 32 37 40 44 47

Provisions / Other liabilities 31 60 46 36 33 31 83 95

Net financial debt (cash) (42) 8 35 65 72 64 30 13

FINANCIAL RATIOS (%)

Sales (% change) NC (39.3%) (22.8%) 18.7% 38.9% 0.4% 14.3% 8.8%

Organic sales growth

Restated EBITA (% change) NS (76.6%) NC 10.7% 31.2% 81.5% NC 69.9%

Restated attributable net profit (% change) NC 105.1% NC (7.5%) (18.5%) 52.5% (143.6%) NC

Personnel costs / Sales 3.7% 8.3% 9.1% 10.1% 6.3% 7.1% 6.5% 6.4%

Restated EBITDA margin 52.7% 28.0% (16.6%) (9.3%) (1.1%) 8.3% 19.6% 22.3%

Restated EBITA margin 49.5% 19.1% (36.5%) (27.4%) (13.6%) (2.5%) 10.2% 15.9%

Tax rate 43.4% 16.8% NC NC NC NC NC 29.0%

Net margin 25.5% 59.4% (34.6%) (32.0%) (23.9%) (10.0%) (24.4%) 6.6%

Capex / Sales 15.8% 42.0% 13.8% 22.7% 12.6% 8.1% 5.9% 6.8%

OpFCF / Sales 23.7% (10.0%) (29.0%) (34.4%) 2.1% 3.0% 11.0% 11.9%

WCR / Sales 19.5% 28.2% 54.3% 27.5% 14.6% 11.8% 13.0% 15.6%

Capital employed (excl. gdw / intangibles) / Sales 44.5% 187.2% 240.5% 170.8% 100.4% 94.8% 69.1% 67.7%

ROE 23.3% 33.8% (18.5%) (27.8%) (56.4%) (27.4%) (200.2%) 27.8%

Gearing (26%) 6% 20% 46% 75% 66% 57% 26%

EBITDA / Financial debt NC NC NC NC NC 0.7x 2.0x 3.3x

Adjusted financial debt / EBITDA NC 0.4x NC NC NC 5.8x 1.1x 0.5x

ROCE, excl. gdw / intangibles 79.1% 7.2% (10.8%) (11.4%) (9.6%) (1.9%) 10.5% 16.7%

ROCE, incl. gross goodwill 47.4% 5.7% (8.5%) (8.6%) (7.1%) (1.4%) 7.2% 11.7%

WACC 14.3% 10.8% 9.8% 9.8% 9.8% 9.8% 9.8%

Latest Model update: 18 Sep 23

(a) Intangibles: USD53.47m, or 0p per share. (b) adjusted for capital gains/losses, exceptional restructuring charges, capitalized R&D; EBITA also adjusted for impairments and am. of intangibles from M&A

(c) after EBITA adjustments and financial result/tax adjustments. (*) In listing currency, w. div. reinvested