

Non-Independent Research

A MiFID II compliant note

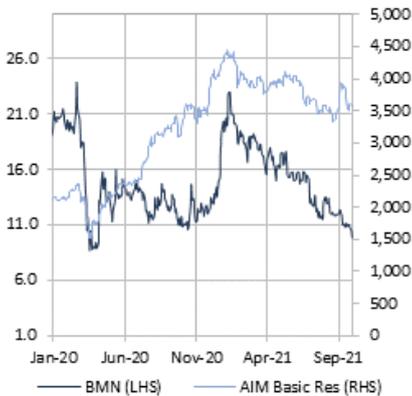
*SP Angel acts as Nomad & Broker to Bushveld Minerals.

05 October 2021

Stock Data

Ticker	BMN LN
Share Price:	9.5
Market Cap:	£114m

Price Chart



Vanchem kiln 3 to lead expansion of vanadium

Bushveld is an integrated vanadium mining, processing and technology businesses.

The South African group owns 74% of Vametco and 100% of the Vanchem. Bushveld Energy (84%) is developing solar powered, Vanadium Redox Flow Battery mining grid.

- Bushveld Minerals plan to expand vanadium production at Vanchem ahead of previous plans for expansion at Vametco.
- Kiln 3 at Vanchem is being prepared for commissioning in H1 2022 with full production expected through H2 2022. Management have secured \$18m for the refurbishment of Kiln 3 which expect is expected to commission in H1 2022. Vanchem should produce 2,600mtVpa from 2023..
- Feasibility work is due by the year end on further expansion plans to raise vanadium production to 6,000-6,400mtVpa in the medium term, eg from 2023.
- We are running with our more cautious group production of 5,141t in 2023 pending the publication of further details on the revised production.
- Higher production of ferrovanadium should enable unit costs to revert to previously seen lower levels depending on the prevailing South African rand and local inflation.
- **Bushveld Energy** continued to develop its VRFB electrolyte plant in South Africa with demand said to be rising as government accelerate the energy transition to a low-carbon energy future. New demand in this area could make a significant difference to the supply/demand balance and prices.
- **Valuation:** The impact of lower production and higher unit costs in the first half is largely offset by a meaningful recovery in ferrovanadium production along with lower unit costs. Our valuation adjusts to 33p from 37.7p previously.
- We expect to re-rate our valuation on confirmation of feasibility study work which is expected to take production in the medium term to 6,000-6400tpa in 2023.

Research

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(Dec year end)	US\$	2019	2020	2021E	2022E	2023E	2024E
FeV price	\$/kg	55	25	35	35	40	40
Vanadium Production	mtV	2,833	3,631	3,416	4,455	5,320	7,145
Vanadium Sales	mtV	2,392	3,842	3,416	4,455	5,320	7,145
Sales ⁺	\$m	116.5	90.0	116.0	151.4	206.7	277.5
Cost of Sales	\$m	-45.8	-73.4	-89.1	-100.8	-104.6	-141.7
Admin costs	\$m	-38.1	-31.5	-30.4	-37.8	-42.7	-49.0
Other costs	\$m	-4.2	-5.4	-5.6	-7.3	-9.6	-13.0
Depreciation	\$m	-10.4	-17.9	-17.6	-19.1	-20.5	-20.6
Operating profit	\$m	22.3	-32.8	-21.1	-6.3	38.8	66.3
Finance & other	\$m	1.9	-4.7	-7.4	-8.9	-10.0	-7.2
Pre-tax profit	\$m	83.3	-37.5	-28.5	-15.2	28.8	59.1
Tax	\$m	-14.0	0.5	4.9	-0.5	-8.2	-16.8
Post-tax profit	\$m	69.2	-37.0	-23.6	-15.7	20.6	42.2
EPS	\$/s	5.51		-4.88	-0.73	2.16	3.39
PE	x	6.4	-	-	-	6.0	3.8
EV/EBITDA	x	13.6	-	-	10.4	3.1	2.2
EBITDA	\$m	28.4	-20.4	-9.1	5.5	49.7	73.8
FCF (100%)	\$m	13.9	-22.5	-60.5	-15.0	23.9	59.4

