C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Anglo American is a leading global mining company and our products are the essential ingredients in almost every aspect of modern life. Our portfolio of world-class competitive mining operations and undeveloped resources provides the metals and minerals that enable a cleaner, more electrified world and that meet the fast growing consumer-driven demands of the world's developed and maturing economies. With our people at the heart of our business, we use innovative practices and the latest technologies to discover new resources and mine, process, move and market our products to our customers around the world – safely, responsibly and sustainably.

As a responsible miner we are the custodians of what are precious natural resources. We work together with our business partners and diverse stakeholders to unlock the sustainable value that those resources represent for our shareholders, the communities and countries in which we operate, and for society as a whole. Anglo American is re-imagining mining to improve people's lives.

FutureSmart Mining™ is our innovation-led pathway to sustainable mining and includes our far-reaching Sustainable Mining Plan. Aligned to the UN's Sustainable Development Goals, we have set out a series of ambitious 2030 goals and interim targets that relate to three major areas of sustainability – trusted corporate leader, i.e. advocating for the highest standards of governance to drive transparency and trust in mining and mined products; healthy environment; and thriving communities.

Our portfolio of world-class assets producing the right metals and minerals of the right quality to power a cleaner future, coupled with our approach to both technology and sustainability in its full sense, set us apart. Our first responsibility is to reduce our energy and water usage, and our emissions – and we are committed to doing exactly that. We're on track to achieve our 2020 targets and are confident that our FutureSmart Mining™ technologies will be a key driver of our emissions reductions to 2030 and of driving our operations towards carbon neutrality.

Our portfolio of world class competitive mining operations and undeveloped resources – spanning diamonds (through De Beers), copper, platinum and other platinum group metals (PGMs), iron ore, coal and nickel – provides the raw materials to meet the growing consumer-driven demands of the world's developed and maturing economies.

De Beers has the global leadership position in diamonds, producing around a third of the world's rough diamonds, by value.

Anglo American has a world-class asset position in copper, with the potential to establish a leading position built around its interests in two of the world's largest copper mines – Los Bronces (a 50.1% owned subsidiary) and Collahuasi (44% owned joint operation), with Reserve Lives of 23 years and 69 years, respectively.

Anglo American Platinum (held through a 78% interest in Anglo American Platinum Limited) is the world's leading PGM producer.

Anglo American's iron ore operations provide customers with niche, high iron content ore. In South Africa, we have a majority share (69.7%) in Kumba Iron Ore. In Brazil, we have developed the integrated Minas-Rio operation (100% ownership which produces a high quality pellet feed product. In manganese, we have a 40% share in Samancor Holdings.

We are the world's third largest exporter of metallurgical coal and our coal operations in Australia serve customers throughout Asia and the Indian sub-continent, Europe and South America. In South Africa, we supply thermal coal to both the export and domestic energy markets. We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible.

Our Nickel business in Brazil has capacity to produce around 45,000 tonnes per annum of nickel, whose primary end use is in the global stainless steel industry.

Further information is available in:

· Our climate change supplement (Climate Change: Our Plans, Policies and Progress): https://www.angloamerican.com/sustainability/environment/climate-change

· Our integrated Annual Report - https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2019/aa-annual-report-2018.pdf

· Our Sustainability Report - https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2019/aa-sustainability-report-2018.pdf

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1 2018	December 31 2018	No	<Not Applicable>

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

Australia
Brazil
Canada
Chile
Peru
South Africa
United Kingdom of Great Britain and Northern Ireland
Zimbabwe

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-CO0.7

(C-CO0.7) Which part of the coal value chain and other areas does your organization operate in?

Row 1

Coal value chain

Underground coal mining
Surface coal mining

Other divisions

Please select

C-MM0.7

(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?

Row 1

Mining

Copper
Platinum group metals
Iron ore
Nickel
Diamonds

Processing metals

Copper
Platinum group metals
Nickel

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	At Anglo American, the Sustainability Committee of the Board is responsible for addressing climate change related topics. The Committee oversees, on behalf of the Board, material policies, processes, and strategies designed to manage sustainability risks and opportunities. Matters relating to climate change and energy are included in each quarterly report to the Committee, and as stand-alone items on the agenda. The Chair of the Sustainability Committee provides a summary of the Committee's discussions at the Board, which addresses the most material issues raised by the Committee. The Chief Executive performance scorecard and report to the Board also include performance indicators on energy and GHG emissions. In addition to the discussions at the Sustainability Committee, the Audit Committee reviews the company's material risks, including climate change, twice a year.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	Matters relating to climate change and energy are included in each quarterly report to the Committee, and also feature periodically as stand-alone items on the agenda. In addition to the committee's standing agenda items, the following matters were discussed as they relate to climate change, during 2017: • development of Anglo American's new Sustainable Mining Plan, including ambitious energy and GHG targets; and • progress on actions to meet disclosure commitments under the 'Aiming for A' shareholder resolution. The following relevant matters were discussed during 2018: • Sustainable Mining Plan implementation update • Anglo American's sustainability performance and future sustainability trends • Climate change The Anglo American Board has held one full strategy session on climate change and another is scheduled for later in 2019. The Group Management Committee and its sub-committees are briefed regularly on the issue and provide operational direction.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (Group technical director)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Climate change is a key strategic issue and falls under the executive responsibility of the Group's technical director, Tony O'Neill, who is an executive member of the Board and the Group Management Committee (GMC). The GMC is comprised of the chief executive, business unit CEOs, Group directors of corporate functions and the Group general counsel. 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 GMC is supported by corporate, operational and investment sub-committees. These committees are responsible, respectively, for: reviewing corporate policies and processes, as well as the financial performance and budgets for business units; driving operational best practices across the Group and the setting of technical standards; and making recommendations to the GMC and chief executive on capital-investment proposals.

The Corporate Committee reviews corporate and ethical policies and processes, and financial performance and budgets at business unit level. Applications for funding related to climate change made by business units are made to this committee. The Operational Committee is responsible for driving climate change best practices across the Group and the setting of technical standards. The Investment Committee is responsible for making recommendations to the GMC and chief executive on capital investment proposals such as those relating to bulk water supply (relevant to our Platinum operations, for example) and clean energy generation (relevant to the mine methane capture and energy generation projects at our Metallurgical Coal operations, for example).

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.

Climate change issues are monitored via a central database for quantitative consumption, GHG emissions and energy savings data. Narrative reports are produced by business units on a quarterly basis. The CEO scorecard includes climate change metrics, which are reported at each Board and Sustainability Committee meeting.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?
Corporate executive team

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
The CEO scorecard is compiled every quarter and is the basis for the CEO's performance reporting to the Board. The Anglo American chief executive and business unit CEOs' scorecards include performance on energy and carbon. The 2020 GHG target is included in the 2017 long term incentive plan (LTIP). The LTIP performance measures are aligned to our strategic objectives over a three-year performance period. To receive the LTIP benefit in full, Anglo American will need to achieve the 2020 GHG target a year earlier, in 2019. Since 2017, our 2020 energy and carbon targets are included within the plan.

Who is entitled to benefit from these incentives?
Environment/Sustainability manager

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
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. Going forward, Anglo American will move to incentivizing individuals based on their team's performance with respect to climate, energy and water targets. This will contribute to the whole workforce being incentivized to meet our GHG targets.

