

Operational reviews continued

ARM Ferrous

André Joubert
Chief executive – ARM Ferrous



Key features for F2021

Significantly improved safety performance

Record headline earnings of R7.9 billion, underpinned by higher US dollar iron ore prices

Increased sales volumes across all commodities

Material matters

- Continued impact of Covid-19
- Transnet underperformance
- Continued pressure on unit costs
- Delays in completion of Black Rock and Gloria projects
- Multiple transformer failures at Sakura Ferroalloys



- Increased community unrest



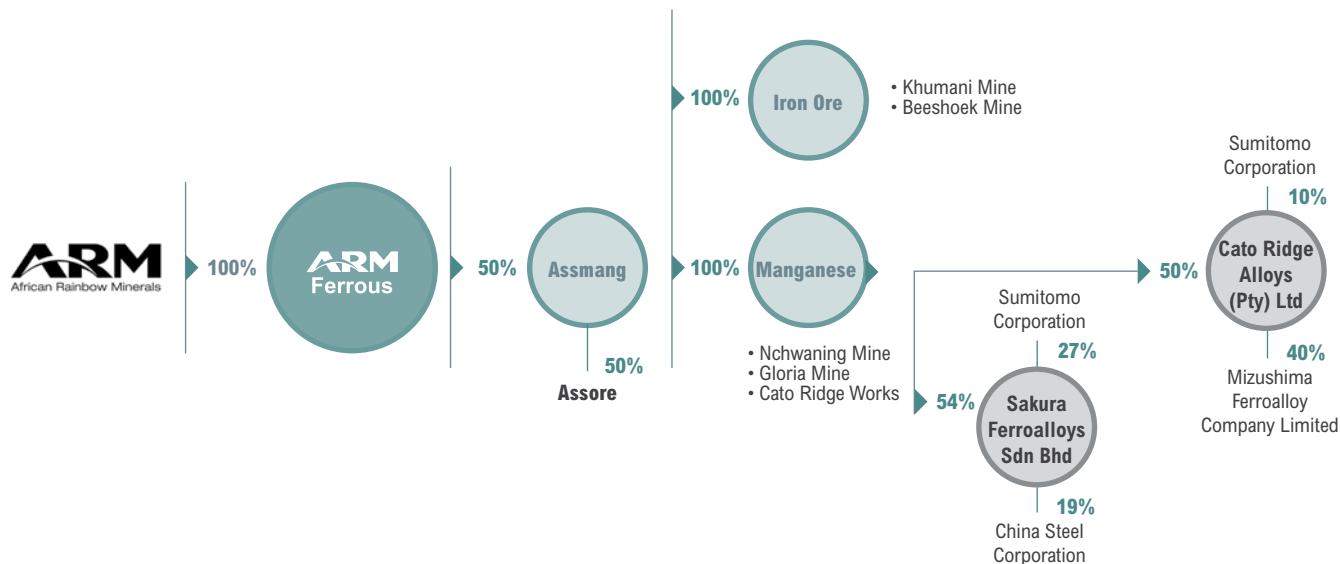
- Sedibeng water-supply reliability



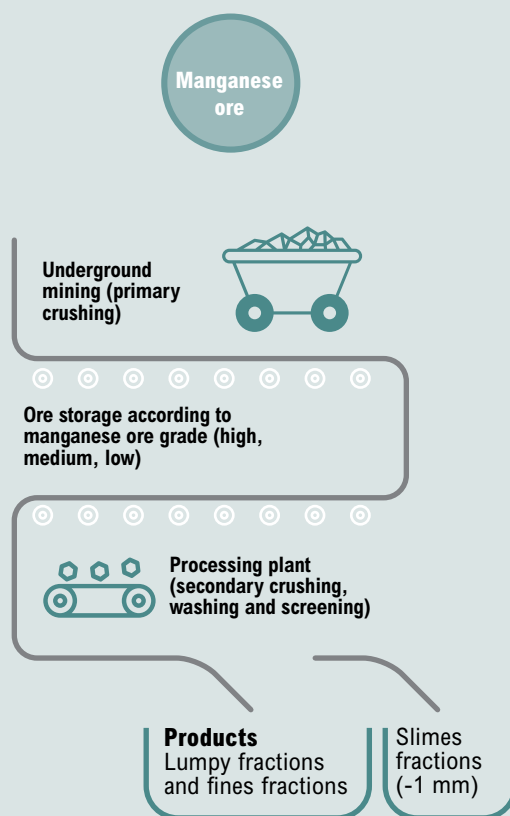
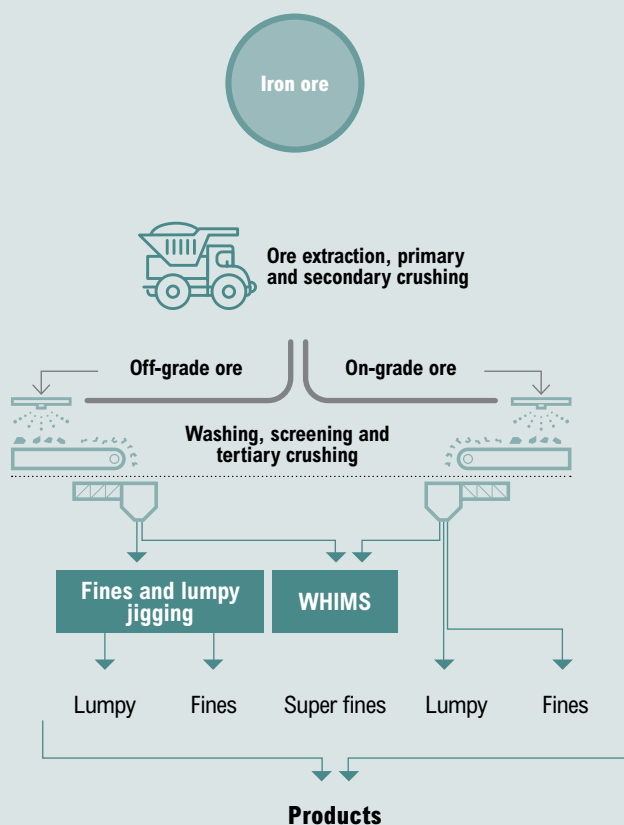
South Africa



Structure



Production process



Operational reviews continued

ARM Ferrous continued

Scorecard

KHUMANI MINE Iron ore

F2021 OBJECTIVES

Ensure LTIFR below tolerance level of 0.20 per 200 000 man-hours

ACHIEVED/NOT ACHIEVED



Achieved

LTIFR was 0.04 per 200 000 man-hours

F2022 OBJECTIVES

Ensure LTIFR below a tolerance level of 0.15 per 200 000 man-hours

Production planned at 12.6 million tonnes to accommodate risk of ongoing Covid-19 impact in F2021, thereafter sustainable production planned at 14.0 million tonnes per annum



Achieved

Production volumes were 12.7 million tonnes

Production planned at 13.5 million tonnes to accommodate risk of Transnet underperformance and Sedibeng water-supply disruptions

Sustain ultra-fines (WHIMS) production at 600 000 tonnes per annum



Achieved

Achieved nameplate capacity of 600 000 tonnes per annum

Sales planned at 13.1 million tonnes to offset ongoing pandemic risk, sustainable sales are planned at 14.4 million tonnes per annum



Achieved

Sales volumes were R13.3 million tonnes

Sales planned at 13.8 million tonnes to accommodate risk of Transnet under-performance in F2022, then sustainable sales planned at 14.4 million tonnes per annum

Target unit production cost increases below inflation



