Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

Anglo American is a global and diversified mining business that provides raw materials essential for economic development and modern life. Our diversified portfolio of products spans the economic development cycle and, as a responsible miner, we are the custodians of precious resources. We work together with our key partners and stakeholders to unlock the long-term value that these resources represent for our shareholders, but also for the communities and countries in which we operate – creating sustainable value and making a real difference. Our portfolio of high quality mining assets and natural resources includes platinum group metals and diamonds, with significant interests in copper, iron ore and manganese, metallurgical and thermal coal, and nickel. We operate in Africa, Europe, South and North America, Australia and Asia. Our headquarters are in London, United Kingdom and we are listed on the London and Johannesburg stock exchanges.

For the purposes of the CDP and other sustainable development reporting, we include only managed businesses and material joint-ventures (such as De Beers' Debswana and Namdeb Holdings 50:50 JVs with the governments of Republics of Botswana and Namibia) where Anglo American standards are applied. Data from operations that are divested during the year is included up until the point of sale.

We see climate change as one of the defining challenges of our era. We recognise the science of climate change and acknowledge that we have a role to play in limiting global warming to 2°C. To succeed we will need to be both resilient and innovative. FutureSmart™ mining is Anglo American's approach to innovation. It means bringing cutting-edge technological advances and broad, innovative ideas to address mining's intractable challenges, including climate change. Through collaborative partnerships, we are connecting people to find safer, more efficient and more sustainable ways to mine the precious metals and minerals that the world needs. For example, in 2015, the implementation of cleaner fuel, haul management and engine control units by Coal Australia resulted in a decrease in diesel consumption, helping us achieve our scope 1 and 2 emission reduction targets. Clean fuels have also resulted in efficiency gains in Minas-Rio and are being rolled out across the Group. In 2015, the initiative helped us avoid 23,211 tonnes of CO2e and save up to $4 million. With regular planned maintenance, this initiative is expected to last to the end of life of mine or until new technology is developed.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.
The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
Australia
Brazil
Botswana
Canada
Chile
Namibia
Peru
South Africa
United Kingdom

Select country
Zimbabwe
Rest of world

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD($)

CC0.6

Modules
As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.
If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below in CC0.6.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

Climate change is a key strategic issue and falls under the management responsibility of the Group's Technical Director, Tony O'Neill, who is a member of the Board and the Group Management Committee. The Group Technical Director is supported by the Group Head of Safety and Sustainable Development, the Head of Environment and the Lead for Energy and Carbon Effectiveness. The Group Director of Corporate Relations, also a member of the Group Management Committee, Anik Michaud, is responsible for the public policy, social performance and engagement aspects of climate change. The meetings of the Group Energy/Carbon Forum offer energy and environmental practitioners from across Anglo American an opportunity to share updates on performance, good-practice ideas and policy developments.
The Sustainability Committee is a sub-committee of the Board chaired by Jack Thompson (non-executive director). The Committee's role is to oversee material policies, processes and strategies designed to manage material risks and opportunities, including climate change and energy. Climate change and energy are included in every quarterly report to the Board and in business unit performance reports, as well as in the form of an annual 'deep dive' agenda item. The Committee meets quarterly and comprises Jack Thompson (chairman); Mark Cutifani (Chief Executive); Tony O'Neill (Group Technical Director); Sir John Parker (Chairman of the Board); and non-executive directors Mphu Ramatlapeng and Jim Rutherford. Ray O'Rourke served as a Committee member until his resignation from the Board in July 2016. Business unit CEOs and Group Directors of HR and Corporate Relations also participate in the meetings.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	The CEO scorecard is compiled every two months and is the basis for the CEO's performance reporting to the Board. Each business unit CEO has a scorecard that is aligned with what is in the Group CEO scorecard. These include ECO2MAN (GHG and energy reduction) targets. Anglo American has a target of achieving an 8% improvement in energy use and a 22% saving in GHG emissions by 2020, against our projected 'business as usual' (BAU) consumption. In other words, by 2020 our consumption and emission levels will be 8% and 22% lower than they would have been had we not implemented reduction and efficiency measures.
Energy managers	Monetary reward	Emissions reduction target Energy reduction target	A portion of energy managers' variable remuneration is linked to quantitative energy and GHG targets developed through the bottom-up ECO2MAN programme and associated targets.
Environment/Sustainability managers	Monetary reward	Emissions reduction target Energy reduction target	A portion of environment/sustainable development managers' variable remuneration is linked, where relevant, to quantitative GHG and climate change reductions in line with ECO2MAN targets.
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	At Anglo American Platinum, both emission reduction and energy reduction targets are included as individual performance indicators of each corporate executive team member. These indicators form part of the overall deliverables of each Executive, which play a part in determining their final performance rating.
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	In 2017, the Board approved the inclusion of these targets within the executive Long-Term Incentive Plan.
All employees	Recognition (non-monetary)	Emissions reduction project Behavior change related indicator Other: Various	The global recognition programme has three levels – Applaud Now, Applaud Stars and the Applaud Annual Awards – creating both formal and informal ways to acknowledge individuals or teams across the business who have gone above and beyond to complete a task or realise an objective. The awards a linked to our Code of Conduct which is underpinned by our values and the behaviours that all employees should demonstrate in their daily work. One of the key areas of the Code is 'We protect safety, health and environment', so by recognising people who have done something that helped improve health, safety or protect the environment (through the climate change work for example), through our recognition

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
			programme Applaud, we make sure that we are putting our values into action and that we are following our Code. This programme had been paused due to market conditions but was resumed in 2017.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or	Australia, South America, North America, Asia, Europe and Africa. The focus mainly around the areas where Anglo American has a footprint as well as (to an extent)	> 6 years	The Climate Risk and Adaptation (CRA) guideline has been developed in line with the Anglo American Group Integrated Risk Management and Operational Risk Management processes. The CRA guideline is a systematic approach that

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
	committee appointed by the Board	including components of the upstream and downstream value chain.		utilises four layers in order to: identify and analyse climate change associated risks and opportunities; and put measures in place to control those risks. Each business unit submits an annual integrated risk report on the key risks and opportunities (including climate change and adaptation risks) to the corporate centre for review and presentation to the Board. Our approach to adaptation includes building climate-change scenarios using the best available science using our operating models to identify vulnerability and exposure. We also consider adaptation measures in new project stage-gate evaluations.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Two key processes guide how we manage climate-change risks: the Operational Risk Management (ORM) programme for operations, and the Investment Development Model (IDM) for projects.

The ORM guides operations on how to assess risk at each level of activity, with tools to help identify priority unwanted events and the controls we need to put in place and monitor to prevent those events. The Climate Risk and Adaptation (CRA) guideline is a document that describes the activities that should be undertaken (in line with recommended practice) to demonstrate that existing and future weather and climate risks have been adequately considered and controlled during the company's Operational Risk Management (ORM) Process.
By way of example, an increased frequency in extreme rainfall events will require changes in monitoring, infrastructure design and emergency preparedness.

The IDM process and evaluation criteria ensure that climate-change risks and opportunities are embedded in the investment design, including the consideration for alternative low-carbon energy sourcing and the adaptation required for extreme weather and long-term climate change.
Anglo American's specialist business assurance services are responsible for the overall monitoring and assurance of the risk-management process.

Each site (asset level) is responsible for the compilation and submission of a risk and control register, of which the most material risks are rolled up into the business unit risk and control register and ultimately the Group risk and control register (company level). The Group risk and control register, in conjunction with the operational technical assurance reviews, provides the basis for reporting risks to the Anglo American Board Audit Committee and Anglo American Board Sustainability Committee.

CC2.1c

How do you prioritize the risks and opportunities identified?

Climate change risks and opportunities are identified through the Operational Risk Management (ORM) programme for operations, and the Investment Development Model (IDM) for projects. Analysis is included in these processes (for example, in the use of climate scenario models) and risks and opportunities prioritised with the use of multi-disciplinary workshops, involving specialist skills. Each subset (from asset level to company level) of the company (with support from the Anglo American Business Assurance Services) is responsible for the identification, analysis, evaluation, execution and monitoring and review of risks and opportunities pertaining to their area of responsibility. The prioritization process is integrated into the issue based risk assessment layer of the risk management process. Issue based risk assessments involve the investigation and prioritisation of unwanted events using a five-by-five box matrix, which ranks risks in terms of potential impact and likelihood of occurrence. Bow-tie analysis and other root cause analysis techniques are used to further evaluate the risks and identify the controls necessary to prevent, mitigate and ameliorate the potential consequences (thus to ensure the risk is kept to levels in line with the defined risk appetite). The overall prioritisation is based on likelihood of occurrence and potential impact with potential impact covering multiple facets of the business including: material loss/business interruption/physical damage, safety, health, environment, social/community, reputation, legal, and regulatory. For example, we have done work at Venetia where the risk of extreme rainfall events is likely to continue to increase, which has implications for production and safety at open cast operations. As a consequence of this exercise, we will look at storm water drainage requirements to accommodate 1/500 year flood events.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

Our ambition is to create a resilient business that delivers robust profitability and sustainable, positive cash flows through the cycle. The core of our strategy is our position as 'the' diversified miner, giving us options for how and where we choose to allocate capital to grow the business, improve margins, generate returns (deliver value), and helps protect us through commodity and economic cycles. There are four strategic imperatives that will enable us to achieve our ambition:

FOCUS THE PORTFOLIO: we prioritise time and capital on the assets that offer the most attractive long-term value-creation potential: our world-class assets in diamonds, PGMs and copper with benefits from the performance of several other high quality, individual assets across the bulk commodities and other minerals, including iron ore, coal and nickel.

DRIVE CONSISTENT DELIVERY: Maintaining a highly competitive mindset with innovation and outstanding delivery at the forefront of how we drive change.

DEVELOP CORE BUSINESS PROCESSES: Becoming industry leaders in critical areas, extracting maximum value from our assets and products.

DELIVER A HIGH PERFORMANCE CULTURE: Ensuring our organisation and people have the critical core skills to improve returns.

Our climate change strategy is designed to safeguard the business and host communities against climate change risks, and to contribute to mitigating global greenhouse gas (GHG) emissions. We seek to understand the implications of climate change on our value chain and to maximise opportunities associated with the transition to a low-carbon future.

i) Information regarding climate change is reported to the Board Sustainability Committee and executives on a quarterly basis. The information is based on the analysis of GHG and energy data recorded into a central database by all operations; business unit quarterly reports on sustainability issues (including climate change and energy); and results of climate risk assessments on certain operations. This information, together with direct engagement with business units and other relevant internal stakeholders, and a review of the external climate change environment, forms the foundation for the climate change strategy development and review process. For example, a high-resolution modelling exercise for the Los Bronces underground project in Chile was completed in collaboration with the UK Met Office. This modelling exercise informed our catchment-based water-model, air-quality and natural-hazard assessments and control measures.

ii) There are three main aspects of climate change that influence our business strategy: changes in the demand for some of our products (for example, platinum is increasingly used in low-carbon technologies such a fuel cells); the effects of climate regulation and taxation on the performance of parts of our business (e.g. increased operating costs); and the physical and social impacts of a changing climate and their potential impacts on our operations (including security of energy supply) and host communities.

iii) In the short term (1-5 years), climate change has driven more efficient use of energy and emissions reductions via the ECO2MAN programme. For example, in

2015 and 2016, the implementation of cleaner fuel, haul management and engine control units by Coal Australia resulted in a decrease in diesel consumption, helping us achieve our emission reduction targets and are being rolled out across the Group. In 2015, the initiative helped us avoid 23,211 tonnes of CO2e and save $4 million. In 2016, GHG and energy reduction targets were set for each business unit and for the Group. The Anglo American Operating Model provides the framework for integrating energy and emissions management into the business process. The “analyse and improve” and the “service strategy” elements of the operating model are most applicable. Climate change has also triggered a series of climate adaptation studies and adaptation plans for high-risk assets and projects and raised opportunities and challenges in relation to certain products.

iv) The most significant long-term (5-20 year) strategic consideration has been potential risks associated with thermal coal assets in the Group’s portfolio. In 2015, we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. The independent forecasters foresee coal as playing an important role, up to 2040, in electricity production, supporting poverty alleviation and sustaining prosperity even in the 2oC scenario. We recognise responsible coal mining is important for the development of emerging economies but fossil fuels will be increasingly contested by society and, as a result, the role of thermal coal will decline. We are therefore unlikely to make any significant future commitments to thermal coal in the long term.

v) Our operational GHG and energy reduction programme reduces our exposure to carbon taxation and delivers energy cost savings beyond what we believe our competitors are achieving. We are also playing a leading role in driving demand for low carbon technologies that rely on our products (e.g. R&D of platinum-based fuel cells).

vi) The most substantial climate-related business decisions include our aspirational goal to develop a carbon neutral mine by 2030 and the inclusion of long-term GHG reduction targets within the executive Long-Term Incentive Plan. A process is under way to develop the Group’s Sustainability Strategy and, subject to management review, it may include longer-term (2030) aspirational energy- and carbon-reduction targets aligned with our end goal for a carbon neutral mine.
Other examples include:
•In April 2016, the Board supported a special resolution proposed by a group of shareholders that was then passed by shareholders at the AGM. The resolution in support of strategic climate resilience for 2035 and beyond was prepared by the ‘Aiming for A’ coalition of institutional investors, which includes pension fund, church group and charitable foundation investors.
•In February 2017, Anglo American and 12 other companies launched the Hydrogen Council. Through the Council we confirmed our ambition to accelerate investment in the development and commercialisation of both hydrogen and fuel cell sectors. Hydrogen-powered fuel cell electric vehicles offer the most natural solution for zero emission vehicles – emitting only water and requiring little change to the way we are all used to driving and refuelling our cars.
•De Beers is investigating the potential to use the formation of carbonate minerals in kimberlite tailings, the waste rock from diamond mining, as a CCS-technology solution.
•FutureSmart™ mining is Anglo American’s approach to innovation that brings cutting-edge technological advances and broad, innovative ideas to address mining’s intractable challenges, including climate change.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price on carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price on carbon

In regions where carbon pricing is an emerging government policy, we include carbon pricing in our budget guidance and project evaluations. For example, in South Africa, the pricing aligns with the carbon tax design ($8.74 (R120) per tonne with various exemptions that takes it down to an average rate of $3.50 (R48) per tonne). A carbon price is included in assessing brownfield expansion projects (such as was the case for Mafube extension). At our Australian business we previously used a carbon price aligned with the government's carbon pricing mechanism, but no longer do so since the tax was repealed.