Who is entitled to benefit from these incentives?
Corporate executive team

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
At Anglo American, 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.

Who is entitled to benefit from these incentives?
All employees

Types of incentives
Recognition (non-monetary)

Activity incentivized
Emissions reduction project

Comment
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 are 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 programme Applaud, we make sure that we are putting our values into action and that we are following our Code.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	5	
Long-term	5	30	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>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 utilises four layers 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, whilst using our operating models to identify vulnerability and exposure. We also consider adaptation measures in new project stage-gate evaluations.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

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. 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.

Anglo American's Integrated Risk Management (IRM) process is supported by the Group's Integrated Risk Management Standard. Within this standard, the requirements of effective risk management are highlighted. Risk is assessed across the Group, Business Units, Operations and Capital as well as across corporate functions such as HR, Legal and Safety and Sustainable Development.

Operational Risk Management (ORM) is embedded within the IRM process and assesses risk at the operational level. Risks are continually assessed and critical controls are applied to mitigate the risks identified.

Climate risk and adaptation assessment (CRA) is embedded within ORM. This raises the profile of climate related risks to ensure that they are included in layer 1 (baseline risk assessment) and layer 2 (issue-based risk assessment). If climate risk has been adequately considered in Layers 1 and 2, then Layers 3 (task risk management) and 4 (continuous risk management) should not need specific climate inputs.

Once identified, the process will evaluate identified climate change risks to establish root causes, financial and non-financial impacts, and likelihood of occurrence. Consideration of risk treatments is taken into account to enable the creation of a prioritised register and in determining which of the risks should be considered as a principal risk. Residual risk ratings are classified with reference to likelihood and consequence. Climate change consequence ratings span from "insignificant" to "major". 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.

Climate change risks and opportunities are prioritised based on materiality criteria. As in previous years, Anglo American undertakes a methodological approach to identifying, prioritising and reporting on material climate change issues by a process of internal reflection and external stakeholder engagement.

Our process for determining materiality involves three steps: consultation, analysis and approval. The consultation process in 2018 involved extensive desktop research, including: review of the Group Risk Register; global media coverage and analyst reports on Anglo American and the mining sector; and analysis of minuted Board and executive discussions. We also conducted an external consultation survey with a wide range of stakeholders, including investors, communities, customers, suppliers, governments, civil society and industry groups. We will continue to conduct such engagement on a regular basis.

A climate change risk is defined as a principal risk if it poses a risk or combination of risks that would threaten the business model, future performance, solvency or liquidity of Anglo American (i.e. a substantive impact). Examples of a "major" consequence of relevance to climate change risks would be flood-related business interruptions leading to a greater than 5% of annual revenue loss, a major widespread social impact through conflict around increasingly scarce water resources affected by climate change (jeopardising our social license to operate), a significant breach of law (such as the Australian Safeguard Mechanism), etc. An example of a principal risk related to climate change includes the longer-term risk from declining internal combustion engine manufacturing, and a switch to battery operated vehicles instead of fuel cell electric vehicles, which continue to use higher volumes of PGMs. This risk is directly affected by the transition to a lower carbon global economy.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Anglo American has an active engagement strategy with the governments, regulators and other stakeholders within the countries in which we operate or plan to operate, as well as at international level. We assess portfolio capital investments against political risks and avoid or minimise exposure to jurisdictions with unacceptable risk levels. We actively monitor regulatory and political developments at a national level, as well as global themes and international policy trends, on a continuous basis. For example, in Australia, the federal government implemented the climate change Safeguard Mechanism in July 2016 to restrict GHG emissions. In South Africa, our operating sites are prepared for the reporting requirements under the national GHG emission reporting regulations, which came into effect in April 2017.