Not achieved

Unit production costs increased mainly due to higher working cost waste tonnage and lower production volumes

Target unit production cost increases below inflation

BEESHOEK MINE Iron ore

F2021 OBJECTIVES	ACHIEVED/NOT ACHIEVED	F2022 OBJECTIVES
Ensure LTIFR below tolerance level of 0.20 per 200 000 man-hours	 Achieved LTIFR was 0.07 per 200 000 man-hours	Ensure LTIFR below tolerance level of 0.20
Maintain production at 2.8 million tonnes per annum	 Achieved Production volumes were 3.3 million tonnes	Maintain production at 3.0 million tonnes per annum
Maintain sales volumes of 2.9 million tonnes to local markets and 350 000 tonnes to export market	 Achieved Sales volumes were 3.6 million tonnes	Maintain sales volumes of 2.65 million tonnes to local market and 350 000 tonnes to export market
Maintain unit production cost increases below inflation	 Achieved	Maintain unit production cost increases below inflation
Increase Beeshoek Mine's reserves and extend life-of-mine	 Achieved	







Operational reviews continued

ARM Ferrous continued

Scorecard

BLACK ROCK MINE Manganese ore

F2021 OBJECTIVES	ACHIEVED/NOT ACHIEVED	F2022 OBJECTIVES
Reduce LTIFR to 0.25 per 200 000 man-hours	 Not achieved LTIFR was 0.33 per 200 000 man-hours	Reduce LTIFR to 0.25 per 200 000 man-hours
Target production volumes of 4.4 million tonnes	 Not achieved Production volumes were 4.0 million tonnes mainly due to the delay of Black Rock and Gloria projects and continued impact of Covid-19	Target production volumes of 4.5 million tonnes
Deliver export sales volumes of 3.7 million tonnes	 Achieved Export sales volumes were 3.8 million tonnes	Deliver export sales volumes of 4.0 million tonnes
Target unit production cost increases below inflation	 Not achieved Unit production costs increased above inflation mainly due to delays in the Black Rock and Gloria projects, together with above-inflation increases to input costs	Target unit production cost increases below inflation

