Equity Research

Mining sector

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Tennyson

MC Mining (MCM LN)

MARKET DATA

Bloomberg	ticker	MCM LN
Share price	p/shr	7.63
Target	p/shr	21
TP upside	%	182
Shares out	Million	399.665
Fd shares	Million	423.178
Mkt cap	US$m	37.1
EV	US$m	45.9

DESCRIPTION

MC Mining is a multi-asset company poised to develop South Africa's only source of hard coking coal (HCC). MCM's flagship Makhado project will replace imported HCC in the country's steel industry by offering a clear logistical advantage over imports. The group also has existing cash flow from two smaller operations, and 'blue sky' potential from its vast additional metallurgical coal resources contained in mineral rights adjacent to Makhado.

UNIQUELY PLACED TO SUPPLY AN ESSENTIAL RAW MATERIAL

Steel remains an essential material for global development, not least in the infrastructure required for decarbonisation. The challenges posed in transitioning the global steel industry to production methods that eliminate greenhouse-gas emissions, especially in the key steel-producing countries of Asia, mean that demand for metallurgical coal will remain firm for many decades. Meanwhile, widespread antipathy towards coal will contribute to a dearth of investment in the additional capacity required to replace depleting mines, leading to potential shortages and creating an opportunity for pragmatic investors. MC Mining's Makhado project is uniquely placed to supply the South African steel industry with hard coking coal, thereby replacing imports and thus receiving strong government support. The construction-ready project has major logistical advantages owing to the availability of existing infrastructure, and is thereby able to supply both domestic and export markets. We initiate coverage with a BUY, backed by a risk-weighted, DCF-based Target Price of 21p/shr – offering 2.8x upside to the current price. This TP uses our base-case long-term coal-price assumptions: at current spot coal prices and FX, our equivalent risk-weighted valuation would rise to 112p/shr.

GROUP SUMMARY FINANCIAL FORECASTS

Year to 30 Jun		2021A	2022A	2023A	2024F	2025F	2026F	2027F
Revenue*	US$m	20.7	23.5	44.8	89.3	98.2	201.2	265.5
EBITDA	**US$m**	**-1.3**	**-1.7**	**-0.7**	**7.1**	**10.2**	**28.1**	**43.6**
EBITDA margin	*%*	*na*	*na*	*na*	*8%*	*10%*	*14%*	*16%*
Attrib. profit	US$m	-11.7	-20.7	-4.3	3.3	5.9	8.8	19.7
EPS	US¢/shr	-7.7	-11.4	-1.5	0.8	1.4	2.1	4.6
P/E	x	na	na	na	11.4	6.6	4.5	2.0
EV/EBITDA†	**x**	**na**	**na**	**na**	**7.8**	**5.2**	**2.5**	**1.6**

Source: Tennyson Securities

*At base-case long-term price assumptions; †Ratios use attributable EBITDA; US$1.22 US dollar / pound sterling

Steel is an essential material for modern development

Source: Pexels/Sevenstorm

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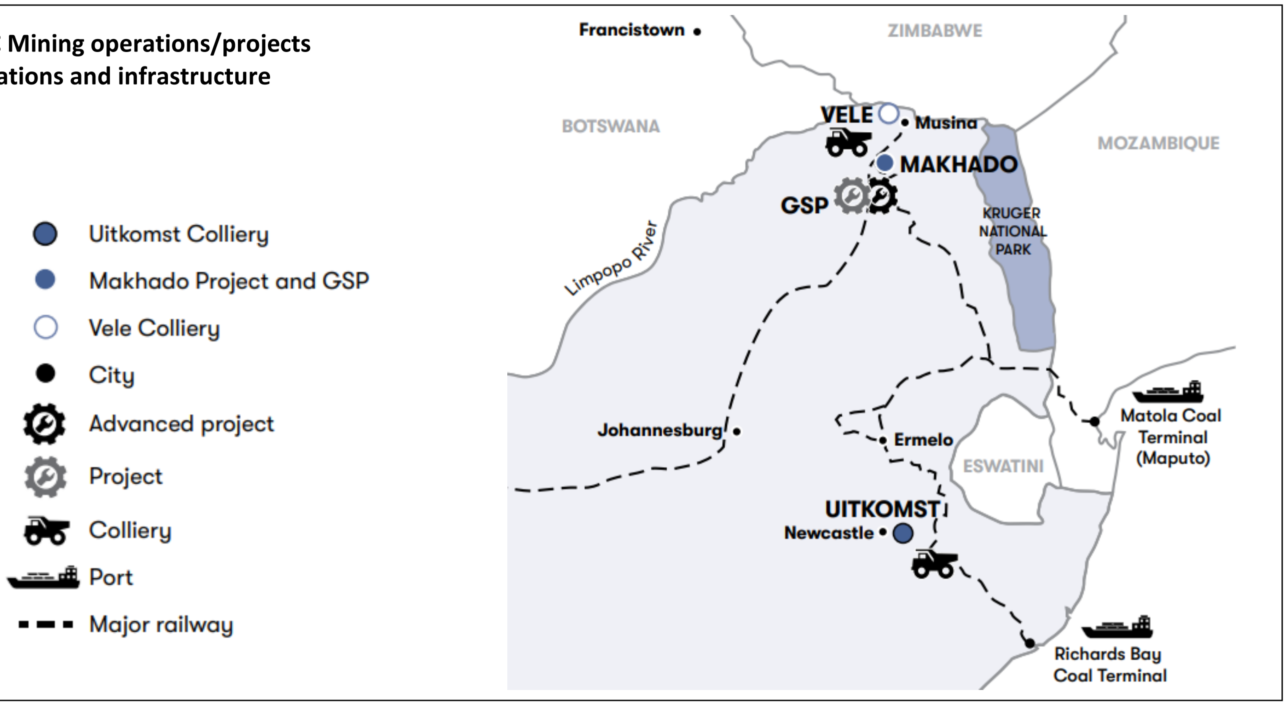
CONTENTS

MC Mining operations/projects locations and infrastructure



Source: MC Mining

INVESTMENT CASE

Key asset: MCM's Makhado project is the only readily mineable source of hard coking coal (HCC) in South Africa, poised to replace imports in the coal-blend that feeds the coke ovens of the country's steel industry.

Logistics advantage: sales of HCC from Makhado to South Africa's domestic steel industry will have a significant logistics advantage over imports from existing key sources in Australia and the US. Imports are shipped across the Indian Ocean, enter via the dry-bulk port at Richard's Bay and are then railed to ArcelorMittal South Africa's coke ovens. Makhado's domestic sales of HCC will be trucked to the railhead at Musina where the off-taker will take ownership for direct railing to its coke ovens.

Proximity to infrastructure: all of MCM's operations and projects lie in close proximity to existing railways and sealed roads, providing ready access to points of sale (railheads and ports – diagram on preceding page). This offers crucial savings in development timetables and capex compared with other bulk-commodity projects.

Government support: the South African Government is a strong supporter of Makhado, via the state-owned Industrial Development Corp. (IDC), which has already lent R160m (plus accrued interest) to support development and has a 6.7% direct interest in the project.

Construction-ready: Makhado is fully permitted and has been extensively engineered over a lengthy period. The project requires only to complete its funding package, with production following 18 months later.

Product demand: demand for metallurgical coal (the main product from Makhado and thus MCM's key revenue driver) remains firm, with the transition to low-carbon alternatives in steel-making likely to be slow, especially in the key markets of China and India (with MCM particularly well-placed geographically to supply the latter market). Meanwhile, the contraction in funding for new capacity will constrict supply (see 'Coal markets', p26).

By-product: thermal coal is a by-product for Makhado (~17% of forecast project revenue), but remains a useful contributor, and benchmark thermal-coal pricing also affects revenue from MCM's small existing mine Uitkomst. The long-term prospects for thermal-coal demand are arguably more challenging, but supply is also contracting (see 'Coal markets', p30).

Cash-generative: using our conservative long-term assumptions for benchmark coal prices (US$215/t for premium low-volatile HCC and US$108/t for API4 6,000kcal/kg thermal coal), we forecast average annual EBITDA from Makhado of ~US$42m.

Rising coal prices: After easing in the first half of this year, HCC prices are once again rising sharply and thermal coal prices are recovering. At current spot coal prices (US$350/t for HCC and US$131.5/t for API4) and FX (R18.98/US$), Makhado's annual average EBITDA would be ~US$133m and corporate-level EBITDA would put the stock on an EV/EBITDA ratio of ~0.5x at full production.

Coal price leverage: at prices prevailing for large parts of CY2022 (US$400/t for premium HCC and US$300/t for API4), Makhado's annual average EBITDA rises to ~US$250m. Prices in 2022 were abnormal, but periods of significantly elevated prices in the structurally volatile coal market are always possible when external events affect supply (see 'Coal markets', p31).

Existing cash flow: MCM has two existing sources of cash flow: the Uitkomst coal mine in KwaZulu-Natal Province (details p17) and the Vele coal mine in Limpopo Province. Vele has been farmed out to a third party which has funded its recommissioning and pays MCM a fixed sum on each tonne of coal sold provided API4 remains above US$120/t on a monthly average basis (details p20). This arrangement with Vele adds further coal-price leverage to MCM.

Investment background – the global warming issue

Over the past few years there has been a clear and widespread acceptance of the adverse effects of climate change, which has led to a significant shift in funding to investment in projects that can contribute to decarbonisation. It has also resulted in a contraction in available funding for the coal sector, first in thermal coal (used to generate electricity) and more recently in metallurgical coal (used as a reductant in the production of metals, predominantly steel). For pragmatic investors, this contraction in funding offers a significant opportunity for above-average returns from cash-generative assets during the window of transition.

When considering an investment in MC Mining, it is important to understand the structure of the industry which uses the group's products.

Steel remains an essential material for global development, including in the construction of the infrastructure required for decarbonisation. However, the steel industry is estimated to account for around 11% of current global carbon dioxide emissions (in turn representing some 7% of overall greenhouse-gas emissions).

Currently around 70% of worldwide steel demand is met with steel produced from iron ore in conventional blast furnaces. Iron ores are essentially oxides of iron, requiring the oxygen to be removed (reduction) to produce steel. In conventional blast furnaces the reductant is carbon monoxide, produced by heating coke (along with the iron ore) in an oxygen-depleted environment. The carbon monoxide removes the oxygen from the iron ore, transforming itself into carbon dioxide as a waste product. The coke is produced from metallurgical coal (on average, producing 1t of steel requires 0.78t of metallurgical coal).

The balance of ~30% is met with steel produced in electric-arc furnaces (EAFs, which themselves produce no carbon dioxide, but do require large amounts of electricity). These EAFs are fed predominantly with scrap steel, plus in some cases a proportion of pre-reduced iron briquettes. This direct-reduced iron (DRI) is typically made from high-grade iron-ore pellets reduced with natural gas (CH_4), which also produces carbon dioxide as a waste product. To produce truly carbon-free steel, the EAFs need to be supplied with renewable electricity, and the DRI needs to be produced with hydrogen other than from natural gas.

Thus in steel-making, the transaction to carbon-free steel remains in its infancy, as the replacement of coke as the main source of reductant would require many billions of dollars of investment to replace existing blast furnaces. Should that massive reinvestment not be forthcoming, and the transition is allowed to occur naturally as blast furnaces reach the end of their useful lives, the comparatively young age of blast furnaces in the key steel producing countries (China and, increasingly, India), means the process will take many decades.

Moreover, it will require a significant investment in additional capacity to produce hydrogen, which is the likely 'carbon free' replacement as reductant, and which poses additional challenges. Currently, the most common method of producing hydrogen (steam reforming of natural gas) also generates carbon monoxide/carbon dioxide. Carbon-free hydrogen can be produced by electrolysing water, but this process requires large amounts of electricity.

This implies that demand for metallurgical coal (MCM's principal product) is likely to remain firm for decades to come, with any contraction caused by the replacement of conventional blast furnaces being largely offset by growth in conventional steel production in the developing world, particularly India (see 'Coal markets', p27).

In thermal coal (a by-product for MCM), the move to alternative means of generating electricity that produce much less carbon dioxide (wind, solar, nuclear etc) has been under way for some time, though the investment required and timescale mean that there will remain significant demand for thermal coal for many years to come. In addition, production is contracting, opening the possibility for further periods of tight markets (see 'Coal markets', p30).

COMPANY VALUATION

Our 12-month Target Price (TP) for MCM of 21p/shr is based on a sum-of-parts valuation, including discounted cash flow valuations of its three principal assets (risk-weighted where appropriate). Corporate overheads are included as a negative, on a discounted cash flow basis, and we also allow for net cash/debt at 30 June 2023 (adjusted for the existing IDC loan – see table footnotes below), in line with the start of the discounted cash flow analyses.

Our 12-month TP includes a risk-weighting that limits the Makhado project to 70% of its full value, to take into account its undeveloped status (both in terms of execution risk and the potential dilutive effects of its remaining funding requirements (details p7). We expect to reduce this risk weighting as the project advances, and as additional funding is secured.

Our valuation is strongly related to prices: at prices prevailing for large parts of CY2022 (US$400/t for premium HCC and US$300/t for API4), our TP on the same risk-weighted basis would rise to 256p/shr. These were abnormal prices, but significantly elevated prices in the structurally volatile coal market are always possible when events dictate (sensitivity analyses on following page).

MC MINING SUM-OF-PARTS VALUATION – RISK-WEIGHTED* TO DERIVE TARGET PRICE

Asset	Unrisked			Risked*		
	US$m	£m	GBp/shr	US$m	£m	GBp/shr
Makhado: NPV8 (67.3% ownership post capex returns†)	147.5	121.2	29	103.2	84.9	20
Uitkomst: NPV8 (84% ownership)	25.8	21.2	5	25.8	21.2	5
Vele: NPV8 of revenue stream (100% ownership)	12.5	10.3	2	12.5	10.3	2
GSP: 3x Makhado option value at 10%‡ (74% ownership)	48.0	39.4	9	33.6	27.6	7
Corporate overheads NPV8	-71.9	-59.1	-14	-71.9	-59.1	-14
Cash (at 30/06/2023)	7.5	6.2	1	7.5	6.2	1
Debt (at 30/06/2023; excludes existing IDC loan#)	-0.2	-0.1	0	-0.2	-0.1	0
Total	**169.2**	**139.1**	**33**	**110.6**	**90.9**	**21**

Source: Tennyson Securities

Valuation assumptions:

*Risk weighting reduces Makhado project NPV to 70% of its full value

†Details of Makhado ownership and funding structure pp9&13

‡Details of Greater Soutpansberg Project valuation assumptions p24

#Consolidated debt at 30/06/23 was US$16.5m but in this valuation table debt excludes the existing R160m IDC loan (plus interest) because repayment of the loan is included in Makhado's DCF and NPV (see pp12-14)

Discount rate 8%; R18.98 (spot) and R19.00 (long term) SA rand / US dollar; US$1.22 US dollar / pound sterling

399.665m basic shares, plus 11.512m for performance rights and 12.000m options = 423.178m for valuation

Key external assumptions include future prices for HCC and thermal coal. For Makhado's primary product, we have taken the international benchmark for premium low-volatile HCC and applied a discount for the quality of the planned product (a mid-vol 64 HCC). For domestic sales, we have applied a further discount, taking into account the off-taker will take delivery at the Musina railhead. For export HCC, we apply just the quality discount from premium HCC, as the coal will be sold FoB Matola Coal Terminal. In both cases, we have factored the relevant rail and port costs, and sales commissions into our opex assumptions (details pp11-12).

For the pricing of Uitkomst's products, we have used MCM's reported data and historical market-price data to establish the typical relationship between benchmark market prices and Uitkomst's received prices. We then apply these relationships to our assumptions for future long-term benchmark prices (details p18) to derive our forecasts for product revenues.