	Relevance & inclusion	Please explain
Emerging regulation	Relevant, always included	Regulations related to carbon pricing (such as the carbon tax in South Africa) will increase capital and operating costs. Our regulatory teams within each country also provide us with new or pending regulatory issues within the water areas to allow us to plan for future changes. Anglo American S&SD, projects, Group legal departments, the Minerals Council of South Africa forums and other working groups also inform the business risks related to future climate-related regulation. Regulatory and tariff information gathered in this manner is integrated into our on-site climate and water risk assessment processes that are ongoing. Recognising the potential for a range of carbon pricing and offset/incentive policies to emerge in the medium term, we continue to work with governments, industry peers and other stakeholders in developing and implementing effective, efficient and equitable climate-change policies. For example, Anglo American has proactively engaged in the design of the carbon tax in South Africa through providing comments on draft designs and through our involvement in Industry Task Team on Climate Change (ITTCC) and as members of the Minerals Council of South Africa, 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. The tax is effective from 1 June 2019.
Technology	Relevant, always included	Low carbon technologies with the potential to negatively impact demand for our products are assessed on an ongoing basis. Additionally, technology development has the potential to enable more cost-effective achievement of our long term GHG mitigation target. As a member of the ICMM, Anglo American has access to research and discussions on emerging technology-related risks as well as best practice available technologies. We are also investing in new technologies: FutureSmart Mining™ is Anglo American's innovation-led approach to responsible and sustainable mining – and it is critical for the future of how we do business. We are looking well beyond our own industry to re-imagine the future of mining, using open-innovation principles and partnerships to find solutions that will materially improve efficiencies and our competitive positions. As part of FutureSmart Mining™ we are planning on investing significant capital by 2021 in the following initiatives: • Digitalisation: the Intelligent Mine that leverages, for example, advanced process control (yielding potential production benefits but also up to 5% energy efficiency improvements) and Internet of Things, artificial intelligence, etc.; • Concentrate the Mine: designed to provide a step change increase in an operations metal output, reducing energy and water consumption through more efficient processing techniques; • The Waterless Mine: focused on innovative ways to separate and transport waste, evaporation measurement, dry-tailings disposal and non-aqueous processing; and • The Modern Mine: aiming to achieve a step change in mining efficiency through the development and implementation of new technologies, automation, and processes. We invest in low-carbon research and development (R&D), equipment, products, and services. This includes investment into CCS (through the Australian Coal 21 Fund, the South African Centre for Carbon Capture and Storage and through De Beers work on CO2 mineralisation of kimberlite tailings). We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures (APV), which targets growth of early stage hydrogen enablers. We also support the development of carbon reduction and removal technologies. We are founding sponsors of the World Bank's Climate Smart Mining Facility which was launched in May 2019.
Legal	Relevant, always included	The Operational Risk Management (ORM) programme for operations, and the Investment Development Model (IDM) for projects include a consideration of legal climate change risks. Examples of legal climate change risks include the Safeguard Mechanism affecting our Metallurgical Coal business in Australia and the risks of non-compliance with GHG reporting regulations affecting our South African operations. In Australia, the federal government implemented the climate change Safeguard Mechanism in July 2016, to restrict GHG emissions. We continue to explore options for offsets should there be a potential exceedance, including the use of carbon credits. In South Africa, our operating sites are prepared for the reporting requirements under the national GHG emission reporting regulations, which came into effect in April 2017.
Market	Relevant, always included	The transition to lower carbon, climate resilient economies is expected to have impacts on the demand for our products and these trends are factored into our risk and opportunity assessment procedures. In 2015, we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. In 2016 we undertook a qualitative analysis of the climate-change signposts and indicators affecting copper and PGM demand to 2035. In 2018 we extended this work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. Climate scenario analysis has informed our strategy in the following ways: • Our significant growth optionality in metals and minerals that are required for the low carbon transition. In copper this includes our existing long-life Chilean assets and the development of the Quellaveco operation in Peru. Meanwhile, our flagship PGMs mine at Mogalakwena in South Africa, is well placed to provide not only a wide variety of PGMs, but also material volumes of high-quality nickel. • Climate scenario analysis has informed our decision to halve our position in thermal coal through the sale of our South African Eskom-tied domestic coal operations and the Drayton, Dartbrook and Callide operations in Australia. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible • In regions where carbon pricing is an emerging government policy, we already include carbon pricing in our budget guidance and project evaluations. Going forward, we will take into account a carbon price for our pricing and forecasting in all jurisdictions • We have built optionality into our operational strategy, across our products and growth areas, coupled with a disciplined approach to capital allocation. • We are using the analysis to actively assess long term growth opportunities (e.g. expansion into other promising metals and minerals and potential adjacent growth opportunities) See https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/sustainability/our-strategy/climate-change-our-plans-policies-and-progress2019.pdf
Reputation	Relevant, always included	The climate change aspects considered in the Operational Risk Management (ORM) programme for operations include climate-related reputational risks. Climate change regulation continues to evolve rapidly and many of the proposed developments have significant potential reputational and financial implications of non-compliance. Failure to demonstrate positive climate change action would damage Anglo American's reputation and impact our relationships with customers, investors, business partners, regulators and broader society. Anglo American is experiencing increasing pressure from investors, in particular, to proactively manage climate change risks and opportunities which are increasingly seen as material to shareholder value. The recommendations of the TCFD are an example. To assess potential reputational risks associated with the products we mine and process, in 2015 we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. In 2016 we undertook a qualitative analysis of the climate-change signposts and indicators affecting copper and PGM demand to 2035. In 2018 we extended this work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. Climate scenario analysis now forms an important part of our climate risk assessment 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 accounting for 66 million tonnes of CO2 annually. In 2018, we conducted an audit of the 71 industry associations of which Anglo American is a member to ensure that those associations' policy and advocacy positions were aligned with Anglo American's positions. Some differences were identified and we have engaged with the industry associations in question to ensure that there is no suggestion that Anglo American is inconsistent in our positioning on climate change and our overall climate change strategy. https://www.angloamerican.com/sustainability/environment/climate-change
Acute physical	Relevant, always included	The climate change aspects considered in the ORM programme for operations, and the IDM for projects include acute physical risks. We have been working with the UK Met Office since 2010, and more recently also with the CSIR in South Africa and other recognised experts on climate science. Initial climate studies identified our highest-risk sites as being located in Peru and Chile, with several other operations also vulnerable to extreme weather events. In 2012, we developed climate scenarios for vulnerable regions, which we then used to develop best-practice guidance for our operations and new investment projects. In 2016, we undertook a high-resolution modelling exercise with the UK Met Office, for the Los Bronces underground project in Chile. The scenario data has informed our catchment-based water-model, air-quality and natural-hazard assessments and control measures. In 2018, our PGMs business initiated a climate modelling and adaptation exercise across all of its operations in South Africa.
Chronic physical	Relevant, always included	The climate change aspects considered in the Operational Risk Management (ORM) programme for operations, and the Investment Development Model (IDM) for projects include chronic physical risks. We have been working with the UK Met Office and other recognised experts on climate science since 2010. Initial climate studies identified our highest-risk sites as being located in Peru and Chile, with several other operations also vulnerable to extreme weather events. In 2012, we developed climate scenarios for vulnerable regions, which we then used to develop best-practice guidance for our operations and new investment projects. In 2016, we undertook a high-resolution modelling exercise with the UK Met Office, for the Los Bronces underground project in Chile. The scenario data has informed our catchment-based water-model, air-quality and natural-hazard assessments and control measures. In 2018, our PGMs business initiated a climate modelling and adaptation exercise across all of its operations in South Africa.
Upstream	Relevant, sometimes included	This catchment-based approach is an integral component of our new Water Management Standard. For example, we participated in the Olifants River Catchment Management Forum established with other mining companies, comprised of various local stakeholders. The consortium assesses acid mine drainage in the Olifants river catchment in Mpumalanga, including the feasibility of applying mine-impacted water for irrigation purposes. We also piloted the ICMM water guidance at Minas Rio through a multi stakeholder workshop with particular emphasis on perceived risks. In addition, we use the Socio-Economic Assessment Toolbox (SEAT) to understand our water related socio-economic impacts, enhance stakeholder dialogue and the management of social issues. Our ongoing stakeholder engagement provides us with internal company knowledge that allows us to integrate these issues into our risk processes. Climate-related risks in our supply chain are increasingly considered. We engage with our suppliers to understand whether they measure their carbon emissions and water impact. Climate-smart procurement will see us buying more high-efficiency equipment and working with suppliers on innovation and technology change. Examples of successful measures to work with our supply chain to reduce our direct and indirect risks include: • working with key global suppliers to understand their innovation plans, and discussing how those can support safety and sustainability objectives • changing a fuel contract to a new fuel that includes an additive that improves fuel efficiency and reduces related GHG emissions • requiring that service providers transporting employees meet requirements regarding the specification, operation and maintenance of buses • working with suppliers to source more efficient products that minimise operating costs and reduce GHG and other emissions • efforts to recycle mining consumable goods, including conveyor belts and tyres, to reduce environmental impacts. A Scope 3 emissions assessment was initiated in 2019 to assess Scope 3 emissions footprint, technologies to abate these emissions, and to investigate partnerships of current and new technologies.
Downstream	Relevant, sometimes included	Anglo American considers customers in our assessment of climate risk particularly with respect to those using our thermal coal products and those processing our iron ore products, as these collectively represent more than 90% of our scope 3 emissions. There is a growing level of customer awareness on climate change and we engage with key customers directly to understand their climate-related expectations and requirements. Our Platinum business actively invests in the hydrogen value chain, a downstream user of PGMs. Platinum will invest USD100 million, over the period from 2014-2019, in companies that use or enable the use of PGM-based technology in their products or processes. This has resulted in the recent launch (July 2018) of AP Ventures, the vision is to invest in high-performance technologies built on the unique properties of Platinum Group Metals which address climate change among the other environmental challenges faced by society. Our longer-term partnership research programmes include piloting platinum-based fuel cells for mobile and stationary power systems. In February 2017, Anglo American and 12 other companies launched the global Hydrogen Council (now 39 companies). Through the Council we confirmed our ambition to accelerate investment in the development and commercialisation of both hydrogen and fuel cell sectors. A Scope 3 emissions assessment was initiated in 2019 to assess Scope 3 emissions footprint, technologies to abate these emissions, and to investigate partnerships of current and new technologies.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Management is responsible for monitoring progress of actions to mitigate key risks and to determine if any such risk falls outside the limits of our risk appetite. Management is supported through the Group's internal audit programme, which evaluates the design and effectiveness of controls. The risk management process is continuous; key risks are reported to the Audit Committee, with sustainability risks also being reported to the Sustainability Committee.

Our process for determining materiality involves three steps: consultation, analysis and approval. The consultation process in 2018 involved extensive desktop research, including: review of the Group Risk Register; global media coverage and analyst reports on Anglo American and the mining sector; and analysis of minuted Board and executive discussions. We also conducted an external consultation survey with a wide range of stakeholders, including investors, customers, suppliers, governments, civil society and industry groups. We will continue to conduct such engagement on a regular basis.