CATO RIDGE WORKS Manganese alloy

F2021 OBJECTIVES	ACHIEVED/NOT ACHIEVED	F2022 OBJECTIVES
Maintain good safety performance	<div> <div>✓</div> <div>Achieved</div> </div> Zero lost-time injuries	Maintain zero lost-time injuries and good safety performance
Commission sinter plant in July 2021	<div> <div>✗</div> <div>Not achieved</div> </div>	Sinter plant to be commissioned in March 2022
Use manganese ore ultra-fines in BRIX recipe	<div> <div>✗</div> <div>Not achieved</div> </div>	Introduce alternate higher-quality sweetener in recipe
Increase BRIX in furnace recipe (feed) to 25%	<div> <div>✓</div> <div>Achieved</div> </div>	Continuous optimisation of BRIX recipe



Operational reviews continued

ARM Ferrous continued

Scorecard

SAKURA FERROALLOYS Manganese alloy


F2021 OBJECTIVES

Maintain safety performance, ensuring LTIFR below tolerance level of 0.20


ACHIEVED/NOT ACHIEVED

 **Achieved**
Zero lost-time injuries


Target production volumes of 220 000 tonnes

 **Not achieved**
Production volumes were 191 000 tonnes due to multiple transformer failures in January, April and May 2021


Target sales volumes of 220 000 tonnes

 **Not achieved**
Sales volumes were 218 000 tonnes due to transformer failures

Maintain furnace efficiencies and improve unit costs by implementing cost-saving initiatives

 **Achieved**
Furnace ore efficiencies improved 5.3% and power efficiencies by 1.3%. Multiple cost-saving initiatives kept unit cost increases at 1%

Complete phase 1 of water-treatment plant project

 **Not achieved**
Delayed mainly due to Covid-19 restrictions

F2022 OBJECTIVES

Maintain safety performance, with LTIFR below tolerance level of 0.18

Target production volumes of 234 000 tonnes

Target sales volumes of 227 000 tonnes

Maintain furnace efficiencies and improve unit costs by implementing cost-saving initiatives

Complete hot commissioning for phases 1 and 2 of water-treatment plant. Expected completion date is September 2022

Commodity prices

Average realised US dollar export iron ore prices were 79% higher on a free-on-board (FOB) equivalent basis at US\$156 per tonne (F2020: US\$87 per tonne) driven by robust steel production in China and weather-related supply challenges in key iron ore-producing countries like Brazil and Australia. The 62% fines index (CIF China) reached a high of US\$234 per tonne in May 2021. Average realised prices at our iron ore operations were further enhanced by a strong rally in iron ore lump premiums which also reached record levels. The iron ore operations opportunistically increased the ratio of lump to fines sales volumes from 54:46 in F2020 to 58:42 in F2021. A sustainable lump to fines ratio for the operations is expected to be 55:45.

The index price for 44% manganese ore was US\$4.57/mtu (CIF Tianjin) at 30 June 2020, declining to a low of US\$4.09/mtu in July 2020. At 30 June 2021, the index price recovered to US\$5.15/mtu.

The index price for carbonate manganese ore (37% manganese ore CIF Tianjin) was US\$4.21/mtu at 30 June 2020, dropping to a low of US\$3.78/mtu in July 2020. At 30 June 2021, the index price recovered to US\$4.71/mtu.

Manganese ore prices have remained lower than expected during F2021 largely due to persistently high inventory levels (particularly in China) and increased global manganese ore supply.

Average realised prices for high-carbon manganese alloy and medium-carbon manganese alloy at Cato Ridge Works decreased by 12% to US\$937 per tonne (F2020: US\$1 065 per tonne) and by 11% to US\$1 364 per tonne (F2020: US\$1 533 per tonne), respectively.

Financial performance

Delivering financial returns to shareholders and other providers of capital

ARM Ferrous headline earnings were 77% higher at R7 927 million (F2020: R4 479 million) as a 104% increase in the iron ore division's headline earnings more than offset a 46% decrease in the manganese division's headline earnings.



Operational performance

Continuously improving operational performance

Iron ore division

Total iron ore sales volumes increased by 5% to 16.4 million tonnes (F2020: 15.6 million tonnes). Export sales volumes were 1% higher at 13.3 million tonnes (F2020: 13.1 million tonnes). Local sales volumes were 29% higher at 3.1 million tonnes (F2020: 2.4 million tonnes) due to above-plan offtake from Arcelor Mittal South Africa.