Sensitivity analysis

Our valuation is chiefly sensitive to discount rate, product pricing and the exchange rates between the rand, the US dollar and sterling. We value all of MCM's assets and liabilities in US dollars (which is also the group's reporting currency, and the currency for most of its current and future sales). The rate between the US dollar and sterling obviously affects the final TP (expressed in GBp to compare directly with the share price on London's AIM market).

The rate between the rand and the US dollar is also highly significant, as the group's opex (and most of its capex) is incurred in rand. Thus a weaker rand has a highly positive impact on costs expressed in US dollars. The group's outstanding debt is also denominated in rand, and thus a weaker rand reduces both the nominal value of that debt and its real value against future US dollar revenues. We assume a long-term assumption for the rand/US dollar of R19/US$, which we believe is in line with our conservative assumptions for coal prices as the rand tends to be inversely correlated to the prices of the country's commodity exports.

Below we show the Target Price at a range of future benchmark coal prices (which drive received prices for MCM's products), discount rates and rand/US dollar exchange rates.

MCM TP* (GBp/SHR) – SENSITIVITY TO CHANGES IN BENCHMARK HARD COKING COAL VS. API4 PRICES

Premium hard coking coal†	175	215	250	300	350	400
API4‡						
50	-60	-26	-5	21	47	74
75	-31	-4	15	41	67	94
108	0	21	40	66	93	120
125	15	36	54	81	108	134
150	32	53	71	98	125	152
175	49	70	88	115	142	169

Source: Tennyson Securities

Valuation assumptions:

*Risk-weighted Target Price - Makhado NPV8 at 70% of full value

†Benchmark price for premium hard coking coal, FoB Queensland – Makhado received prices adjusted for coal quality, logistics, fees etc

‡Benchmark price for thermal coal (6,000kcal), FoB Richards Bay, South Africa – Makhado received prices adjusted for coal quality, logistics, fees etc

R18.98 (spot) and R19.00 (long term) SA rand / US dollar; US$1.22 US dollar / pound sterling

MCM TP* (GBp/SHR) – SENSITIVITY TO CHANGES IN BENCHMARK HARD COKING COAL VS. DISCOUNT RATE

Premium hard coking coal†	175	215	250	300	350	400
Real discount rate						
15.0%	-4	9	19	34	48	63
12.5%	-3	12	24	42	60	78
10.0%	-2	17	32	54	76	98
8.0%	0	21	40	66	93	120
5.0%	3	32	57	93	131	168
0.0%	14	68	116	186	257	329

Source: Tennyson Securities

Valuation assumptions:

*Risk-weighted Target Price - Makhado NPV8 at 70% of full value

†Benchmark price for premium hard coking coal, FoB Queensland – Makhado received prices adjusted for coal quality, logistics, fees etc

R18.98 (spot) and R19.00 (long term) SA rand / US dollar; US$1.22 US dollar / pound sterling

MCM TP* (GBp/SHR) – SENSITIVITY TO CHANGES IN BENCHMARK HCC VS. LONG-TERM ZAR/USD

Premium hard coking coal†	175	215	250	300	350	400
Long-term R/US$‡						
15.00	-59	-22	0	26	52	79
17.00	-23	4	23	49	75	102
19.00	0	21	40	66	93	120
21.00	14	35	54	81	107	134
23.00	26	47	66	92	119	146
25.00	36	57	76	102	129	156

Source: Tennyson Securities

Valuation assumptions:

*Risk-weighted Target Price - Makhado NPV8 at 70% of full value

†Benchmark price for premium hard coking coal, FoB Queensland – Makhado received prices adjusted for coal quality, logistics, fees etc

‡Long-term ZAR/USD flexed; R18.98 / US dollar (spot, financial assets/liabilities); US$1.22 US dollar / pound sterling

FINANCIAL FORECASTS

On the following page we present a summary of our financial forecasts for MCM, based on cash flows from the existing Uitkomst and Vele operations (details on p17 and p20 respectively).

One point worth noting in MCM's consolidated profit & loss statement is the accounting treatment of Vele. MCM receives a fixed payment of R200/t for coal sold from a third party, to which operation of the mine has been outsourced. MCM books the full operating cost as invoiced by the third party to its P&L, and invoices the third party for the same costs plus the R200/t payment (where applicable – details pp20-22) which MCM then books to its revenue line. This has the effect of boosting MCM's consolidated revenue and operating costs, and because the margin is effectively fixed at R200/t, dilutes MCM's overall EBITDA margin.

Our financial forecasts also show the negative/positive cash flows from the construction and commissioning of Makhado (we model commissioning as occurring in Q1 FY2026, which is the September quarter of CY2025).

MCM has an existing loan with the IDC (R160m plus accrued interest), the repayment deadline for which has been extended several times and which we assume will be renegotiated to be repaid once Makhado is in steady-state production. This loan, and the above repayment assumption, are included in our forecasts and model.

In July 2019, the IDC agreed to extend a further loan, of R245m. The agreed loan had a term of seven years from drawdown, and was repayable in 20 equal quarterly instalments commencing two years after drawdown. The loan was to bear interest at a margin (undisclosed) over the South African Prime interest rate. The deadline for MCM to draw down on this loan was extended several times, but finally expired at the end of June this year. We are optimistic that this arrangement will be renewed in some form as part of the overall funding package, though we do not include it in our model or forecasts at this time.

Our forecasts show a negative corporate cash position (peaking at US$56.7m at the end of FY2025), coinciding with the Makhado project's peak funding requirement (estimated by MCM at US$96m – details p10). Thus additional funding is required to add to the group's existing cash (US$7.5m at 30 June 2023).

In the 'going concern' assessment in MCM latest annual report (year to 30 June 2023), the group included a series of funding assumptions that indicate the various options under negotiation and/or consideration.

- Deferring the existing R160m IDC loan until Makhado is in steady state production (as we assume above);
- the securing of convertible debt funding (we would assume convertible into equity) of US$25m;
- production-based funding (we would assume off-take related) of US$25m;
- a prepayment of US$15.9m on the sale of hard coking coal;
- construction-based funding including a BOOT (build-own-operate-transfer) arrangement with a contractor of R155m (US$8.2m);
- other debt/equity.

As noted above, we have not included any of these funding assumptions in our forecasts or model. Clearly, the securing of additional debt with respect to Makhado would be value-enhancing to equity returns at the project level, and would reduce any future dilution at the corporate level stemming from the need for additional equity.

MC MINING CONSOLIDATED FINANCIAL ESTIMATES (REAL TERMS, 2023 MONEY)

Year-end 30 June	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Profit & loss (US$m)										
Revenue	20.7	23.5	44.8	89.3	98.2	201.2	265.5	228.6	207.5	207.2
Cost of sales	-20.3	-21.0	-41.2	-77.4	-83.3	-178.4	-226.7	-195.8	-170.3	-170.5
incl. inventory movements	*-0.3*	*3.8*	*-10.1*	-	-	-	-	-	-	-
incl. logistics & other selling expenses	*-0.3*	*-0.9*	*-8.1*	*-1.1*	*-1.2*	*-19.5*	*-41.9*	*-39.6*	*-41.6*	*-41.6*
incl. depreciation	*-2.5*	*-2.5*	*-1.9*	*-1.1*	*-1.2*	*-11.2*	*-10.7*	*-9.8*	*-8.9*	*-8.2*
incl. royalties	*-0.1*	*-0.2*	*-0.4*	*-1.0*	*-1.2*	*-6.1*	*-11.3*	*-10.2*	*-11.0*	*-11.0*
Gross profit	0.4	2.5	3.6	11.9	14.9	22.8	38.8	32.8	37.2	36.7
Other operating income & gains	0.2	0.3	1.6	-	-	-	-	-	-	-
Expected credit losses	-	-0.3	0.3	-	-	-	-	-	-	-
Administrative expenses	-5.3	-6.8	-8.9	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0	-6.0
Impairment expense	-6.8	-14.9	-	-	-	-	-	-	-	-
Other gains/(losses)	0.8	0.1	0.8	-	-	-	-	-	-	-
Operating profit/(loss)	-10.7	-19.2	-2.7	5.9	8.9	16.8	32.8	26.8	31.2	30.7
Finance income	0.2	0.1	0.4	-	-	-	-	-	-	-
Finance costs	-1.6	-1.7	-1.7	-0.4	-0.4	-0.4	-0.4	0.0	0.0	0.0
Profit/(loss) before tax	-12.1	-20.7	-4.0	5.5	8.5	16.4	32.4	26.8	31.2	30.7
Income tax (expense)/credit	0.3	-0.1	-0.4	-1.6	-1.9	-1.4	-0.9	-0.9	-2.7	-11.6
Net profit/(loss)	-11.8	-20.8	-4.4	3.9	6.6	15.0	31.5	25.9	28.5	19.1
Attributable to parent	-11.7	-20.7	-4.3	3.3	5.9	8.8	19.7	15.9	17.6	11.3
Attrib. to non-controlling interests	-0.1	-0.1	-0.1	0.6	0.7	6.2	11.8	10.0	10.9	7.8
EBITDA*	-1.3	-1.7	-0.7	7.1	10.2	28.1	43.6	36.7	40.2	39.0
*EBITDA margin**	*na*	*na*	*na*	*7.9%*	*10.4%*	*14.0%*	*16.4%*	*16.0%*	*19.4%*	*18.8%*
Cash flow (US$m)										
Net cash from operations	-1.5	-0.4	-0.8	7.1	10.2	28.1	43.6	36.7	40.2	39.0
Movements in working capital	0.1	-1.8	-2.5	4.9	6.3	-13.8	1.6	0.5	-0.2	0.1
Interest paid/received	-0.1	-0.2	0.2	0.0	-	-	-	-	-	-
Income tax (paid)/refunded	0.2	0.0	-0.5	-1.2	-1.7	-1.6	-1.1	-0.9	-1.8	-7.1
Net cash from operating activities	-1.4	-2.4	-3.5	10.8	14.8	12.7	44.1	36.2	38.2	31.9
Cash (used in)/from invest. activities	0.2	-1.5	-8.7	-26.7	-61.6	-6.7	-2.1	-2.1	-2.1	-2.1
Repaym't of deferred consideration	-	-2.7	-	-	-	-	-	-	-	-
Proceeds from issuing shares (net)	0.8	3.5	21.1	-	-	-	-	-	-	-
Dividends paid to minority interests	-	-	-0.1	-	-	-0.3	-0.4	-0.4	-0.4	-
Proceeds from borrowings	2.3	4.9	0.3	-	-	-	-	-	-	-
Repayment of borrowings	-0.5	-0.6	-1.7	-0.2	-	-	-17.5	-	-	-
Repayment of leases	-1.0	-0.9	-0.7	-0.7	-0.7	-0.7	-0.4	-	-	-
Effect of exchange-rate changes	0.1	0.1	-0.7	-	-	-	-	-	-	-
Net increase in cash & equivalents	0.6	0.4	6.0	-16.8	-47.4	5.0	23.6	33.8	35.7	29.8
Cash & equivalents at period end	1.0	1.5	7.5	-9.3	-56.7	-51.7	-28.1	5.7	41.4	71.2
Debt at period end	-19.5	-21.7	-16.3	-16.4	-16.7	-17.1	0.0	0.0	0.0	0.0
Net cash/(debt) at period end	-18.5	-20.2	-8.8	-25.6	-73.5	-68.8	-28.1	5.7	41.4	71.2
Key indicators										
Weighted average shares in issue (m)	152.630	181.698	296.483	407.891	419.647	423.178	423.178	423.178	423.178	423.178
Earnings/share (US¢/shr)	-7.7	-11.4	-1.5	0.8	1.4	2.1	4.6	3.8	4.2	2.7
P/E (x)	na	na	na	11.4	6.6	4.5	2.0	2.5	2.2	3.5
EV/EBITDA† (x)	na	na	na	7.8	5.2	2.5	1.6	1.9	1.8	1.8
FCF/share† (US¢/shr)	-1.6	-1.9	-4.0	-2.0	-6.6	0.1	7.7	5.1	5.4	4.4
P/FCF† (x)	na	na	na	na	na	68.8	1.2	1.8	1.7	2.1
Return on equity‡	na	na	na	3.6%	6.0%	8.3%	15.6%	11.2%	11.0%	6.6%
Exchange rates										
Average exchange rate (R/US$)	15.40	15.19	17.73	18.90	19.00	19.00	19.00	19.00	19.00	19.00
Period-end exchange rate (R/US$)	14.34	16.21	18.75	18.98	19.00	19.00	19.00	19.00	19.00	19.00

Source: MC Mining/ Tennyson Securities
*Underlying EBITDA - excludes impairment expenses
†Ratios use attributable EBITDA/FCF; ‡Attributable post-tax profit divided by shareholders' equity

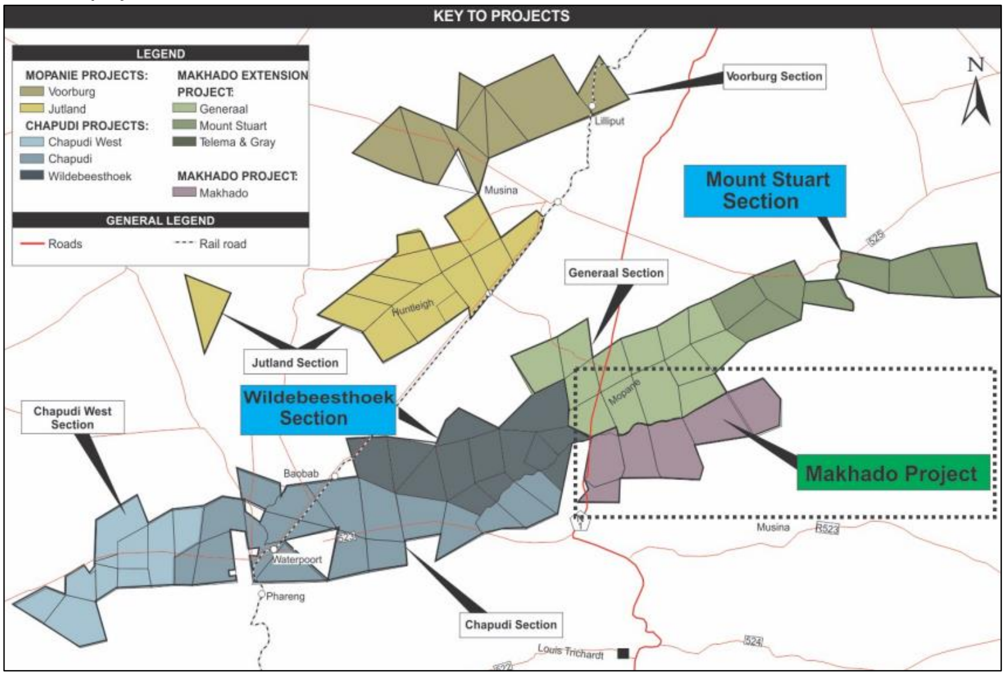
MAKHADO PROJECT

MCM's core asset is the Makhado hard coking coal (HCC) project in South Africa's Limpopo Province, in the north of the country. The project area is 65km southwest of the town of Musina, which is the nearest railhead (location and infrastructure diagram, p3).

MCM holds a 67.3% interest in Makhado, the state-owned Industrial Development Corp. holds 6.7% and the balance of 26% is held by 'black economic empowerment' (BEE) groups, including 20% held by representatives of the local community.

Makhado lies in the Soutpansberg coalfield, adjacent to several other properties held by MCM. These include certain properties which together comprise the group's Greater Soutpansberg Project (details p23).

Makhado project



Source: MC Mining

Development plan

Makhado has been under consideration for development for over a decade, and during that period has been the subject of significant technical and financial evaluation, including two definitive feasibility studies. The project is thus well understood by MCM, with the key to developing an operation now the securing of the necessary funding.