An example of a physical risk assessed and managed through this process is the risk of climate-induced extreme weather events. Anglo American seeks to understand the physical 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 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. In 2016, we undertook a high-resolution modelling exercise with the UK Met Office, for the Los Bronces underground project in Chile. The scenario data has informed our catchment-based water-model, air-quality and natural-hazard assessments and control measures.

In 2018, our PGMs business initiated a climate modelling and adaptation exercise across all of its operations in South Africa.

An example of a legal risk assessed and managed through this process is the proposed carbon tax in South Africa. 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 Minerals Council of 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 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO_2e – a 25% reduction relative to the BAU 22.8 $MtCO_2e$.

We have set a new long-term target to reduce absolute GHG emissions by 30% by 2030 against the 2016 level.

Building on the outcomes of the FutureSmart Mining™ Innovation Open Forum on energy that we held in December 2016, we held an energy efficiency workshop in October 2017 to further assist in identifying and prioritising opportunities, and in developing action plans meet our longer term targets. By 2020, we will have completed technical and commercial reviews to identify the priority energy and carbon-reduction options at our major operations. Through FutureSmart Mining™, we are investing in new mineral processing technologies that are more energy efficient than conventional methods of comminution. For example, our novel comminution circuits fragment particles using 30% less energy than conventional means.

We are also exploring low carbon and renewable energy options. For example, we have implemented energy recovery at Platinum's Waterval Smelter; are industry leaders in using rich gas for a combined 140 MW power generation plant using waste mine (methane) from our underground coal mines in Australia; and are exploring CCS options (e.g. through De Beers, we are investigating the potential for mineral carbonation of kimberlite tailings as a CCS technology solution). Carbon offset projects will be pursued to further reduce emissions. Our budget guidelines include provision for the South African carbon tax and the guidance for new investment evaluations include sensitivity to carbon pricing.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Transition risk

Primary climate-related risk driver
Policy and legal: Increased pricing of GHG emissions

Type of financial impact
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description
The draft bill on carbon tax was first issued by the South African government in November 2015 and then reissued in for comment during December 2017. The Carbon Tax Act and the Customs and Excise Amendment Act were both officially gazetted on Thursday (23 May 2019) and has come into effect as of 1 June 2019. The two Acts work in conjunction with each other, with the Customs and Excise Amendment Act primarily dealing with administrative issues surrounding the implementation of the new Carbon Tax Act. The Tax follows the polluter pays principle where companies which exceed the stipulated threshold for certain activities will be penalised R120 per tonne of carbon dioxide equivalent (CO2e). Various “allowances” will reduce the effective rate. Although, allowance thresholds have been incorporated and will be reviewed at the end of the first phase (2022). Annual payments towards the Tax are expected to be done during July each year for the previous calendar year and will be administered through the Customs and Excise Act. Draft SARS rules provide for the registration and licensing of emissions based on IPCC codes. While certain policy and technical aspects remain outstanding, we are evaluating further opportunities to reduce energy use and GHG emissions and options to source carbon offset credits. The tax will increase our operating 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 1657459 tCO2e of Scope 1 emissions in 2018.

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
2129811

Potential financial impact figure – maximum (currency)
6120755

Explanation of financial impact figure
The estimated exposure to carbon tax, with the commencement of the scheme for 2020 is USD 3.2 million at 2018 USD prices. This assumes the basic and some additional allowances. Given uncertainty around allowances the liability ranges from USD 2.1 million to USD 6.1 million at 2018 USD prices. The financial impact will be higher from 2023 onwards (as “allowances” are removed / reduced and as GHG emissions from purchased electricity become taxed).

Management method
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 and as members of the Minerals Council South Africa, Business Unity South Africa and the National Business Initiative. Our ECO2MAN energy and GHG management programme mitigates our exposure by reducing operational GHG emissions. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e. We have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations. We are re-imagining the future of mining. We believe that mines will be carbon neutral and we have begun detailed work to develop a pathway and timeframe to carbon neutrality, based on: • Radically reducing energy consumption through FutureSmart Mining™ methods and technology adoption • Switching to low carbon energy sourcing For example, our novel comminution circuits fragment particles using 30% less energy than conventional means. Our budget guidelines include provision for the South African carbon tax and the guidance for new investments evaluations include sensitivity to carbon pricing.

Cost of management
12000000

Comment
We estimate in excess of USD12 million has been invested in energy savings projects, research, policy development and developing climate change fact bases in South Africa since 2011. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at more than USD 260 million based on 2017 energy prices.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Transition risk

Primary climate-related risk driver
Policy and legal: Increased pricing of GHG emissions

Type of financial impact
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

In Australia, the federal government implemented the climate change Safeguard Mechanism in July 2016, to restrict GHG emissions. • It covers facilities with emissions greater than 100ktCO2e (i.e. all our Metallurgical Coal sites). It is a benchmarking framework where a baseline emissions level is set for each operation based on the last five years (FY 2009-10 to FY 2013-14) of data for Scope 1 emissions reported under the National Greenhouse and Energy Reporting Scheme (NGERS). Anglo American determined a calculated baseline for Capcoal, Moranbah North and Grosvenor mines, accompanied with a third-party audit report. The applications were submitted by the deadline on the 31st of October. In Australia, the federal government implemented the Climate Change Safeguard Mechanism in July 2016, to restrict GHG emissions. In 2018, Metallurgical Coal exceeded permitted emission levels at Capcoal and Moranbah North. This has been addressed through carbon credits and potential adjustments to agreed baselines.

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
4519499

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
In 2017 Anglo American's Capcoal Mine relinquished 133,107 Australian Carbon Credit Units (ACCUs) at a cost of AUS $ 1,768,952 (USD 1.36 million). In 2018 Anglo American's Capcoal Mine and Moranbah North Mine purchased a combined 171,494 ACCUs in anticipation for 2017-18 exceedances at a cost of AUS $ 4,232,748 (USD 3.16 million).

Management method
Exceedance above baseline limits remains a risk for our Metallurgical Coal business (as we mine deeper or expand into areas where geological conditions may result in more emissions). The business unit will continue to track emissions for each facility against their respective baselines as well as monitor legislation changes and available abatement technologies. In 2017, components of the ECO2MAN programme were reviewed as a part of the sustainable development audit. In 2018, work has continued on identifying and implementing ECO2MAN projects where appropriate. At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations, coal mine methane is captured and used to generate more than 140 MW of electricity. Their combined environmental benefit is a reduction in GHG emissions of 5 Mt of CO2e emissions a year. In Australia, the abatement of dilute ventilation air methane (or VAM) is being constantly researched by industry bodies such as the Australian Coal Association Research Program (ACARP) and Australian Coal21 Fund. However, significant safety issues have to be overcome before the easiest technology (high temperature oxidation) can be implemented at an Australian mine.

Cost of management
4519499

Comment
Payment to the regulator wasn't required in 2018 as multi-year baselines were approved prior to the surrender date. Baseline's for these sites now apply over a three-year period. Any exceedance from 2017 to 2020 will need to be paid in 2021.