Total iron ore production volumes decreased by 1% to 15.9 million tonnes (F2020: 16.1 million tonnes) as higher production volumes at Beeshoek Mine were offset by lower production volumes at Khumani Mine due to compromised water-supply reliability.



Despite the rally in iron ore prices, manganese ore prices remained suppressed in F2021.

Operational reviews continued

ARM Ferrous continued

Production volumes at Khumani Mine were impacted by challenges related to water supply as the project to upgrade the Vaal Gamagara Water Supply System was delayed. Assmang is in extensive engagement with the Sedibeng Water Board, the Department of Water Affairs and the Minerals Council South Africa to collaboratively ensure that phase 1 of the refurbishment programme is completed, and that phase 2 commences in order to sustain water supply to the area.

In total, 13.3 million tonnes of iron ore was railed and exported through the Sishen-Saldanha export channel, representing a deficit of just over one million tonnes compared to planned volumes. This was largely due to major operational and maintenance challenges, major port equipment breakdowns and abnormal weather conditions. Engagements with Transnet are ongoing to address these challenges.

On-mine unit production costs at Khumani Mine increased to R289 per tonne (F2020: R251 per tonne) mainly due to inflation, higher working cost waste tonnages, the impact of Covid-19-related expenses and lower production volumes.

On-mine unit production costs at Beeshoek Mine increased to R263 per tonne (F2020: R246) mainly due to inflation and higher working cost waste tonnages, partially offset by higher production volumes.

Unit cost of sales, which includes marketing and distribution costs, were 16% higher mainly due to the increase in unit production costs and sales and marketing costs (driven by higher US dollar iron ore prices) and an increase in sea-freight rates per tonne.

Manganese ore

Manganese ore sales volumes increased by 22% from 3.2 million tonnes in F2020 to 3.9 million tonnes in F2021 mainly as a result of easing Covid-19 restrictions (compared to F2020) and ramp up of the Black Rock and Gloria projects. Export sales volumes were 22% higher at 3.8 million tonnes (F2020: 3.1 million tonnes) while local sales volumes increased by 45% to 0.14 million tonnes (F2020: 0.10 million tonnes).

In total, 3.8 million tonnes of manganese ore was railed and exported through the Port Elizabeth Bulk Ore Terminal and Saldanha Multi-Purpose Terminal. To mitigate rail losses due to Covid-19 in the earlier months of the year and to build up port stocks, road transport was contracted for approximately 185 000 tonnes from May 2020 to July 2020.

Transnet experienced challenges at the rail and port. Engagements with Transnet are ongoing to address these issues. Further engagements with Transnet on rail and port allocation beyond the current contractual tonnages of 4.0 million tonnes per annum and current contractual period until March/June 2023 are also progressing.

Production volumes at Black Rock Mine rose by 12% to 4.0 million tonnes as the Black Rock and Gloria projects progressed. Production volumes were negatively impacted by Covid-19-related challenges, increasing community unrest and water supply challenges.

Black Rock Mine's on-mine unit production costs were 18% higher at R699 per tonne (F2020: R593 per tonne) mainly due to increased labour costs, inefficiencies after delayed delivery of the Black Rock and Gloria projects, Covid-19 compliance costs and above-inflation increases in insurance and steel-based products. Labour cost increases were driven by higher head count for additional shifts worked, increased long-term incentive expenses for A to C bands and higher costs associated with Covid-19 absenteeism, which resulted in 8 184 person-days lost in F2021 (including employees and contractors). Unit production cost improvements expected from the Black Rock and Gloria projects were not realised due to delays in commissioning certain Black Rock project and Gloria project systems. Unit production costs are expected to improve as completion and ramp up of the two projects delivers improved efficiencies.

Unit cost of sales (which include marketing and distribution costs) increased by 8% as a result of higher sales and marketing costs due to higher revenue, increased freight rates, higher on-mine unit production costs and increased depreciation as the Black Rock and Gloria projects move to commissioning phase.

Manganese alloys

High-carbon manganese alloy production at Sakura Ferroalloys (100% basis) decreased to 191 000 tonnes (F2020: 232 000 tonnes) mainly due to multiple transformer failures in January, April and May 2021. The April transformer failure left Furnace 1 out of operation as the only spare transformer was used during the first transformer failure that occurred in January 2021.

Sakura Ferroalloys declared force majeure on its customers due to lower-than-planned production caused by these events. Based on current planning, Furnace 1 is expected to be switched on by the end of September 2021.