We are currently assessing long-term carbon pricing scenarios that impact on the global business, including the demand for our products.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations
Funding research organizations
Other

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Industry Task Team on Climate Change (ITTCC)	Consistent	We are members of the ITTCC in South Africa, which is a non-profit organization that represents energy-intensive industries. The ITTCC is committed to working with industry, business groups and government departments to ensure sustainable economic growth while transitioning to a low-carbon economy. The ITTCC's role is to undertake technical, fact-based studies to ensure that South Africa's policies on Climate Change are based on the best information and best practice and prescribe tangible, achievable ends. As an example, Anglo American's Stan Pillay, previously Chairman of the ITTCC, represented both the ITTCC and Business Unity South Africa (BUSA) at the 'intended nationally determined contribution' (INDC) Parliamentary public hearings in September 2015.	Anglo American actively participates in meetings, provides expert advice and has supported a piece of work to provide a fact base to inform policy development.
International Council on Mining and Metals (ICMM)	Consistent	In 2001, we became a founding member of the ICMM. The ICMM recognises climate change as an undeniable and critical global challenge, and its causes must be addressed by all parts of society. ICMM member companies are committed to being part of the solution. Members support a binding global agreement, carbon pricing, the need to reduce emissions, the use of coal as part of a measured transition to a lower carbon energy mix, greater use of renewables, adapting and helping communities to adapt to	Anglo American provided commentary on drafts of this position through participation on the working group. In 2016, Anglo American chaired the climate change working group responsible for finalising an Operational Adaptation project based on the MiCA tool and completed a post-COP21 policy brief, among other projects.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		changes, considering climate change in planning and engaging and partnering for effective solutions.	
Chamber of Mines in South Africa	Consistent	Anglo American's CEO is a council member of the Chamber of Mines (CoM), which holds a range of positions on carbon policy issues. In general, the CoM seeks to ensure that environmental issues are addressed in a manner that enhances members' contribution to sustainable development and ensures that risks to the viability of the mining industry are identified and managed. The CoM was not supportive of the carbon tax as proposed.	Anglo American provided commentary into the process – the company is supportive of carbon mitigation mechanisms in a way that does not compromise socio-economic imperatives.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

No

CC2.3e

Please provide details of the other engagement activities that you undertake

In 2015, Anglo American joined the COP21 Paris Pledge for Action – a statement which gathered momentum in support of the transition to a low-emissions future. In 2015, the United Nations launched the Sustainable Development Goals (SDGs), many of which are related to climate change. Anglo American was part of the business-sector group giving input into their development and an early champion in promoting their adoption.

In January 2017, at the World Economic Forum's Annual Meeting, 13 leading energy, transport and industry companies launched a global initiative – the Hydrogen Council – to voice a united vision and long-term ambition for hydrogen to foster the energy transition. During the launch, members of the Hydrogen Council confirmed their ambition to accelerate their significant investment in the development and commercialisation of both hydrogen and fuel-cell sectors. These investments currently amount to an estimated total value of €1.4 billion ($1.5 billion) a year. This acceleration will be possible if the key stakeholders increase their backing of hydrogen as part of the future energy mix with appropriate policies and supporting schemes.
The Hydrogen Council is made up of 13 CEOs and chairpersons from different industries and energy companies, including our chief executive Mark Cutifani. All are

committed to help achieve the ambitious goal of staying below the 2oC target, as agreed in the 2015 Paris Agreement.

Anglo American also undertakes a range of engagements specific to various countries in which we operate. For example:
• Anglo American, through our Nickel, Niobium and Phosphates (NNP) operations, was the first mining company to join the Climate Protocol of the State of São Paulo. The initiative is part of the São Paulo State strategy to reduce GHG emissions and take actions to adapt to climate change. This is a pioneering initiative in Brazil presented by the Secretariat of Environment of São Paulo, during the COP-21. In line with Anglo American's support of a fact base informing policy, NNP has also partnered with the Sustainability Study Center of the School of Business Administration of the Getulio Vargas Foundation. One project aims to estimate the financial gain of using woodchips as fuel for the Codemin process instead of coal. Reforestation activities are in place to produce wood used as energy in the kilns of Codemin and in the Catalão dryers. New uses for wood, such as in the nickel ore drying process, are being evaluated.
• In South Africa, Anglo American participates in a wide spectrum of policy engagement processes through its membership of the National Business Initiative (NBI) and BUSA. The NBI is a voluntary association of companies mobilising business leadership and resources for specific sustainability objectives. Anglo American engages with the NBI and feeds into workshops and research processes. BUSA is the representative body of organized business in South Africa. BUSA has played a leading role in facilitating climate change policy workshops and submitting formal comments to the national government in relations to the proposed carbon tax, carbon budgets, pollution prevention plans, GHG reporting, the 'desired emission reduction outcomes' and the country's 'intended nationally determined contribution'. These engagements are undertaken as members of the ITTCC and the Chamber of Mines. Anglo American also served as Chair of the Energy Efficiency Leadership Network (EELN): a collaboration between the Department of Energy (DOE), NBI, and BUSA to assist the South African business sector with skills and capacity building on energy management and sharing of best practice.
• Our copper operations have shared experiences in energy efficiency with government and other companies in workshops and meetings designed to inform a new energy regulation for 2020 in Chile

CC2.3f

What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

During 2016, we reviewed the climate change positions and activities of organisations of which Anglo American and our business units are members to ensure that those organisations do not hold positions on climate change that are contrary to our own.

In addition, Anglo American's policy and position on climate change was approved by the General Management Committee and the Board Sustainability Committee. As such, every business unit is responsible for ensuring that direct and indirect activities are consistent with the Group climate change policy and position.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1+2 (location-based)	100%	22%	2015	18227939	2020	No, but we anticipate setting one in the next 2 years	We have set new long-term targets for energy (extended to 8%) and GHGs (extended to 22%) reduction by 2020. Emissions are projected based on circumstances in line with operating plans (stripping ratios, ore hardness, haul distances, expansions and closures, etc.) and then performance is measured, ex-post, in line with the World Resources Institute's (WRI) Policy and Action Standard. Improvements are achieved by selecting and implementing high value energy efficiency and GHG mitigating and include projects undertaken through operational

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
								improvements and supply chain procurement. In 2011, we launched our operational energy- and carbon management programme, ECO2MAN, following increased recognition of our responsibility to reduce operational GHG emissions, as well as growing concern over the potential bearing on business of the policy responses to climate change. Through ECO2MAN, we have been able to analyse our activities and identify opportunities to reduce energy consumption and carbon emissions. This understanding formed the basis for setting our ambitious target to reduce GHG emissions by 22% against our adjusted 2020 baseline consumption (subject to divestments and significant business changes). ECO2MAN is supported by a mandatory carbon and energy technical standard and related guidance. We are developing the Group's Sustainability Strategy and, subject to management review, it may include longer-term (2030) aspirational energy- and carbon-reduction targets aligned with our end goal for a carbon-neutral mine.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment

CC3.1e

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	20%	60%	We reduced emissions by 19% relative to an adjusted 2016 baseline. We are on track to achieving our 2020 target. In 2016, a total of 320 energy-efficiency and business improvement projects saved 5.8 million GJ in energy consumption, with the avoided energy cost estimated at $90 million. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at $260 million based on 2016 energy prices. GHG emissions savings in 2016 amounted to 4.5 million tonnes (Mt) CO2e.

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?

Yes

CC3.2a

Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Product	Anglo American Platinum is the world's largest producer of platinum group metals (PGMs) with more than half of our products being used to make automotive catalytic converters which reduce emissions from vehicle fleets all around the world (petrol and diesel).	Avoided emissions	Other: own calculations in line with IPA LCA results	19%	More than 60% but less than or equal to 80%	Platinum will invest $100 million, over the period from 2014-2019, in companies that use or enable the use of PGM-based technology in their products or processes. Our longer term partnership research programmes include piloting platinum-based fuel cells for mobile and stationary power systems. We have also successfully piloted fuel cell technology for underground locomotives and in a mini-grid rural electrification project. In February 2017, Anglo American and 12 other companies launched the Hydrogen Council. Through the Council we confirmed our ambition to accelerate investment in the development and commercialisation of both hydrogen and fuel cell sectors. Hydrogen-powered fuel cell electric vehicles offer the most natural solution for zero emission vehicles – emitting only water and requiring little change to the way we are all used to driving and refuelling our cars. Through our PGM Investment Programme activities we are investing in a number of new promising technologies which use PGMs. This includes companies that support or use fuel cell technology/ clean technology for example: · Ballard which is a

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
						Canadian based business providing clean energy fuel cell products that enable optimized power systems for a range of applications. · Altergy Systems is a global leader in the manufacture and supply of proton exchange membrane fuel cells. The company was the first fuel cell company to implement automated assembly lines enabling the high volume, low cost manufacture of fuel cells. We also hold a minority share-holding in Johnson Matthey Fuel Cells Limited which carries out research and development for the enhancement and development of fuel cells and associated hydrogen generation technology from fuels and the commercial exploitation thereof, including the manufacture and sale of fuel cell-related products.
Product	Copper is used in several low-carbon technology and energy efficiency applications. Anglo American produced 577 Kt of copper in 2016. The use of copper in transmission and distribution lines can reduce losses and therefore reduce emissions associated with fossil fuel based power. Electric vehicles and various renewable energy technologies rely on copper. Copper is also used in	Avoided emissions	Other: own calculations in line with the GHG Protocol Standards for emissions accounting	13%	Less than or equal to 10%	The European Copper Institute estimates that incorporating one extra kilogram of copper into expanding the copper conductor diameter can save between 100 and 7,500 kilograms of CO2e emissions.

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
	ICT equipment that can enable dematerialisation and avoid GHG emissions. Demand for copper is expected to increase, given its use in several low-carbon technology applications. Our qualitative assessment to determine implications for product demand for copper indicates that in the transition to a low-carbon economy and under increasing climate constraints, the demand for copper is particularly positive.					
Product	Nickel is currently used in nickel metal hydride, nickel cadmium and lithium ion batteries. These battery technologies enable more efficient energy consumption in vehicles (such as electric vehicles) and facilitate greater penetration of renewable energy technologies allowing for lower energy-related GHG emissions. Renewable energy technologies also rely on nickel-containing alloys to produce turbines, pumps, rotors, storage tanks, etc. Anglo American produced 44500t of Nickel in 2016	Avoided emissions	Other: own calculations in line with the GHG Protocol Standards for emissions accounting	2%	Less than or equal to 10%	Nickel demand is expected to increase due to the growth in low carbon technologies that rely on nickel-containing alloy. Anglo American is currently assessing the changes in demand for these products to understand the opportunity as well as the implications in terms of avoided emissions enabled through the their use.
Product	Kumba sells iron ore which is used to make steel. The use of steel is crucial for the production of wind turbines which is renewable and clean source of	Avoided emissions	Other: own calculations in line with the GHG Protocol	12%	Less than or equal to 10%	Kumba sells iron ore which is used to make steel. The use of steel is crucial for the production of wind turbines which is renewable and clean source of energy

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
	energy production. In addition, Kumba's iron ore has a high lump-to-fines ratio compared to its competitors. During 2016, Kumba maintained their lump-ore to fine-ore ratio at 65:35. This ratio affects the amount of energy required in the sintering process in steel making, enabling a reduction in emissions generated by our clients. A high lump-to-fines ratio enables a significant reduction of emissions.		Standards for emissions accounting			production. In addition, Kumba's iron ore has a high lump-to-fines ratio compared to its competitors. During 2016, Kumba maintained their lump-ore to fine-ore ratio at 65:35. This ratio affects the amount of energy required in the sintering process in steel making. A high lump-to-fines ratio enables a significant reduction of emissions.

CC3.3

Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and/or implementation phases)

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	236	232344
To be implemented*	29	146142
Implementation commenced*	38	98025
Implemented*	342	4500000
Not to be implemented	219	70550

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Fugitive emissions reductions	Coal Australia continued to invest in additional capture and use of rich gas from underground operations through power generation plants and gas exports. This initiative has been ongoing for a number of years but in 2016 the capacity was increased to 129MW (110MW in 2015). This initiative supports the achievement of	55273	Scope 1	Voluntary					