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Transition risk

Primary climate-related risk driver
Policy and legal: Other

Type of financial impact
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description
COP 21 concluded with the Paris Agreement. In spite of the US withdrawal in 2017, we have seen continuous progress in the transition towards a low-carbon economy. The negotiated outcomes continue to influence national policies and energy technology choices and will do so for decades into the future. All countries in which Anglo American operates are 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. Anglo American may be exposed to future carbon pricing mechanisms in geographies other than those already affected (Australia and South Africa). Anglo American's Scope 1 emissions in geographies other than Australia and South Africa were 1 838 912 tCO2e (representing 19% of our Scope 1 emissions).

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Unknown

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)
16654296

Explanation of financial impact figure
Financial implications will only become evident as countries develop and implement domestic policies that will impact our different operations. The estimated upper range is based on Anglo's internal carbon price (R120 or USD 9.06 / direct CO2e), based on the South African carbon price.

Management method
We are working with governments and industry to develop equitable and effective climate change policies and technologies to facilitate the transition to a lower carbon future. The ECO2MAN program is been implemented across the Group, with an emphasis on driving energy and emission savings. At Anglo American we are re-imagining the future of mining. We believe that mines will be carbon neutral and we have begun detailed work to develop a pathway and timeframe to carbon neutrality, based on: • Radically reducing energy consumption through FutureSmart Mining™ methods and technology adoption • Switching to low carbon energy sourcing, increasing renewables in our energy mix We have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. As an example, through FutureSmart Mining™, by taking advantage of the natural variations within orebodies, we can identify and reject gangue (waste rock) close to the mine face. This means that we can reduce our energy intensity by more than 10%, as less reject gangue is being processed in our plants. Today, we have a full-scale demonstration installed at a copper mine in Chile, with two more units scheduled for delivery in 2019. Through De Beers, we have started investigating the potential for mineral carbonation of kimberlite tailings as a CCS-technology solution.

Cost of management
12000000

Comment
We estimate in excess of USD12 million has been invested in energy savings projects, research, policy development and developing climate change fact bases in South Africa since 2011. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at more than USD260 million based on 2017 energy prices. The GHG reduction projects we have implemented have a typical payback time of three years. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description
We have been working with the UK Met Office and other recognised experts on climate science since 2010. Initial climate studies identified our highest-risk sites as being located in Peru and Chile, with several other operations also vulnerable to extreme weather events. In 2012, we developed climate scenarios for vulnerable regions, which we then used to develop best-practice guidance for our operations and new investment projects. In 2016, we undertook a high-resolution modelling exercise with the UK Met Office for the Los Bronces underground project in Chile. In 2018, we undertook a similar high-resolution climate modelling exercise with South Africa's Council for Scientific and Industrial Research (CSIR), for all our PGM operations in South Africa and Zimbabwe. In 2019, similar exercises are planned for Quellaveco in Peru and Gahcho Kué in Canada. Our climate data review and predictive modelling indicate that increasing weather volatility – including highly variable and interchangeable periods of droughts and floods – is likely to exacerbate water stress and vulnerabilities at our operations and communities in which we operate. The Mogalakwena Complex is water secure for production under current conditions. Expansion of the Mogalakwena Complex is, however, potentially hindered by regional water scarcity due to increased demand and low water assurance associated with drought conditions. 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. In the reporting year, from 24th of July to 1st of November, the operation completely shut down water abstraction from the Peixe River, due to the mandatory limits imposed by the operation's water abstraction permit in a condition of regional water scarcity.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
90500000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
There was no impact on production in the reporting year. However, water restrictions had a net negative impact on production at Los Bronces of approximately 18,000 tonnes in 2015 which translates into a USD90.5 million impact.

Management method
The scenario data has informed our catchment-based water model and control measures. The analysis informs our water supply strategy. The water recycling system at the Los Bronces operation was a significant investment and allows the site to recycle more than 78% of available water and implemented various other initiatives. In order to mitigate the current risk of current water supply to Mogalakwena, we have 1. Test filtered tailings to dewater tailings; 2. Upgraded the Polokwane Sewage Works to secure

an additional 6ML of treated sewage water for reuse in the operation; 3. Undertaken tailings seepage recovery; 4. Evaluated the utilisation of additional wastewater effluent from Municipal Wastewater treatment plants in Limpopo. 5. Completed groundwater studies as part of the expansion studies to determine potential water sources for the concentrator; and 6. Invested in the research and development of various water-saving technologies with some already in the pilot phase e.g. course-floatation 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 installation of additional pumping capacity at the tailings dam to increase the recirculation of water from the tailings dam reservoir to the site's processing plant.

Cost of management
27500000

Comment
Recent water project expenditure at Los Bronces was US$20 million (this excludes the operational costs of purchasing water). A once-off $6 million investment by Anglo American Platinum was made to support the upgrade of Polokwane's sewage works for quality improvement and to secure an additional 6 Ml/d for Mogalakwena. Of the $6 million, we have spent $5.2 million to date, with $0.75 million being incurred in the reporting year. The work will be completed in the next financial year. In the order of US$6 million was spent at Minas Rio on modifying the chemistry of the water as well as the acquisition and installation of additional pumping capacity at the tailings dam. Costs of various adaptation studies have amounted to USD744,100

Identifier
Risk 5

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Physical risk

Primary climate-related risk driver
Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact
Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description
To understand, assess and mitigate the physical risks of climate change and extreme weather events we have worked with global leaders in climate modelling including the UK Met Office and the South African Council for Scientific and Industrial Research (CSIR) to understand the vulnerability of our operations and our host communities. These assessments assumed unabated anthropogenic GHG emissions through to the end of the century, with associated warming of more than 3.5°C and focused on: • Constructing local climate change models using the best available science • Using our operating model process to identify vulnerability and exposure • Integrating critical controls into operational risk management • Providing access to model data to universities and government functions As a result of snow and rain in Chile we lost 28 production days at our copper operations in 2015.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
90500000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
There was no impact on production in the reporting year. However, water restrictions had a net negative impact on production at Los Bronces of approximately 18,000 tonnes in 2015 which translates into a USD90.5 million impact.

Management method
Some of the key initiatives over the years to address physical risks are: • In 2011 we undertook a Climate Change Time of Emergence study for all our operations and projects, to help prioritise the areas for initial focus • In 2012, we developed best practice guidelines for our operations and new investment projects using climate scenario analysis for sites in South Africa and in Peru. • In 2016, we undertook a high resolution modelling exercise for Los Bronces • In 2018, our PGMs business initiated a climate modelling and adaptation exercise across all of its operations in South Africa

Cost of management
7244100

Comment
A once-off R80 million (USD6.5 million) investment by Anglo American Platinum was made to support the upgrade of Polokwane's sewage works for quality improvement and to secure an additional 6 Ml/d for Mogalakwena. Of the R80 million, we have spent R70 million to date, with R10 million being incurred in the reporting year. The work will be completed in the next financial year. Costs of various adaptation studies have amounted to USD744,100.

Identifier
Risk 6

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Physical risk

Primary climate-related risk driver
Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact
Reduced revenue from decreased production capacity (e.g., delayed planning approvals, supply chain interruptions)

Company- specific description
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 operation. This is resulting in an increase in costs associated with purchasing and transporting water.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
90500000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
There was no impact on production in the reporting year. However, water restrictions had a net negative impact on production at Los Bronces of approximately 18,000 tonnes in 2015 which translates into a USD90.5 million impact.