High-carbon manganese alloy sales volumes (100% basis) increased by 1% to 218 000 tonnes (F2020: 216 000 tonnes). The impact of the transformer failures on high-carbon manganese alloy sales volumes for F2021 was limited as sufficient stock levels were available to service contracts.

High-carbon manganese alloy production at Cato Ridge Works decreased by 3% to 123 500 tonnes (F2020: 127 100 tonnes). Medium-carbon manganese alloy production at Cato Ridge Alloys (100% basis) decreased by 4% to 48 000 tonnes (F2020: 49 500 tonnes).

High-carbon manganese alloy sales at Cato Ridge Works increased by 17% to 76 000 tonnes (100% basis) (F2020: 65 000 tonnes). Medium-carbon manganese alloy sales at Cato Ridge Alloys (100% basis) increased by 37% to 58 100 tonnes (F2020: 42 400 tonnes).

Unit production costs at Sakura Ferroalloys increased by 1% from MYR3 691 per tonne in F2020 to MYR3 736 per tonne in F2021.

Unit production costs at Cato Ridge Works increased by 11% from R11 504 per tonne in F2020 to R12 798 per tonne in F2021 mainly due to lower production volumes, above-inflation power escalations and the variability of the ore grade.

Medium-carbon manganese alloy unit production costs at Cato Ridge Alloys decreased by 0.4% from R18 302 per tonne in F2020 to R18 221 per tonne in F2021 due to a reduction in the cost for molten metal.

Investing in the current business

Capital expenditure (100% basis) for **iron ore** operations was R2 397 million (F2020: R2 223 million), which includes capitalised waste-stripping costs of R851 million (F2020: R787 million).

Khumani Mine's capital expenditure (100% basis) was 18% higher at R1 820 million (F2020: R1 535 million) mainly due to increased replacement fleet and an investment in an automated discard spreader system aimed at increasing production efficiencies. The mine's capital expenditure includes capitalised waste-stripping costs of R438 million (F2020: R426 million).

Beeshoek Mine's capital expenditure (100% basis) was R614 million (F2020: R670 million) which includes capitalised waste-stripping costs of R412 million (F2020: R361 million).

Total capital expenditure for the **manganese ore** operations was R2 060 million on a 100% basis (F2020: R2 260 million) of which R845 million (F2020: R846 million) related to the Gloria project. At 30 June 2021, 84% of the approved capital of R3 billion was spent on the Gloria project and 95% of the approved capital of R7.2 billion was spent on the Black Rock project.

The Black Rock and Gloria projects aim to modernise and expand the mine's output by increasing volumes and flexibility to produce various grades of manganese ore at the three operating shafts while improving efficiencies. Ramp up of the Black Rock Mine operations is being closely synchronised with Transnet's rail availability and is informed by prevailing market conditions.

The estimated date of completion of the Black Rock and Gloria projects is August 2022. Difficult ground conditions in mining areas, complex geology, various labour incidents and Covid-19 resulted in delays on the estimated completion date. The Nchwaning 3 silo feed and satellite tip 1 systems were successfully commissioned and handed over to operations at the end of June 2021. The Nchwaning II Graben system commissioning is underway.

Operational reviews continued

ARM Ferrous continued

Our people

Ensuring a safe, healthy and appropriately skilled workforce

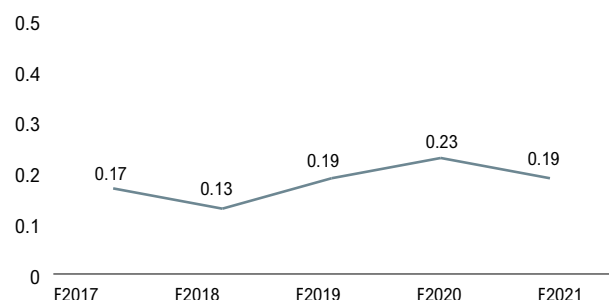
Total employees at ARM Ferrous increased 10% to 12 358 at 30 June 2021 (30 June 2020: 11 256), with 47% full-time employees and 53% contractors. ARM Ferrous invested R131 million in training.



Safety and health

ARM Ferrous operations have been fatality-free since 2015. The divisional LTIFR improved to 0.19 per 200 000 man-hours in F2021 (F2020: 0.23).