As mentioned, Makhado has been subject to several designs, including a low-capex option of trucking the coal 134km to MCM's existing plant at Vele. This formed the basis of the most recent bankable feasibility study, released in April 2022.

However, MCM has since settled on a plan to build a new, stand-alone coal processing plant on site at Makhado which, although increasing the capex, reduces opex significantly by eliminating the trucking of significant waste (contained in the RoM coal, prior to processing) over the considerable distance to Vele. This results in a far more economically robust project and, in addition, has released the Vele plant for a farm-out deal to provide MCM with additional and immediate cash flow (details p20).

Under the current plan for Makhado, full details of which were released at the end of June, mining will commence in the eastern part of the deposit (East Pit), before moving to the Central and West pits in sequence, all by surface mining. RoM capacity will be 4.0Mtpa, fed to a processing plant to produce an average of 0.81Mtpa of hard coking coal (classified as 64 mid-volatile) and 0.62Mtpa of thermal coal (classified as having a net calorific value of 5,500kcal/kg).

MCM expects to start construction in H1 CY2024. The work is scheduled to take 18 months, at a capital cost to first production of R1,709m (including a 10% contingency), with further capex from year 14 of R539m (including a 20% contingency) to extend the mine life. The initial capex results in a peak funding requirement of R1.8 billion, equivalent to US$96m at MCM's FX assumptions (which average R18.83/US$ over the life-of-mine – LoM).

Operating costs are estimated at an average of R1,563/t over the LoM, on a C3 fully-allocated basis (including all mining and processing costs, plus indirect costs and state royalties, and primary and sustaining capex spread over the LoM), and is calculated across the combined tonnage of the two products. This estimate is real (ie it is expressed in current terms, without inflation).

At MCM's FX assumptions, this is equivalent to US$83/t (real). Of this fully allocated cost, capex (primary and sustaining) represents ~US$3/t and royalties ~US$7/t, with the balance of US$73/t representing mining, processing and overheads. Note, this operating cost estimate represents the average LoM cost across all products at the point of sale, and thus includes transport and other logistics costs, which differ depending on the point of sale (eg export vs. domestic); and selling costs, which differ depending on the product type and whether for export or domestic sale (details below under 'Marketing & logistics').

Included in the above opex, MCM estimates sustaining capex at R240m over the LoM (equivalent to US$12.7m).

Under the current plan, the LoM runs for 28 years, supported by the latest reserve figures (detailed below).

MAKHADO RESERVES & RESOURCES (100% OWNERSHIP BASIS)

Reserves†

Category	RoM (Mt)	Saleable HCC (Mt)	Saleable TC (Mt)	Primary yield	Secondary yield
East Pit					
Proven	49.695	11.101	8.743	22.3%	17.6%
Probable	4.878	1.129	0.843	23.1%	17.3%
Total	**54.573**	**12.230**	**9.586**	**22.4%**	**17.6%**
Central Pit					
Proven	21.947	4.685	3.747	21.3%	17.1%
Probable	1.158	0.286	0.196	24.7%	16.9%
Total	**23.105**	**4.971**	**3.943**	**21.5%**	**17.1%**
West Pit					
Proven	26.114	4.885	4.791	18.7%	18.3%
Probable	2.462	0.431	0.376	17.5%	15.3%
Total	**28.576**	**5.316**	**5.167**	**18.6%**	**18.1%**
Combined Pits					
Proven	97.756	20.671	17.281	21.1%	17.7%
Probable	8.498	1.846	1.415	21.7%	16.7%
Total	**106.254**	**22.517**	**18.696**	**21.2%**	**17.6%**

Resources*

Category	Gross in situ (Mt)	Cut to gross	Total in situ (Mt)	Mineable in situ (Mt)
Measured	387.340	-5%	367.970	227.400
Indicated	254.000	-8%	233.680	68.600
Inferred	116.200	-10%	104.600	7.200
Total	**757.540**	**na**	**706.250**	**303.200**

Source: MC Mining

†Reserves at 28 June 2023, based on measured & indicated resources unchanged from 30 June 2022

*Resources at 30 June 2022; resources include reserves

The reserve statement in the table above was generated on 28 June 2023 from the measured & indicated mineable resource of 296Mt (which is unchanged from 30 June 2022). The reserve was generated by applying a minimum seam thickness of 0.5m, and an economic cut-off based on realised prices of US$193/t for 64 mid-vol HCC (assumed export price FoB Matola) and US$29/t for 5,500kcal thermal coal (FoR Musina), both after quality and off-take deductions).

These realised price assumptions are based on benchmark prices of US$215/t for seaborne premium HCC and US$108/t for API4 (6,000kcal thermal coal, FoB Richards Bay). As stated, the reserves have maximum ash contents of 10% and 25.9% for the HCC and thermal coal, respectively, and a minimum volatile material content of 20%.

Marketing, logistics and realised pricing

As noted above, planned production of HCC is 0.81Mtpa, of which MCM expects to sell around 0.42Mtpa to the country's domestic steel industry (essentially ArcelorMittal South Africa, the country's sole significant producer, with which MCM has long-standing off-take agreements in principle initially signed in June 2019). The balance will be exported via the Matola Coal Terminal (MCT) in Mozambique, the nearest export port.

Domestic sales of HCC will be trucked 78km to the railhead at Musina, where the coal will be sold free-on-rail (FoR) to the customer. Those logistic costs are built into MCM's project opex. Domestic pricing is assumed at an average of US$175/t (real terms, over the life-of-mine), which takes into account a 10% discount for coal quality (from benchmark premium hard coking coal, which is low-volatile) to Makhado's mid-volatile product, plus a further 10% discount (LoM average) assumed to be imposed by the customer.

Exports of HCC will receive a higher price, averaging US$193/t (real terms, over the life-of-mine), as they will be sold free-on-board customer vessels at MCT. However the profitability of exports will be lower than domestic sales, as they will incur higher logistics costs which are built into MCM's project opex.

Given the constraints currently experienced by coal producers on South Africa's state-owned rail network, MCM is conservatively assuming Makhado's export sales will be trucked to MCT for the first ten years of the project's life, a distance of 650km, before switching to rail (which will involve trucking 78km to Musina and loading onto rail). All of these truck, rail, loading and port costs are in the project opex assumptions.

The 5,500kcal/kg thermal coal is expected be sold free-on-rail at Musina. MCM previously reached a memorandum of understanding with coal-trader Vitol (the MoU was originally signed in January 2013), which MCM is seeking to renegotiate. MCM assumes pricing based on benchmark thermal coal API4 (6,000kcal/kg, FoB Richards Bay), less a 16% discount for quality and a further discount for location (which MCM estimates based on the likely logistics cost of the off-taker in moving the coal to port and loading it).

MAKHADO PROJECT – DERIVATION OF REALISED PRICES FROM BENCHMARKS (REAL TERMS)

	Life-of-mine average† (US$/t)
Benchmark premium hard coking coal	215
Coal quality discount	-21
Realised 64 mid-vol hard coking coal – export sales (FoB Matola Coal Terminal)	**193**
Sales price adjustments*	-19
Realised 64 mid-vol hard coking coal – domestic sales (FoR Musina)	**175**
Benchmark 6,000kcal thermal coal	108
Coal quality discount	-17
Sales price adjustments*	-61
Realised 5,500kcal thermal coal (FoR Musina)	**29**

Source: MC Mining; benchmark prices from Afriforesight June 2023 forecasts
†Prices are expressed in real terms, without inflation
*Includes assumptions for rail & port charges to relate benchmark export prices back to Musina free-on-rail prices

These assumptions, along with MCM's LoM plan, result in a post-tax project NPV of US$361m (at a real discount rate of 6%, 100% ownership basis), and a post-tax real IRR of 37%.

Our model

We have modelled Makhado using the mine plan, operating assumptions, and capex and opex inputs from MCM's latest development plan.

We assume construction starts in Q1 CY2024, following the completion of funding arrangements, which will be followed by the expected 18-month construction period, leading to plant commissioning in the September quarter of CY2025. Thus our model has a ramp-up year in FY2026, and assumes full production from FY2027 (details in table on pp15-16).

We assume a long-term price for benchmark premium low-volatile hard coking coal of US$215/t, flat in real terms for the life of the project, which we discount in line with the underlying assumptions in MCM's received price derivation on p11. For thermal coal, we assume benchmark API4 (6,000kcal/kg FoB Richards Bay) at a long-term level of US$108/t, flat in real terms for the life of the project, which we similarly discount in line with MCM's underlying assumptions on the preceding page.

We estimate cash operating costs at an average of US$82.20/t of combined product sold (real-terms average over the life-of-mine; including mining, processing, overheads, transport & logistics and government royalties).

We express these cash operating costs in conventional format, and thus our opex output excludes capex. However, our opex outcome comes in slightly higher than MCM's equivalent estimate (by ~US$4/t), offsetting both the capex element in MCM's fully-allocated opex and fractionally lower royalties in our model (owing to our slightly lower price assumptions) and thus coincidentally gives a similar number to MCM's fully-allocated cost.

For comparison with MCM's opex outcome, our equivalent C3 fully allocated LoM average opex would be US$85.38/t.

Our model gives a project NPV of US$216.1m at our discount rate of 8% (post-tax, real). Our NPV is lower than MCM's published figure, mainly owing to our assumption of a discount rate of 8% (real) compared with the 6% used by MCM (at 6% real our NPV would be US$286.6m); the fact that we start our DCF at today's date, rather than the start of construction; plus our slightly higher opex outcomes and our flat product pricing profile (whereas the MCM model has higher pricing assumptions in the early years). The last two factors also result in our IRR of 29.6% (post-tax, real) coming in slightly lower than MCM's estimate.

These figures (NPV and IRR) are effectively ungeared, as we include in our project model and DCF only the existing IDC loan of R160m plus accrued interest (which we assume will be repaid once steady-state operations are achieved) and none of the various funding options that MCM is considering (details p7).

MAKHADO POST-TAX NPV8 (US$m, 100% BASIS*, UNRISKED) – BENCHMARK HCC PRICE VS. API4†

Premium hard coking coal	175	215	250	300	350	400
API4						
50	-219.4	-2.0	152.3	364.5	579.6	799.8
75	-97.2	94.4	243.9	455.9	674.3	894.8
108	43.5	216.1	364.4	579.3	799.7	1,020.2
125	107.8	278.2	426.5	643.8	864.3	1,084.8
150	199.9	369.5	518.8	738.8	959.3	1,179.9
175	291.3	461.0	613.3	833.8	1,054.3	1,275.0

Source: Tennyson Securities

Valuation assumptions:

*MCM sum-of-parts (see p5) assumes 67.3% ownership, NPV this table (at 8% real discount rate) represents 100%

†HCC and API4 are benchmark prices, Makhado received prices adjusted for coal quality, logistics, fees etc

R19.00 (long term) SA rand / US dollar

The NPV and IRR are sensitive to several parameters, including assumptions for future benchmark coal prices and the rand-US dollar exchange rate.

MAKHADO POST-TAX NPV8 (US$m, 100% BASIS*, UNRISKED) – BENCHMARK HCC PRICE† VS. ZAR/USD

Long-term R/US$ \ Premium hard coking coal	175	215	250	300	350	400
15.00	-289.4	-64.8	96.0	309.4	521.1	736.9
17.00	-91.9	97.1	246.6	458.5	674.7	895.1
19.00	43.5	216.1	364.4	579.3	799.7	1,020.2
21.00	141.6	311.5	460.5	680.4	901.0	1,121.6
23.00	220.7	390.4	543.6	764.1	984.8	1,205.7
25.00	286.9	459.5	613.8	834.5	1,055.5	1,276.4

Source: Tennyson Securities

Valuation assumptions:

*MCM sum-of-parts (see p5) assumes 67.3% ownership, NPV this table (at 8% real discount rate) represents 100%

†HCC is benchmark price, Makhado received prices adjusted for coal quality, logistics, fees etc

MAKHADO POST-TAX IRR (100% BASIS) – BENCHMARK HCC PRICE VS. API4†

API4 \ Premium hard coking coal	175	215	250	300	350	400
50	na	7.8%	23.7%	42.4%	58.8%	73.2%
75	-4.2%	17.9%	32.2%	49.7%	65.3%	79.2%
108	12.5%	29.6%	42.6%	59.1%	73.6%	86.8%
125	19.1%	35.3%	47.6%	63.6%	77.8%	90.6%
150	28.1%	43.1%	54.9%	70.1%	83.7%	96.1%
175	36.5%	50.5%	61.8%	76.3%	89.4%	101.6%

Source: Tennyson Securities

Valuation assumptions:

†HCC and API4 are benchmark prices, Makhado received prices adjusted for coal quality, logistics, fees etc

R19.00 (long term) SA rand / US dollar

MAKHADO POST-TAX IRR (100% BASIS) – BENCHMARK HCC PRICE† VS. ZAR/USD

Long-term R/US$ \ Premium hard coking coal	175	215	250	300	350	400
15.00	na	2.5%	15.9%	32.3%	46.9%	60.4%
17.00	-0.9%	17.1%	30.1%	46.5%	61.3%	74.7%
19.00	12.5%	29.6%	42.6%	59.1%	73.6%	86.8%
21.00	24.0%	40.8%	53.5%	69.8%	84.2%	97.3%
23.00	34.1%	50.4%	63.2%	79.1%	93.4%	106.6%
25.00	43.0%	59.2%	71.6%	87.3%	101.6%	114.6%

Source: Tennyson Securities

Valuation assumptions:

†HCC is benchmark price, Makhado received prices adjusted for coal quality, logistics, fees etc

For our valuation, we estimate an attributable NPV of US$147.5m, also post-tax and at a real discount rate of 8%. To derive this figure, we take 100% of project cash flows, and attribute these to MCM (less an initial modest dividend to the BEE groups, which are 'free carried' in the ownership structure) until MCM's contribution to project funding is repaid (along with MCM's existing shareholder loans to Makhado, estimated at ~R700m at 30 June 2023), after which we attribute MCM with its 67.3% ownership share of cash flow.

Although the BEE groups are 'free-carried' with respect to capex, we understand they will be required to pay a purchase price for their ownership interests. However, as the level of this purchase price is not yet clear, we have not included any potential impact on MCM's attributable value for Makhado.

Our attributable IRR (post-tax, real) is 26.0%. This is lower than the project IRR (100% basis) owing mainly to the funding carry and subsequent cash flow share of the BEE partners.

In common with the project outputs, these figures (attributable NPV and IRR) are effectively ungeared, as they include only repayment of the existing R160m IDC loan (plus accrued interest), which we assume will happen only once steady-state operations are achieved, and no new debt. Returns to equity may be improved by the adoption of new debt in the funding structure: for example, just the restoration of the previously agreed R245m additional IDC loan would increase our IRR attributable to MCM from 26.0% to 27.5%.

We then apply a risk discount to our attributable NPV to take into account the remaining project risks (mainly securing the balance of funding), thus reducing Makhado's contribution to our sum-of-parts valuation to 70% of its full vale (company valuation details p5).