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Anglo American's Scope 1 and 2 emission reduction targets.								
Energy efficiency: Processes	A pilot project was implemented in Los Bronces Water Recirculation System (SAR), the aim was decreasing the number of switch on/off o the pumps and optimise the energy consumption doing the same work necessary (less kWh/m3). The pilot is already being tested and the estimated benefit is close to 2% of energy reduction in the system. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction targets.	2425	Scope 2 (location-based)	Voluntary	560640	286000	<1 year	6-10 years	
Transportation: fleet	Our Copper business implemented star-stop pilot module into hauling fleet to stop the engine in queues and save diesel. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction targets.	17659	Scope 1 Scope 3	Voluntary	195556	600000	1-3 years	6-10 years	
Energy efficiency: Building services	De Beers undertook various energy efficiency measures including: installation of harmonic filters and LED lamps, replacement of motor drives with higher efficiency DC drives and optimized use of ATCO dorms (to take some dorms out of service). These initiatives contributed	13264	Scope 2 (location-based)	Voluntary	1466765	4138747	1-3 years	16-20 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	to the achievement of Anglo American's Scope 1 and 2 emission reduction targets.								
Transportation: fleet	De Beers implemented energy management of the hauling fleet through DEEMS. This included implementation of a fuel management system (manual / automatic) to accurately account for fuel used on EMV equipment. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction targets.	8403	Scope 1 Scope 3	Voluntary	2505562	0	<1 year	6-10 years	
Transportation: fleet	Truck DOH Improvement Project-Sishen Reduction in Shift change delays and Exceedance on breaks taken through improved discipline control measures and accountability. A new shift roster was implemented to further optimise shift delays. Reduction in delays at the waste dumps coming from traffic limitations at start-ups. Reduction in over-trucking/no suitable excavator by optimising truck re-allocation and shovel operational and/or maintenance off times. Reduction in unmanned trucks through foreman accountability and appointment of additional operators. Reduction in truck waiting times during refuelling	4137	Scope 1 Scope 3	Voluntary	1210874	15052	<1 year	11-15 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	by implementing additional fuel bay (Nooitgedact), using bowsers to fill trucks in North Mine region and implementing opportunity refuelling during blasting.								
Transportation: fleet	Kumba Iron Ore's Sishen mine implemented a shovel DOH and Tempo Improvement Project. The project improves the clearing of entrances and reduces hang-time. This improves truck cycle time payload to achieve 100% PLM Internal Dumping Opportunities	4898	Scope 1 Scope 3	Voluntary	1433654	15052	<1 year	11-15 years	
Energy efficiency: Processes	Our Platinum business unit implemented a steam leak rectification programme and a steam trap maintenance programme. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	7048	Scope 1	Voluntary	0	0	<1 year	3-5 years	
Energy efficiency: Processes	Our Platinum business unit undertook electrode heater optimisation contributing to Anglo American's Scope 1 and 2 emission reduction target.	2867	Scope 1 Scope 2 (location-based)	Voluntary	288246	371449	1-3 years	6-10 years	
Energy efficiency: Processes	Anglo American Platinum implemented various projects to increase compressor efficiencies, optimise compressed air systems and match compressed air delivery to	8101	Scope 1 Scope 2 (location-based)	Voluntary	814625	16660	<1 year	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	process requirements. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.								
Energy efficiency: Processes	Anglo American Platinum replaced inefficient and faulty equipment with more efficient technology. For example V-Belts were replaced with efficient belt technology. Also, a leak rectification programme was introduced that replaced faulty pressure vessels and pipes to minimise electricity consumption. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	2767	Scope 2 (location-based)	Voluntary	278269	0	<1 year	3-5 years	
Energy efficiency: Processes	Anglo American Platinum undertook several projects to reduce consumption coal and other fossil fuels. Projects that were undertaken include: APC for hot gas generators are now flash drying plants which improves stability and operation of the plant, the boiler efficiency deterioration issue was addressed and the oxygen analyser reliability was also improved. These initiatives contributed to the achievement of	52149	Scope 1	Voluntary	124587	101966	<1 year	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Anglo American's Scope 1 and 2 emission reduction target.								
Energy efficiency: Processes	Anglo American Platinum optimised a variety of processes to decrease energy consumption. Some of these projects include: combined cycle turbine cogeneration, minimizing the amount of reverts being generated and recycled back to the furnaces. These projects all resulted in a significant energy savings. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	282727	Scope 1 Scope 2 (location-based)	Voluntary	105780142	44228892	<1 year	3-5 years	
Waste recovery	Heat recovery projects were undertaken at our platinum operation to improve efficiencies and reduce electricity consumption. These projects focused on heat recovery around the stack gas and blowdown operations as well as heat recovery from viable compressors. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	14104	Scope 2 (location-based)	Voluntary	88965	174800	1-3 years	3-5 years	
Transportation: fleet	Anglo American Platinum implemented several products to reduce mobile diesel consumption. These included: Auto Dispatch and	6344	Scope 1 Scope 2 (market-	Voluntary	2178630	312350	<1 year	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Turn-by-Turn assistance; KOM 930E fleet systematic upgrade of Fuel Systems from HPI to MCRS; Effective management of diesel to achieve savings of diesel. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.		based)						
Transportation: fleet	Coal South Africa implemented several products to reduce mobile diesel consumption. These included: the re-calibration of the engines will save between 3 and 6% diesel. The EH3500 fleet consumes on average 80 litres per hour (17 Trucks - 11 for 2015 and 6 for 2016). The EX3600 fleet consumes on average 150 litres per hour (2 EX3600). These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	993	Scope 1	Voluntary	0	0	<1 year	6-10 years	
Energy efficiency: Processes	Coal South Africa implemented various measures to achieve plant optimisation focussing on operational efficiency. These initiatives contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	1530	Scope 1 Scope 2 (location-based)	Voluntary	0	0	<1 year	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Transportation: fleet	Truck Payload Improvement - Sishen In FY2015 a voluntary payload optimisation for haul trucks at Sishen mine was implemented. The project adjusted the target payloads to between 110% and 115% of the rated payload and accounted for varying payload management readings at the loading zone. The overload truck settings were aligned with the original equipment manufacturer 10-10-20 principle. The monthly payload distributions and averages were monitored to ensure alignment with manufacturer's standards and no overloading. This project was continued in 2016 and further payload improvement was realised. The project resulted in a further annual diesel saving of 1117 m3. Beyond the direct scope 1 emissions reductions Kumba's scope 3 emissions from 'fuel- and energy-related activities (not included in Scopes 1 and 2)' will also be reduced. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	2992	Scope 1 Scope 3	Voluntary	875758	15052	<1 year	11-15 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Transportation: fleet	Truck Traffic Management improvement - Sishen Optimisation/Reduction of Mandatory Stops on-route (40%-60% reduction in stops) implemented across the mine. Implementation of Modular Mining Dispatch 6 system with automatic dispatching per mining region. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.	9301	Scope 1 Scope 3	Voluntary	2722491	2637048	<1 year	11-15 years	
Transportation: fleet	Overall Efficiency Improvement on the KOM 730 Truck Fleets - Kolomela Voluntary improvements were made to the payload management system for haul trucks at Kolomela mine. The project involved adjusting the target payloads to 110% of the rated payload and accounted for varying payload management readings at the loading zone. The overload truck settings on the Komatsu 730E AC drive fleets were aligned with the original equipment manufacturer specifications. The monthly payload distributions and averages were monitored to ensure alignment with equipment manufacturer standards and no overloading. Also implemented was the Dynamic	1950	Scope 1 Scope 3	Voluntary	570769	15052	<1 year	21-30 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Dispatching and otpimisation of matching the KOM 730 trucks to the bigger shovels, resulting in notably reduced idling, spotting and queueing. The project was continued in 2016 and resulted in an annual diesel saving of 727 m3. Beyond the direct scope 1 emissions reductions Kumba's scope 3 emissions from 'fuel- and energy-related activities (not included in Scopes 1 and 2)' will also be reduced. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.								
Transportation: fleet	Payload Improvement on 90t Hauling fleets - Kolomela A payload management project was rolled out to optimise the loading of haul trucks at Kolomela. The project focused on the target payloads and aimed to effectively increase the number of passes per payload. The monthly payload distributions and averages were monitored to ensure alignment with original equipment manufacturer standards. This project was continued in 2016 and resulted in further diesel savings of 157 m3 on the 90t Fleets. Beyond the direct scope 1 emissions reductions	422	Scope 1 Scope 3	Voluntary	123544	15052	<1 year	21-30 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Kumba's scope 3 emissions from 'fuel- and energy-related activities (not included in Scopes 1 and 2)' will also be reduced. This initiative contributed to the achievement of Anglo American's Scope 1 and 2 emission reduction target.								

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low carbon product R&D	Anglo American has launched a $100 million fund to invest in platinum-based technology companies in South Africa. Platinum-based fuel cells provide a significant economic and environmental development opportunity for the country by facilitating the provision of clean, reliable and cost-effective power. In Australia, we hold a 19.2% interest in MBD Energy, which is undertaking applied research into an algal synthesiser process that involves entrapping CO2 from power station fuel gases for the production of biodiesel and other by-products.
Internal price on carbon	An internal price of carbon is used for the budgeting process for scope 1 emissions in South Africa, and as a downside risk for scope 2. Sensitivity testing against carbon pricing scenarios is done for coal.
Dedicated budget for energy efficiency	Each of our business units are required to budget for projects (and where necessary the capital requirements) to meet their energy and carbon emissions savings targets which have been decided through the implementation of ECO2MAN.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s)

Publication	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	Management Approach – 19; Stakeholder Engagement – 21; Material Issues – 22; Corporate Social Investment – 50; Water Quality – 63; Energy Security - 67	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC4.1/sustainability-report-2016.pdf	
In voluntary communications	Complete	Governance – 6; Policy Engagement – 8; Reducing operational emissions and energy use – 10; Climate change and our portfolio – 12; Adaptation – 12; Innovation – 17; Working with our suppliers – 19;	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC4.1/Anglo American Climate Change Supplement.pdf	
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Develop core business processes- 27-28; Key Performance Indicators- 34-35	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC4.1/annual-report-2016-interactive-v2.pdf	

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation
Risks driven by changes in physical climate parameters
Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	The draft bill on carbon tax was issued by the South African government in 2016. While certain policy and technical aspects remain outstanding, we are evaluating further	Increased operational cost	1 to 3 years	Direct	Very likely	High	The estimated exposure to carbon tax is $5.1 million (R70 million) (assuming no pass through in the electricity price as government has indicated	Anglo American has proactively engaged in the design of the tax through providing comments on draft designs and through our involvement in Industry Task Team on Climate Change (ITTCC) and as members of the Chamber of Mines,	We estimate in excess of $12 million has been invested in energy savings projects, research, policy development and developing climate change fact bases in

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	opportunities to reduce energy use and GHG emissions and options to source carbon offset credits. The proposed tax would increase energy and management costs at all of our South African operations (affecting Platinum, Coal South Africa, Kumba Iron Ore and De Beers business units). These operations collectively emitted 1 764855 tCO2e of Scope 1 emissions in 2016. There remains significant opposition to the carbon tax, including from within government. If implemented, the scheme is expected to commence in 2018 at the earliest. Based on the current design, the tax will commence						will be the case initially).	Business Unity South Africa and the National Business Initiative. Our ECO2MAN energy and GHG management programme mitigates our exposure to carbon taxation by reducing operational GHG emissions. In 2016, a total of 320 energy-efficiency and business improvement projects saved 5.8 million GJ in energy consumption, with the avoided energy cost estimated at $90 million. Ongoing GHG emissions savings in 2016 amounted to 4.5 million tonnes (Mt) CO2e. We have set new standards on operation energy efficiency across the Group. Challenges exist with regard to reducing GHG emissions associated with our South African coal	South Africa since 2011.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	at an initial rate of $8.74 (R120)/tonne CO2e, with 10% per annum escalation up until 2020, at which point the tax rate and tax free exemptions will come under review.							operations. Currently, there are no viable technologies to extract low-concentration fugitive methane from mine ventilation air. We have made use of mobile flaring units at New Denmark colliery in South Africa to reduce the intermittent methane volumes drained from boreholes drilled into underground workings. Opportunities to flare are limited by very low inherent methane concentrations. Carbon offset projects will be pursued to further reduce emissions. Our budget guidelines include provision for the SA carbon tax and the guidance for new investments evaluations include	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								sensitivity to carbon pricing.	
International agreements	COP 21 concluded with the Paris Agreement, which has the purpose to: • Hold the increase in global average temperatures to well below 2˚C, and pursue efforts to achieve 1.5˚C above pre-industrial levels; • Improve the ability to adapt to adverse climate change and foster low carbon emissions development; and • Support funding, consistent with a pathway towards low carbon emissions and climate resilient development. The Paris Agreement marks a milestone in climate negotiations and for the first time establishes a regime to limit global warming to	Other: Uncertainty and variation of regulatory impact across the portfolio	3 to 6 years	Direct	Likely	Unknown	Financial implications will only become evident as countries develop and implement domestic policies that will impact our different operations.	The Anglo American Operating Model provides the framework for integrating energy and emissions management into the business process. We have implemented ECO2MAN across the Group, with an emphasis on implementing energy and emission savings. ECO2MAN is underpinned by a technical standard and site level reduction targets. In October 2015, the Board Sustainability Committee ratified the Anglo American 2020 reduction targets of 8% for energy and 22% for GHG emissions. These targets were derived taking into account the current cash flow and economic	Costs form part of overall operating costs.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	below 2˚C. The negotiated outcomes will influence national policies and energy technology choices for decades into the future. All countries in which Anglo American operates will be required to contribute to the global effort to deliver on the Paris Agreement. Domestic policies will likely follow where they are not in place already presenting a portfolio risk. For Anglo American the Agreement provides further signals that the global economy is becoming increasingly carbon constrained and as such we need to continue with efforts to reduce our direct and value chain emissions in order							constraints. Through De Beers, we have started investigating the potential for mineral carbonation of kimberlite tailings as a CCS-technology solution. We are working with recognised experts on climate science such as the UK Meteorological Office to understand and prioritise adaptation controls to future climate and extreme weather risks. For vulnerable operations, the Anglo American ORM process is used to evaluate climate risks and critical controls. Adaptation measures are also considered in new project stage gate evaluations. We are working with governments and industry to develop equitable and effective climate change policies and	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to remain competitive. Key impacts for our business include: • Changing demand and markets for our products: In the transition to a low carbon future, thermal coal becomes vulnerable, whilst platinum, copper and nickel could benefit from new energy technology markets; • Increasing disclosure and regulatory compliance: Energy and GHG emissions policies will establish more stringent reduction goals, affecting our global operations; and • Site impacts: Integrating our adaptation to the physical impacts of climate change, such as water scarcity and more frequent extreme							technologies to facilitate the transition to a lower carbon future. The engagements with the South African government on carbon tax and energy efficiency incentives are ongoing. A range of carbon pricing and offset/incentive policies expected to emerge in all our operating geographies.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	weather with local planning.								
Fuel/energy taxes and regulations	Countries are developing energy efficiency regulations that will affect our operations. The Department of Energy in South Africa is developing regulations that will require companies to measure and report energy as well as develop and submit Energy Management Plans. Energy Management Plans are to be developed by companies' with annual energy use in excess of 400 TJ. Anglo American's operations in South Africa would significantly exceed this threshold requiring that the company report energy , submit Energy	Increased operational cost	1 to 3 years	Direct	Very likely	Low	Zero. Our ECO2MAN programme places us in a position to meet the expected requirements with no additional cost.	We have implemented an energy and carbon management (ECO2MAN) programme across the Group since 2011. Through ECO2MAN, we are able to analyse our activities and identify opportunities to reduce energy consumption and carbon emissions. ECO2MAN is underpinned by a carbon and energy technical standard and related guidance, and site-level reduction targets. The targets constitute a reduction against current business plans, which take into account known factors influencing performance, such as stripping ratios, ore hardness and depths, haul	Zero. Our ECO2MAN programme places us in a position to meet the expected requirements with no additional cost.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Management Plans and report on progress with respect to those plans. This will affect our Platinum, Coal, Diamond and Iron Ore operations in South Africa. In Chile the government has developed the Chilean Energy Efficiency Action Plan 2012–2020 which encourages the mining sector and industrial consumers to adopt energy efficiency measures, including smart energy systems. There has been significant discussion and engagement regarding driving energy efficiency and renewable energy investment but no regulations or formal targets are currently in place							distances, expansions and closures. Performance is driven through the implementation of discrete projects that reduce energy and emissions intensity at the operations concerned. Anglo American's Operating Model provides the framework for integrating energy and emissions management into the business process. In evaluating operational performance, in addition to measuring energy savings achieved, we assess the project pipeline and new opportunities identified. Our copper operations have shared experiences in energy efficiency with government and other companies in workshops and	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								meetings designed to inform a new energy regulation for 2020 in Chile. Anglo American engages proactively around the draft energy efficiency regulations in South Africa through our involvement in the ITTCC, the Chamber of Mines, the National Business Initiative and Business Unity South Africa.	

