

NATURAL
CAPITAL

Inyoni Dam at Two Rivers Mine

NATURAL CAPITAL

ARM’s approach to environmental sustainability is shaped by our commitment to the principles of responsible mining, zero harm and organisational sustainability.

Our environmental management programme aims to minimise our impact on the natural environment around us and reduce our consumption of scarce natural resources. We believe that our commitment to responsible mining and beneficiation helps us to achieve our strategic goals and also establishes a sustainable competitive advantage.

Mining and beneficiation of metals and minerals converts natural capital into financial capital. Failure to do this in an environmentally and socially responsible way would erode social and relationship capital in the form of trust with local communities and broader society. ARM operates in a highly regulated industry and is dependent on the intellectual capital represented by the mining licences that underpin our activities. It is therefore important that our actions demonstrate responsible and ethical behaviour to build trust with the regulators.

Our most material environmental matters

- > CLIMATE CHANGE
- > RESOURCE MANAGEMENT, PARTICULARLY ENERGY USE AND WATER AVAILABILITY
- > LAND MANAGEMENT, INCLUDING BIODIVERSITY CONSERVATION, REHABILITATION AND CLOSURE PLANNING
- > ENVIRONMENTAL COMPLIANCE – ENSURING THAT OUR OPERATIONS REMAIN LEGALLY COMPLIANT WITH NEW AND CHANGING LEGISLATION
- > MANAGING AND MINIMISING OUR WASTE STREAMS
- > IMPLEMENTATION OF THE NEW REGULATIONS ON FINANCIAL PROVISION FOR REHABILITATION – ENSURING THAT WE COMPLY AND PUT APPROPRIATE FUNDING MECHANISMS IN PLACE TO PROVIDE ADEQUATELY FOR CONCURRENT REHABILITATION AS WELL AS REHABILITATION AT MINE CLOSURE AND POST-CLOSURE STAGES

Climate change is recognised in our Enterprise Risk Management process as one of our most material issues, that can have potential impacts on our ability to achieve our strategy through its effect on energy prices, access to natural resources, weather-related production disruptions and indirect impacts on our value chain.

Our processes are dependent on a reliable and sufficient supply of energy. Interruptions to energy supply affect production efficiencies and can impact the safety of our workforce. The increasing cost of energy impacts our ability to build financial capital and adds socio-economic stress on the communities around us.

Water issues remain a key challenge for our operations. Water scarcity pose a potential constraint on current production and future expansion, and water availability is a core concern for local communities. At Lubambe and Nkomati mines, efficient mining is affected by an excess of water, while availability of water to our operations in the arid Northern Cape remains a focus area. The reliability of current water and electricity infrastructure and the long lead time in rolling out new infrastructure is a risk for current operations and future expansion plans.

The potential reputational and financial implications of non-compliance with the rapidly evolving environmental regulatory framework are significant as are the direct and indirect costs of ensuring compliance. Proposed developments that are likely to have a significant impact on our business include the Carbon Tax Bill, the Greenhouse Gas Reporting regulations, the National Climate Change Response Policy in South Africa, the Desired Emission Reduction Outcomes (DERO), the Peak, Plateau and Decline Trajectory, the government’s Mix of Measures, company level carbon budgets and the revised financial provisions for rehabilitation and closure. ARM supports the government drive towards becoming a low carbon economy and continues to engage with industry bodies and policymakers to ensure that mechanisms achieve this goal while still supporting local industry resilience and competitiveness internationally.

HOW WE MANAGE ENVIRONMENTAL SUSTAINABILITY

The Board holds ultimate responsibility for sustainable development and delegates the monitoring of this area to the Social and Ethics Committee. The Executive: Sustainable Development operates with oversight from the Social and Ethics Committee and reports to the Management Risk and Compliance Committee on matters and activities related to climate change and carbon emissions. Climate change is also on the agenda of the Audit and Risk Committee and is monitored through the enterprise risk management system.

Environmental management systems are in place at operations to identify our environmental impacts and assist in the implementation of our environmental plans and performance monitoring. SHEQ managers at divisional and operational level execute Group environmental strategy, ensuring that operational environmental policies and strategies address the specific environmental challenges and opportunities the operation faces. Environmental performance and compliance are monitored at operational, divisional and corporate level.