LTIFR (per 200 000 man-hours)



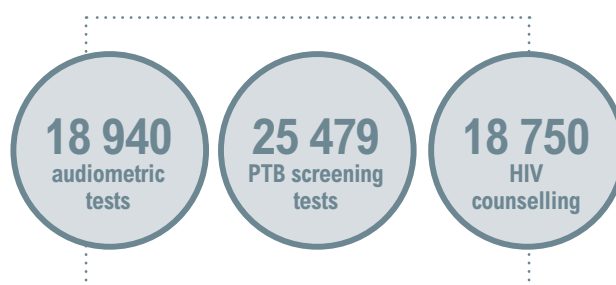
Operation	Total fatality-free shifts worked*	Last fatality	Fatality-free
Beeshoek Mine	4 817 003	Mar-03	18 years
Black Rock Mine	9 308 165	Apr-09	12 years
Khumani Mine	3 934 649	Apr-15	6 years
Cato Ridge Works	2 719 356	Feb-08	13 years
Machadodorp Works	1 178 577	Feb-11	10 years

* As at 30 June 2021.

ARM Ferrous operations implement strict health and safety measures aligned with the guidelines from the Minerals Council and DMRE to proactively prevent the spread of Covid-19. As at 30 June 2021, 85 828 employee screenings had been completed, 4 205 tests, with 1 249 positive cases and 98% of affected employees recovered. Regrettably, 16 employees succumbed to Covid-19 in F2021. Mental health awareness sessions were held in October, raising awareness of the support available on the toll-free helpline in the employee assistance programme and the on-site psychological support programme.

Khumani, Black Rock and Beeshoek mines were approved by the DoH as Covid-19 vaccination sites to support the government-led rollout and as at 26 September 2021, 2 179 employees and 1 968 community members had been vaccinated at these sites.

Risk-based occupational medical surveillance programmes at the operations identify and address specific health risks in each workplace and occupation, particularly PTB, HIV and Aids, and NIHL.



Chronic conditions are monitored by specific occupational exposure profiles for high-risk roles. Programmes promoting physical activity and creating awareness on diet and lifestyle choices aiming to address hypertension in the workforce.

Environmental performance

Ensuring responsible stewardship of natural resources

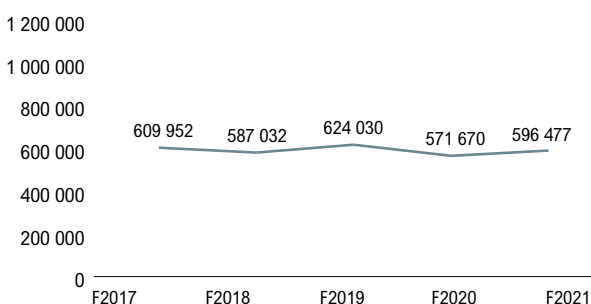
Carbon emissions and energy use



Estimated attributable scope 1 and 2 carbon emissions increased 4.3%. The smelters at Cato Ridge and Machadodorp works together contribute 32% to total Group scope 1 and 2 emissions.

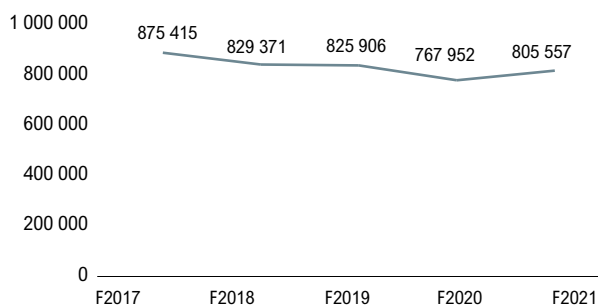
Scope 1 and 2 carbon emissions per tonne of iron ore produced increased to 0.025 tCO₂e/tonne (F2020: 0.024 tCO₂e/tonne). Scope 1 and 2 carbon emissions per tonne of manganese ore produced decreased to 0.041 tCO₂e/tonne from 0.043 tCO₂e/tonne in F2020 scope 1 and 2 carbon emissions per tonne of manganese alloy produced increased to 3.6 tCO₂e/tonne (F2020: 3.3 tCO₂e/tonne). The latter has been restated from prior year as they incorrectly included the Sakura production data.

Scope 1 and 2 carbon emissions – attributable (tCO₂e)



Electricity consumed accounted for 71% of Ferrous division's scope 1 and 2 emissions and increased 5% from the prior year consumption. As a member of the Energy Intensive Users Association, ARM Ferrous has a charter to map its development and implementation of energy-efficient practices.

Electricity consumption – 100 basis (MWh)



Water management

ARM Ferrous' mines are located in the water-scarce Northern Cape and cost and continuity of water supply are risks and potential constraints to growth. This is compounded by loadshedding (which affects water distribution), increasing competition for water and the poor state of infrastructure in the region. Mitigating measures are detailed in our ESG report.

Total reported water withdrawn increased to 12.6 million m³ (F2020: 12.2 million m³) due to increased production. Beeshoek Mine accounted for 46% of ARM Ferrous water withdrawn, Khumani Mine 38% and Black Rock Mine 14%.