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	Working with the UK Met Office, we undertook early	Increased capital cost	>6 years	Direct	More likely than not	Medium-high	Minas Rio lost approximately two months of production due	Anglo American seeks to understand the physical	Costs of various adaptation studies have

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	climate studies in 2010-2011, ranking all Group operations and projects for climate vulnerability. Our highest risk sites are located in Peru and Chile, with several of our other operations also vulnerable to extreme weather events. In 2012-2014, we built low-resolution climate scenarios for vulnerable regions, seeking to develop best practice guidance for our operations and new investment projects. We selected De Beers' Venetia diamond mine, located in a hot						to abstraction restrictions in 2016. In the order of $6 million was spent on modifying the chemistry of the water as well as the acquisition and installation of additional pumping capacity at the tailings dam to increase the use of process water recirculated and stored in the tailings dam reservoir.	implications of climate change for our operations and neighbouring communities, and to implement appropriate adaptation responses. Key elements of our approach include: •building climate scenarios using the best available science •using our Operating Model to identify vulnerability and exposure •integrating critical controls into operational risk management. Among the key adaptation measures are the considerations for catchment impacts, including long-term water	amounted to $744,100

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	semi-arid region in South Africa, as the pilot site for integrating climate risk responses into Anglo American's Operating Model. Using a number of regional climate change models, the scenarios projected climatic variables up to mine closure and beyond, with risks relating to extreme rainfall events, extended periods of drought and steadily increasing temperatures. The adaptation team spent time with the mining function at Venetia to clarify and explore the							supply security, the community exposure and changes in mine and equipment design (for example, stormwater drainage, slope stability and ventilation), and in hazard monitoring and emergency preparedness. Direct management action has not been taken given the long-term and uncertain nature of the risk. Management action has been focused on understanding the potential changes and required monitoring and critical controls. As a next step, we plan to undertake dynamic quantitative	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	implications of the scenarios. For example, the distinct rise in temperature has significant implications for water recovery from the tailings dam and the mine's ventilation requirements.							modelling of the scenario indicators and their financial impacts on Anglo American's product portfolio. This analysis is expected to be finalised in 2018.	
Change in precipitation pattern	Availability of water is central to mining and thus has the potential to impact Anglo American's core business. Potential changes in precipitation patterns have been less certain in the climate change adaptation studies undertaken so far. However, in general, changes in rainfall variability may	Reduction/disruption in production capacity	Up to 1 year	Direct	More likely than not	Medium-high	As an indication of the potential impacts of extreme weather events: as a result of snow and rain in Chile we lost 28 production days at our copper operations. Minas Rio lost approximately two months of production due to abstraction restrictions in 2016. In the order of $6 million was	Direct management action has been taken in relation to current rainfall variability involving developing and implementing water efficiency technologies to reduce water dependency and projects to improve resilience against physical impacts of extreme weather events. At De Beers, management action has been	Costs of various adaptation studies have amounted to $494,100. Anglo American Platinum has spent $3,641,661 (R50 million) on upgrading the Polokwane Sewage works to ensure additional water to Mogalakwena, $728,332 (R10 million) on improving the reservoirs in Thabazimbi, $1,383,831

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	cause operational disruptions due to floods and droughts (which impact on energy security), present risks to the health and safety of employees and local communities, and may negatively affect land rehabilitation outcomes. As a result of snow and rain in Chile we lost 28 production days at our copper operations. All of our platinum operations within the Limpopo river basin are in water stressed areas. In addition, there are challenging socio-economic circumstances with high						spent on modifying the chemistry of the water as well as the acquisition and installation of additional pumping capacity at the tailings dam to increase the use of process water recirculated and stored in the tailings dam reservoir.	focused on understanding the potential changes and identifying the critical controls and monitoring requirements. Anglo American Platinum has been investing in the provision of water available for communities in which we operate: the Amandelbult complex invested in a mobile wastewater treatment plant, water-purification plant, a waste-disposal unit and water tanker to bring clean water to the community. Anglo American Platinum have implemented a long term bulk water strategy and infrastructure	(R19 million) on a Dissolved Air Flotation (DAF) system at Rustenburg and $582,666 (R8 million) on improving the infrastructure at the Northam Sewage Works and $873,999 (R12 million) at the Amandelbult operation on a provision of water to the community.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	poverty levels and poor infrastructure. This means that access to secure water and community opposition is a risk. For example, water supply to the Rustenburg circle and Thabazimbi circle has been a concern for several years because of a continued increase in the demand for potable water in the area by other users (in August 2015 Mogalakwena mine experienced community protests and public violence). In the reporting year the Department of Water and Sanitation issued an							plan, to protect, manage and maintain water supply to their operations. Anglo American Platinum is a representative member and chairperson of the Executive Committee of the Olifants River Joint Water Forum. The water resources team at Minas Rio developed an operational water balance, hydrological model and simulations to predict water abstraction stoppage periods in the Peixe River during the dry season. The current contingency plan has been implemented comprising the acquisition and	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	instruction to reduce water consumption as a result of the drought. This directly impacts our Rustenburg and Amandebult complex mines. One of the biggest challenges faced by the Minas-Rio operation is the water scarcity that affects the South-Central region of Brazil. Since 2012, rainfall has been below the historical average. From July 16th to November 15th 2016, water abstraction from the Peixe River was paralyzed to ensure the maintenance of residual minimum flow in the river, as							installation of additional pumping capacity at the tailings dam to increase the use of process water recirculated and stored in the tailings dam reservoir, as per its design.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	an environmental control.								
Change in precipitation extremes and droughts	Los Bronces is Anglo American's largest operation in Chile and one of the largest copper deposits in the world. Water constraints in 2015 led to a decrease in production, but returned to normal in the final quarter of 2015 following snowfall. This has forced the team to develop and implement a series of water-efficiency measures and seek alternative, non-competing sources of water to ensure the continuity of adequate water supply for the	Reduction/disruption in production capacity	1 to 3 years	Direct	Virtually certain	Medium	Total copper production at Los Bronces in 2016 was 307,200 tonnes. The water restrictions had a net negative impact on production of approximately 18,000 tonnes in 2015. The resultant financial loss was approximately $90.5 million.	In 2016, we partnered with the UK Met Office on high-resolution modelling for our Los Bronces operation in Chile. The scenario data will be used to inform our catchment-based water model, air quality and natural hazard assessments and control measures. Los Bronces continues to mitigate water supply challenges by implementing technical solutions that promote water efficiency and water resilience. Water is transported to	Recent water project expenditure at Los Bronces was US$74 million and is considered significant in relation to the overall operating costs of the operation.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	operation. This is resulting in an increase in costs associated with purchasing and transporting water.							the operation via a 56-kilometre pipeline from the Las Tórtolas tailings dam using a special water-recycling system. A significant investment in a water recycling system allows the site to recycle 66% of available water. Other reduction initiatives include reducing the evaporation in tailing dams as well as improving tailings deposition. The site designed an evaporation cover trial for implementation in 2017 in conjunction with a feasibility study for expanding the use of thickeners, and investigating other technology	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								to recover water from tailings dams as part of its long-term efficiency plan. The efficiency strategy will be reviewed and optimised in 2017. The operation is also expanding its engagement with regional stakeholders and potential water partners and evaluating new water sources, ranging from water transfer schemes, to regional desalination. In the long-term, more stringent environmental conditions, competing demand and continued dry conditions will continue to challenge security.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	A changing climate has the potential to exacerbate electricity supply challenges affecting our operations Brazil, where approximately 65% of national electricity comes from hydropower. In 2015, the south-eastern region of Brazil experienced the worst drought in more than eight decades putting significant pressure on electricity generation capacity. This caused electricity price increases and supply outages (although this did not result in any production stoppages at Anglo American operations).	Reduction/disruption in production capacity	Up to 1 year	Indirect (Supply chain)	Likely	Medium-high	Costs will vary depending on the length of a power cut and the effect on production. Production stoppages at Platinum's Mototolo Concentrator (in the region of 55 hours) at an estimated cost of $1,602,331 (R22m). This excludes the time required to achieve plant stability.	In Brazil, Anglo American is engaging with government around the electricity supply sector. Efforts are being made to improve efficiency and reduce energy consumption at our Brazilian operations. In the event that the national power utility is unable to provide electricity Anglo American will investigate alternative power sources and may revert to the use of diesel generators for power generation. The cost estimate for this response strategy was quantified by calculating the cost to generate electricity from	The cost to generate electricity using diesel generators amounted to approximately $0.13/kWh compared to approximately $0.075/kWh which Brazil currently pays for electricity from the national power utility (hydro-powered grid). Other costs associated with engaging with utilities form part of normal operating costs.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	The drought led to more thermal generation. This may also contribute to climate change mitigation-related risks faced by the operations. The drought has eased and, while the underlying supply risk nonetheless remains, it has lessened significantly owing to increased use of thermal-power generation. Extreme weather has also affecting electricity supply infrastructure at Anglo American Platinum's Mototolo Concentrator. Poor maintenance by the regulator							diesel generators compared to the current electricity price Anglo pays to the national utility at its Brazil operations.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	(Eskom) coupled with heavy rainfall in 2016 caused production stoppages during the reporting year.								

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	Independent forecasters foresee coal as an important part of the energy mix up to 2040, even in those scenarios that successfully limit global warming to 2oC. Coal, primarily through its role in electricity production, has a critical role in supporting poverty	Reduced demand for goods/services	>6 years	Direct	More likely than not	Medium-high	Underlying EBIT for coal operations was $ 1,112 million in 2016 ($457 million in 2015).	In 2015, we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. The exercise highlighted the continued role of thermal coal in the global energy mix, even within the 2oC Scenario, with an	Our investment in clean coal technology amounts to approximately $10 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	alleviation and sustaining prosperity. It would be detrimental to the development prospects of many of the world's emerging economies and poorest countries, to simply stop mining coal. That said, fossil fuels will be increasingly contested by society and, as a result, the role of thermal coal will decline. Thermal coal supply is the most significant climate exposure for Anglo American, with the indirect downstream GHG emissions amounting for 108 million tonnes of CO2 annually. Our coal business represented 22.75% of our revenue for 2016. 48% of our coal business, by revenue, relates to metallurgical coal used in the production of steel.							increasing contribution from alternative low-carbon energy sources, and the great need for deployment of carbon capture and storage (CCS) technologies. We are participating in the development of carbon capture and storage and clean coal technologies various investments: we sponsor research to use algae to sequester carbon and for bioremediation. In Australia, we voluntarily contribute to the Coal 21 Fund for development of low emission technologies. In South Africa we are founding members of the Centre for Carbon Capture and Storage. Through the World Coal Association and the Coal Industry Advisory Board, we engage with governments to inform policy for the effective uptake of new technologies	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	However, there is limited substitution for metallurgical coal in steel making. Coal is an indispensable element of steel production, which is a critical material in the provision of renewable energy. At present, we do not believe that there is any viable alternative to metallurgical coal. We have high-quality assets in Australia, Colombia and South Africa, producing the particular products our diverse customers need, in both metallurgical coal (for steel manufacture) and thermal coal (for electricity generation) applications.							under the global platform for accelerating coal efficiency (PACE). We also invest directly in reducing our emissions. Savings in GHG emissions due to ECO2MAN projects implemented since 2011 amounted to 19% largely through the use of coal mine methane drainage for power generation at our underground operations in Australia. We are unlikely to make any significant future commitments to thermal coal in the long term.	

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	During 2013, regulations on the allowance for energy efficiency savings in terms of section 12L of the South African Income Tax Act as amended came into operation. Tax incentives were introduced for businesses that can show measurable energy savings. The 12L regulation allows for a $0.07 (R0.95)//kWh tax allowance for energy savings and sets out the process for determining the significance of	Reduced operational costs	1 to 3 years	Direct	Likely	Medium	The estimated potential tax rebate is in the region of $11 million as well as the ongoing energy cost savings associated with projects.	This will require the third party (registered) monitoring and verification of all viable and/applicable projects within Anglo American's South African business units and/or operations. Tax rebates based on planned and implemented projects are expected for Anglo American Platinum (8 projects at Mogalkwena), De Beers (9 projects at Venetia), Kumba Iron Ore (4 projects at Sishen and 2	No cost ($0): there is a net benefit (this is the model offered by energy service companies). As an example M&V costs at Coal SA amounted to $12,782 but savings and the tax rebates result in a net benefit.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	energy efficiency savings, and the requirements for claiming the proposed tax deduction. Energy security is a major risk to Anglo American, and in light of the 12.7% 2015 increase and a further 9.4% (2016) tariff increase, our ECO2MAN programme affords us opportunities, demonstrated by a $90 million saving in avoided energy input costs for global operations in 2016. Opportunities are available for our South African business units to utilise the 12L tax incentive regulation, translating to a conservative $11 million (provided							projects at Kolomela) and Coal SA (1 project at Goedehoop and 1 project at Landau Colliery).	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the benefits outweigh the cost of third party measurement and verification). With the potential of upcoming regulation requiring the submission of a five-year Energy Management Plan and annual progress reporting, there is opportunity to align this with the ECO2MAN programme. As an example, Sishen (Muba Iron Ore) implemented a project to improve traffic management on hauling fleets. The energy saving, coupled with the 12l tax rebate would reduce operating costs by a net amount of $ 237 253.								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	The South African carbon tax bill allows for the use of domestic offset credits against 10% of tax exposure. Draft regulations on the use of offsets were published in June 2016. We are evaluating options to source cost-effective carbon credits. This presents opportunities for our South African operations (affecting Platinum, Coal South Africa, Kumba Iron Ore and De Beers business units) to mitigate risk (reduce our carbon tax liability) but also to potentially generate an additional income stream.	Reduced operational costs	1 to 3 years	Direct	More likely than not	Low-medium	With regard the draft South African carbon tax bill, it is estimated that offsets could reduce compliance costs by $182,083 (R2.5 million)//pa.	Carbon credits to be transacted in accordance with Anglo American's Treasury and Supply Chain policies and requirements. Such transactions will consider access to both project specific offset credits as well as the carbon market supply. As an example, Anglo American's Kumba Iron Ore have identified and implemented various carbon-offset projects. These have included: 1. A bamboo plantation, with over 1000 trees covering 4 hectares; 2. Installing domestic solar water heaters in houses; 3. Undertaking a camelthorn tree preservation	To be determined at a company level. Anglo American's Kumba Iron Ore has invested just over $145,666 (R 2 million in bamboo and solar in pilot projects in preparation for the offset mechanism. De Beers has invested $50,000 in the project exploring CCS mineralization in kimberlite and plans to invest additional time and $2.2 million (excluding site scale pilots).

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								project aimed at creating an offset area to preserve vegetation; and 4. Solar powered facilities at Heuningkranz exploration site. De Beers has started investigating the potential to use the formation of carbonate minerals in kimberlite tailings, the waste rock from diamond mining, as a CCS-technology solution. In 2016, De Beers completed a review of previous mineral-carbonation studies at mine sites. Currently, a group of expert employees is working with external experts from the University of British Columbia, Monash University, and	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								the University of Queensland to assess if CO2 could be stored in kimberlite tailings at Venetia mine in South Africa and at Gahcho Kué mine in Canada. In addition, De Beers is supporting academic-focused research at Voorspoed mine in South Africa, to better understand carbonation pathways and rates, as well as carbonate-mineral preservation, in kimberlite tailings in a southern African climate over a long time period.	
International agreements	Over the longer-term it is envisaged carbon offsets, and in particular international	Reduced operational costs	3 to 6 years	Direct	More likely than not	Low-medium	Uncertain	Anglo American is considering options for long-term partnerships, which will	To be determined. None at this stage.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	forestry (REDD+) credits will play a significant role in meeting regulatory emission caps. In this regard Anglo American is considering options for long-term partnership with companies engaged in REDD+ initiatives.							enhance our efforts in the transition to the future low-carbon economy. We will continue to engage in multi-stakeholder initiatives and contribute to a well-designed carbon pricing scheme. Carbon credits to be transacted in accordance with Anglo American's Treasury and Supply Chain policies and requirements. Such transactions will consider access to both project specific offset credits as well as the carbon market supply.	