SUSTAINABILITY REVIEW continued

NATURAL CAPITAL HIGHLIGHTS AND CHALLENGES

Achieving meaningful reductions in energy use and carbon emissions is challenging in an economic climate where capital expenditure is constrained. Proposed regulatory environmental initiatives, including the carbon tax, are likely to add further pressure to the industry.

There is an increasing expectation for supply chain transparency and this is particularly evident in the activities of certain NGOs and the guidance in international reporting standards. Expanding environmental monitoring and reporting to include the supply chain is costly and time-consuming.

We submitted our 2015 CDP Report during the year, achieving a 98% disclosure score and a 'B' performance score. This was our seventh consecutive report under the project and we also submitted a CDP Water Report for the first time this year.

Modikwa Mine was successfully certified in terms of the international environmental management system, ISO 14001.

NATURAL CAPITAL FOCUS FOR F2016

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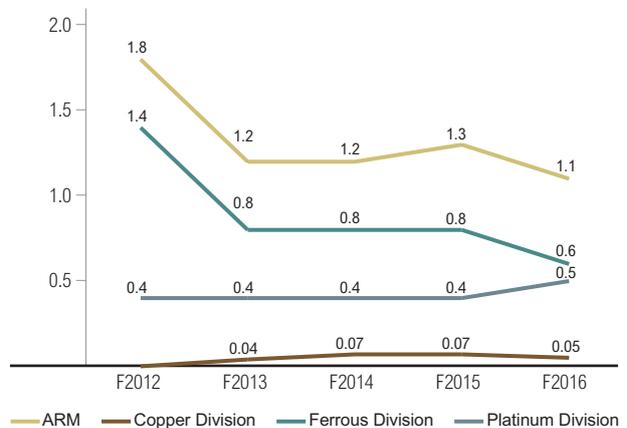
CONTINUE TO IMPLEMENT CARBON EMISSION REDUCTION INITIATIVES AND MONITOR OUR PERFORMANCE AGAINST OUR EMISSION TARGETS.

The Group's F2016 estimated carbon footprint (Scope 1 and 2 attributable emissions) decreased 13.5% to 1.08 mtCO₂e (F2015: 1.25 mtCO₂e).

Scope 1 and 2 emissions from operations in the Ferrous Division decreased to 615 843 tCO₂e (F2015: 813 689 tCO₂e) due to reduced production at the smelters, particularly Cato Ridge Works and estimated emissions attributable to the Platinum Division increased by 7.6% to 456 780 tCO₂e (F2015: 424 623 tCO₂e) due to production increases at Two Rivers Mine.

Emissions at Lubambe Mine decreased by 33.1% to 4 956 tCO₂e (F2015: 7 409 tCO₂e) as a result of reduced production.

CARBON FOOTPRINT – ATTRIBUTABLE SCOPE 1 AND 2 (mtCO₂e)



2 IMPROVING THE CARBON INTENSITY OF OUR PRODUCTION BY IDENTIFYING AND IMPLEMENTING APPROPRIATE EMISSION REDUCTION INITIATIVES.

Scope 1 and 2 emissions per full-time employee (FTE) decreased to 158.2 tonnes CO₂e (F2015: 167.0 tonnes CO₂e/FTE). Emission reduction initiatives implemented during the year are discussed in the section that follows.

3 ENGAGING PROACTIVELY IN THE PROCESS OF IMPLEMENTING VARIOUS POLICY MEASURES AND ENVIRONMENTAL INSTRUMENTS, INCLUDING CARBON BUDGETS AND CARBON TAX.

We continue to engage with government on various aspects of the proposed measures that could have a material impact on our operations. Engagements include meetings with government officials, attendance at stakeholder engagement events and direct comments on documents. While the proposed measures remain in draft, we are investing in our reporting systems to ensure that we can report according to the requirements once the regulations have been passed.



Black Rock Mine

SUSTAINABILITY REVIEW continued

CARBON EMISSIONS

The largest contributor to ARM's carbon footprint is the consumption of electricity produced by coal-fired power stations. Other contributors include diesel used in mining operations and materials movement, and carbon-based reductants in the smelters, such as coke and coal.

Greenhouse gas (GHG) emissions are measured and reported to the Carbon Disclosure Project (CDP) in terms of Scope 1, Scope 2 and Scope 3 emissions, as defined in the table below.

