

# CLIMATE CHANGE

## OUR POSITION, STRATEGY AND ACTIONS



# **WE RECOGNISE THE CHALLENGE POSED BY CLIMATE CHANGE AND WE ARE TAKING ACTION TO ADDRESS ITS CAUSES AND TO PROTECT OUR EMPLOYEES AND ASSETS, AS WELL AS OUR COMMUNITIES, AGAINST ITS POTENTIAL IMPACTS**

Caption – front cover:

An overview of Moranbah North Power Station located in Queensland, Australia at our Moranbah North mine. The plant generates electricity from methane-rich gas that is released during underground mining operations.

Note: All Rand/US Dollar conversions contained in this brochure are based on the Anglo American 2010 reporting standard, which is US \$: R7,32



Environmentalist Erika Prinsloo checks a portion of the grass on a rehabilitation section of the coal dispersal facility at Greenside Colliery.



Low energy lights are used underground at Bafokeng-Rasimone Platinum Mine.



# OUR STRATEGY

We are committed to enabling our operations and local communities to address and adapt to the causes and effects of climate change.

The world will continue to demand the commodities we produce. The low carbon economy cannot exist without metals. Coal is an important part of the energy mix and it will continue to drive the economic and social progress of much of the developing world – and several parts of the developed world – for the foreseeable future. The challenge is to make the production and use of the commodities we produce more sustainable.

We have set a goal of achieving the maximum economically sustainable energy and carbon savings in our business and in the use of our products.

**Our climate-change strategy has three focus areas: operational excellence, exploiting technologies and engagement and partnerships.**

Effective implementation of this strategy will deliver carbon and energy savings. It will yield a clear assessment of risks and opportunities in the markets in which we operate, with action plans in place to mitigate those risks and deliver shared value.

## 1. OPERATIONAL EXCELLENCE

Our business is growing, and mining conditions are becoming more challenging with the result that our energy intensity is also increasing. We are having to mine deeper, haul further and work harder to produce the same output. The energy we consume accounts for 70% of our greenhouse gas (GHG) emissions; our primary response to climate change is therefore to use energy more efficiently while also minimising GHGs directly emitted during our operational processes such as fugitive coal mine methane.

What this means is tackling our own carbon footprint through the introduction of clear targets and standards and then ensuring that our business units have identified and prioritised savings projects to deliver against those goals.

### Eco<sub>2</sub>Man

Our programme for planning, measuring and reporting our energy and GHG performance is called Eco<sub>2</sub>Man.

Eco<sub>2</sub>Man, which is an abbreviation for energy and CO<sub>2</sub> management, allows us to better understand our future energy consumption and GHG footprint over the life of an asset, and to support identification of the least-cost energy savings measures that will enable us to meet our savings targets.

This programme is linked to Anglo American's Group Technical Standard on energy and GHG emissions management.

Through Eco<sub>2</sub>Man, every site now has in place new bottom-up targets for saving energy and GHG emissions based on a business-as-usual (BAU) methodology. This new approach sets out the forecast energy demand and GHG emissions curve that accounts for the variable operating conditions from which we aim to make savings. It will also allow us to understand the cost curves to achieve these savings.

We believe we are an industry leader in implementing new targets based on this BAU methodology which is also auditable and aligned with a new ISO standard being developed.

### Climate adaptation

We are working with recognised experts on climate science to help us understand and prioritise appropriate response measures to the potential physical impacts of climate change.

The UK Meteorological Office has assessed the potential impact of water availability and sea-level changes on the Minas-Rio project in Brazil.

## 2. EXPLOITING TECHNOLOGIES

We are investing in technologies that will enable us to be running cost-efficient, low carbon mines in twenty years time and we are developing low carbon technology pathways that will reduce the footprint of our products.

**We have already invested over US \$180 million in low carbon technology.**

We also have a number of investments in clean coal research and development projects and we are developing and implementing PGM-based emission reduction technologies such as fuel cells.

### Tackling methane emissions

Methane occurs naturally in all coal mines and is a greenhouse gas 21 times more damaging to the environment than carbon dioxide. It accounts for 17% of our GHG emissions and is our largest single source of GHG emissions. Venting is thus an increasingly unacceptable option.

#### Moranbah North

In our underground metallurgical coal mines in Australia, methane is highly concentrated, which makes large-scale, capture-and-use initiatives for this 'rich' gas viable.

Our metallurgical coal business has supplied two dedicated gas-fired power stations with coal seam methane piped from our Moranbah North mine in central Queensland and the nearby Capcoal mine.