Management method
A bespoke piece of climate-modelling analysis was carried out for the Los Bronces underground copper project in Chile and a strategy subsequently developed. As an example, Los Bronces copper mine in Chile has an ambitious plan to recycle more water by sucking it from the bottom of a tailings dam. More than 200 million m3 of waste water are retained in the fine tailings of Las Tórtolas dam, which is currently up to 100 metres deep. Retained water will increase to more than 750 million m3 during the life of the mine. Water retention in the tailings is the biggest part of water consumption at Los Bronces and many other mines. The proposed water-recovery scheme aims to increase water re-use efficiency by extracting some of this water and pumping it back to the Los Bronces processing plant. The plan is for 29-millimetre horizontal wells to be drilled through the permeable weathered bedrock along the bottom of the dam and then lined with a 19-millimetre perforated steel pipe into which water will drain. It could improve Los Bronces' water efficiency by reducing water consumption by up to 20%, contributing to meeting our sustainability targets. A trial well is scheduled for the first quarter of 2020, with monitoring and evaluation of results due by mid-2020. The water recycling system at the Los Bronces operation was a significant investment and allows the site to recycle more than 78% of available water.

Cost of management
75000000

Comment
Current estimates put the overall Los Bronces project cost at USD30-75 million. Recent water project expenditure at Los Bronces was US$20 million which excludes the operational costs of purchasing water. These are once off costs and derived from quotations and invoices.

Identifier
Risk 7

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Transition risk

Primary climate-related risk driver
Reputation: Shifts in consumer preferences

Type of financial impact
Reduced revenue from decreased demand for goods/services

Company- specific description
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 2'C Coal, primarily through its role in electricity production, has a critical role in supporting poverty 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 accounting for 66 million tonnes of CO2 annually. Our thermal coal business represented 12% of our revenue for 2018. 54% of our coal business, by revenue, relates to metallurgical coal used in the production of steel. However, there are limited substitutes 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 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.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
3196000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Underlying EBITDA for coal operations was USD 3 196 million in 2018 (USD2 868 million in 2017).

Management method
We have halved our thermal coal production in the last five years and, as renewable power generation continues to take hold, we will continue that transition. We are participating in the development of CCS and clean coal technologies through various investments. 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 CCS. 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 under the global platform for accelerating coal efficiency (PACE). We also invest directly in reducing our emissions. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

Cost of management
10000000

Comment
Our investment in clean coal technology amounts to approximately USD10 million.

Identifier
Risk 8

Where in the value chain does the risk driver occur?
Direct operations

Risk type
Transition risk

Primary climate-related risk driver
Technology: Substitution of existing products and services with lower emissions options

Type of financial impact
Reduced demand for products and services

Company- specific description
In 2016 we undertook a qualitative analysis of the climate-change signposts and indicators affecting PGM demand to 2035. In 2018 we extended this work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. The upside outlook for PGMs is not certain, given the potential for significant growth if the hydrogen economy develops at scale. Although the long-term outlook for the automotive sector is positive, demand for vehicles could be lower in 2°C than in our New Policies Scenario (NPS)+, owing to accelerated shared mobility and autonomous vehicles trends. The uptake of electric vehicles is positive for both copper and nickel. The effects on demand for PGMs is less clear. The emergence of Battery Electric Vehicles (BEVs) as a major alternative drivetrain in the long term would reduce demand for auto catalysts and thus have a negative impact on PGMs demand. However, across both scenarios, hybrids would maintain a share of sales in the next decade, thus ensuring a level of continued demand from autocatalysts. We expect Fuel Cell Electric Vehicles (FCEVs), which today rely on PGMs-based fuel cells, to contribute to the electrified drivetrain for vehicles, especially in the heavy-duty segment of the market. One third of Anglo American's Platinum is sold to the automotive industry (a third meets the demands of the industrial sector and a third of the jewellery sector). Of that third, roughly half is associated with light duty diesel vehicles in Europe. The rest is in areas unlikely to be affected by electric vehicles. The growing hydrogen economy (and growth in jewellery demand) will more than offset this loss in demand in Europe in particular. In the long term, there is some risk to our sales if adoption rates are faster than projected at present. Similarly, government regulation or social change (e.g. through increased use of car-sharing services) could limit sales of internal combustion engine vehicles and the associated demand for PGMs in their catalytic converters. Anglo American is the leading primary producer of platinum group metals. https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/sustainability/our-strategy/climate-change-our-plans-policies-and-progress2019.pdf

Time horizon
Long-term

Likelihood
Unlikely

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
13886792

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Any downturn in the automotive market or in the share of the internal combustion engine beyond current expectations would be expected to have a negative impact on profit. If a decrease in demand resulted in a R100 (USD 7.55) decrease in the PGM basket price this would reduce our EBIT by R184 million (USD 13.9 million at 2018

prices) over a year long period.

Management method
We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures(APV), which targets growth of early stage hydrogen enablers. Partnering with the South African state pension fund manager, Public Investment Corporation (PIC), the parties committed USD100 million each to the endeavour. AP Ventures will continue with the original intention of the PGM investment programme, investing in high-growth companies developing patentable technologies that use PGMs to address some of society's biggest challenges. In December 2018, Mitsubishi Corporation became the third limited partner of AP Ventures, further endorsing the fund's mandate. AP Ventures will invest globally in companies that support development of innovative and competitive technological uses of PGMs. Examples include Altergy Systems, Hydrogenious Technologies: Greyrock Energy, Ballard Power Systems, Hyet Hydrogen, United Hydrogen, Ergosup and It's Fresh.

Cost of management
100000000

Comment
Anglo American Platinum will invest USD100 million, through AP Ventures, into a specialist 12-year Fund dedicated to investment in advanced companies utilising the unique properties of PGMs.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Other

Type of financial impact
Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company-specific description
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 USD0.08 (R0.95)//kWh tax allowance for energy savings and sets out the process for determining the significance of energy efficiency savings, and the requirements for claiming the proposed tax deduction. Opportunities are available for our South African business units to utilise the 12L tax incentive regulation. With the potential of upcoming regulation requiring the submission of a five-year Energy Management Plan and annual progress reporting, there is an opportunity to align this with the ECO2MAN programme.

Time horizon
Current

Likelihood
Virtually certain

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
15400000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Measurable energy savings allowed several of our operations in South Africa to benefit from the 12l tax-deduction incentives, estimated at USD15.4 million.

Strategy to realize opportunity
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 Mogalakwena), De Beers (9 projects at Venetia), Kumba Iron Ore (4 projects at Sishen and 2 projects at Kolomela) and Coal SA (1 project at Goedehoop and 1 project at Landau Colliery). Our Kumba Iron Ore subsidiary in South Africa has achieved significant energy savings through a range of emission reduction initiatives across its haulage fleet. These included improving payload management systems, expanding the implementation of its diesel energy efficiency management programme, optimising the loading of haul trucks, and adjusting haul truck engines.

Cost to realize opportunity
12782

Comment
No cost (USD0): 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 USD12,782 but savings and the tax rebates result in a net benefit.

Identifier
Opp2

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Type of financial impact
Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)

Company-specific description
The South African carbon tax bill allows for the use of domestic offset credits against 10% of tax exposure. 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.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
212981

Potential financial impact figure – maximum (currency)
612075

Explanation of financial impact figure
With regard to the South African Carbon Tax Act, it is estimated that offsets could reduce compliance costs by USD 0.2 million to 0.6 million in 2020 (2018 prices).