MAKHADO PROJECT – SUMMARY OPERATING ESTIMATES (100% BASIS, REAL TERMS, 2023 MONEY, US DOLLARS EXCEPT WHERE STATED) – PAGE 1 OF 2									
Year-end 30 June	**LoM***	**2024F**	**2025F**	**2026F**	**2027F**	**2028F**	**2029F**	**2030F**	**2031F**
Production									
Total waste moved (Mbcm)	261.2	-	-	9.77	10.04	10.65	10.80	10.67	10.82
Total RoM coal mined (Mt)	106.3	-	-	2.39	3.97	4.00	4.00	4.00	4.00
Strip ratio (bcm:t)	*2.5*	-	-	*4.1*	*2.5*	*2.7*	*2.7*	*2.7*	*2.7*
RoM feed to plant (Mt)	106.3	-	-	2.39	3.97	4.00	4.00	4.00	4.00
HCC washing plant yield	21.2%	-	-	21.2%	23.6%	22.1%	22.6%	22.6%	22.4%
HCC produced (Mt)	22.5	-	-	0.51	0.93	0.88	0.91	0.90	0.89
5,500kcal coal washing plant yield	17.6%	-	-	23.6%	17.3%	15.9%	19.6%	18.9%	17.1%
5,500kcal coal produced (Mt)	18.7	-	-	0.56	0.69	0.64	0.78	0.75	0.69
Total product (Mt)	41.2	-	-	1.07	1.62	1.52	1.69	1.66	1.58
Sales									
HCC product sold (Mt)	22.5	-	-	0.48	0.92	0.89	0.90	0.90	0.89
of which domestic sales	*11.3*	-	-	*0.28*	*0.42*	*0.42*	*0.42*	*0.42*	*0.42*
of which export sales	*11.2*	-	-	*0.20*	*0.50*	*0.47*	*0.48*	*0.48*	*0.47*
5,500kcal product sold (Mt)	18.7	-	-	0.49	0.70	0.64	0.77	0.76	0.69
Total sales volume (Mt)	41.2	-	-	0.97	1.62	1.53	1.67	1.66	1.59
Pricing									
Benchmark price premium HCC (US$/t)	215	316	298	257	215	215	215	215	215
HCC price domestic sales (FoR-Musina) (US$/t)	145	212	200	172	144	144	144	144	144
HCC price export sales FoB-Matola (US$/t)	190	278	262	226	189	189	189	189	189
Benchmark API4 (US$/t)	108	126	122	115	108	108	108	108	108
5,500kcal price export sales FoB-Matola (US$/t)	41	48	46	40	34	34	34	34	34
Revenue									
Gross revenue (US$m)	4,529.4	-	-	112.5	178.8	170.6	178.2	177.9	173.8
incl. domestic HCC	*1,632.5*	-	-	*48.2*	*60.5*	*60.5*	*60.5*	*60.5*	*60.5*
incl. export HCC	*2,134.7*	-	-	*44.7*	*94.6*	*88.3*	*91.5*	*91.7*	*89.8*
incl. 5,500kcal	*762.2*	-	-	*19.7*	*23.7*	*21.7*	*26.1*	*25.7*	*23.4*
Total selling expenses (US$m)	908.8	-	-	19.0	40.9	38.3	40.5	40.4	39.3
Total net revenue (US$m)	3,620.6	-	-	93.5	137.9	132.3	137.7	137.4	134.5
incl. domestic HCC	*1,537.8*	-	-	*45.8*	*57.0*	*57.0*	*57.0*	*57.0*	*57.0*
incl. export HCC	*1,483.4*	-	-	*32.3*	*63.3*	*59.1*	*61.2*	*61.3*	*60.1*
incl. 5,500kcal	*599.5*	-	-	*15.4*	*17.6*	*16.2*	*19.4*	*19.1*	*17.4*
Total net revenue (US$/t)	88	-	-	96	85	87	82	83	85
incl. domestic HCC	*136*	-	-	*164*	*136*	*136*	*136*	*136*	*136*
incl. export HCC	*132*	-	-	*163*	*126*	*126*	*126*	*126*	*126*
incl. 5,500kcal	*32*	-	-	*31*	*25*	*25*	*25*	*25*	*25*
Cash operating costs									
Total cash opex excl. royalties (Rm)	59,310.9	-	-	1,653.6	2,332.1	2,346.7	2,414.9	2,426.7	2,423.3
Total cash opex excl. royalties (US$m)	3,121.6	-	-	87.0	122.7	123.5	127.1	127.7	127.5
Total cash opex excl. roy. (US$/t of RoM process'd)	29.38	-	-	36.46	30.96	30.88	31.77	31.93	31.89
Total cash opex avg. all products (US$/t of sales)	82.20	-	-	87.74	82.94	87.03	81.84	83.02	86.60
incl. royalties	*6.46*	-	-	*5.26*	*6.49*	*6.18*	*6.15*	*6.16*	*6.13*
incl. selling expenses	*22.05*	-	-	*18.93*	*25.14*	*25.14*	*24.16*	*24.34*	*24.77*
incl. mining	*35.79*	-	-	*47.17*	*34.85*	*38.26*	*35.63*	*36.44*	*39.67*
incl. processing	*8.91*	-	-	*8.76*	*9.09*	*9.74*	*8.81*	*8.91*	*8.56*
incl. indirect/overheads	*8.99*	-	-	*7.61*	*7.38*	*7.71*	*7.09*	*7.16*	*7.46*
Cash margin average across all products (US$/t)	27.70	-	-	28.13	27.52	24.64	24.58	24.02	22.99
Capex (US$m)									
Primary capex	118.5	25.1	60.0	5.0	-	-	-	-	-
Sustaining capex	12.6	-	-	0.1	0.5	0.5	0.5	0.5	0.5
Total capex	131.1	25.1	60.0	5.1	0.5	0.5	0.5	0.5	0.5

Source: Tennyson Securities
*Life-of-mine total/average
R19.00 (long term) SA rand / US dollar

MAKHADO PROJECT – SUMMARY OPERATING ESTIMATES (100% BASIS, REAL TERMS, 2023 MONEY, US DOLLARS EXCEPT WHERE STATED) – PAGE 2 OF 2

Year-end 30 June	LoM*	2024F	2025F	2026F	2027F	2028F	2029F	2030F	2031F
Profit & loss (US$m)									
Gross revenue	4,529.4	-	-	112.5	178.8	170.6	178.2	177.9	173.8
Cost of sales	-3,511.4	-	-	-95.1	-143.5	-141.2	-144.3	-144.4	-143.1
incl. selling expenses	*-908.8*	-	-	*-18.4*	*-40.7*	*-38.4*	*-40.5*	*-40.4*	*-39.3*
incl. mining	*-1,475.0*	-	-	*-45.8*	*-56.4*	*-58.4*	*-59.7*	*-60.6*	*-62.9*
incl. processing	*-367.2*	-	-	*-8.5*	*-14.7*	*-14.9*	*-14.8*	*-14.8*	*-13.6*
incl. overheads	*-370.7*	-	-	*-7.4*	*-11.9*	*-11.8*	*-11.9*	*-11.9*	*-11.8*
incl. D&A	*-123.6*	-	-	*-9.9*	*-9.3*	*-8.2*	*-7.3*	*-6.5*	*-5.8*
incl. royalties	*-266.2*	-	-	*-5.1*	*-10.5*	*-9.4*	*-10.3*	*-10.2*	*-9.7*
Operating profit	1,018.0	-	-	17.5	35.3	29.4	33.9	33.4	30.7
Finance expense	-1.5	-0.4	-0.4	-0.4	-0.4	0.0	0.0	0.0	0.0
Pre-tax profit	1,016.5	-0.4	-0.4	17.1	34.9	29.4	33.9	33.4	30.7
Tax expense	-258.6	-	-	-	-	-	-1.8	-10.6	-9.7
Net profit	757.9	-0.4	-0.4	17.1	34.9	29.4	32.1	22.8	21.0
EBITDA	1,141.6	-	-	27.3	44.5	37.6	41.2	39.9	36.5
Gross EBITDA margin	*25.2%*	-	-	*24.3%*	*24.9%*	*22.1%*	*23.1%*	*22.4%*	*21.0%*
Net EBITDA margin†	*31.5%*	-	-	*29.2%*	*32.3%*	*28.5%*	*29.9%*	*29.0%*	*27.1%*
Project cash flow (US$m)									
Sales revenue	4,529.4	-	-	112.5	178.8	170.6	178.2	177.9	173.8
Cash operating costs (incl. royalties)	-3,387.8	-	-	-92.1	-133.2	-132.9	-137.4	-138.0	-137.3
Finance costs paid	-1.5	-0.4	-0.4	-0.4	-0.4	0.0	0.0	0.0	0.0
Project loans drawn	-	-	-	-	-	-	-	-	-
Project loans repaid	-17.5	-	-	-	-17.5	-	-	-	-
Tax paid	-258.6	-	-	-	-	-	-0.9	-6.2	-10.2
Capex	-131.1	-25.1	-60.0	-5.1	-0.5	-0.5	-0.5	-0.5	-0.5
Net cash flow	732.9	-25.5	-60.4	14.9	27.1	37.1	39.4	33.2	25.9

Source: Tennyson Securities
*Life-of-mine total/average
†Net EBITDA margin based on revenue net of selling costs (selling costs incl. transport to point of sale, sales commission etc)
R19.00 (long term) SA rand / US dollar

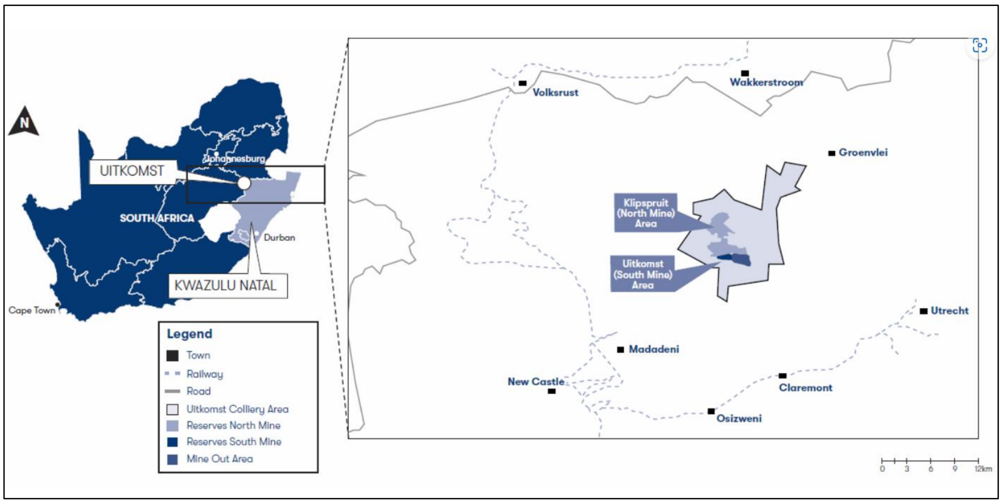
UITKOMST OPERATION

Uitkomst is an operating underground coal mine, located 23km northeast of Newcastle in South Africa's KwaZulu-Natal province (Newcastle is home to significant heavy industry, including steel-making, chemicals and cement). MCM holds an 84% interest in the operation, which supplies mainly high-quality coal to industrial consumers within South Africa. Uitkomst has also recently supplied coal to export markets, taking advantage of high export prices, but owing to the easing of export prices these export sales were halted during the June quarter of this year (Q4 FY2023).

MCM acquired an initial 91% interest in the operation in June 2017 from Pan African Resources for R275m (R150m in cash and R125m in the form of 261.3m MCM shares), principally to provide cash flow to help cover corporate overheads and other costs while the group's much larger coal projects, in particular Makhado, were developed. In 2017 MCM reduced its interest to 70% by selling 21% to 'Black Economic Empowerment' (BEE) interests, in a vendor-financed transaction on the same terms as MCM initial acquisition, taking BEE ownership to 30% and thereby fully complying with the BEE legislation.

In the December quarter of 2022 (Q2 FY2023) MCM bought back a 14% interest for US$511,000 to bring its ownership to the current 84% level (without compromising the asset's BEE status, under the principle of 'once empowered, always empowered').

Uitkomst location



Source: MC Mining

Operations & sales

Uitkomst produced 445,474t of run-of-mine (RoM) coal in the year to 30 June 2023 (FY2023), which resulted in sales of 230,181t of high-grade coal and 11,185t of middlings coal (a lower-grade, high-ash product), an implied combined yield of ~60%. The high-grade coal comprises peas (a sized product sold mainly to local traders for sale in the provincial market where it is used for energy or steam-unit production) and coal in the 0-40mm size range (sold as pulverised coal mainly into the South African metallurgical market).

During FY2023 MCM also took advantage of high export prices, selling 123,860t of the high-grade product into the export market (in previous financial years there were no such sales). These coal exports commenced in the September quarter of 2022 (Q1 FY2023) under a marketing agreement with Overlooked (Pty) Ltd, set at a monthly minimum quantity of 20kt. The chief executive of Overlooked is Matthews Senosi, a non-executive director of, and a significant shareholder in, MCM, and the marketing agreement was thus treated as a 'related party' transaction.

The export sales ceased in Q3 FY2023 as the high prices for export coal eased, and exports were zero during Q4 FY2023. The marketing agreement with Overlooked, originally for six months but subsequently extended, expired at the end of June 2023, and at prevailing export-coal prices MCM has no plans to renew as the logistics costs (chiefly rail and port) would render such sales uneconomic.

Reserves & resources

MCM puts Uitkomst's remaining life at around 15 years, which is borne out by the reserve statement below (calculating from June 2022), based on the RoM reserves and the mining rate in FY2023 of 445kt of RoM.

UITKOMST RESERVES & RESOURCES* (100% OWNERSHIP BASIS)

Reserves

Category	Mineable in situ (Mt)	RoM (Mt)	Saleable product (Mt)	Yield
Proven	9.456	5.884	3.730	63.4%
Probable	2.125	1.237	0.813	65.7%
Total	**11.581**	**7.121**	**4.543**	63.8%

Resources†

Category	Gross in situ (Mt)	Cut to gross	Total in situ (Mt)	Mineable in situ (Mt)
Measured	15.474	-5%	14.700	13.926
Indicated	4.650	-10%	4.185	3.953
Inferred	7.100	-15%	6.035	5.680
Total	**27.224**	**na**	**24.920**	**23.559**

Source: MC Mining
*At 30 June 2022
†Resources include reserves

MCM is in the process of adjusting the shift system at Uitkomst designed to give the miners more time at the face per shift, thus increasing productivity and reducing unit operating costs. This is expected to result in a monthly production rate of 45kt of RoM, increasing annual RoM to 540kt. This would inevitably shorten the mine life, other factors notwithstanding.

Our model

We have modelled Uitkomst on the basis of this higher mining rate (ramping up during the first half of FY2024), with an initial mine life to FY2036 based on the published reserves above. We then add a modest life extension, based on the inferred resource (which is additional to the reserves). We take the mineable in situ inferred resource, reduce it by the same conversion factor of resource to reserve as implied by the published reserves (~65%), reduce it by the same factor as the reserves to convert to RoM (~61%) and then further cut to 75% owing to its inferred status. This gives three years of further life, for a total of 16 years.

Our pricing model is based on our long-term assumption of US$108/t for the API4 price index (6,000kcal thermal coal, FoB Richards Bay) as used in our model for Makhado. We then adjust API4 for Uitkomst's sales mix, based on the historical relationship between API4 and Uitkomst's received prices for its non-export sales. Details of our future price (and other assumptions) are in the table on p19.

Our operating cost model is also based on several years of Uitkomst's historical performance, which we adjust to match the group's published financial results for the operation. Our assumptions result in a remaining life-of-mine average cash operating cost of US$80/t, which is slightly lower than reported opex in FY2022 and FY2023, owing to our assumed long-term FX assumption (R19/US$) and to the approximate 20% increase in production referred to above.

(Note: reported opex in FY2023 of US$123/t includes the logistics costs of moving the export sales to port and loading, despite the coal being sold at the mine gate. We estimate average opex excluding these logistics costs was US$101/t. Similarly the average reported received price of US$142/t includes the export sales at the price free-on-board at the port, resulting in an overall average cash margin of US$19/t, unchanged from FY2022 – see table p19.)