Though highly damaging when released as a gas, methane, when it is burnt, is one of the cleanest fossil fuels. It produces less carbon dioxide for each unit of heat produced than other hydrocarbon fuels.

By capturing methane which would otherwise have been vented, these power stations not only prevent 2.5 million tonnes of CO<sub>2</sub>-equivalent emissions from entering the atmosphere each year – but they generate 75MW of electricity.

This electricity is enough to power 48,000 homes and the emission savings are equivalent to taking 500,000 cars off the road – or planting 3.6 million trees.

#### New Denmark

An innovative methane flaring project at our New Denmark colliery in north-eastern South Africa, using a mobile flaring-off mechanism, is expected to reduce the mine's annual methane emissions by 15%. Flaring burns off methane, rendering it 18.5 times less harmful to the environment than venting.

Two of the flares have been incorporated into the mine's methane drainage system at a project cost of R9 million (US \$1,3 million). Under the Kyoto Protocol, methane flaring is an eligible Clean Development Mechanism (CDM) activity. As a result, the project could generate more than US \$8 million in revenue in its first decade through the sale of Certified Emission Reduction credits – revenue that would make it financially viable.

## 3. ENGAGEMENT AND PARTNERSHIPS

We are working in partnership with governments and other key stakeholders to develop equitable and effective climate change policies and enable our communities to access clean energy and benefit from the green economy.

We support government efforts to make the transition to a low carbon economy. We support policies which lead to a long-term price on carbon. However, we believe that these policies should be based on a solid fact base and contain a wide range of policy instruments so that they will yield a predictable and measured transition. In particular, we believe that policies should recognise the stage of a country's development and not impact its international competitiveness.

## Supporting green economic growth

We have recently launched a new Green Fund within our flagship Zimele enterprise development programme. We have committed an investment amount of R100 million (US \$14 million) to the fund, which aims to empower and encourage entrepreneurs to operate in the green economy in South Africa.

We also have two pilot projects examining how we can use carbon markets to fund community development projects. These involve the retrofitting of government-provided housing in our mine communities with solar water heaters and better insulation, and the production of biochar to store carbon and improve soil productivity.

### Enabling a low-carbon future

As the world's leading producer of platinum and other platinum group metals (PGMs) we are actively involved in developing markets and applications for PGMs. These metals already contribute to reducing greenhouse gas emissions and saving energy by making processes more efficient and effective.

Our platinum business has launched a R100 million (US \$14 million) fund to invest in platinum-based technology companies in South Africa. This includes a partnership with fuel cell company, Alteryg and the South African government, to manufacture and market fuel cell systems locally and in other sub-Saharan countries.

Platinum-based fuel cells offer a solution to one of the key limitations of renewable energy sources which is storage of the energy generated. Offering high efficiency, versatility and scalability, fuel cells have the potential to be an important element in the transition to a low carbon economy.

**14%**

of our electricity consumption is from renewable sources, mainly hydro-power in South America.

**20 million**

tonnes of carbon dioxide equivalents were emitted in 2010.

**US \$180 million**

invested in low carbon technology.

## WHY WE NEED TO ACT

### An increase in the cost of doing business

Rising energy costs make doing business more expensive. In South Africa we face electricity price rises of 25% a year until 2013 and we believe that prices will continue to rise significantly in all markets.

Taxes on carbon emissions are either already in place or are being planned in many countries of significance to us. These could have a material financial impact on our business.

### Changes to our markets

We believe that by 2020 most supply chains will be actively involved in reducing their greenhouse gas (GHG)

emissions. Suppliers as well as customers will be seeking alternative energy sources to lower their carbon profiles.

We need to be able to respond to reductions or increases in volume in certain products. Opportunities exist in environmentally friendly technologies such as platinum-based fuel cells.

### Changing with the climate

Climate change might cause significant physical impacts. As Anglo American invests in long-term assets, there may be a long-term risk and it is important for us to understand our vulnerabilities.

Extreme weather events and increased temperatures may disrupt our operations, supply chains and transport infrastructure, or cause harm to our employees and local communities.

### Key facts

- 110.8 million gigajoules (GJ) of energy was consumed by Anglo American during 2010.
- Fossil fuels are our largest source of energy (53%).
- Clean diesel technologies based on platinum have helped grow the market for diesel cars to half of the total European market, reducing road fuel use by 10 – 20%.
- We spend more than US \$10 million annually in partnering with research institutes and other organisations researching downstream technologies that will help our customers reduce their carbon emissions.

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