Strategy to realize opportunity
We investigate opportunities for carbon-offset partnerships. We have identified options for implementation once a compliance carbon-trading market develops. 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 including: 1. A bamboo plantation, with over 1,000 trees covering 4 hectares; 2. Installing domestic solar water heaters in houses; 3. Undertaking a camelthorn tree preservation 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.

Cost to realize opportunity
2200000

Comment
Anglo American's Kumba Iron Ore has invested just over USD145,666 (R 2 million in bamboo and solar pilot projects in preparation for the offset mechanism. De Beers plans to invest a total of USD3 million in the project exploring CCS mineralisation in kimberlite (excluding site scale pilots).

Identifier
Opp3

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Type of financial impact
Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)

Company-specific description
Demand for platinum group metals (PGMs) from the automotive sector accounts for just over 40%, 70% and more than 80% of total platinum, palladium and rhodium demand, respectively. As governments enact ever-tighter emissions legislation, these three metals, which are used in catalytic converters, have a key role to play in the move to reduce vehicle emissions. In the short term, such legislation is likely to mean higher metal loadings on catalytic converters to improve their efficiency. As automotive producers look to produce larger numbers of hybrid vehicles, which run on both an internal combustion engine (ICE) and a battery, PGMs will remain in high demand as the catalysts require metal loadings similar to those found in current ICE cars. Looking further ahead, hydrogen fuel cell electric vehicles (FCEVs) offer a zero emissions alternative to ICE vehicles, without the need for consumers to change their behaviour.

Time horizon
Long-term

Likelihood
More likely than not

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
13886792

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
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. If a decrease in demand resulted in a R100 decrease in the PGM basket price this would reduce our EBIT by R184 million (USD 13.9 million at 2018 prices) over a year long period. Anglo American Platinum's EBIT in 2018 was R 10 333 million.

Strategy to realize opportunity
We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures (APV), which targets growth of early stage hydrogen enablers. Partnering with the South African state pension fund manager, Public Investment Corporation (PIC), the parties committed USD100 million each to the endeavour. AP Ventures will continue with the original intention of the PGM investment programme, investing in high-growth companies developing patentable technologies that use PGMs to address some of society's biggest challenges. In December 2018, Mitsubishi Corporation became the third limited partner of AP Ventures, further endorsing the fund's mandate. AP Ventures will invest globally in companies that support development of innovative and competitive technological uses of PGMs. Examples include Altergy Systems, Hydrogenious Technologies: Greyrock Energy, Ballard Power Systems, Hyet Hydrogen, United Hydrogen, Ergosup and It's Fresh.

Cost to realize opportunity
100000000

Comment
We will invest USD100 million, through AP Ventures, into a specialist 12-year Fund dedicated to investment in advanced companies utilising the unique properties of PGMs.

Identifier
Opp4

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Type of financial impact
Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon

Company-specific description
There is an opportunity to invest in the self-generation of energy as technologies develop and become economically viable and as the drivers to secure reliability of energy supply and reduce our GHG emissions intensify. Key opportunities lie at our South African operations (particularly around waste heat recovery and solar PV), as well as solar PV at our operations in Brazil, Chile, Australia and Canada, and further use of methane for electricity at our Australian underground operations.

Time horizon
Short-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
6743547

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
As an indication, if a 75MW solar PV facility were to produce at a levelized cost of R0.02 below the rate that we buy electricity from Eskom (the utility in South Africa), this would result in a saving of R112 million per year (USD 8.4 million at 2018 prices).

Strategy to realize opportunity
We have made some early progress in the use of renewable energy, although a great deal more is required. In Brazil, the furnace at Codemin uses biomass instead of fossil fuels in the processing of nickel. Coal South Africa has installed solar power generation capacity that meets a portion of its energy needs. Anglo American's Moranbah North and Capcoal methane-fired power stations together generate more than 140 MW of electricity. Electricity generated feeds into the grid but there is an option for this to be ring-fenced for Anglo American should there be any grid constraints affecting supply. Platinum's Waterval smelter in South Africa generates electricity from waste heat

recovered from the converting process. Through this process we generate an average of approximately 3.2 MW in electrical energy for own use. 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. We are undertaking a study currently to look at all alternate / renewable energy opportunities at each operation. Each context is unique and we are trying to work out what we can do at each operation. This process will inform how we plan to roll out renewable energy going forward. We are currently evaluating tenders for a 75MW solar photovoltaic facility supplying Mogalakwena Mine, and are also partnering with developers in Rustenburg to become an off-taker.

Cost to realize opportunity
2476329

Comment
The Eternity Power Thermal Harvesting™ project which was commissioned in June 2015 and developed by Vuselela Energy in collaboration with Platinum which had a total project cost of R150million. We invested USD2,476,329 (R34 million) in Greyrock Energy.

Identifier
Opp5

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Markets

Primary climate-related opportunity driver
Access to new markets

Type of financial impact
Increased revenues through access to new and emerging markets (e.g., partnerships with governments, development banks)

Company-specific description
Three of Anglo American's commodities – copper, platinum and nickel – will become even more critical in the move to low-carbon technology and renewable energy. The 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. 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 43,300t of Nickel in 2018. Copper is used in several low-carbon technology and 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 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 668 Kt of copper in 2018.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financially, based on our current asset footprint and ignoring any future adjustments to the portfolio beyond the execution of our potential suite of organic growth projects or any other changes, our cashflow could grow significantly to 2030 under NPS+. Under the IEA's 2°C scenario we remain resilient, although there is greater uncertainty depending on what assumptions are made on critical levers. The range relative to our NPS+ cashflow could be between 20% higher and 10% lower in 2030.

Strategy to realize opportunity
In 2015, we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. In 2016 we undertook a qualitative analysis of the climate-change signposts and indicators affecting copper and PGM demand to 2035. In 2018 we extended this work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. At a product level, we expect profit pools to grow in both scenarios for copper and nickel. Climate scenario analysis has informed our strategy in various ways including, for example, our significant growth optionality in metals and minerals that are required for the low carbon transition. In copper this includes our existing long life Chilean assets and the development of the Quellaveco operation in Peru.

Cost to realize opportunity
0

Comment
None at this stage (beyond normal operating costs)

Identifier
Opp6

Where in the value chain does the opportunity occur?
Direct operations

Opportunity type
Resource efficiency

Primary climate-related opportunity driver
Other

Type of financial impact
Other, please specify (innovation-led to competitive advantage)

Company-specific description
Innovation can lead to competitive advantage through finding new ways to make mining safer, more efficient, more sustainable, more harmonised with the needs of host communities, and with a smaller environmental footprint. The need to transition to a low-carbon economy and adapt to changing climatic conditions are fundamental to our long-term success. As we look forward to our next 100 years, we aim to lead in an industry that remains vital to the development of modern society. With our innovative approach to sustainability and the application of technologies to reduce the physical impacts of mining, our goal will be – as it always has been – to deliver value to all our stakeholders and continue to make a real and positive difference.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1000000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
USD 1bn EBITDA improvement from Technology & Innovation by 2022 (relative to 2017)

Strategy to realize opportunity
FutureSmart Mining™ is Anglo American's innovation-led pathway to sustainable mining, the blueprint for the future of our business. It is a new way of thinking that will transform the nature of mining – how we discover, mine, process, move and market our products – and how our stakeholders experience our business. It is about our environmental and societal footprint. We are looking well beyond our own industry to re-imagine the future of mining, using open-innovation principles and partnerships to find solutions that will materially improve efficiencies and our competitive positions. As part of FutureSmart Mining™ we are planning on investing significant capital by 2021 in the following initiatives: • Digitalisation (the Intelligent Mine) • Concentrate the Mine • The Waterless Mine • The Modern Mine As an example, as part of FutureSmart Mining™, we are exploring hydrogen (H2) haulage. The approach oversizes solar PV, leverages tariff arbitrage opportunities and produces H2 with excess solar PV generation to fuel trucks. Potential value includes reducing GHG emissions on large sites by 30% in plant and 100% in trucks; increasing truck power by 5%; improving energy security, creating resilience to electricity price increases, contributing to a shift to the hydrogen economy (increasing our PGM product demand), innovating around next generation mining vehicles and including host communities.