We also include sustaining capex at R30m annually for the next nine years, which is somewhat higher than in recent years but takes into account the need for certain additional works required during the period, before reducing to R15m annually to the end of the mine's projected life.

Our model gives an NPV_8 of US$25.8m, contributing 5p/shr to our overall MCM valuation and Target Price (details p5).

UITKOMST OPERATION – SUMMARY OPERATING ESTIMATES (100% BASIS, REAL TERMS, 2023 MONEY, ALL IN US DOLLARS)

Year-end 30 June	LoM*	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F
Production & sales									
RoM coal produced (kt)	8,590.0	490.1	470.6	445.0	490.0	540.0	540.0	540.0	540.0
High-grade duff & peas sold (kt)	4,603.2	265.9	199.1	230.2	259.7	286.2	286.2	286.2	286.2
incl. domestic sales	*4,603.2*	*265.9*	*199.1*	*101.3*	*259.7*	*286.2*	*286.2*	*286.2*	*286.2*
incl. export sales	-	-	-	*123.9*	-	-	-	-	-
Middlings sold (kt)	242.2	26.4	26.0	11.2	13.8	15.2	15.2	15.2	15.2
Total coal sold (kt)	4,845.4	292.3	225.1	241.4	273.5	301.4	301.4	301.4	301.4
Pricing & operating costs									
Benchmark API4 (US$/t)	110	81	213	185	126	122	115	108	108
Received price – avg. across all products (US$/t)	99	70	104	142	113	110	104	97	97
Total cash opex – avg. all products (US$/t of sales)	80	60	85	123	86	82	82	81	81
Cash margin - average across all products (US$/t)	20	10	19	19	27	28	22	17	16
Exchange rate period average (R/US$)	19.00	15.94	15.27	17.73	18.90	19.00	19.00	19.00	19.00
Capex (US$m)									
Primary capex	-	-	-	-	-	-	-	-	-
Sustaining capex	19.0	0.2	1.1	1.5	1.6	1.6	1.6	1.6	1.6
Total capex	19.0	0.2	1.1	1.5	1.6	1.6	1.6	1.6	1.6
Uitkomst P&L (US$m)									
Sales revenue	481.2	20.5	23.6	34.2	30.9	33.2	31.3	29.3	29.3
Cost of sales	-416.9	-20.3	-21.0	-31.3	-24.7	-25.9	-25.9	-25.8	-25.9
incl. D&A	*-30.7*	*-2.5*	*-2.5*	*-1.4*	*-1.1*	*-1.2*	*-1.3*	*-1.4*	*-1.5*
incl. inventory adjustment	-	*-0.3*	*3.8*	*-0.2*	-	-	-	-	-
incl. royalties	*-12.6*	*-0.1*	*-0.2*	*-0.6*	*-1.0*	*-1.2*	*-1.0*	*-0.7*	*-0.7*
Operating profit	64.3	0.2	2.6	2.9	6.2	7.3	5.3	3.5	3.4
Finance expense	-	-	-	-	-	-	-	-	-
Pre-tax profit	64.3	0.2	2.6	2.9	6.2	7.3	5.3	3.5	3.4
Tax expense	-20.3	-	-	-0.9	-1.6	-1.9	-1.4	-0.9	-0.9
Net profit	44.0	0.2	2.6	2.0	4.6	5.4	4.0	2.6	2.5
EBITDA	95.0	2.8	5.1	4.3	7.3	8.6	6.7	5.0	5.0
EBITDA margin	*19.7%*	*13.4%*	*21.5%*	*12.5%*	*23.7%*	*25.7%*	*21.4%*	*17.0%*	*16.9%*
Uitkomst cash flow (US$)									
Sales revenue less cash opex (incl. royalties)	91.3	2.8	1.1	3.8	6.9	8.4	6.7	4.9	5.0
Finance costs paid	-	-	-	-	-	-	-	-	-
Tax paid	-20.8	-	-0.1	-0.6	-1.2	-1.7	-1.6	-1.1	-0.9
Capex	-19.0	-0.2	-1.1	-1.5	-1.6	-1.6	-1.6	-1.6	-1.6
Net cash flow	51.6	2.6	0.0	1.8	4.1	5.1	3.5	2.2	2.5

Source: Tennyson Securities
*Life-of-mine total/average, from FY2024 onwards
R19.00 (long term) SA rand / US dollar

VELE OPERATION

Vele lies in the Tuli coalfield, in Limpopo Province, 48km west of the town of Musina (the nearest railhead), on South Africa's northern border with Zimbabwe.

The Vele coal mine was originally conceived as a producer of semi-soft coking coal, with a thermal-coal by-product. It was commissioned by MCM in early 2012 to produce thermal coal, but was put on care & maintenance late in the following year owing to adverse economics (declining international thermal-coal coal prices and the logistics costs of exporting via the nearest suitable port – Matola in Mozambique, which is 760km away).

Vele during its previous operating period (2012-13)

Source: MC Mining

The project was held on care & maintenance with a view to using the plant to process run-of-mine coal trucked from Makhado. However, when the plan for Makhado was switched back to a stand-alone operation in 2022, the options for Vele were reopened.

Farmed out under contract

In December 2022 MCM announced that it had reached agreement with Hlalethembeni Outsourcing Services (HOS) whereby the latter would recommission, upgrade and operate Vele's processing plant and mine according to an agreed plan. All mining and processing costs are borne by HOS, along with the necessary capex to restart the mine.

The contract has a term of five years (to December 2027), at the end of which MCM (via its 100% subsidiary Limpopo Coal Co. (LCC) which holds the Vele licences) will pay HOS the equivalent of the 'value in use' of the plant and other operating assets for their return to LCC. LCC remains responsible for the mine's regulatory compliance, rehabilitation guarantees, relationships with the relevant authorities and local communities, and for the provision of power and water.

Under the agreement, HOS is targeting full monthly production of 60kt (720ktpa) of thermal coal, although there are no minimum nor maximum requirements. HOS will pay LCC a fixed sum of R200/t of saleable coal produced in any given month, provided the API4 benchmark price for South African thermal coal averages more than US$120/t in that month. At our long-term assumed FX of R19/US$, this will generate ~US$7.6m annually to MCM, which also benefits from the saving of the care & maintenance cost (which had been running at ~US$1.2m annually).

Vele was duly recommissioned in late December 2022, and had produced 96,673t of saleable product by 30 June 2023 (~48kt in each of Q3 and Q4 FY2023). Ramp-up to full production is targeted for H2 CY2023.

Vele has a mining right valid until 2040, an environmental permit for the duration of the mine life and a water-use licence valid until 2037. Coal resources are very significant, offering a life of well over 100 years at the current target mining rate.

VELE RESERVES & RESOURCES* (100% OWNERSHIP BASIS)

Reserves

Category	Mineable in situ (Mt)	RoM (Mt)	Saleable primary product (Mt)	Saleable secondary product (Mt)	Primary yield	Secondary yield
Proven	23.806	25.280	4.666	9.680	18.5%	38.3%
Probable	301.371	266.115	47.848	117.751	18.0%	44.2%
Total	**325.177**	**291.395**	**52.514**	**127.431**	**18.0%**	**43.7%**

Resources†

Category	Gross in situ (Mt)	Cut to gross	Total in situ (Mt)	Mineable in situ (Mt)
Measured	148.166	-10%	133.349	86.112
Indicated	426.854	-15%	362.826	200.303
Inferred	218.932	-20%	175.145	75.154
Total	**793.952**	**na**	**671.320**	**361.569**

Source: MC Mining
*At 30 June 2022
†Resources include reserves

From an accounting perspective, Vele is classified as an operating asset of MCM (from the start of H2 FY2023), and MCM books both revenue and costs to its profit & loss account. Under the arrangement with HOS, the latter invoices MCM for its operating costs at Vele, and MCM invoices HOS for those costs, plus the R200/t where applicable.

VELE OPERATION – SUMMARY OPERATING ESTIMATES USING OUR LONG-TERM API4 ASSUMPTION† (REAL TERMS, 2023 MONEY, ALL IN US DOLLARS)

Year-end 30 June	LoM*	2023A	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Production									
RoM coal produced (Mt)	8.46	0.26	1.74	1.92	1.92	1.92	0.96	-	-
Washing plant yield	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Saleable product (Mt)	3.17	0.10	0.65	0.72	0.72	0.72	0.36	-	-
HOS royalty									
Benchmark API4 (US$/t)	116	185	126	122	115	108	108	108	108
Coal sales eligible for HOS royalty (Mt)	1.26	0.06	0.54	0.72	-	-	-	-	-
HOS royalty rate (R/t)	200	200	200	200	200	200	200	200	200
HOS royalty (US$m)	13.3	0.7	5.7	7.6	-	-	-	-	-
P&L (US$m)									
Coal sales invoiced	267.0	10.6	58.4	65.0	57.4	57.4	28.7	-	-
Cost of sales	-253.7	-9.9	-52.7	-57.4	-57.4	-57.4	-28.7	-	-
EBITDA	13.3	0.7	5.7	7.6	-	-	-	-	-
Tax expense	-	-	-	-	-	-	-	-	-
Net profit	13.3	0.7	5.7	7.6	-	-	-	-	-
Cash flow (US$m)									
EBITDA	13.3	0.7	5.7	7.6	-	-	-	-	-
Capex	-	-	-	-	-	-	-	-	-
Tax paid	-	-	-	-	-	-	-	-	-
Net cash flow	13.3	0.7	5.7	7.6	-	-	-	-	-

Source: Tennyson Securities
†Our long-term assumption for API4 is US$108/t from FY2027 onwards, taking a straight line from its current spot level of US$131.5/t to mid-FY2027
*Life-of-mine total/average, from FY2024 onwards
R19.00 (long term) SA rand / US dollar

This accounting arrangement has a significant impact on MCM's consolidated accounts, enlarging revenue and operating costs and, as the EBITDA margin at Vele is relatively slim (we estimate just under 10% when MCM is receiving the R200/t payment), dilutes MCM's overall

EBITDA margin to an extent. Nevertheless, the relatively slim EBITDA margin at Vele should not be a concern, as it is protected by the 'cost-plus' nature of the arrangement with HOS.

Valuation

We value Vele at US$12.5m (contributing 2p/shr to our TP) based on the net present value (at our 8% discount rate) of the revenue stream over the life of the contract (to December 2027). This is based on our assumptions for API4 (which comprise a long-term assumption of US$108/t from the middle of FY2024, with the price taking a straight line to that point from its current spot level of US$131.5/t). This base-case pricing scenario is shown in the table on the preceding page.

Below, we show our estimates for Vele should API4 remain above US$120/t for the duration of the contract with HOS. Should this scenario prevail, the incremental value from Vele would add a further 3p/shr to our overall valuation and Target Price for MCM (notwithstanding the value uplift on Makhado and Uitkomst that would also ensue from a higher API4 price). This significant additional leverage to the API4 price provided by Vele is also apparent in the first TP sensitivity table on p6).

VELE OPERATION – SUMMARY OPERATING ESTIMATES ASSUMING API4 REMAINS ABOVE US$120/T† (REAL TERMS, 2023 MONEY, ALL IN US DOLLARS)

Year-end 30 June	LoM*	2023A	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Production									
RoM coal produced (Mt)	8.46	0.26	1.74	1.92	1.92	1.92	0.96	-	-
Washing plant yield	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Saleable product (Mt)	3.17	0.10	0.65	0.72	0.72	0.72	0.36	-	-
HOS royalty									
Benchmark API4 (US$/t)	124	185	127	127	124	121	121	121	121
Coal sales eligible for HOS royalty (Mt)	3.06	0.06	0.54	0.72	0.72	0.72	0.36	-	-
HOS royalty rate (R/t)	200	200	200	200	200	200	200	200	200
HOS royalty (US$m)	32.2	0.7	5.7	7.6	7.6	7.6	3.8	-	-
P&L (US$m)									
Coal sales invoiced	285.9	10.6	58.4	65.0	65.0	65.0	32.5	-	-
Cost of sales	-253.7	-9.9	-52.7	-57.4	-57.4	-57.4	-28.7	-	-
EBITDA	32.2	0.7	5.7	7.6	7.6	7.6	3.8	-	-
Tax expense	-	-	-	-	-	-	-	-	-
Net profit	32.2	0.7	5.7	7.6	7.6	7.6	3.8	-	-
Cash flow (US$m)									
EBITDA	32.2	0.7	5.7	7.6	7.6	7.6	3.8	-	-
Capex	-	-	-	-	-	-	-	-	-
Tax paid	-	-	-	-	-	-	-	-	-
Net cash flow	32.2	0.7	5.7	7.6	7.6	7.6	3.8	-	-

Source: Tennyson Securities

†This scenario assumes API4 remains above US$120/t for the duration of the HOS contract, and MCM thus receives the R200/t payment for all coal sold

*Life-of-mine total/average, from FY2024 onwards

R19.00 (long term) SA rand / US dollar

LCC will be liable for income tax, but owing to the subsidiary's accumulated losses, we do not envisage any tax becoming payable during the contract period. Government royalties are payable on coal sales, which will be covered by HOS (as the seller of the coal).

Clearly, the project will have a residual value at the end of the contract. However, we are unable to quantify this value until MCM's future plans for the property become clear, and at this time we include only the value stemming from the HOS contract.

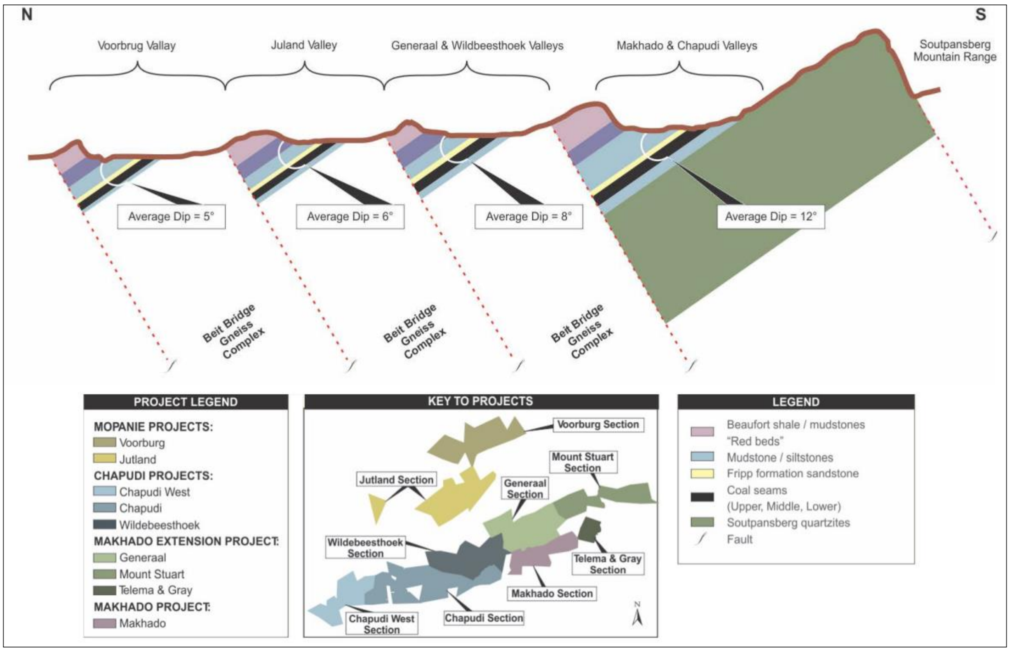
GREATER SOUTPANSBERG PROJECT

The Greater Soutpansberg Project (GSP), in South Africa's Limpopo Province, comprises three main project areas: Mopane, Generaal and Chapudi. MCM acquired these mineral rights, adjacent to its existing Makhado project, in a major package of mineral rights bought from Rio Tinto in November 2010 (for US$75m in staged payments).