Source: SP Angel, Bushveld, Vametco & Vanchem

Bushveld Continued...**Assumptions**

- **Vanadium price:** We have reduced our vanadium price assumption for this year to \$35/mtV but have maintained our price assumption for 2022 onwards at \$40/mtV.
- We see vanadium prices as being driven by new demand for construction in the US, India and Europe where new infrastructure and housing programs should require increased production of rebar and structural steel bearing higher vanadium content.
- We also expect the construction of a number of Vanadium Redox Flow Batteries to add to demand with two new VRFBs being built in China following on from earlier tests and a new test VRFB is also planned in the UK to work alongside a Li-ion battery. The VRFBs serve to store and stabilise power from inconsistent renewable energy sources.
- Demand for primary vanadium was suppressed in the year by high iron ore prices which encouraged traders to blend magnetite ores bearing vanadium with hematite ores. Bushveld expects this practice to slow as iron ore prices continue to fall. Iron ore prices have fallen from >\$200/t to \$117/t today in China for high grade 62% iron ore making the use of lower grade magnetite and iron ores which fetch a significant discount to the 62% grade price less attractive to use.
- **Production:** We forecast production and sales of 3,416mtV of ferrovandium for the year vs guidance of 3,400-3,600mtV.
- Production should rise to around 4,455mtV next year driven by the commissioning of Kiln 3 at Vanchem in the second half.
- The addition of Kiln 3 should further raise production to 5,320mtV in 2023.
- **Feasibility Studies** due around the year end indicate potential to raise production to 6,400-6,800mtV in the medium term (2023). We will look at adding this production into our model on further definition of these studies.
- **Longer term** the group continues to target steady state production of 8,400mtV.
- **Forex:** We have adjusted our assumption on the South African rand to ZAR15/USD. The rand strengthened from May 2020 last year driven by strengthening commodity exports and higher prices as China increased imports.
- While we expect the rand to weaken from here convention and difficulty of forecasting currency rates compels us to use a stable rand rate in our modelling.
- **Total sustaining costs TSC:** We note the effect of the stronger rand added \$4.8/kgV to total sustaining costs at Vametco in the first half vs H1 2020. This was second only to the impact of lower production volumes which raised TSCs by \$6.5/kgV.
- Lower production led to a ~US\$9.4/kgV cost increase which will unwind as the production rate recovers. We see the H1 cost of \$38.3/kgV falling to \$33.5/kgV for the full year at Vametco and to \$29/kgV in 2022 depending on the rand, local inflation and production volumes. Vametco 'Cash Costs' are guided to fall to \$23.7-24.2/mtV for 2021.
- We note Vanchem also saw a similar \$4.8/kgV impact from the rand as well as \$8.6/kgV of other costs as well as \$5.6/kgV of sustaining capex raising costs to \$38.2/kgV for the first half. We expect TSC costs at Vanchem to fall to around \$30/kgV next year. Vanchem Cash Costs are guided to fall to \$30.3-31.1/kgV for 2021.

Interim results commentary:

- Bushveld Minerals report a 9% rise in H1 sales to \$47m from \$43m yoy.
- Group production fell 5% to 1,574mtV vs 1,661mtV .
- **Vametco production guidance** is for: 2,300-2,400mtV at a cost of \$23.70-24.20/kgV.
- **Vanchem production guidance** is for: 1,100- 1,200mtV at a cash cost of \$30.3-31.1/kgV.

- **Vanadium sales** fell 9% to 1,608mtV vs 1,765mtV.
- The average realised vanadium price rose to \$29.24/kgV vs \$24.2/kgV. We note the lag in received prices against the H1 LBM ferrovanadium price of \$33.4/mtV in H1.
- **Vanadium prices** are around \$29/mtV in China today having slipped around 13% in the past 30 days.
- An **EBITDA loss** of \$10.8m vs a loss of \$1.0m was recorded despite the increase in sales due to scheduled maintenance and unscheduled stoppages in Q1.
- **Unit costs** rose to \$39.7/kgV vs \$25.0/kgV.
- **Vametco cut costs** by 2.6% in Q2 and expects costs to fall to previous guidance of \$23.7-24.2/kgV for C1 unit costs.
- **South African rand strength** led to a rise in local costs with the currency rising 13% to 14.54/USD through the period. The rand has since weakened to 15.04 today.
- **Operating losses** rose to \$19.7m vs a loss of \$9.9m yoy with the rand strength adding ~\$7.3m to the EBITDA loss.
- **Pre-tax losses** rose to \$22.7m vs \$10.7m yoy.
- Group unit costs rose by 59% to \$39.7/kgV from \$25.0/kgV.
- **Production outlook:** Critically, management expect to double vanadium production through the restart of Kiln 3 at Vanchem with \$18m of capex now allocated.
- **Vanchem's Kiln 3** is of a similar size and capacity as the main kiln at Vametco and should raise Vanchem production to ~2,600mtV, with Vametco running at ~2,600mtV.
- **Production is targeted to rise** to a run rate 5,000-5,400mtV by end 2022 and onto 6,400-6,800mtV in the medium term.
- The group remains on schedule to produce 3,400-3,600mtV by the year end.
- Bushveld maintain their aim to raise production to 8,400mtV pa in the longer term.
- **Cost savings:** Bushveld aim to cut costs by \$2.5-4m pa from 2022.
- **Operating and administrative costs** came in at US\$14.4 m vs \$14.0m in H1 2020.
- **Sustaining capital** \$6.1m vs \$0.1m in H1 2020
- **Bushveld Energy:** Construction has started on the new vanadium electrolyte plant in South Africa being built in conjunction with the IDC agency who are partners in the business.
- This will be the largest publicly announced plant outside China at 200MWh pa of vanadium electrolyte production. The plant should hopefully scale up to 800MWh pa as demand for VRFB batteries rises for longer term power storage.
- Bushveld recently sold 9,000kg of vanadium pentoxide to Invinity Energy Systems for \$200,000 presumably for conversion into electrolyte.
- **Covid-19:** Bushveld saw five active Covid cases with a 96% recovery rate and two Covid-related fatalities though the period.
- The group are running a vaccination program for Vametco and Vanchem employees.
- **Cash at end June:** \$31.6m vs \$50.5m and end December.
- **Net debt:** \$54.4m vs \$33.7m at end December due to the H1 loss on lower production, higher unit costs and the stronger rand.

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Buy - Expected return >15%

Hold - Expected return range -15% to +15%

Sell - Expected return < 15%