Category	Classification
Scope 1	Direct GHG emissions from sources owned or controlled by the Company
Scope 2	Indirect GHG emissions related to purchased energy
Scope 3	All indirect emissions not included in Scope 2 that occur in the upstream and downstream value chain

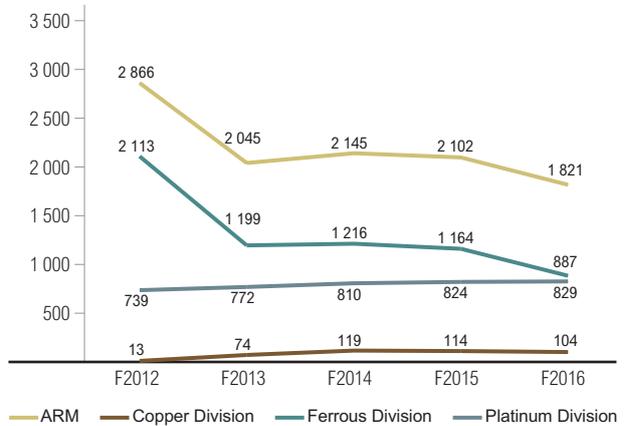
Cato Ridge Works is the largest single contributor to the Group's Scope 1 and 2 emissions due to the energy intensive nature of the beneficiation process. In F2016, Cato Ridge Works accounted for 31% of total Group Scope 1 and 2 emissions. Other significant contributors include Khumani Mine (13.6%) and Nkomati Mine (19.8%).

Emissions data is reported quarterly, discussed at the individual operational sustainability meetings and assessed according to potential exposure, probability and consequence for the business. Opportunities to reduce GHG emissions are based on site-specific assessments of what is possible and these are built into longer-term bottom-up targets. Cost reduction projects at operations emphasise the importance of reducing emissions and energy consumption. Capital allowances are allocated at operations for energy efficiency projects and emission reduction activities are included in internal KPIs and scorecards for teams and divisions. ARM's climate change strategy has been rolled out across operations and divisional carbon strategy workshops are run to raise awareness about emission reduction programmes.

ELECTRICITY

A consistent supply of electricity is a critical requirement for efficient mining and beneficiation. At the mines, electricity powers the crushers and mills that process ore, ventilation fans, pumps for dewatering and the motors that drive conveyor belts and elevator cages. Metal processing requires significant amounts of energy and the Cato Ridge smelter in the Ferrous Division accounts for nearly one-third of the Group's total electricity consumption. The most significant impact electricity supply interruptions have on our operations are on workplace safety, production efficiencies and diesel consumption with resulting emissions when generators are used to supply electricity to critical functions, e.g. ventilation.

ELECTRICITY CONSUMPTION (000 MWh)



Total electricity consumed by the Group in F2016 was 1 820 802 MWh (reported on a 100% basis), a 13.4% decrease on F2015 (2 102 451 MWh). The Ferrous Division's electricity consumption decreased by 24% to 887 382 MWh (F2015: 1 164 218 MWh) and the Platinum Division's electricity consumption increased by 1% to 829 484 MWh (F2015: 824 432 MWh).

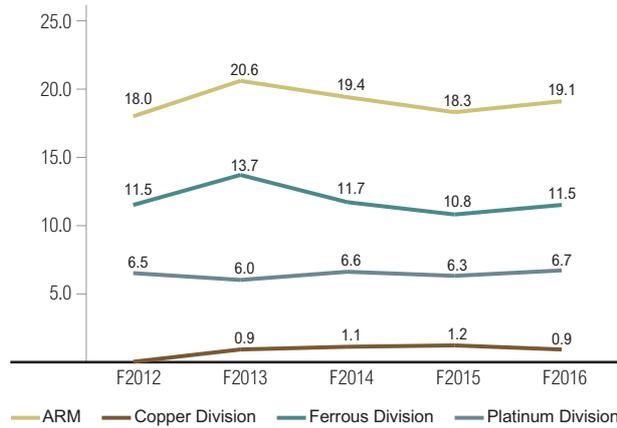
Energy saving and carbon emission reduction initiatives implemented by operations during last year include:

- > Black Rock Mine implemented a range of energy efficiency initiatives including replacing ventilation fans with more efficient alternatives, replacing inefficient air conditioning systems and implementing an energy efficient lighting programme.
- > Nkomati Mine implemented a range of energy efficient lighting replacements and focused on turning off unnecessary ventilation fans.
- > Two Rivers Mine introduced a range of behaviour change awareness and maintenance programmes.
- > Modikwa Mine implemented a number of energy efficiency projects related to compressed air use (an air leak repairing programme, installing line controls/isolation valves), ventilation fans (turning fans off when not needed, repairing leaks, installing guide vanes), haulage fans (switching off fans when not needed, removing unnecessary fans, installing energy efficient fans), plant mills and implemented an energy efficient lighting replacement programme.
- > Lubambe Mine implemented a range of energy efficiency measures, including controlled switching of major loads (not running major power consumers at the same time) and removing unnecessary ventilation fans.
- > Nkomati received a capital allocation to improve metering onsite for increased energy monitoring and targeting.

WATER

ARM abstracts water from a range of sources according to the terms of our integrated water use licence at each operation. These sources include rivers, boreholes and municipal sources. Ongoing engagement with interested parties and other relevant stakeholders ensures the sustainability of water resources and that all operations have the necessary controls in place to ensure that the quality of water around them is not negatively affected.

WATER ABSTRACTED (million m³)



ARM operations abstracted a total of 19.1 million m³ in F2016 (F2015: 18.3 million m³). Beeshoek Mine accounts for 26% of the total abstracted, and Khumani Mine and Nkomati Mine account for 24% and 16% respectively. Most of the water Beeshoek Mine abstracts is supplied to local communities and the mine's employee village.

Water abstracted at the Ferrous Division increased by 6.3% to 11.5 million m³ (F2015: 10.8 million m³) and increased by 5.9% in the Platinum Division to 6.7 million m³ (F2015: 6.3 million m³).

BIODIVERSITY

Ensuring that the processes and controls are in place to safeguard the biodiversity in the biomes in which we operate is an important aspect of ARM's sustainability model. There are Biodiversity Action Plans in place at all operations and operations are at different stages of implementing their biodiversity management programmes. These are audited externally every second year and annually through legal compliance audits as part of the environmental management system.

	F2016				F2015			
	Ferrous	Platinum	Copper	ARM	Ferrous	Platinum	Copper	ARM
Scope 1 and 2 carbon emissions (000 tCO ₂ e)	616	457	5	1 078	814	424	7	1 246
Electricity consumption (000 kWh)	887	829	104	1 821	1 164	824	114	2 102
Water abstracted (million m ³)	11.5	6.7	0.85	19.1	10.8	6.3	1.2	18.3

WASTE CONTROLS

There were no significant hydrocarbon spills during the year. Minor hydrocarbon spills were reported by Black Rock (52 litres of fuel), Dwarsrivier (120 litres of oil) and Two Rivers (73 litres of oil and 114 litres of fuel). Affected areas were rehabilitated and the contaminated soil was disposed at licenced hazardous waste landfill sites.

An internal multi-disciplinary team conducted a review of the management systems of the operations' tailings storage facilities in terms of the requirements of the Mine Health and Safety Act Guideline for Mandatory Code of Practice on Mine Residue Deposits and relevant environmental regulations (including the National Water Act, Government Notice 704 and the National Environmental Management: Waste Act). ARM also participated in the ICMM's review of members' management practices relating to tailings storage facilities. The ICMM will publish a good practice guideline in this regard by November 2016.

NATURAL CAPITAL FOCUS FOR F2017

1 CONTINUE TO IMPLEMENT CARBON EMISSION REDUCTION INITIATIVES AND MONITOR OUR PERFORMANCE AGAINST OUR EMISSION TARGETS.

2 IMPROVING THE CARBON INTENSITY OF OUR PRODUCTION BY IDENTIFYING AND IMPLEMENTING APPROPRIATE EMISSION REDUCTION INITIATIVES.

3 ENGAGING PROACTIVELY IN THE PROCESS OF IMPLEMENTING VARIOUS POLICY MEASURES AND ENVIRONMENTAL INSTRUMENTS, INCLUDING CARBON BUDGETS AND CARBON TAX.