Tailings storage facilities (TSFs)

The Assmang exco and social and ethics committee consider TSF compliance and status reports at each quarterly meeting.

All three ARM Ferrous mining operations have commenced with the implementation of the GISTM. An accountable executive has been appointed for the safe and responsible management of TSFs in the Ferrous division, and the TSF management policy and standard is being implemented. All facilities are being reclassified in terms of the GISTM criteria. This also entails updating the dam-breach analysis of the facilities against the risk criteria in the GISTM. Once the process is completed, the emergency response plan of each facility will be updated accordingly. Currently, all facilities are operated within the required structural stability parameters for the facility.

Supporting our communities

Maintaining our social licence to operate

ARM Ferrous is part of the shared-value working committee with other Northern Cape manganese producers and the Minerals Council in creating innovative projects with a meaningful benefit for communities.



The operations promote economic development and job creation in local communities by providing training, mentoring, coaching and some financial support to local black-owned businesses including SMMEs through enterprise and supplier development initiatives. Where viable, businesses are promoted into the mining supply chain and participate in the ARM Ferrous procurement system.

ARM Ferrous invests in community infrastructure and socio-economic development as part of local economic development and social labour plans, as well as through its corporate social investment initiatives. To support Covid-19 relief, Black Rock Mine provided a testing and screening facility at Kuruman Hospital, donated and distributed cloth masks to communities, upgraded ablution facilities at four local schools to improve sanitation. The mine also provided four furnished mobile classrooms to support social distancing. Beeshoek Mine upgraded three local libraries to improve facilities for remote learning while schools were closed.



Operational reviews continued

ARM Ferrous continued

Summary operational and financial indicators – 100% basis

Iron ore division

Operations

Khumani and Beeshoek mines – 100% basis unless otherwise stated

Ownership

ARM owns 50% of Assmang (Pty) Ltd and Assore Ltd owns 50%

Management

Assmang is jointly managed by ARM and Assore. ARM provides the administration and technical services while Assore performs the sales and marketing function

	Unit	F2021	F2020	F2019	F2018	F2017
OPERATIONAL						
Production volumes	000t	15 929	16 092	17 786	18 578	17 714
Khumani Mine	000t	12 675	13 100	14 145	14 694	14 560
Beeshoek Mine	000t	3 254	2 993	3 641	3 884	3 154
Sales volumes	000t	16 417	15 568	17 543	17 874	17 275
Export iron ore	000t	13 269	13 129	14 430	14 315	14 061
Local iron ore	000t	3 148	2 439	3 114	3 559	3 214
Unit cost changes						
On-mine production unit costs	%	13	10	8	2	3
Unit cost of sales	%	16	10	15	6	2
FINANCIAL						
Sales revenue	R million	37 621	20 638	20 827	14 534	15 853
Total costs	R million	16 927	11 065	12 000	10 304	10 091
Operating profit	R million	20 694	9 573	8 827	4 230	5 762
EBITDA	R million	22 255	10 992	10 284	5 631	7 179
Headline earnings	R million	15 046	7 376	6 795	3 343	4 373
Capital expenditure	R million	2 397	2 223	2 097	1 780	1 169

AFS



Refer to note 2 in the annual financial statements for iron ore segmental information.

Summary operational and financial indicators – 100% basis

Manganese division

Operations

Nchwaning and Gloria mines (collectively Black Rock Mine), Cato Ridge Works, Cato Ridge Alloys and Sakura Ferroalloys

Ownership

ARM owns 50% of Assmang (Pty) Ltd and Assore Ltd owns 50%

Management

Assmang is jointly managed by ARM and Assore. ARM provides the administration and technical services while Assore performs the sales and marketing function

	Unit	F2021	F2020	F2019	F2018	F2017
OPERATIONAL						
Production volumes						
Manganese ore	000t	4 041	3 619	3 409	3 717	3 069
Ferromanganese	000t	362	409	455	450	403
Sales volumes						
Manganese ore*	000t	3 966	3 227	3 434	3 177	2 974
Ferromanganese	000t	353	323	398	360	303
Unit cost changes						
On-mine production unit costs	%	18	(2)	15	16	1
Unit cost of sales	%	8	–	17	13	12
FINANCIAL						
Manganese ore						
Sales revenue	R million	10 236	9 005	12 493	10 495	8 322
Total costs	R million	9 034	6 410	7 796	(6 017)	(4 971)
Operating profit	R million	1 202	2 595	4 697	4 478	3 351
EBITDA	R million	1 918	3 183	5 307	5 015	3 759
Headline earnings	R million	823	1 846	3 449	3 192	2 407
Capital expenditure	R million	2 060	2 228	2 256	1 240	1 671
Ferromanganese						
Sales revenue	R million	1 956	1 791	2 293	2 338	1 897
Total costs	R million	1 794	1 651	2 038	(1 711)	(1 887)
Operating profit	R million	162	140	255	627	10
EBITDA	R million	220	189	356	684	67
Headline earnings	R million	74	(174)	(228)	616	(85)
Capital expenditure	R million	188	86	54	45	31

* External sales only and includes sales to Sakura Ferroalloy.