CC6.1b

Please describe your inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC6.1c

Please describe your inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	International pressure to reduce GHG emissions from mobile and stationary sources driven by internal combustion engines and from the generation of electricity is putting pressure on the development of alternative forms of energy conversion, such as fuel cells. As Proton Exchange Membrane (PEM) fuel systems – which are used in fuel cell electric	Increased demand for existing products/services	1 to 3 years	Direct	Likely	Medium	Assuming that supply and other demand were to remain unchanged, an increased demand for PGMs for use in fuel cells would be to cause an increase in the PGM basket price. A $7.28 (R100) increase in the PGM basket price of 1% is expected to increase EBIT by approximately $12,235,980	Our longer term partnership research programmes include piloting platinum-based fuel cells for mobile and stationary power systems. We have also successfully piloted fuel cell technology for underground locomotives and in a mini-grid rural electrification project. In February 2017, Anglo American and 12 other companies launched the	Anglo American Platinum will invest $100 million, over the period from 2014-2019, in companies that use or enable the use of PGM-based technology in their products or processes. For example, we invested $2,476,329 (R34 million) in Greyrock Energy.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	vehicles – contain PGMs as catalysts, the emerging fuel cell industry presents a major demand segment for the global platinum mining industry. With large scale manufacturing and further research and development, capital costs are expected to decrease, which should open up new markets. Anglo American Platinum is the world's largest producer of platinum group metals (PGMs) with more than half of our products being used to make automotive catalytic converters which reduce emissions from vehicle fleets all around the world (petrol and diesel). On a						(R168 million). Amplats' EBIT in 2016 was $16,096,140 (R221 million).	Hydrogen Council. Through the Council we confirmed our ambition to accelerate investment in the development and commercialisation of both hydrogen and fuel cell sectors. Through our PGM Investment Programme activities we are investing in a number of new promising technologies which use PGMs. This includes companies that support or use fuel cell technology/ clean technology for example: • Ballard which is a Canadian based business providing clean energy fuel cell products that enable optimized power systems for a range of applications. • Altergy Systems is	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	regional basis, for South Africa we see an opportunity to position South Africa both as a market and as a manufacturing location for fuel cell products. The creation of a fuel cell industry, along with manufacturing, installation and maintenance jobs, is aligned with the national development plan and government's industrial development priorities. For example, in 2016, we invested in US-based Greyrock Energy, which is developing and commercialising gas-to-liquids technology used to produce clean fuels from stranded or flared gas.							a global leader in the manufacture and supply of proton exchange membrane fuel cells. The company was the first fuel cell company to implement automated assembly lines enabling the high volume, low cost manufacture of fuel cells. We also hold a minority share-holding in Johnson Matthey Fuel Cells Limited which carries out research and development for the enhancement and development of fuel cells and associated hydrogen generation technology from fuels and the commercial exploitation thereof, including the manufacture and sale of fuel	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								cell-related products.	
Other drivers	The South African renewable energy bid programme provided the opportunity for Anglo American to invest in the Kathu Concentrated Solar project. The 100 MW project has achieved financial closure, with construction to commence in 2018. The project was sold to GDF Suez and will be developed on property made available by Kumba Iron Ore, without additional investment by Anglo American. The project has been registered as a CDM project, with Kumba holding the rights to all carbon credits issued (estimated at 200ktpa). There	Other: Securing carbon offsets	3 to 6 years	Direct	Very likely	Medium	$3.9 million (R42 million) - associated with the Kathu Solar PV project	Kumba Iron Ore secured the Kathu Solar project for CDM registration during the project initiation. Additionally, Anglo American's Moranbah North and Capcoal methane-fired power stations together generate more than 119 MW of electricity. The power stations are owned and operated by clean-energy provider, Energy Developments Limited (they provide a benefit in mitigating our methane emissions). Electricity generated feeds into the grid but there is an option for this to be ring-fenced for Anglo should there be any grid	$45,998 (R500,000) - associated with the Kathu Solar PV project. We invested $2,476,329 (R34 million) in Greyrock Energy.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	are additional opportunities to invest in the generation of utility-scale renewable energy generation and other low carbon technologies. We are currently exploring options and considering commercial models that are most attractive for the company.							constraints affecting supply. We have investigated commercial use of discard coal for power generation, using circulating fluidised-bed combustion (CFBC) technology. In 2016, the 450 MW Khanyisa Discard-Coal Project, located at Kwezela colliery, secured preferred bidder status in the South African government's Coal Baseload Independent Power Producer (IPP) Procurement Programme. The plant will see the introduction of CFBC technology in South Africa, with long-term environmental benefits, including avoiding negative impacts on water and air quality. In 2016, we invested	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								in US-based Greyrock Energy, which is developing and commercialising gas-to-liquids technology used to produce clean fuels from stranded or flared gas. Amplats also invested in United Hydrogen Corporation, based in the US, which supplies low-cost hydrogen, a critical issue for fuel-cell vehicles.	
Changing consumer behavior	The project demand for renewable energy and energy storage technologies is projected to increase as we transition to a lower carbon global economy. Two of Anglo American's commodities, copper and nickel, are used in these technologies.	Increased demand for existing products/services	1 to 3 years	Direct	Likely	Medium	Anglo American has not conducted quantitative modelling. This will be done in 2018.	In 2016, we undertook a qualitative assessment to determine implications for product demand for copper and PGM markets. The qualitative analysis, which included the International Energy Agency 2° Scenario, indicates that in the transition to a low-	None at this stage (beyond normal operating costs)

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Nickel is currently used in nickel metal hydride, nickel cadmium and lithium ion batteries. These battery technologies enable more efficient energy consumption in vehicles (such as electric vehicles) and facilitate greater penetration of renewable energy technologies allowing for lower energy-related GHG emissions. Renewable energy technologies also rely on nickel-containing alloys to produce turbines, pumps, rotors, storage tanks, etc. Anglo American produced 44500t of Nickel in 2016. Copper is used in several low-carbon technology and							carbon economy and under increasing climate constraints, the demand for both metals is positive, and is particularly attractive for copper. We are also currently assessing the potential increase in demand for Nickel associated with its projected increased application in low carbon technology deployment.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	energy efficiency applications. Use of copper in transmission and distribution lines can reduce losses and therefore reduce emissions associated with fossil fuel based power. Electric vehicles and various renewable energy technologies rely on copper. Copper is also used in ICT equipment that can enable dematerialisation and avoid GHG emissions. Demand for copper is expected to increase, given its use in several low-carbon technology applications. Our qualitative assessment to determine implications for product demand for copper								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	indicates that in the transition to a low-carbon economy and under increasing climate constraints, the demand for copper is particularly positive. Anglo American produced 577 Kt of copper in 2016.								

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

I) Anglo American considered impacts of a changing climate in terms of the impact on rainfall, temperature, wind and humidity assessed at a regional level for all operations and in certain cases at a more local level (such as in the case of Los Bronces which operates in a very water stressed area and which we will do for our South African operation). In addition to considering the potential risks of a changing climate to employee health, production stoppages and increased operational costs, we have also considered whether these impacts could present opportunities for additional revenue streams or provide indirect benefits such as enhancing our social license to operate.

II) Anglo American has conducted several climate change and adaptation studies and no substantive opportunities have been identified, given the uncertainties around climatic patterns. Studies run by Anglo American attempt to provide a more regional landscape perspective than most climate change predictions. These studies include distinctive trends on temperature however cannot get distinctive views on how rainfall, wind and humidity will change.

iii) Potential opportunities associated with mining are indirect and have multiple dependencies on a variety of climatic conditions. We are unable to confidently predict and quantify changes in quantity of water supply, for example. Water stress is considered one of Anglo American's most significant water risks considering 75% of operations are located in water scarce areas. For Anglo American to maintain its licence to operate, the company cannot degrade water quality, nor can it compromise other users' right of access to this commodity. The company has an opportunity to contribute to adequate supply of water which will build community resilience to adapt to a changing climate where projected water availability is expected to decrease. For example, Anglo American Platinum has spent $3,641,661 (R50million) on upgrading the Polokwane Sewage works to ensure additional water to Mogalakwena, as well as improving the infrastructure at the Northam Sewage Works and $873,999 (R12 million) at the Amandelbult operation on a provision of water to the community. However we view this more as risk mitigation than an opportunity.

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Sat 01 Jan 2011 - Sat 31 Dec 2011	9347918
Scope 2 (location-based)	Sat 01 Jan 2011 - Sat 31 Dec 2011	9426307
Scope 2 (market-based)	Sat 01 Jan 2011 - Sat 31 Dec 2011	0

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
IPCC Guidelines for National Greenhouse Gas Inventories, 2006

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Not Applicable

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CH4	IPCC Second Assessment Report (SAR - 100 year)
CO2	IPCC Third Assessment Report (TAR - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Electricity	1.01	metric tonnes CO2e per MWh	Country Specific - South Africa
Electricity	0.79	metric tonnes CO2e per MWh	Country Specific - Australia
Electricity	0.39	metric tonnes CO2e per MWh	Country Specific - Chile
Electricity	0.08	metric tonnes CO2e per MWh	Country Specific - Peru
Electricity	0.13	metric tonnes CO2e per MWh	Country Specific - Brazil. State and / or provider specific: Codemin (1.075) Niobium (0.118) Phosphates (0.1075) Minas Rio mine (in Goias – 0.1431) Minas Rio construction (in Rio – 0.1244)

Fuel/Material/Energy	Emission Factor	Unit	Reference
Electricity	0.43	metric tonnes CO2e per MWh	Country Specific - United Kingdom
Electricity	0.22	metric tonnes CO2e per MWh	Country Specific - Canada. State specific: Capcoal, Callide, Dawson, Foxleigh, BCO, Moranbah, Grosvenor (0.79) Drayton, Dartbrook (0.84)
Electricity	1.01	metric tonnes CO2e per MWh	Country Specific - Namibia (the Eskom (South African) factor is applied if site cannot confirm a country specific factor)
Electricity	1.01	metric tonnes CO2e per MWh	Country Specific - Botswana (the Eskom (South African) factor is applied if site cannot confirm a country specific factor)
Electricity	0.59	metric tonnes CO2e per MWh	Country Specific - Zimbabwe
Diesel/Gas oil	2.67	metric tonnes CO2e per m3	Business unit specific –CoalAus
Motor gasoline	2.28	metric tonnes CO2e per m3	Business unit specific –CoalAus
Liquefied petroleum gas (LPG)	1.53	metric tonnes CO2e per metric tonne	Business unit specific –CoalAus
Natural gas	0.00215	metric tonnes CO2e per m3	Business unit specific –CoalAus
Diesel/Gas oil	2.68	metric tonnes CO2e per m3	IPCC
Motor gasoline	2.28	metric tonnes CO2e per m3	IPCC
Liquefied petroleum gas (LPG)	2.98	metric tonnes CO2e per metric tonne	IPCC
Natural gas	0.00215	metric tonnes CO2e per m3	IPCC
Other: Heavy fuel oil	3.13	metric tonnes CO2e per metric tonne	IPCC
Other: Light fuel oil	2.77	metric tonnes CO2e per m3	IPCC
Bituminous coal	2.62	metric tonnes CO2e per metric tonne	IPCC
Metallurgical coke	2.44	metric tonnes CO2e per metric tonne	IPCC

Fuel/Material/Energy	Emission Factor	Unit	Reference
Waste oils	2.46	metric tonnes CO2e per m3	IPCC
Kerosene	2.83	metric tonnes CO2e per m3	IPCC
Petroleum coke	3.17	metric tonnes CO2e per metric tonne	IPCC
Other: Tailgas	0.00024	metric tonnes CO2e per m3	IPCC
Other: Non-renewable waste fuel	0	metric tonnes CO2e per metric tonne	IPCC
Other: Intermediate fuel oil	2.74	metric tonnes CO2e per m3	IPCC
Other: Marine gas oil	2.669	metric tonnes CO2e per m3	IPCC
Biodiesels	2.69	metric tonnes CO2e per m3	IPCC
Other: Biomass used as fuel	0	metric tonnes CO2e per metric tonne	IPCC
Wood or wood waste	0	metric tonnes CO2e per metric tonne	IPCC
Other: Methane flared	2.749	Other: metric tonnes CO2 per metric tonne CH4	IPCC; Australia does a specific conversion based on NGERs and accounts for changing combustion efficiency
Other: Methane from coal mining	21	Other: metric tonnes CO2 per metric tonne CH4	IPCC: from July 2015, Australia's GWP was revised to 25

Further Information

Page: CC8. Emissions Data - (1 Jan 2016 - 31 Dec 2016)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

8863265

CC8.3

Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	As of October 2015, Chile is among the countries/regions where the I-REC Standard board has authorized the issuers to implement attribute tracking systems. A total of 2,034,016 MWh of electricity were purchased by our operations in Chile in 2016. The emissions factors associated with electricity purchased are based on information provided by suppliers in the market, according to the I-REC Standard. These factors are used for the location-based and the market-based Scope 2 emission values (hence they are the same). In early 2016, Anglo American updated its systems to more accurately report in line with the revised Scope 2 reporting methodologies.

CC8.3a

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
8889987	703770	

CC8.4

Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
F-Gasses	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	After review, the contribution of F-gasses to Anglo American's carbon footprint was considered negligible (significantly below the materiality threshold).
N2O	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	After review, the contribution of N2O to Anglo American's carbon footprint was considered negligible (significantly below the materiality threshold).