MCM holds an interest of 74% in the GSP, with a 'black economic empowerment' partner, Rothe Investments, holding the balance. The project areas lie close to a Special Economic Zone (Musina-Makhado), designated by the government to aid the development of the energy and metallurgical industries.

The GSP lies within the Soutpansberg coalfield, a major geological region generally dipping to the north, intersected by a series of faults such that the coal zones are uplifted to relatively shallow depth.

Greater Soutpansberg north-south section



Source: MC Mining

MCM submitted applications for mining rights for the three project areas in 2013, and in December 2018 received the mining right for Chapudi. The mining rights for Generaal and Mopane followed in November 2019 and February 2021, respectively. These mining rights have subsequently been challenged via the statutory appeal process, and the Department of Mineral Resources & Energy is considering those appeals.

The GSP hosts very significant coal resources – approximately 7 billion tonnes (5.7 billion tonnes after assumed geological losses) of which some 1.6 billion tonnes are estimated to be mineable. That is around five times the mineable resource at Makhado.

Any development of these resources would, of course, be dependent on a number of factors, including securing the necessary environmental and water-use licences; the availability of funding; market demand for the product; and access to sufficient capacity with respect to infrastructure. Nevertheless, these resources represent significant optionality for MCM once Makhado is in operation. MCM plans to commence the necessary studies for the outstanding water and environmental permits.

Potential products from these resources include hard coking coal, semi-soft coking coal and thermal coal.

GREATER SOUTPANSBERG (EXCLUDING MAKHADO) RESOURCES* (100% OWNERSHIP BASIS)				
Category	**Gross in situ (Mt)**	**Cut to gross**	**Total in situ (Mt)**	**Mineable in situ (Mt)**
Mopane				
Measured	109.435	-10%	98.492	94.916
Indicated	125.034	-15%	106.279	100.507
Inferred	36.239	-20%	28.991	24.001
Total	**270.708**	**na**	**233.762**	**219.424**
Generaal				
Measured				
Indicated				
Inferred	407.163	-20%	325.730	55.511
Total	**407.163**	**na**	**325.730**	**55.511**
Chapudi				
Measured				
Indicated				
Inferred	6,399.023	-20%	5,119.219	1,318.481
Total	**6,399.023**	**na**	**5,119.219**	**1,318.481**
Combined GSP†				
Measured	109.435	-10%	98.492	94.916
Indicated	125.034	-15%	106.279	100.507
Inferred	6,842.425	-20%	5,473.940	1,397.993
Total	**7,076.894**	**na**	**5,678.711**	**1,593.416**

Source: MC Mining
*Resources at 30 June 2022
†Excluding Makhado (Makhado resources shown in table on p10)

Valuation

We value the GSP on the basis that it represents a series of options similar in magnitude to Makhado. Assuming three Makhado-sized projects (more than supported by the stated resources), and valuing each at a nominal 10% of the value of Makhado (NPV8 of US$216.1m representing 100% of the project at our base-case assumptions), we derive an unrisked value of US$48.0m for the GSP.

Our risked valuation uses the 70% risked valuation for Makhado we assume in our Target Price, to bring the GSP valuation in our TP in line with our current valuation for Makhado. This gives a risked valuation for the GSP of US$33.6m.

Both of these valuations (unrisked and risked) assume 74% of the value is attributable to MCM, in line with its current ownership of the GSP.

For comparison with other potential valuation methods, this represents ~US0.03/t of the mineable resource (unrisked) and ~US$0.02/t (risked).

BOARD & MANAGEMENT

Nhlanhla Nene – chairman
Mr Nene was formerly the Minister of Finance in the South African Government. He has also served as Deputy Minister of Finance and chairman of the Public Investment Corp, a state-owned organisation which is the largest institutional investor in the country. During his time in public office, Mr Nene represented South Africa at a number of multi-lateral institutions, including the IMF, World Bank, the G20, BRICS, the Commonwealth and the African Development Bank. Prior to public office, Mr Nene held senior roles at Metropolitan Life.

Godfrey Gomwe – managing director & chief executive officer
Mr Gomwe is an experienced mining executive, with more than 30 years in the sector. Most notably, his previous roles include chief executive of the thermal coal business of the Anglo American group. During his career at Anglo American, Mr Gomwe was also executive director of the group's South African subsidiary; head of business development for Africa; finance director and chief operating officer of the South African subsidiary; and executive chairman and chief executive of Anglo American's Zimbabwean subsidiary.

Khomotso Moshela – independent non-executive director
Mr Moshela is a trained accountant and experienced corporate financier, having worked at African Merchant Bank and for Mvelaphanda (a diversified South African mining group). He also served as chairman of both Northam Platinum and Zambezi Platinum.

Andrew Mifflin – independent non-executive director
Mr Mifflin has more than 30 years' experience in the coal mining sector, in both hard coking coal and thermal coal. He has worked for British Coal, Xstrata and, more recently, GVK Resources, a large Indian conglomerate with extensive assets in a range of industries, including power generation and coal mining.

Julian Hoskin – independent non-executive director
Mr Hoskin has almost four decades' experience as a mining engineer, in resource evaluation, project execution and operational management, including both metallurgical and thermal coal mines and associated infrastructure.

An Chee Sin – non-executive director
Mr Chee Sin is a professional accountant. He founded Pinnacle Tax Services, prior to which he was director of corporate tax at KPMG. Mr Chee Sin is an Accredited Tax Practitioner with the Singapore Institute of Accredited Tax Professionals, and a Chartered Accountant with the Institute of Singapore Chartered Accountants.

Brian He Zhen – non-executive director
Mr Zhen is currently the marketing and public relations executive for Pan African Mining Pvt Ltd, a mining company based in Zimbabwe. Previously he was managing director of Real Gain Investments, and construction manager for CRI-Eagle Investments (Pty) Ltd and Eagle Canyon Investments (Pty) Ltd.

Mathews Senosi – non-executive director
Mr Senosi is a mining engineer, with over 25 years' experience in operations and project execution, mainly in the coal sector, and also extensive corporate experience. He worked within Anglo American's coal business before leaving to establish his own coal businesses. Mr Senosi is chief executive of Overlooked Mining Group, which produces more than 7.5Mtpa of thermal coal for export and domestic customers. On MCM's board, Mr Senosi represents Senosi Group Investment Holdings, one of MCM's largest shareholders (with ~24%).

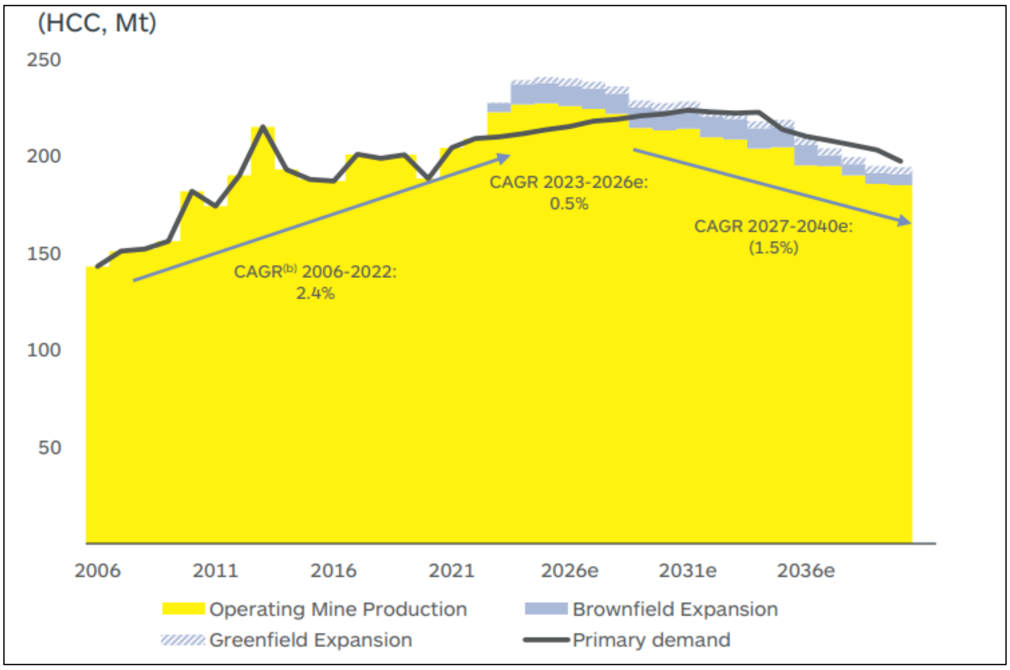
Yi (Christine) He – non-executive director
Ms He has over 20 years' experience in commercial management, including in the financing and execution of large mining projects. She is the managing director (and a major beneficial owner) of Dendocept (Pty) Ltd, and is the nominated MCM board member of the Dendocept Consortium, which is a major shareholder in MCM (with a ~24% interest).

COAL MARKETS

Metallurgical coal

In metallurgical coal, the near-term picture shows demand reasonably well supplied, as demand growth slows and as producers reinvest in sustaining/increasing capacity (arguably aided by stronger balance sheets from recent elevated prices). However, the market balance appears more challenged into the next couple of decades, where a deficit seems likely unless projected expansions and new capacity come into production. That, in turn, would imply prices high enough to incentivise the necessary investment.

Seaborne hard coking coal capacity vs. demand



Source: CRU via South32

In a recent presentation (May 2023), South32 (a producer) argued that among the suite of coking coals, demand for premium hard coking coal will continue to grow until a commercially viable alternative for steel-making is adopted. Meanwhile, development of new capacity is hampered by permitting challenges.

We would also argue that even with metallurgical coal generating significant cash flows, the widespread antipathy towards coal among generalist investors (even towards metallurgical coal) is making the big diversified producers with public listings nervous. We note the increasingly low profile given to metallurgical coal in their corporate presentations, let alone thermal coal (which many have anyway divested in recent years), as a typical symptom.

This is important because we expect the big diversified producers (which have the flexibility to switch capital across the various commodity sectors) to be increasingly constrained in their capital allocations to metallurgical coal despite the ability of these assets to generate cash. For example, despite contributing some 18% of the group's ~US$30m in EBITDA in FY2023 (results for the year to 30 June released), mining giant BHP's coal division was allocated just 7% of the group's planned ~US$10 billion in capex over the following 12 months.

BHP appears to remain committed to producing high-quality metallurgical coal in Queensland but, like other high-profile producers, is emphasising coal quality (to maximise existing blast-furnace efficiency to reduce, as far as possible, carbon dioxide emissions per tonne of steel produced – a goal which will become increasingly important as carbon-pricing is extended). BHP has already sold certain metallurgical coal assets in Queensland producing lower-quality coal, and has recently (18 October) reached agreement to dispose of other assets.

In addition to investor antipathy towards coal, these decisions have been made easier by the recent increase in coal royalties in Queensland, and BHP has indicated that it will invest only in sustaining and optimising existing production in the State and will not invest in any further growth. This is significant, as the group's key remaining asset in the sector (and in the State), the BHP-Mitsubishi Alliance, still produces around 17% of worldwide traded metallurgical coal (based on FY2024 guidance of 56-62Mt – 100% basis, issued prior to the agreement this month to sell the Blackwater and Daunia mines to Whitehaven Coal for US$4.1 billion).

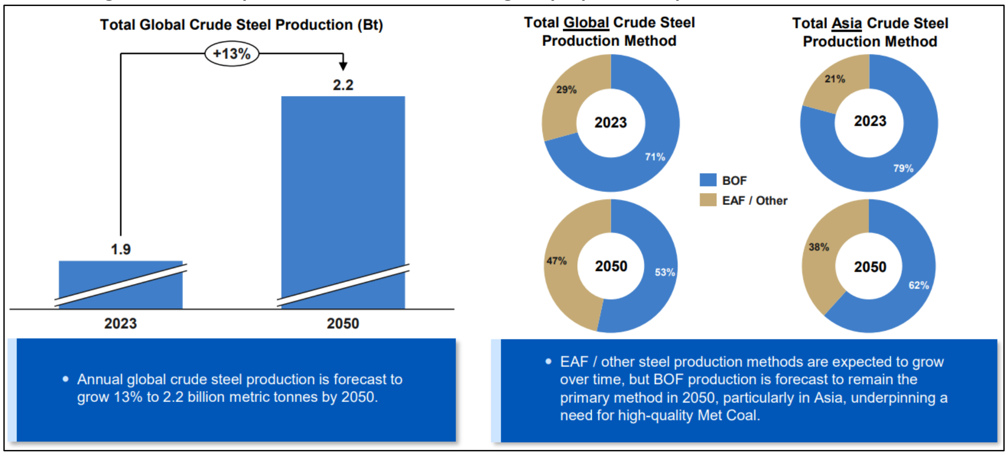
Overall demand for metallurgical coal is obviously driven by the level of crude steel production, which reached a record 1.96 billion tonnes in 2021 but then declined by ~4% to 1.88 billion tonnes in 2022. China is the world's largest steel producer, at 1.02 billion tonnes in 2022, 54% of the total.

In its *Economic and commodity outlook*, published in August 2023, BHP sees China's steel production plateauing in the range 1.0-1.1 billion tonnes annually for the next five to six years. However, in the longer term, the continued urbanisation of the developing world's growing population will underpin demand growth. China's accumulated stock of steel-in-use is currently 9t per capita, compared with 12t in the US, and even on the assumption of achieving living standards three-fifths of those in the US, BHP sees China's figure rising by 1.5-1.75x as China's urbanisation rate rises

Coronado Resources, a 16Mtpa producer (~75% of which is metallurgical coal) with operations in Australia and the US, argues that metallurgical coal will remain an indispensable raw material for the in the long term, not least because steel is an essential material in infrastructure need to make the transition to a low-carbon world.

Drawing on data supplied by consultants Wood Mackenzie, Coronado projects a 13% rise in global steel production to 2050, rising from the 1.9 billion tonnes of crude steel produced in 2022 to 2.2 billion tonnes. Currently, 71% of worldwide steel production is produced in conventional blast furnaces requiring metallurgical coal to produce the coke. On the basis of 0.78t of metallurgical coal per tonne of steel, that equates to the current worldwide demand for metallurgical coal of ~1 billion tonnes.

Worldwide growth in steel production to 2050, and change in proportion of production method



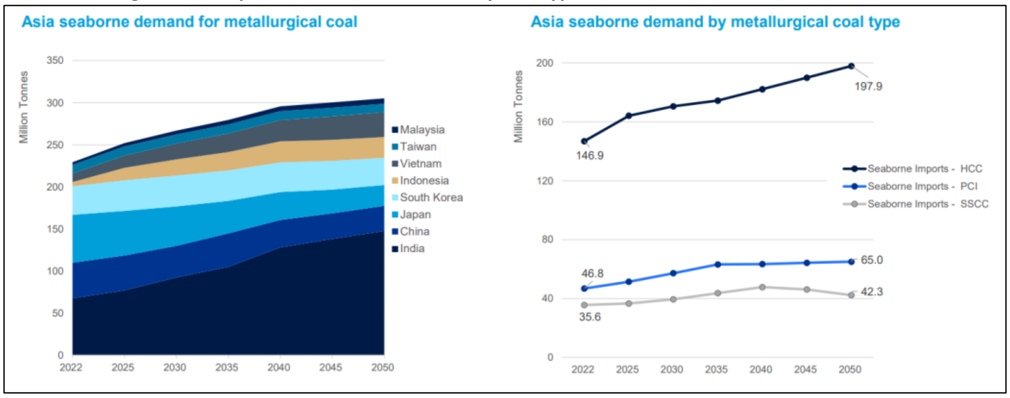
Source: Wood Mackenzie Coal Market Service Metallurgical Trade Long-term Outlook H1 2023, via Coronado Global Resources

The push towards low-carbon steel production will reduce the proportion of steel produced in conventional blast furnaces. However, because the bulk of growth in steel production is forecast to occur in Asia, particularly in India, where the rate of adoption of steel capacity not using conventional blast furnaces will be slower, the forecast data indicate that by 2050 53% of steel production will still require metallurgical coal, implying demand of ~0.9 billion tonnes.