Refer to note 2 in the annual financial statements for manganese segmental information.

Operational reviews continued

ARM Ferrous continued

Summary sustainable development indicators – 100% basis

Unit		F2021	F2020	F2019	F2018	F2017
Employee indicators						
Average number ¹		12 097	10 430	11 426	10 247	8 662
– Permanent employees		5 501	5 222	5 293	5 017	4 522
– Contractors		6 595	5 207	6 133	5 230	4 140
LTIFR per 200 000 man-hours		0.19	0.23	0.19	0.13	0.17
Environmental indicators						
Scope 1 and 2 carbon emissions ²	tCO2(e)	596 477	571 670	624 030	587 032	608 040
Total water withdrawn ³	million m ³	12.6	12.2	11.9	10.2	9.8
Energy usage						
– Electricity	MWh	805 557	767 952	825 906	829 371	875 415
– Diesel	000 litres	59 267	57 155	61 118	59 163	49 837
Community investment indicators						
CSI and LED spend	R million	106	109	120	102	69
– CSI	R million	42	33	9	6	9
– LED	R million	64	75	111	63	64

¹ Permanent employees and contractors are reported as an average for the year, consistent with calculating safety statistics.

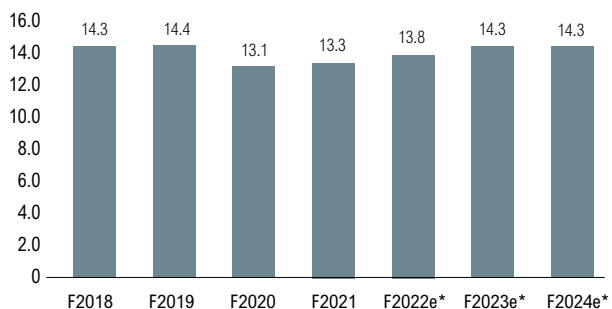
² Reported on an attributable basis.

³ Includes rainfall and runoff water harvested, surface water withdrawn from rivers, municipal water and groundwater.

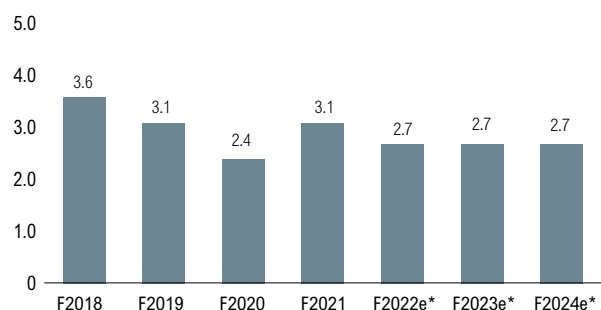


Outlook sales volumes – 100% basis

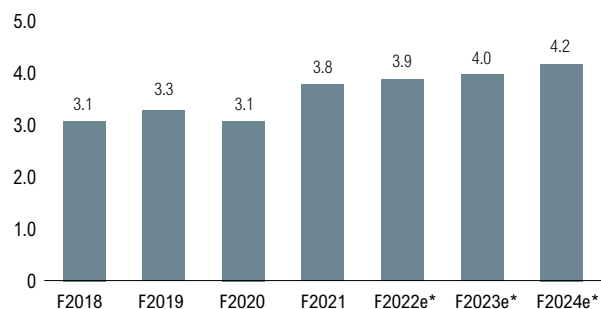
Export iron ore (million tonnes)



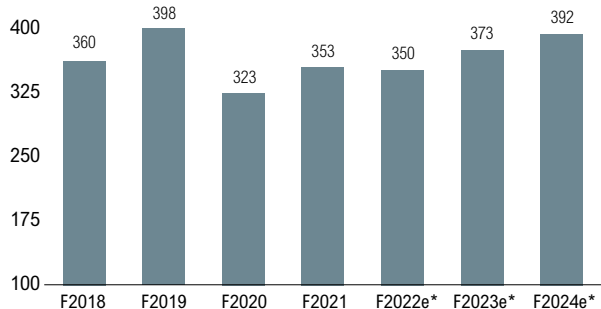
Local iron ore (million tonnes)



Export manganese ore (million tonnes)



Manganese alloys (thousand tonnes)



* F2022, F2023 and F2024 represent estimated volumes.