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
CO2 emissions from spontaneous combustion (sponcom)	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	There is no internationally recognised methodology for calculating CO2 emissions from sponcom.
Emissions from explosives detonation	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	The emissions have previously been assessed and found to be immaterial.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 2% but less than or equal to 5%	Metering/ Measurement Constraints	Annual audits conducted by an external assurance provider operate on a 5% materiality threshold. There are occasionally errors in data associated with metering that fall below this threshold.
Scope 2 (location-based)	Less than or equal to 2%	Metering/ Measurement Constraints	Annual audits conducted by an external assurance provider operate on a 5% materiality threshold. There are occasionally errors in data associated with metering that fall below this threshold.
Scope 2 (market-based)	Less than or equal to 2%	Metering/ Measurement Constraints	Annual audits conducted by an external assurance provider operate on a 5% materiality threshold. There are occasionally errors in data associated with metering that fall below this threshold.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC8.6a/sustainability-report-2016.pdf	74	ISAE 3410	100
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC8.6a/sustainability-report-2016.pdf	74	ISAE3000	100

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emission Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC8.7a/sustainability-report-2016.pdf	74	ISAE 3410	100
Location-based	Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2017/72/772/Climate Change 2017/Shared Documents/Attachments/CC8.7a/sustainability-report-2016.pdf	74	ASAE3000	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Other: Total amount of energy used in million GJ	As part of our 2016 sustainability reporting process we also requested that the assurer audit energy data for expression of reasonable assurance.
Year on year change in emissions (Scope 1 and 2)	External assurance is undertaken annually on Anglo American's Scope 1 and 2 emissions therefore year on year changes in emissions is verified by a third party.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
Australia	4656778
Botswana	401789
Brazil	1233730
Canada	206217
Chile	397295
Namibia	169426
Peru	21085
Rest of world	3794
South Africa	1764855
United Kingdom	1570
Zimbabwe	6726

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division
By GHG type

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
Kumba Iron Ore	511924
Iron Ore Brazil	105453
Coal: Australia-Canada	4657120
Coal: South Africa	576993
Copper	418051
Nickel, Niobium and Phosphates	1128183
Platinum	544979
De Beers	919077
Exploration	798
Corporate	433
Vergelegen	255

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	8604471
CH4	258793

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
South Africa	6484373	0	6227495	0
Australia	672830	0	850993	0
Brazil	254700	0	2767533	0
Peru	84	0	129	0
Chile	703770	703770	2034016	0
Zimbabwe	66106	0	112044	0
Botswana	471809	0	424302	0
Namibia	172603	0	135779	0
Rest of world	34659	0	121464	0
United Kingdom	2245	0	14292	0
Canada	26810	0	119500	0

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
Kumba Iron Ore	434042	0
Iron Ore Brazil	64098	0
Coal: Australia-Canada	672862	0
Coal: South Africa	855976	0
Copper	703853	703770
Nickel, Niobium and Phosphates	190595	0
Platinum	5034227	0
De Beers	925010	0
Exploration	76	0
Corporate	7614	0
Vergelegen	1634	0

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

More than 5% but less than or equal to 10%

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Heat	0
Steam	0
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

16378366

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Bituminous coal	1720316
Metallurgical coke	851339
Diesel/Gas oil	10399921
Natural gas	216642
Liquefied petroleum gas (LPG)	226096
Motor gasoline	231033
Kerosene	3338
Petroleum coke	22606
Biodiesels	50619
Other: Heavy Fuel Oil	1532624
Other: Biomass	662661
Other: Marine Gas Oil	349598
Other: Intermediate Fuel Oil	77072
Other: Smaller Quantity Fuels Used	34502

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
Energy attribute certificates, Renewable Energy Certificates (RECs)	2034016	0.39	As of October 2015, Chile is among the countries/regions where the I-REC Standard board has authorized the issuers to implement attribute tracking systems. A total of 2,034,016 MWh of electricity were purchased by our operations in Chile in 2016. The emissions factors associated with electricity purchased are based on information provided by suppliers in the market, according to the I-REC Standard. These factors are used for the location-based and the market-based Scope 2 emission values (hence they are the same). Anglo American has revised report systems to more accurately report in line with the revised Scope 2 reporting methodologies.
Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company	6070	0	Anglo American Platinum purchases an estimated 18,500 MWh per year from Eternity Power RF associated with the 4,3 MW Eternity Thermal Harvesting power plant at ACP. The plant was commissioned in June 2015 and a total of 6,070 MWh produced for Anglo American Platinum's consumption in the reporting year. This electricity is not purchased through a market-based instrument and therefore is not considered Scope 2 market-based emissions according to the CDP guidance.

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
16019331	12965748	3053583	2660592	2660592	Anglo American has also invested in a 100MW Concentrated Solar Power plant (with storage). The Kathu Solar project has achieved preferred bidder status in the South African Renewable Energy Independent Power Producer Programme REIPPPPP). Energy generated will feed into the grid. The Kathu Solar project has not been included in the figures reported here. At our Moranbah North and Capcoal underground metallurgical coal operations in Australia, waste mine methane is used to generate more than 100 MW of electricity. Greenside colliery's solar farm in South Africa consists of 376 photovoltaic panels, adding up to an installed capacity of 90.2 kW at peak. In 2016, the 450 MW Khanyisa Discard-Coal Project, located at Kwezela colliery, secured preferred bidder status in the South African government's Coal Baseload Independent Power Producer (IPP) Procurement Programme. The plant will see the introduction of CFBC technology in South Africa, with long-term environmental benefits, including avoiding negative impacts on water and air quality.

Further Information

Page: CC12. Emissions Performance

CC12.1

How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to the previous year?

Decreased

CC12.1a

Please identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	2.74	Decrease	In 2016, a total of 320 energy efficiency and business improvement projects saved 5.8 million GJ in energy consumption, with the avoided energy cost estimated at $90 million. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at $260 million based on 2016 energy prices. The GHG emissions savings in 2016 (4.3 Mt CO2e) were marginally lower than in 2015 (4.6 Mt CO2e) owing to the divestment of underground Platinum operations where ventilation projects contributed materially to GHG savings. In the reporting year an additional 499353 tCO2e were reduced by our emissions reduction initiatives, and our total S1 and S2 emissions in the previous year was 18227939 tCO2e, therefore we arrived at 2.74% through (499353/ 18227939)*100= 2.74%)
Divestment	0.45	Decrease	In September the divestment of Niobium and Phosphates was completed which resulted in an emissions reduction of 0.2%. Divestments of Foxleigh (29 August 2016) and Callide (31 October 2016) were also completed. Foxleigh's divestment resulted in a 0.13% reduction in GHG emissions and Callide's resulted in a 0.12% reduction in GHG emissions.
Acquisitions	0	No change	Anglo American had no acquisitions in the reporting year.
Mergers	0	No change	Anglo American had no mergers in the reporting year.
Change in output	1.34	Increase	GHG emissions increased significantly at Barro Alto in Brazil due to the rebuilding of furnaces. This increase in emissions was 3.16% as a percentage of 2015 total GHG emissions. The remainder of the change is due to a variety of relatively smaller changes in output across the various operations. There was also a decrease of 4% in total coal production from 2015. The decrease was attributable to a reduction in export thermal production at Drayton, where mining activities ceased in October, following the New South Wales Planning Assessment Commission decision not to support the approval of the Drayton South project.
Change in methodology	0.76	Decrease	The Emissions Factor for electricity in Brazil was updated in November 2015 from 0.13 to 0.08 metric tonnes CO2e per MWh.
Change in boundary	0	No change	There was no change in boundary.
Change in physical operating conditions	0	No change	There was no change in physical operating conditions.
Unidentified	0	No change	There were no unidentified changes.

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Other	0	No change	There were no other changes.

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.000767	metric tonnes CO2e	23142000000	Location-based	3	Decrease	Scope 1 and 2 GHG emission decreased by 2.6% and group revenue increased by 1% compared to the previous reporting year. The decrease in emissions was the result of a combination of emission reduction initiatives, divestments and a change in output. The most significant change was due to emission reduction initiatives saving an

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
						additional 499353 tCO2e during the year. In 2016, a total of 320 energy efficiency and business improvement projects saved 5.8 million GJ in energy consumption, with the avoided energy cost estimated at $90 million. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at $260 million based on 2016 energy prices. The GHG emissions savings in 2016 (4.3 Mt CO2e) were marginally lower than in 2015 (4.6 Mt CO2e) owing to the divestment of underground Platinum operations where ventilation projects contributed materially to GHG savings.

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
4.09	metric tonnes CO2e	Other: Copper Equivalent Production	4122558	Location-based	4	Increase	Group GHG emissions per copper equivalent production. This metrics is used to communicate the GHG intensity per unit in a single comparable measure for the portfolio: the GHG emissions of mining 1 tonne of copper equivalent. The increase is partially offset by reductions due to emission reduction

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
							initiatives implemented in 2016 saving an additional 499353 tCO2e during the year.
1.73	metric tonnes CO2e	Other: Copper Equivalent Production	576175	Location-based	15	Decrease	Iron Ore GHG emissions per tonne of copper equivalent production: A 19% decrease in emissions was partly due to two main emissions reductions projects: optimised fines on product stacking resulting in a 9079 tCO2e decrease in emissions; and the implementation of dynamic dispatching in order to increase diesel efficiency resulting in a 1038 tCO2e decrease in emissions.
3.6	metric tonnes CO2e	Other: Copper Equivalent Production	396899	Location-based	9	Decrease	Coal SA GHG emissions per tonne of copper equivalent production: A 3.8% decrease in emissions was partly as a result of optimisation projects focusing on operational efficiency and recalibration of engines (reducing an additional 2523 tCO2e emissions in 2016). Copper equivalent production increased by 4.6%.
1.61	metric tonnes CO2e	Other: Copper Equivalent Production	1141956	Location-based	26	Decrease	De Beers GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 9% due in part to due to the installation of harmonic filters and LED lamps as well as the replacement of motor drives with higher efficiency DC drives. An energy management project of the hauling fleet through DEEMS also contributed to an emissions reduction. The total reductions for these projects was 21657 tCO2e. Copper equivalent production went up by 22% from 2015 to 2016.
1.94	metric tonnes CO2e	Other: Copper Equivalent Production	577000	Location-based	7	Decrease	Copper GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 24% from 2015 to 2016. The decrease in emissions is partly due to various optimisation projects. For example pumps and fans were automated to decrease their energy usage. The milling operation was also optimised to use less balls and hence

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
							decreased the specific energy consumption. These projects totalled a 4873 tCO2e decrease in emissions.
11.1	metric tonnes CO2e	Other: Copper Equivalent Production	479328	Location-based	2	Increase	Coal Australia-Canada GHG emissions per tonne of copper equivalent production: The emissions increase by 3.3% while the copper equivalent production was relatively unchanged.
6.74	metric tonnes CO2e	Other: Copper Equivalent Production	826920	Location-based	12	Increase	Platinum GHG emissions per tonne of copper equivalent production: The change was largely due to a 16% decrease in copper equivalent production relative to the previous reporting year. GHG emissions from platinum production decreased by 5% from 2015 to 2016. The increase was partially offset by emission reduction initiatives which resulted in a decrease of an additional 376 107 tCO2e in 2016.
154	metric tonnes CO2e	full time equivalent (FTE) employee	115428	Location-based	17	Increase	Anglo American’s scope 1 and 2 emissions have decreased by 2.6% and FTE (employees and contractors) have decreased by a relatively higher 16%. The decrease in FTE is a result of the restructuring associated with creating a fit for purpose organisation.
7.6	metric tonnes CO2e	Other: Copper Equivalent Production	173626	Location-based	32	Increase	Nickel GHG emissions per tonne of copper equivalent production: a 67% increase in GHG emissions resulted in a significant increase in GHG emissions per tonne of copper equivalent production.
1.94	metric tonnes CO2e	Other: Tonne of copper sold	578000	Location-based	7	Decrease	GHG emissions decreased by 24% from 2015 to 2016. The decrease in emissions is partly due to various optimisation projects. For example pumps and fans were automated to decrease their energy usage. The milling operation was also optimised to use less balls and hence decreased the specific energy consumption. These projects totalled a 4873 tCO2e decrease in emissions.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, and we do not currently anticipate doing so in the next 2 years

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	304381	This category includes upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by Anglo American's Platinum (Platinum), Coal South Africa (Coal SA), Iron Ore Brazil (IOB), Copper and Kumba Iron Ore (Kumba) business units. Activity data: The Platinum data was based on the purchase of explosives obtained from supply chain records of the quantities purchased. Coal SA data was	50.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			based on the quantity of lime/limestone produced and/or consumed on site for stone dusting and water treatment. Kumba identified explosives, steel, tyres and cement as its top four purchased goods using supplier invoices to obtain the total masses in tonnes. Emission factors: The emission factors and their respective sources are provided below: Explosives: 2.51 tCO2e/tonne product (CCalc Tool Manual Version 1.1 – Carbon Calculations over the Life Cycle of Industrial Activities). Steel: 1.9 tCO2e/tonne product (Greenhouse Gas Abatement in Energy Intensive Industries, page 5, Integrated steel mill average) Tyres: 1.2 tCO2e per tonne (Michelin Annual Report - 2013 Performance, page 43) Cement: 0.893 tCO2e/tonne product (Pretoria Portland Cement - http://ppc.investoreports.com/ppc_ar_2013/downloads/ppc-ar-2013) Lime/Limestone: 0.75 tCO2e per tonne (Tier 1 IPCC 2006 Guideline methodology) GWP values: Carbon dioxide = 1 Methodology: The direct supplier emissions are estimated by multiplying the quantity of purchased product by an emission factor associated with the production of the product. Calculations were performed in accordance with ISO 14064 Part 1 and the Scope 3 Accounting and Reporting Standard by The Greenhouse Gas Protocol Initiative. IOB calculated emissions using the Brazilian GHG Program calculation sheets and its conversion factors (GHG Protocol Brazilian Program Tool - Version 2016.1.1). Assumptions: No assumptions were made in the calculation of the emissions in this category. Allocation methods: Operational Control (Platinum, Iron Ore Brazil, Copper and Coal SA) Financial Control (Kumba)		
Capital goods	Not relevant, explanation provided	0	Not applicable	0.00%	There were no significant investments in capital during the reporting year. Due to the complex nature