BHP's commentary supports this position, noting that the average age of India's blast furnaces is 18 years, while in China it is even lower at 12 years. Thus any large-scale displacement of metallurgical coal in steel-making will take decades, not least because replacing existing capacity before the end of its useful life will be very costly. Meanwhile, the alternative routes for steel-making are either lacking in cost competitiveness (absent draconian carbon pricing) or are not technologically ready (or both). Steel-making is typically a low-margin business where cost control is vital.

The growth in Indian steel production will reinforce the country's position as the largest importer of metallurgical coal in the coming decades. Wood Mackenzie projects a 33% increase in Asian demand for imported metallurgical coal over the same period, to over 300Mt. Almost two-thirds of that total will be hard coking coal, with the balance made up by the lower-quality products of pulverised-coal injection (PCI) coal and semi-soft coking coal.

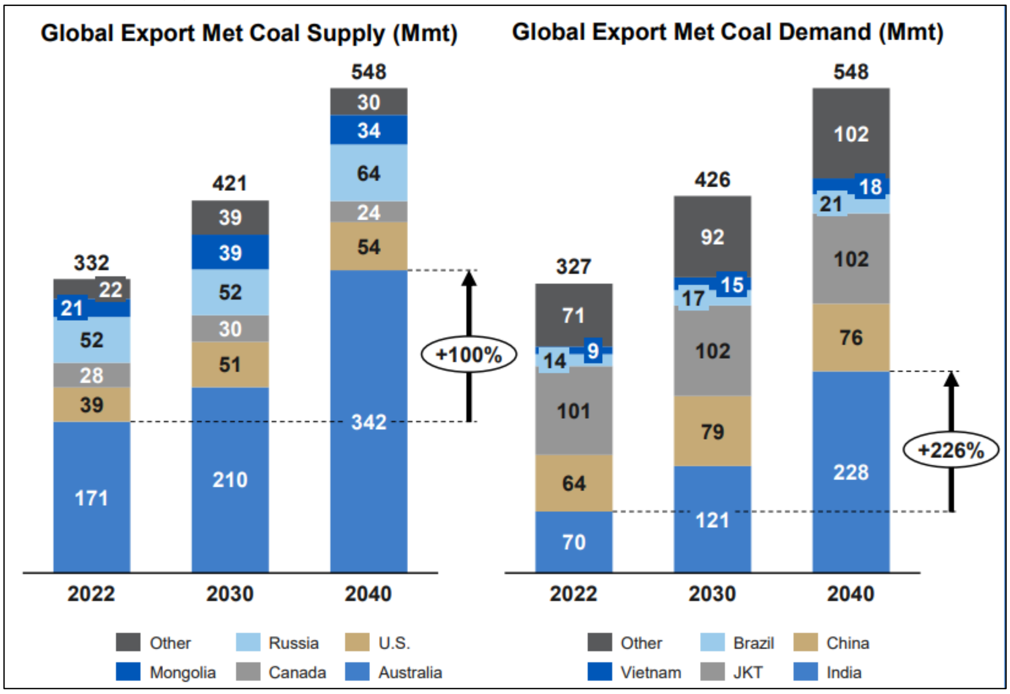
Asian metallurgical coal import demand to 2050, and by coal type



Source: Wood Mackenzie February 2023, via Whitehaven Coal

Other forecasts for growth in Indian demand (and worldwide demand) for metallurgical coal are even more bullish. Using data from consultants AME (which run to 2040), Coronado shows a forecast near-threefold increase in Indian crude steel production over the period 2022-2040, from 125.1Mt to 366.7Mt, driving a commensurate increase in metallurgical coal imports.

Worldwide metallurgical coal exports/imports to 2040



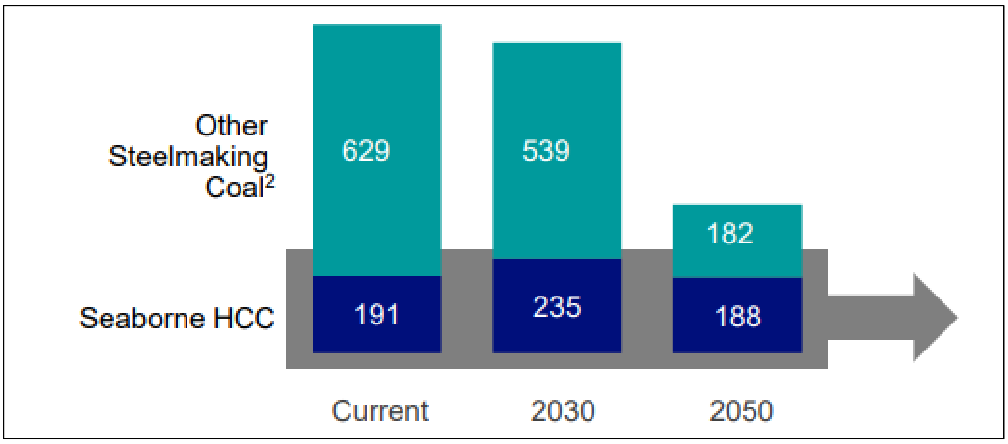
Source: AME Metallurgical Coal Strategic Market Study 2023 Q1, via Coronado Global Resources

Perhaps the most striking aspect of the AME forecasts on the preceding page is not the very bullish demand numbers, but the assumptions for production growth in export metallurgical coal that would be needed to meet that level of demand. For example, Australian exports (and thus production) are assumed to double from 171Mt last year to 342Mt by 2040.

Given the reluctance of the major mining companies to invest in the sector to which we referred on pp26-27, along with well-publicised challenges regarding the permitting of new coking-coal mines in Australia, this would appear to be a very challenging assumption. The obvious implication is the need for very attractive prices to stimulate the necessary investment, and even that may be insufficient to achieve a balanced market, resulting in potential scarcity pricing as consumers fight for supply.

The major North American producer of seaborne hard coking coal (HCC), Teck Resources of Canada, is rather more restrained in its forecasts, both for demand and for production. Teck foresees a sharp fall in overall demand for metallurgical coal, owing to a combination of increased scrap supply (thus increasing steel production from electric-arc furnaces); declining coke rates as blast furnaces become ever more efficient; and replacement of some blast-furnace capacity with production based on direct-reduced iron, natural gas and hydrogen.

Worldwide metallurgical coal demand to 2050



Source: Teck Resources

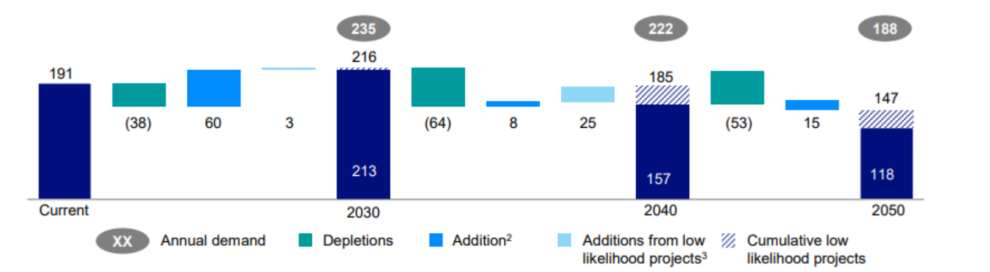
However, within the overall decline in demand, Teck expects demand for seaborne HCC to prove more resilient, owing to the push for greater blast-furnace efficiency to reduce carbon emissions (requiring high-quality coking coal) and to the fact that the main growth in steel production will occur in countries largely dependent on imports, such as India. Teck's medium-term forecasts for seaborne HCC are largely in line with those of CRU (p26), with demand declining from around the end of the current decade having peaked at ~235Mtpa.

Another reason Teck foresees resilience in demand for seaborne metallurgical coal is the continued emphasis on blast furnaces in those countries where steel production is expected to grow. Moreover, Teck expects the main technology likely to be adopted to decarbonise the steel-making industry to be based on carbon capture, rather than on reduction using hydrogen. This will continue to place high-quality HCC at the forefront of the metallurgical coal sector, owing to its higher efficiency and thus lower carbon emissions requiring capture.

Teck expects a range of low-carbon/carbon-free technologies to be adopted, but argues that the use of carbon capture alongside conventional blast furnaces will be the one adopted on a large scale owing to its cost and technological advantages. For example, Teck believes this technology is the only one that can be adopted sufficiently quickly for China to meet its national carbon-reduction targets.

As mentioned earlier, Teck is equally sanguine in its supply forecasts, forecasting a decline in seaborne HCC from the end of this decade. This is expected to result in significant supply gaps even if future production projects with a low likelihood of proceeding are factored in, let alone if only those projects with a high likelihood of going ahead are considered.

Seaborne metallurgical coal supply changes, with probable/possible new projects, vs. demand to 2050



Seaborne Steelmaking Coal Supply/Demand Gap (Mt)

(Mt)	Net Capacity 2030	Net Capacity 2040	Net Capacity 2050
Gap with high likelihood projects	-22	-65	-70
Gap with high and low likelihood projects	-19	-37	-41

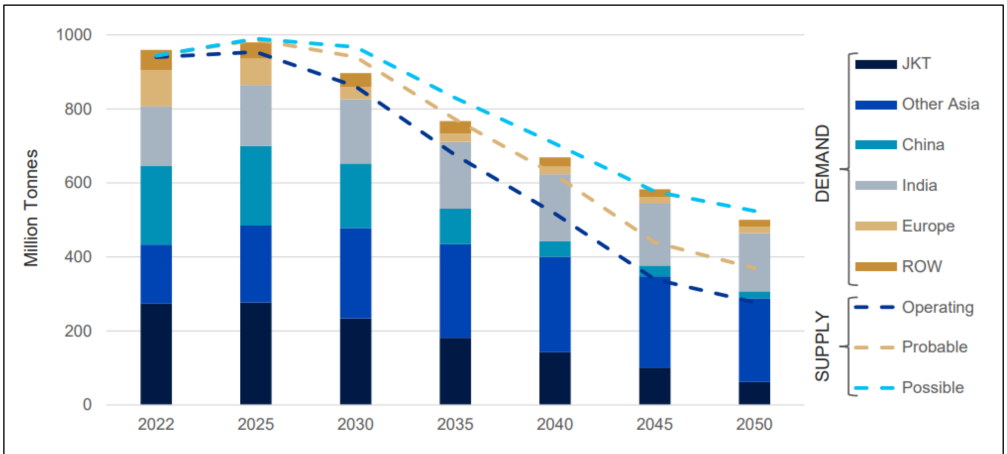
Source: Teck Resources

Thermal coal

In thermal coal the outlook (both immediate and long-term) for sustained demand is rather less positive, as the adoption of low-carbon alternatives for generating electricity is already well under way. Against that, the outlook for supply is also very negative, with external funding highly constrained (thermal coal is effectively a no-go area for public equity and commercial-bank lending). Internal funding by publicly-listed diversified mining groups is similarly closed. Again taking BHP as an example, having failed to divest its remaining New South thermal coal business, BHP plans to cease thermal coal production completely by 2030.

Whitehaven Coal, managing ~16Mtpa of saleable production in Australia (predominantly high-quality thermal coal), argues that thermal coal will continue to play a key role in supplying reliable electricity for decades. However, demand will contract across the range of thermal coals, and a key variable is the extent to which the supply side is able to respond in the form of investment in life-extensions/expansions/new capacity. Without those ‘probable’ and ‘possible’ projects, a supply gap is set to emerge.

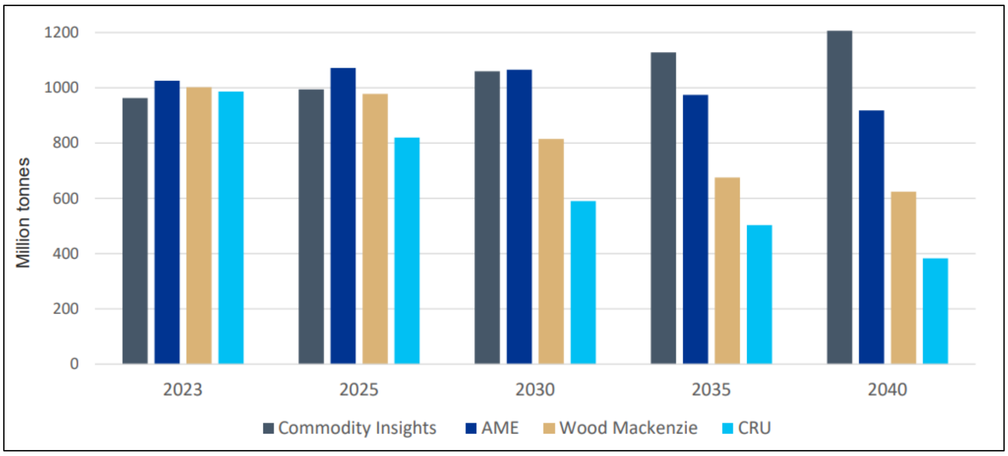
Seaborne thermal coal supply/demand balance to 2050



Source: Wood Mackenzie January 2023, via Whitehaven Coal

In most commodity markets, the need for such a supply-side response typically results in higher prices sufficient to incentivise those ‘probable’ and ‘possible’ projects. However, given the antipathy towards thermal coal in particular, we see the prospect for genuine shortages in the market as higher prices fail to incentivise new investment.

Forecast demand for seaborne thermal coal to 2040



Source: Commodity Insights June 2023, AME July 2023, Wood Mackenzie August 2023, CRU August 2023, via Whitehaven Coal

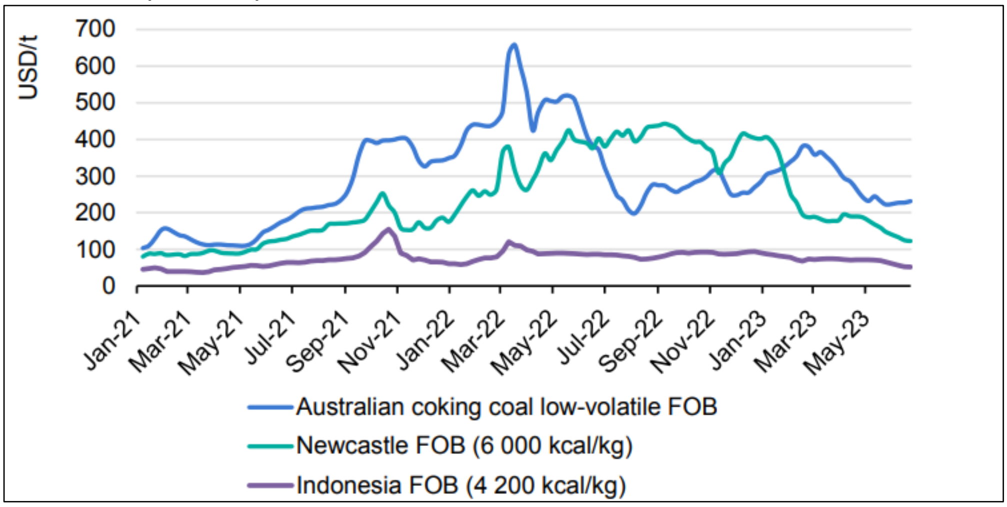
In thermal coal, future demand is also a difficult variable to forecast, as it will depend on the rate of replacement of coal-fired electricity with low-carbon alternatives. This is in contrast with metallurgical coal (where demand forecasts are relatively consistent based on projected steel production and a likely slow rate of transition to low-carbon steel-making). Whitehaven has identified a wide range of demand projections for thermal coal among the various specialist coal-market consulting groups over the next two decades, with not just a range of decline projections, but some projecting growth whereas others foresee decline.