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					of the embedded carbon within the capital goods generally procured by the Anglo American (i.e. a draglines or haul trucks), no capital goods were investigated however future scope 3 emissions inventories will attempt to include embedded carbon from the manufacture and processing of materials in the production of these assets.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	1227556	This category includes emissions related to the extraction and/or production of fuels and energy purchased and consumed by Anglo American's Platinum (Platinum), Coal South Africa (Coal SA), Copper and Kumba Iron Ore (Kumba) business units that are not accounted for in Scope 1 and Scope 2. For Platinum this includes the emissions from coal, diesel, petrol, LPG and paraffin. Coal SA only deems the extraction and/or production of diesel and petrol to be material and includes emissions from the refining of diesel and petrol from crude oil. Kumba includes in its report the extraction, production, and transportation of diesel, LPG and petrol (motor gasoline), AVGAS, used oil as well as electricity transmission and distribution losses Activity data: The activity data was obtained from supply chain records of the quantity of each type of fuel purchased and electricity consumed. Emission factors: The emission factors and their respective sources are provided below: Platinum Coal: 0.2909 kgCO2e/kg; (Defra, 2011).	47.00%	The Tier 2 (RSA country specific) emission factor employed by Coal SA (for diesel and petrol) is one that was given to Coal SA verbally and is a confidential number specific to South African industry.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Diesel: 0.5644 kgCO2e/litre; (Defra, 2012). Petrol: 0.4638 kgCO2e/litre; (Defra, 2012). LPG: 0.1868 kgCO2e/litre; (Defra, 2013). Paraffin: 0.5271 kgCO2e/litre; (Defra, 2012). Kumba Diesel: 0.5787 kgCO2e/litre; (DEFRA, 2014). Petrol: 0.4504 kgCO2e/litre; (DEFRA, 2014). LPG: 0.3978 tCO2e/tonne; (DEFRA, 2014.) AVGAS: 0.524kgCO2e/litre; (DEFRA, 2014.) Used oil for combustion: 0.599 tCO2e/m3; (DEFRA, 2014). GWP values: Carbon dioxide = 1 Methodology: The quantity of fuel consumed in the reporting year was multiplied by the emission factor associated with the extraction, production, and transportation of that fuel. The quantity of electricity purchased was multiplied by the transmission and distribution emission factor of the South African electricity grid. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Assumptions: No assumptions were made in the calculation of the emissions in this category. Allocation methods: Operational Control (Platinum, Copper and Coal SA) Financial Control (Kumba)		
Upstream transportation and distribution	Relevant, calculated	179113	Diesel and Petrol have been considered as material to Platinum. Coal SA included transport of product from respective operations, or from the Rapid Loading Terminal, to the Richards Bay Coal Terminal via Rail. Kumba Iron Ore factored in diesel along with other products which were billed as purchased transport services in kilometres. Iron Ore Brazil included petrol and diesel consumed by contractors. Activity data: The activity data was obtained from supply chain records of the quantity of each type of fuel purchased. Emission factors: The emission factors and their respective sources are provided below: Platinum Diesel: 0.5644 tCO2e/1000 litres (Defra, 2012) Petrol: 0.4638 tCO2e/1000 litres (Defra, 2012) Coal SA Electric rail: 14.18 gCO2e/net t-km (Transnet) Kumba Heavy Articulated vehicle: 0.9946	50.00%	Anglo American Platinum deemed only Diesel and Petrol as the fossil fuels that are most material in this category because previous investigations demonstrated that the amounts of grease and lubricating oil were less than 2% of the total emission from the transportation and

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			kgCO2e/vehicle km, (DEFRA, 2014) NNP Diesel: 2.431 kgCO2e/1000 litres Biodiesel: 2.603 kgCO2e/1000 litres GWP values: Carbon dioxide = 1 Methodology: The total quantities of diesel and petrol used for the transportation and distribution of goods were multiplied with the respective emission factors. The emission factor for a Heavy Goods Vehicle was divided by an assumed 30m3 volume of the purchased goods transported per trip to get the emission factor in terms of volume and then multiplied by a single distance travelled from Sasolburg to Kumba's operations. The Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) accounting and Reporting Standard Assumptions: Only diesel and petrol have been included for the estimation of emissions. Only electric rail emission rates were applied as diesel rail contributed an insignificant 0.21% to this export line. It was assumed that all purchased goods are transported to Kumba's operations in a Heavy Articulated Vehicle >33 tonne. The tanker delivery capacity was assumed to be 30m3 for all goods being transported to the operations. All transportation of diesel was assumed to originate from Sasolburg, South Africa. Distances used (Sishen - 542 km; Kolomela - 580 km; Thabazimbi - 302 km). IOB calculated emissions using the Brazilian GHG Program calculation sheets and its conversion factors (GHG Protocol Brazilian Program Tool - Version 2016.1.1). Allocation methods: Operational Control (Platinum, IOB, Copper and Coal SA) Financial Control (Kumba)		distribution of goods, hence deemed immaterial. Moreover allocation is complex as the transportation and distribution service providers service a multitude of clients.
Waste generated in operations	Relevant, calculated	84691	This category includes emissions from third-party disposal and treatment of waste that is generated by Anglo American Platinum (Platinum) Coal South Africa (Coal SA), Iron Ore Brazil (IOB), Copper and Kumba Iron Ore (Kumba) owned and/or controlled operations during the reporting year. Activity data The activity data on waste	50.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			quantities disposed of was obtained from Platinum's Safety, Health and Environment (SHE) Database. Kumba Supply chain records were utilised to obtain the total volume of lubricant consumed at each of the operations whilst the amount of waste generated per person in the reporting year was estimated from data provided by the Institute of Waste Management South Africa. Emission factors: The emission factors associated with the waste generated in operations for the reporting year are: Land filling (i.e. transport to landfill site): 0.0367 tCO2e/tonne waste (EPA 2002) Lubricants: 2.62 kgCO2e/litre (DEFRA 2014) Waste disposal: 0.17 tCO2e/tonne waste (US Environmental Protection Agency) NNP Waste disposal: 0.745 tCO2e/tonne waste GWP values: Carbon dioxide = 1 Methodology: The quantity of waste disposed of, was multiplied by the emission factor associated with landfilling, combustion of lubricant, waste water treatment and non-hazardous solid waste disposal. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) accounting and Reporting Standard. Assumptions: Due to lack of suitable information on the construction and operation of various municipal sewage treatment facilities. Coal SA assumed that all facilities are anaerobic, deep (>2m) collection lagoon type facilities. It was assumed that the average density of the waste lubricant was 825kg/m3 (http://www.machinerylubrication.com/Read/29319/measuring-relative-density). It was assumed that the average amount of waste generated per employee at Kumba's operations was 0.7kg per day. (Institute of Waste Management Southern Africa). IOB included non-hazardous waste to legal landfill and used the Brazilian GHG Program calculation sheets and its conversion factors (GHG Protocol Brazilian Program Tool - Version 2016.1.1). Allocation methods: Operational Control		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			(Platinum, Iron Ore Brazil, Copper and Coal SA) Financial Control (Kumba)		
Business travel	Relevant, calculated	8101	This category includes emissions from business-related employee travel in vehicles operated by 3rd parties, including air travel (local and international flights) and terrestrial vehicular travel. Activity data on air travel was obtained directly from the Anglo American travel agent. The number of flights and destinations was used to estimate distances travelled by aircraft. Car rentals and claimed kilometres for business travel by road were obtained from the travel agent and the company's financial system. The monetary value of claimed kilometres and an average rate was used to calculate km's travelled. Emission factors: Platinum Long haul air travel: 0.1314 kgCO2e/km (Defra, 2012) Short haul air travel: 0.1149 kgCO2e/km (Defra, 2012) Domestic air travel: 0.2012 kgCO2e/km; (Defra, 2012). Car travel: 0.2339 kgCO2e/km; (Defra, 2012; Average, unknown fuel). Coal SA Car travel: 2.69 tCO2/kL (IPCC 2006) Domestic air travel: 0.191kgCO2/km (GHG Protocol) Long haul First class air travel: 0.352kgCO2/km (GHG Protocol) Long haul Business air: 0.255 kgCO2/km (GHG Protocol) Long haul Economy air: 0.088kgCO2/km (GHG Protocol) Short haul First class air: 0.153kgCO2/km (GHG Protocol) Short haul Business air: 0.153kgCO2/km (GHG Protocol) Short haul Economy air: 0.102 kgCO2/km (GHG Protocol) Car Hire: 0.207 kgCO2/km (GHG Protocol) Kumba Domestic flights: 0.155 kg CO2e/passenger.km (DEFRA 2014). Short haul economy flights: 0.0837 kg CO2e/passenger.km (DEFRA 2014). Short haul business flights: 0.126 kg CO2e/passenger.km (DEFRA 2014). Long haul business flights: 0.231 kg CO2e/passenger.km (DEFRA 2014). Upper Medium Car (unknown fuel): 0.189 kg CO2e/vehicle km (DEFRA 2014). GWP values: CO2 = 1 CH4 = 25 N2O = 298 Methodology: activity data was multiplied by the	50.00%	Use of vehicles on operations / service offices (and the associated diesel / petrol consumption) is included into the scope 1 emissions of each respective operation (reported as tCO2e from fossil fuels).

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			appropriate emission factor. Calculations were performed in accordance with ISO 14064 Part 1 and The GHG Protocol: Corporate Value Chain (Scope 3) accounting and Reporting Standard. Iron Ore Brazil calculated emissions using the Brazilian GHG Program calculation sheets and its conversion factors (GHG Protocol Brazilian Program Tool - Version 2016.1.1). Assumptions: Coal SA assumed all cars to have 3 way catalysts (IPCC 2006 Guideline) Kumba assumed all cars to be medium sized with unknown fuel type Allocation methods: Operational Control (Platinum, Coal SA, Iron Ore Brazil, Copper) Financial Control (Kumba)		
Employee commuting	Relevant, calculated	32083	This category includes emissions from the transportation of employees between their homes and their worksites in vehicles not owned or operated by Anglo American. Activity data: Information taken from the report "Anglo American Platinum Employee transport subsidy plan" 31 August 2012. The distance travelled by employees from home to work, and the number and type of employees working at each operation were obtained from a study conducted in 2013 and was used to estimate Anglo American's Kumba Iron Ore emissions. Emission factors: Platinum Average car (unknown size or fuel): 0.233 kg CO2e/km (Defra, 2012). Minibus Taxi: 0.300 kg CO2e/ km (Defra, 2012). Bus: 0.150 kg CO2e/ passenger.km (Defra, 2012). Rail: 0.115 kg CO2e/passenger.km (Defra, 2011, adjusted with Eskom GEF). Kumba An 'average car' with unknown fuel: 0.189 kgCO2e/km; (DEFRA, 2014). A taxi (Specification sheet of Toyota Quantum 2.7GL 14-seater bus): 0.000022 kg CO2e/passenger.km; (DEFRA, 2014) A local bus: 0.109 kg CO2e/ km (DEFRA, 2014) GWP values: Carbon dioxide = 1 Methodology: Number of employees and approximate distances and methods of travel used was obtained from in-house employee transport studies. The distance travelled by the specific method was multiplied	40.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			with the appropriate emission factor from Defra 2012 (Anglo American Platinum) Defra 2014 (Anglo American Kumba Iron Ore) to obtain the emissions. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) accounting and Reporting Standard. Assumptions: Assumptions were made in terms of the distances travelled by employees based on the finding of the internal studies. Allocation methods: Operational Control (Platinum, Copper) Financial Control (Kumba)		
Upstream leased assets	Not relevant, explanation provided	0	Not applicable	100.00%	This category includes emissions from the operation of assets that are leased by Anglo American and its business units and not included in the scope 1 or scope 2 inventories. This is reported to be zero as any property that may currently be leased out is fully managed and as such incorporated into the scope 1&2 inventories.
Downstream transportation and distribution	Relevant, calculated	5076311	Anglo American Platinum's products are taken by air to the Rand Refinery in Anglo American owned helicopters. From the Rand Refinery the products are transported by flight to the relevant customers. Kumba Iron Ore's products are transported by railway from Sishen and Kolomela to Saldanha, product from Thabazimbi is transported to Vanderbijlpark and Newcastle. The product due for international export	50.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			is transported by sea vessel. Anglo American's Coal South Africa product is transported domestically by railway and a combination of rail and sea vessel for internationally exported products. Activity data: The activity data for this category comprises sources of air, land and sea transportation including helicopters, long and short haul flights, domestic rail as well as export by ship. Emission factors: Helicopter flights: 523.26 kg CO2e/hour based on 170 litres/hour and 3.078 kilogram CO2e/litre (Defra 2012) Platinum Air Domestic: 0.426 kg CO2e/tonne.km (Indirect, Defra 2012) and 2.065 kg CO2e/tonne.km (Direct, Defra 2012). Air Long-haul international: 0.641 kg CO2e/tonne.km (Direct, Defra 2012) and 0.132 kg CO2e/tonne.km (Indirect, Defra 2012). Coal SA Domestic rail: 0.042ktCO2e/tkm (Transnet) International Ocean Freight: 0.0078ktCO2e/tkm (IPCC) Kumba Rail: 0.059 kgCO2e/tonne.km (DEFRA, 2014) Shipping: 0.0025 kgCO2e/tonne.km (DEFRA, 2014) GWP values: Carbon dioxide = 1 Methodology: With regard to the helicopter trips, the total hours travelled was estimated, which was then multiplied by the relevant emission factor in kgCO2e/hour. The weight of the product transported and distance travelled was multiplied by the relevant emission factor. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol. Assumptions: An assumption was made that rail emissions were negligible for Platinum due to immaterial emissions factor. Kumba made the following assumptions: All of the product which is transported via ship is transported via a Bulk Carrier 200,000t + dry weight tonnage (dwt) type of ship classification used in DEFRA The rail emission factor used from DEFRA could be adjusted for the South African rail services by dividing the emission factor by the UK grid emission factor (GEF) and then multiplying it by the South African GEF. Allocation methods: Operational Control (Platinum, Copper and Coal SA) Financial Control (Kumba)		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Processing of sold products	Relevant, calculated	112116849	This category includes emissions from the processing (by third parties/consumers) of sold intermediate products. This processing occurs subsequent to sale by Anglo American Platinum (Platinum) and Kumba Iron Ore (Kumba). Activity data: The activity data for this category includes emissions from: processing nickel for production of stainless steel; the production of copper wire from copper; the processing of refined PGMs and Gold as well as the production of steel from iron ore. Emission Factors: Stainless steel: 6.84 tCO2e/t steel smelted Copper wire: 0.1500 kgCO2/tonne copper Platinum: 33.78 kgCO2/ton Palladium: 46.75 kgCO2/ton Rhodium: 76.80 kgCO2/ton Gold: 18.94 kgCO2/ton Other PGMs: 38.57 kgCO2/ton Iron: 1.35 tCO2e/tonne pig iron (2006 IPCC) Steelmaking: 1.46 tCO2e/tonne steel (2006 IPCC) Steel Products: 0.845 tCO2e/tonne ore Sintering Emission Factor: 0.202 tCO2e/tonne sinter (2006 IPCC) GWP values: Carbon dioxide = 1 Methane = 25 Sintering results in the emission of Carbon dioxide and methane. Methodology: The emissions associated with the processing of the respective materials were calculated by multiplying the mass of the product sold with the emission factor for the processing technique. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol. Assumptions: Conversion of pig iron to steel is assumed a ratio of 1:1. For conservative estimates, nickel produced is assumed to be used for stainless steel production (8% nickel content), as stainless steel production is the most energy intensive process of all nickel end-products. It is further assumed that the product will be recycled at least once during its lifetime. For conservative estimates, copper produced is assumed to be used for the production of copper wire, as the production of copper wire is the most energy intensive process for copper end-products. It is further assumed that the product will be recycled at least once during its lifetime. Platinum constitutes 50% of total PGM production, it is assumed that	38.00%	Coal SA reported zero for this category because, coal is processed at plants on site / at operational level and thus all energy/fugitive related emissions are therefore included in Scope 1 and 2 reports. Any further emissions related to processing subsequent to this are deemed immaterial. The combined contribution of all other PGMs to the total of emissions associated with processing of sold products is regarded as negligible as they account for ~16% of total PGM production.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			the energy involved in the manufacturing of auto-catalysts and jewellery is immaterial. Allocation methods: Operational Control (Platinum) Financial Control (Kumba)		
Use of sold products	Relevant, calculated	107114527	This category includes emissions from the use of goods and services sold by Anglo American. Anglo American's thermal coal product is utilised in the thermal coal powered generation of electricity, both domestically (in South Africa) and Internationally. Whilst our metallurgical coal is exported out (mostly) of Australia and to the rest of the world for steel production amongst others. Activity data: The activity data for this category comprises the metric tonnes of thermal and metallurgical coal product supplied to the various energy generators /providers and steelmakers across the world. Emission factors: Metallurgical coal: 3.06 Thermal coal: 2.03 GWP values: Carbon dioxide = 1 Methane = 25 Nitrous oxide = 296 Methodology: Equation 2.1 (Stationary combustion) of the IPCC 2006 Guidelines (Chapter 2, v2.2) was used to estimate the emissions from coal product sold to and used by the consumer. Emissions (GHG and fuel) is the result of Fuel Consumption multiplied by Emissions Factor (GHG and fuel), where: Emissions (GHG and fuel) is the emissions of a given GHG by type of fuel (kg GHG) Fuel Consumption is the amount of fuel combusted (TJ) Emissions Factor (GHG and fuel) is the default emission factor of a given GHG by type of fuel (kg gas/TJ). Assumptions: The carbon oxidation factor is assumed to be 1. Allocation methods: Operational Control (Coal SA)	30.00%	There are no material emissions directly associated with the use of the iron ore and PGMs post their processing as outlined in the previous category ("Processing of sold products").
End of life treatment of sold products	Relevant, calculated	2972525	This category includes emissions from the disposal and end-treatment of products sold by Anglo American's Platinum (Platinum), Coal South Africa (Coal SA) and Kumba Iron Ore (Kumba) business units. The end of life treatment of coal product (ash/fly post combustion in power stations) is disposal onto discard dumps. Platinum and most PGMs are	50.00%	In South Africa, ash/fly is discarded on dumps and no further treatment is done, as a result this category is immaterial to

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			recycled at end of life. Steel (product of iron ore) is also often recycled with the process involving smelting. Activity data: This data comprises the amount of iron ore sold in the reporting year based on sales records. Emissions factors: The emission factor associated with the end of life treatment: Processing of scrap metal in an Electric Arc Furnace: 0.08 tCO2e / tonne ore (2006 IPCC Guidelines) GWP values: Carbon dioxide = 1 Methodology: The amount of steel recycled was determined by multiplying the recycling rate (30%) with the total amount of steel produced. The amount of recycled steel was then multiplied by the number of times recycled (one) and finally multiplied by the electric arc furnace emission factor to estimate the emissions associated with end of life treatment. The Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard. Assumptions: A steel recycling rate of 30% (World Steel Association report from 2012). Number of times steel is recycled is once. All sold iron ore product is processed into steel. Allocation methods: Operational Control (Platinum and Coal SA) Financial Control (Kumba)		Coal SA. The products of platinum (PGMs) are not often disposed of or treated, instead these usually remain as is or are recycled and as a result this category is reported as zero by Platinum.
Downstream leased assets	Not relevant, explanation provided	0	Not applicable	100.00%	Anglo American and its business units do not lease out their assets and as such this category is irrelevant in this respect.
Franchises	Not relevant, explanation provided	0	Not applicable	100.00%	The franchise category is immaterial to the Anglo American business model.
Investments	Relevant, calculated	911702	This category includes scope 3 emissions associated with Anglo American’s Coal South Africa (Coal SA) and Platinum (Platinum)	40.00%	Anglo American’s Kumba Iron Ore primarily has

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			investments in the reporting year. Non-managed (equity share) operations, Mafube Colliery (50%) and Cerrejón Coal (33%), are included with only the respective shared percentages of their emissions being reported. Activity data: The activity data consists on the quantities of PGM produced at the site of Joint Venture Companies. Scope 1 and 2 emissions from the Coal South Africa equity share operations are reported in this category. Emission factors: The applied emission factor is 1.4665 tCO2e/refined ounce of precious metal. (GHG intensity factor of Anglo American Platinum for 2016, i.e. the CO2 equivalent emissions / refined ounces). The reported direct scope 1&2 emissions were utilised for Coal SA's equity share investments. GWP values: Carbon dioxide = 1 Methodology: The PGM production of the Platinum joint venture mines was multiplied by the GHG intensity figure of Platinum for 2016 as well as the percentage shareholding in order to estimate the emissions from these operations. The Coal SA emissions were obtained from the Enablon database and multiplied by the shareholding percentage. Calculations were performed in accordance with ISO 14064 Part 1 and The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) accounting and Reporting Standard. Assumptions: No assumptions were made. Allocation methods: Operational Control (Platinum and Coal SA)		investments in holding companies without any direct operational footprints and as such reports zero emissions for this category.
Other (upstream)	Not relevant, explanation provided	0	Not applicable	100.00%	Anglo American has no other relevant/material upstream emissions.
Other (downstream)	Not relevant, explanation provided	0	Not applicable	100.00%	Anglo American has no other relevant/material downstream emissions.

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No third party verification or assurance

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Change in output	59	Decrease	The decrease was largely due to a decrease in the goods and services purchased by Kumba Iron Ore. This was the result of a decrease in the use of explosives in this reporting year, along with small decreases in the amount of cement and tyres purchased. This is due to decreased production outputs planned for the year.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	2	Decrease	Emission reduction activities in FY2016 reduced the year-on-year change in fuel and energy related activities. The emission reduction activities reduced the diesel consumption by 1.9 million litres of diesel owing to reduced use of haul truck fleets at Kolomela and Sishen in line with the revised medium-term mining plans. NNP was also excluded from the inventory this year due to the sale of Niobium and Phosphates. In FY2015, the implementation of cleaner fuel, haul management and engine control units by Coal Australia resulted in a decrease in diesel consumption, helping us achieve our scope 1 and 2 emission reduction targets. Clean fuels have also resulted in efficiency gains in Minas-Rio and are being rolled out across the Group. In FY2015, the initiative helped us avoid 23,211 tonnes of CO2e and save up to $4 million. With regular planned maintenance, this initiative is expected to last to the end of life of mine or until new technology is developed. These initiatives were extended in FY2016.
Upstream transportation & distribution	Change in output	18	Decrease	The emissions associated with upstream transportation and distribution at Kumba Iron Ore and Anglo American Platinum increased. The main reason for the decrease was the exclusion of NNP from the inventory this year due to the sale of Niobium and Phosphates.
Waste generated in operations	Unidentified	6	Increase	The change is largely due to increases in waste generated by Coal SA.
Business travel	Other: Movement towards reduced cost travel arrangements	16	Decrease	There has been significant emphasis from Anglo American towards reduced cost travel arrangements (road travel vs. flying vs teleconference calls) which has led to reductions in the use of air travel and road travel. Flights also decreased in line with the decrease in the number of employees at Anglo American Platinum.
Employee commuting	Other: Restructuring	41	Decrease	The decrease is largely due to a decrease in employee commuting at our Platinum Business Unit as a result of the re-positioning and restructuring of the company that continued in 2016.
Downstream transportation and distribution	Change in output	6	Decrease	The downstream transportation and distribution emissions decreased as a result of a decrease in the tonnage of product sold associated with the Business Units included in the inventory.

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Processing of sold products	Change in output	2	Decrease	Kumba Iron Ore sales volumes decreased by 11% to 42.5 Mt (2015: 47.8 Mt), reflecting the 10% decline in production volumes at Sishen.
Use of sold products	Change in output	2	Decrease	The change is the result of an increase in the production at the Eskom-tied mines, due largely to the recommissioning of the third dragline at New Vaal following a maintenance shutdown
End-of-life treatment of sold products	Change in output	2	Decrease	The decreased emissions associated with the end-of-life treatment of sold products resulted from the decrease in sold product in the reporting year.
Investments	Emissions reduction activities	15	Decrease	This is due to a decrease in production of PGMs at JVs of 3% as well as a decrease in the GHG emissions per refined ounce (19%). This reduction is the result of emission reduction initiatives which Anglo American Platinum plays a part in through its involvement in approving budget applications for investments in energy efficiency.
Investments	Change in output	27	Decrease	The decrease is largely the result of decreased production at Coal SA's Mafube and Cerrejón mines.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our suppliers
Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

We have multiple engagement methods:
1. The FutureSmart mining approach to innovation
2. Collective efforts such as the Hydrogen council

3. The PGM investment Programme

i. Methods of engagement
Anglo American engages with partners as part of or FutureSmart mining approach to innovation. The approach brings cutting-edge technological advances and broad, innovative ideas to address mining's intractable challenges, including climate change. Through collaborative partnerships, we are connecting people to find safer, more efficient and more sustainable ways to mine the precious metals and minerals that the world needs.

The FutureSmartTM Open Forums focus specifically on global challenges around mining, processing and sustainability. So far, we have held four forums – Water, Processing, Mining and Energy – where we worked directly with world-class experts from a variety of industries; entrepreneurs; research and non-governmental institutions; as well as suppliers, to explore creative solutions, and potentially collaborate to solve them.

Anglo American is a member of a number of fuel cell and hydrogen associations around the world including the Hydrogen Council. The Hydrogen council was established in January 2017 to voice a united vision and long-term ambition for hydrogen to foster the energy transition. The Hydrogen Council is made up of 13 CEOs and chairpersons from different industries and energy companies, including our chief executive Mark Cutifani. All are committed to help achieve the ambitious goal of staying below the 2oC target, as agreed in the 2015 Paris Agreement.

Through our PGM Investment Programme activities we are investing in a number of new promising technologies which use or facilitate the use of PGMs (in PGM-based catalysts). This includes companies in the fuel cell, hydrogen and energy storage value chain that support or use fuel cell technology/ clean technology. For example we have invested in: • Ballard, a Canadian based business providing clean energy fuel cell products that enable optimized power systems for a range of applications; • Primus Power, a company delivering gird-scale energy storage batteries that enable the integration of renewable energy into the grid; • Food Fresh Technologies, a company that offers a technology used in the packaging of fresh fruit and vegetables to extend the shelf life and reduce food waste; • Greyrock Energy, a company developing and commercialising gas-to-liquids technology used to produce clean fuels from stranded or flared gas; and • Altergy Systems, a global leader in the manufacture and supply of proton exchange membrane fuel cells. Altergy was the first fuel cell company to implement automated assembly lines enabling the high volume, low cost manufacture of fuel cells.

ii. Strategy for prioritizing engagements
Experts, entrepreneurs, research and government institutions and suppliers have been selectively invited to join the forums based on our assessment of their role in meeting our business needs and where we have identified big opportunities for savings (including energy and water) and improved environmental performance. We are seeking partnerships to develop innovative approaches to co-develop solutions. We see partnerships as key in ensuring that we can make leaps forward, rather than incremental changes, through the development and deployment of new products and technologies. Anglo is driving this process to directly reduce our own risk, to take advantage of opportunities but also to capacitate partners in our value chain to reduce their climate change risks (thereby reducing our indirect risks).

The PGM Investment fund seeks a pipeline of promising new technology start-ups and projects through relationships with universities, involvement in relevant conferences and through networks of other funders / co-investors.

iii. Measures of success
Success is measured in terms of our ability to deliver on our business strategy through finding safer, more efficient and more sustainable ways to mine the precious metals and minerals that the world needs.

Our innovation road map was given impetus following the FutureSmart™ Open Forum on Energy held in December 2016. We identified four main themes from the exercise:
- a mosaic of modular renewable energy solutions, including solar thermal applications in ore processing
- biomass applications to generate power from waste and also to generate jobs

- data analytics supporting intelligent energy use
- a group of new-idea technology solutions that will be driven through SmartPath, our internal method for rapid development of innovative ideas.

Success for the Platinum Investment Programme is the long term sustainability of the industry ensuring that the industrial application of PGMs continues to grow, stimulating demand for the metals and a diversification of its uses into the future.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Active engagement	300	22%	We have a large and diverse base of 12,000 suppliers around the world. Through our responsible sourcing programme, we aim to ensure that the goods and services we procure do not cause harm to individuals or the environment. At a minimum, we expect suppliers to demonstrate compliance with all local laws and regulations, as well as good practices, in all areas, including climate change. Our approach is guided by the Anglo American Responsible Sourcing Standards for Suppliers and various supporting policies. Based on a risk ranking, we ask our most material suppliers to complete a self-assessment questionnaire, which includes questions on each supplier's environmental performance, climate change risks, GHG data, air-quality management, and GHG-reduction strategies (we facilitated 85 self-assessments in 2016). We may also ask suppliers to provide proof of statements made and demonstrate that they follow the supplier code, as well as conduct site visits and audits to verify compliance. If a supplier does not meet certain aspects of the standard, they need to implement corrective action plans. In certain circumstances we may terminate the contracts of suppliers who fail to comply with the standards or any legislated requirements. To date, we have audited more than 300 suppliers. In 2015, we started working to harmonise supplier sustainability standards, simplify auditing protocols and agree on principles of mutual recognition for suppliers. This approach will ultimately reduce duplication in cost and effort. Examples of successful measures to work with our supply chain to reduce our direct and indirect risks include: l shifting a fuel contract from one supplier to another. This decision was driven by a number of considerations, one being that the new fuel includes an additive that improves fuel efficiency and reduces related GHG emissions l requiring that service providers transporting employees meet requirements regarding the specification, operation and maintenance of buses. This requirement incorporates efficiency targets (with emissions benefits) in addition to the primary safety objectives. l working with suppliers to source more efficient products that minimise operating costs and reduce GHG and other emissions.

CC14.4c

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

In November 2016, we identified 19 SME suppliers to our Mogalakwena Platinum operation and included them on a unique training and capacity building programme designed to reduce their business risk. The programme included an intensive 2 day training session, where various elements of the Standard – supported by appropriate South African legal requirements were discussed, and measures / mechanisms for risk management and control were agreed. At the end of the training, the SME suppliers completed responsible sourcing self-assessment questionnaires – this was then followed up by site audits on a sample of the SME's where comparisons were drawn between the assessment responses and actual site practices. This information will be used to target specific supplier development initiatives in area where significant control gaps were identified – some of which include lack of management systems and controls for identification of environmental risk; and the lack of preparedness for potential environmentally damaging incidents.

Module: Sign Off

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Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Tony O'Neill	Group Director – Technical	Chief Operating Officer (COO)

Further Information

CDP 2017 Climate Change 2017 Information Request