In any event, it seems likely that thermal coals with higher calorific values will experience the strongest demand, as power generators obliged to retain coal-fired units to maintain reliable electricity supplies seek to minimise emissions per unit of electricity produced.

Prices

A key point to consider in pricing is that coal tends to be more volatile than many other mined commodities, because coal (especially metallurgical coal) is difficult to store for any length of time. Coal that has been mined tends to oxidise, thereby losing some of its quality, and metallurgical coal in particular is prone to spontaneous combustion if left stockpiled for extended periods. Thus stocks tend to be limited to those needed in the consumption pipeline (ie transit stocks at railheads, ports etc, and consumer stocks at power stations and steel producers). There are essentially no exchange-related stocks or strategic stockpiles to help absorb sudden fluctuations in supply and demand as is the case with many metals.

Benchmark coal prices 2021-present



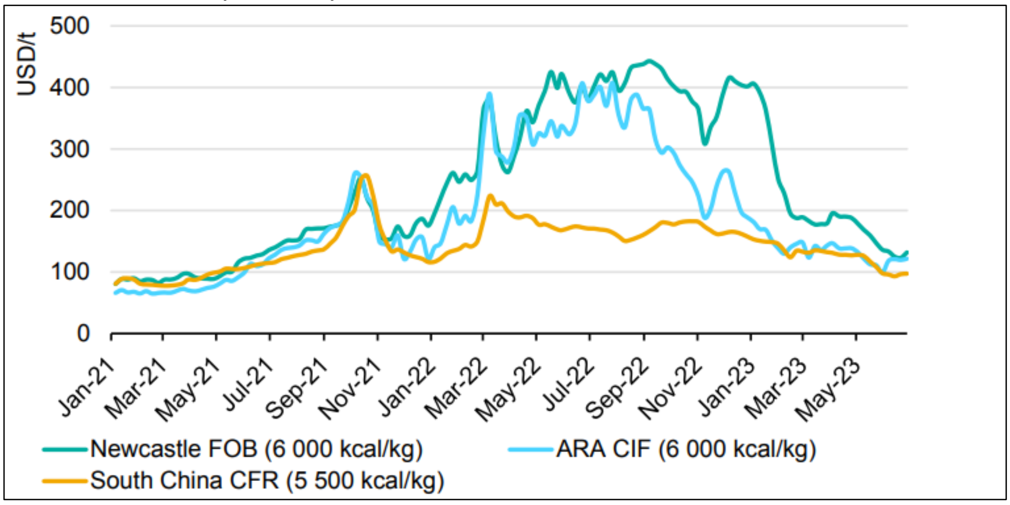
Source: Argus Media via International Energy Agency

This was amply demonstrated in 2022 following the Russian invasion of Ukraine, which pushed up gas prices, leading to a major switch to coal-fired power generation (facilitated by the availability of idled power plants). This surge in demand was exacerbated by supply-side issues, which affected both metallurgical coal and thermal coal, including the European Union's (EU) ban on Russian coal (which could not be easily switched to other markets owing to rail constraints); and weather-related disruption, particularly in Australia.

The disruption was sustained longer in thermal coal, leading to a period in H2 CY2023 during which the market for high-quality thermal coal (FoB Australia) was so tight that this product actually traded at a premium to its counterpart in high-quality metallurgical coal. This unprecedented situation has since reverted to more normal levels, with metallurgical coal regaining its premium in the early part of this year. Indeed, after a period of easing from recent highs of over US$300/t in the early part of this year to as low as ~US$220/t in June, premium HCC has rallied once again and is currently around US$350/t.

Amongst the thermal coals, the increased demand in Europe and the disruption to Australian high-quality coal led to both price markers, ARA CiF (6,000kcal/kg coal delivered in Amsterdam-Rotterdam-Antwerp) and Newcastle FoB (6,000kcal/kg coal loaded at Newcastle in New South Wales) trading at a significant premium to the benchmark South China CFR (5,500kcal/kg coal delivered in South China). However, this premium has since all but disappeared.

Benchmark thermal coal prices 2021-present



Source: Argus Media via International Energy Agency

Coal market fundamentals: demand

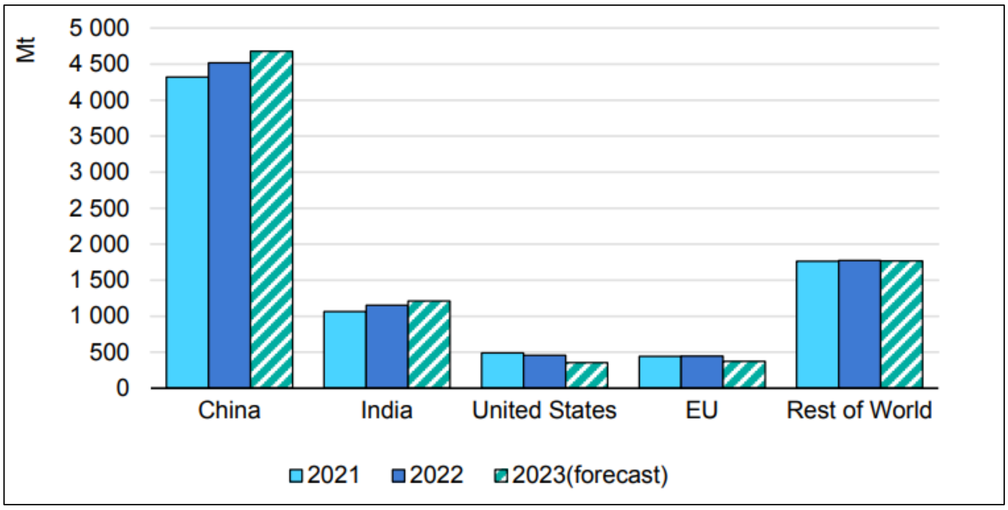
In its latest *Coal Market Update (July 2023)*, the International Energy Agency (IEA) forecasts worldwide total coal demand to reach a new record high, at 8,388Mt (all types of coal), 0.4% higher than in 2022.

The 2022 total was itself a record high, driven by growth in China and India, the two largest consumers, at 4,519Mt and 1,155Mt respectively, and a 36% increase in Indonesia, to 201Mt. Demand in the European Union (EU) was also higher (up 0.9% to 448Mt), a temporary blip in the overall trend, owing mainly to high gas prices and the move away from Russian gas, exacerbated by reductions in output from hydro and temporary shutdowns in the French nuclear sector.

The IEA's full-year 2023 forecast is based on estimated total demand of 4,665Mt in the first half of the year, and a forecast for H2 which is in part dependent on the weather.

Overall demand in H1 2023 was 1.5% high than in the corresponding period of 2022, and thus the IEA is forecasting a contraction in demand in H2 of this year. This will be driven mainly by weaker demand for coal in power stations, especially in the EU and the US, where the decline was already under way in H1 2023 owing to a combination of weaker electricity demand, growth in renewable electricity sources and (in the US) cheaper gas. However, in the non-power sector (principally metallurgical coal, which represents around one-third of non-power sector demand; and coal used to produce synthetic fuels, plastics and fertiliser) the IEA expects continued growth.

Global coal consumption 2021-23



Source: International Energy Agency

Overall, the IEA forecasts a decline of 0.4% in the power-generation sector, to demand of 5,597Mt, and around 2% growth in the non-power sector, to 2,791Mt.

In contrast to the situation in the US and the EU, the IEA expects the two largest sources of demand to grow in 2023, with China rising by 3.5%, to 4,679Mt, and India by 5%, to 1,212Mt.

For 2024, the IEA forecasts coal demand to remain essentially stable (down by 0.1%, to ~8.38 billion tonnes). Within this total, demand from the electricity sector is expected to fall by 1%, owing to the continued growth in renewable power; whereas the industrial sector is expected to grow its demand by 1.5%, as general economic conditions improve. The regional pattern is set to continue, with Asia (particularly India and Southeast Asia growing), and the US and the EU reducing their demand (along with most other mature economies).

China and India will remain the key economies to watch in 2024 and beyond, with a combined ~70% of worldwide coal demand next year. The combined share of the US and the EU will be around 8% in 2024, in stark contrast to 30 years ago when they accounted for some 40%.

Coal market fundamentals: supply

Worldwide coal production was also at a record high in 2022, up 8% to 8,634Mt, driven by significant increases in all three of the largest producers (China, India and Indonesia). The increases were a logical response to higher prices, with China (4,483Mt) and India (924Mt) seeking to reduce import dependency, and Indonesia (641Mt) increasing exports. Production in the EU also grew, by about 5% to 349Mt, owing to increased lignite production to feed local power stations.

Elsewhere the picture was mixed, with production in Russia down by 0.2% owing to the effect of sanctions plus rail bottlenecks in the east of the country (as exports were rerouted); South Africa grew by a modest 0.5% as domestic consumption declined and rail disruptions affected exports; Australia fell by ~3%, to 451Mt, owing mainly to adverse weather but also some remaining Covid-19 restrictions; and the US grew by just over 3% to 542Mt, as high coal prices encouraged production for export despite weaker domestic demand.

The IEA expects overall growth in supply to continue this year, with strong growth in H1 in China, India and Indonesia, and recovery in Russia; offsetting declines in the US and the EU.

China is forecast to produce 4,631Mt in 2023 (up 3.3%); India 989Mt (up 7%) and Indonesia 695Mt (up 8%).

Conversely, South African production is forecast to fall by 4.2% in 2023 (including an estimated fall of 10% in H1), to 220Mt for the year, owing to weak demand from the country's beleaguered power sector. The US is also expected to decline in 2023, by 4.2% to 519Mt, despite higher exports and some restocking by the power sector, as US consumption falls by 22%. Similarly, production in the EU is set to fall in 2023, by ~8% to 321Mt, driven by falling demand from the power sector.

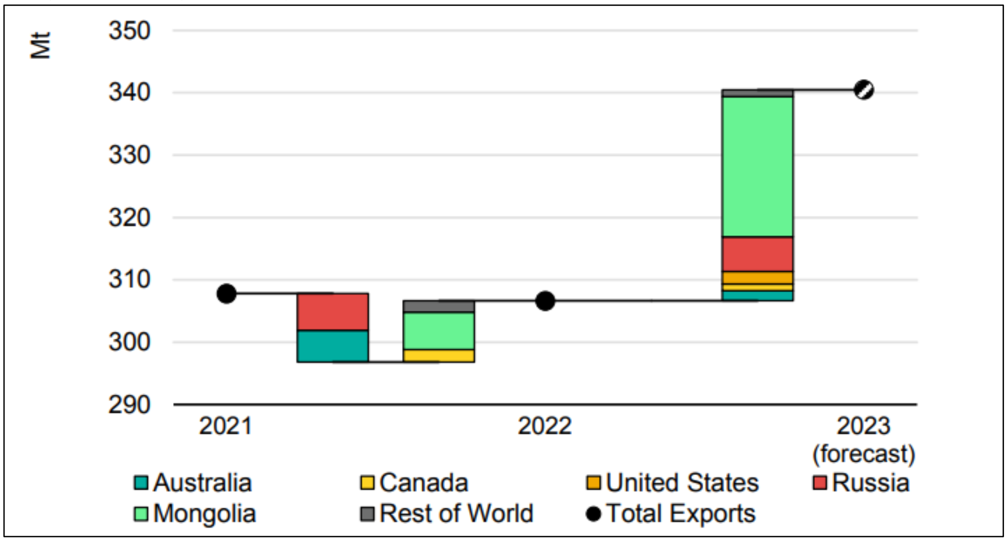
Russia's H1 recovery is not expected to be sustained, and the IEA forecasts a full-year decline of 2.9% in 2023, to 429Mt, though the agency admits that forecasts for Russia are challenging given the circumstances. Meanwhile, Australian production is expected to recover this year, increasing by 2%, to 460Mt.

International trade

Russian exports in 2022 were down, by 14% (to 35Mt) in metallurgical coal and 10% (to 157Mt) in thermal coal, as sanctions forced a redirection that could not be fully achieved owing to rail constraints. Bad weather restricted Australian exports in 2022, with metallurgical coal exports down by 3% to 166Mt, and thermal coal 7% lower, at 184Mt. The US was constrained in playing its usual role of swing supplier, as infrastructure constraints and lack of funding for new investment resulted in a 2.8% decline in thermal coal exports, at 35Mt, despite higher international prices, and no growth in metallurgical coal exports.

Countries which were able to take advantage of lower exports elsewhere included Mongolia, which increased its exports of metallurgical coal by 54% to 17Mt, resulting in worldwide metallurgical coal exports remaining almost flat, at 307Mt. The IEA forecasts Mongolian exports to continue rising this into this year, to 40Mt, as overall trade in metallurgical coal reaches 340Mt (up 11%) to meet anticipated higher demand.

Changes in metallurgical coal exports 2021-23

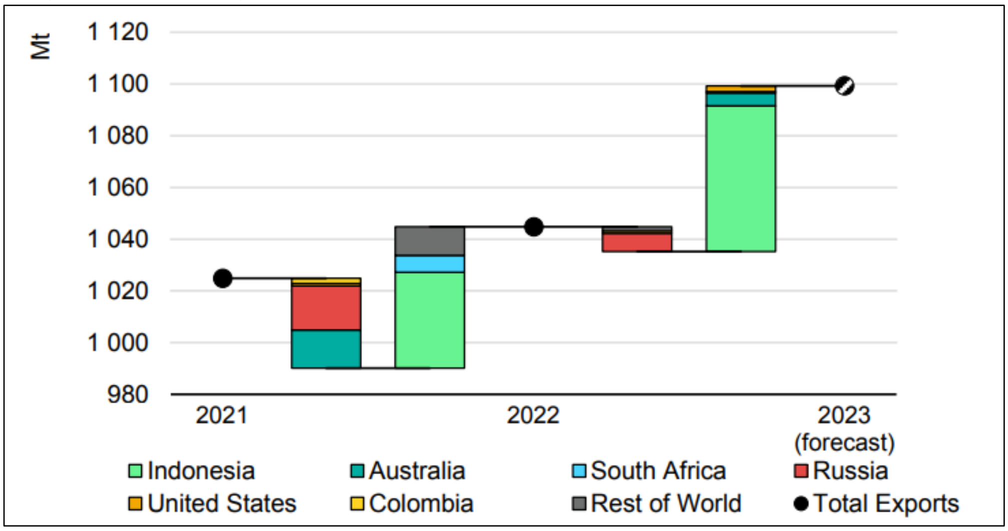


Source: International Energy Agency

In thermal coal, a similar pattern is occurring, with Indonesia stepping into the gap left by Russia and Australia in 2022, exporting 9% more thermal coal, at 469Mt.

The same country is forecast to continue filling the gap caused by overall growth in thermal coal in 2023 (5.2% higher at 1,099Mt worldwide), with Indonesian exports increasing by a further 12% to 525Mt (diagram on following page).

Changes in thermal coal exports 2021-23



Source: International Energy Agency

DISCLAIMER

RECOMMENDATIONS HISTORY

Market index: FTSE Aim Basic Resources

Date	Market Index level	Share Price (GBp)	Target Price (GBp)	Opinion
MC Mining				
23 Oct 2023	2,212	7.63	21	BUY

RATINGS, CERTIFICATION AND DISCLOSURE

RATINGS SYSTEM

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HOLD: The stock is expected to generate absolute price performance of between negative 10% and positive 10% during the next 12 months.

SELL: The stock is expected to generate absolute negative price performance of over 10% during the next 12 months.

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INVESTMENT RESEARCH DISCLOSURES 1,2,3,10,11,12

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