Cost to realize opportunity
900000000

Comment
USD 100-500m per annum capital investment in Technology & Innovation from 2019 to 2021.

Identifier
Opp7

Where in the value chain does the opportunity occur?
Supply Chain

Opportunity type
Resilience

Primary climate-related opportunity driver
Other

Type of financial impact
Other, please specify (Partnerships)

Company-specific description
Collaborative partnerships enable us to connect with people to find safer, more efficient and more sustainable ways to mine the precious metals and minerals that the world needs. Anglo American is considering options for long-term partnerships, which will enhance our efforts in the transition to the future low-carbon economy. The development of the Group's Sustainability Strategy identified the need for partnerships around the following areas: • Building resilience: partnering with stakeholders on carbon-reducing projects and adapting to climate change; and • Being proactive: developing low-carbon technology partnerships. This opportunity is relevant to all our operations.

Time horizon
Long-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)
638943

Potential financial impact figure – maximum (currency)
1836226

Explanation of financial impact figure
As an indication, a 30% reduction in our carbon tax liability (achieved through our long term target) would reduce our 2020 carbon liability by between USD 0.6 million and USD 1.8 million (in 2018 prices)

Strategy to realize opportunity
The FutureSmart™ 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. We invest in low-carbon research and development (R&D), equipment, products, and services. This includes investment into CCS (through the Australian Coal 21 Fund, the South African Centre for Carbon Capture and Storage and through De Beers work on CO2 mineralisation of kimberlite tailings). We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures (APV), which targets growth of early stage hydrogen enablers. We also support the development of carbon reduction and removal technologies. We are founding sponsors of the World Bank's Climate Smart Mining Facility launched in May 2019.

Cost to realize opportunity
100000000

Comment
We will invest USD100 million, over the period from 2014-2019, in companies that use or enable the use of PGM-based technology in their products or processes.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted for some suppliers, facilities, or product lines	Kumba's iron ore has a high lump-to-fines ratio compared to its competitors, reducing downstream emissions associated with steelmaking. We expect demand for this product to increase due to the low-carbon transition. Three of Anglo American's commodities – copper, platinum and nickel – will become even more critical in the move to low-carbon technology and renewable energy. As automotive producers look to produce larger numbers of hybrid vehicles, which run on both an internal combustion engine (ICE) and a battery, PGMs will remain in high demand as the catalysts require metal loadings similar to those found in current ICE cars. Looking further ahead, hydrogen Fuel Cell Electric Vehicles (FCEVs) offer a zero emissions alternative to ICE vehicles, without the need for consumers to change their behaviour. Anglo American is the leading primary producer of PGMs, extracting and processing around 40% of all newly mined platinum and is best placed to benefit from this potential increase in demand. The 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. In the longer term we expect 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 accounting for 108 million tonnes of CO2 annually. Our thermal coal business represented 12% of our revenue for 2018. We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible. 54% of our coal business, by revenue, relates to metallurgical coal used in the production of steel. However, there are limited substitutes for metallurgical coal in steel making.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	Changing weather patterns threaten security of water supply in water stressed areas in which we operate. For example, the Mogalakwena complex is water secure current production levels. Expansion of the Mogalakwena Complex is, however, potentially hindered by regional water scarcity due to increased demand and low water assurance associated with drought conditions. This is further compounded by climate change, with modelling predicting highly variable drought and wet cycles with a potential 10% increase in high and low rainfall margins, as well as shorter and wetter rainy periods, with longer dry periods per annum. The mine is located in an area where there are rapidly growing demands for water to support agricultural, mining, industrial and domestic consumption in order to support on-going economic development and growth.
Adaptation and mitigation activities	Not yet impacted	Increasing costs, supply chain and operational disruptions due to climate change have the potential to negatively impact our adaptation and mitigation activities, Anglo American has not experienced any negative impacts to date.
Investment in R&D	Impacted	Climate change risks and opportunities have contributed to the impetus to invest in innovation. FutureSmart Mining™ is Anglo American's innovation-led approach to responsible and sustainable mining – and it is critical for the future of how we do business. Working in partnership beyond mining, we are looking well beyond our own industry to re-imagine the future of mining, using open-innovation principles and partnerships to find solutions that will materially improve efficiencies and our competitive positions. We believe that one day all mines will be both carbon and water-neutral (as well as low cost and scalable), with a minimal footprint that is harmonised with the needs of our host communities – and that FutureSmart Mining™ is our pathway to that future. We invest in low-carbon R&D, equipment, products, and services. This includes investment into CCS (through the Australian Coal 21 Fund and the South African Centre for Carbon Capture and Storage), CCS and utilisation (through De Beers work on CO2 mineralisation of kimberlite tailings), and investment into the development of fuel cells and the hydrogen value chain through AP Ventures.
Operations	Impacted	Climate change regulations are impacting our operating costs (effected year in South Africa with the introduction of a carbon tax and in Australia given the introduction of the Safeguard Mechanism). Physical climate changes are also impacting our operations and expected to impact them into the future. The Los Bronces operation experienced a drought from 2012-2015 and then subsequent high precipitation events in 2016 and 2017. The result of this was that sections of the pit and haul roads were flooded, leading to lost production for a 2-week period. This is regarded as a substantive loss for the operation. Our platinum business has experienced increased compliance costs due to severe weather events. The primary philosophy of mine water management is to ensure that clean natural water runoff is diverted away from mining operations and the mine affected water is collected, contained and where possible re-used/recycled. Affected water is collected in pollution control dams (PCDs), normally located at the lowest point on the mine site. PCDs must be designed and operated to contain all rainfall events that are less than the 1:50 year rainfall and flood event. During January and February 2017, six PCDs at different operations spilled mine affected water into the natural environment as a result of excessive rainfall. All discharges were sampled for analysis and reported to the Department of Water and Sanitation (DWS) as per the incident procedure. DWS was also engaged to make them aware of the weather and potential discharges and the reporting process that will be followed. Due to significant dilution observed in the receiving environment, the final impact ratings were not significant, and no fines or penalties incurred.
Other, please specify	Not impacted	Not applicable

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	The potential impact of changing market demands for products driven by the transition to an increasing carbon constrained global economy will impact demand for PGMs, nickel, copper and high-quality iron ore (produced by Anglo American's Kumba Iron Ore). The potential impact on revenues has led to our Platinum business' investment in the fuel cell and hydrogen value chain development. We will invest USD100 million, through AP Ventures, into a specialist 12-year Fund dedicated to investment in advanced companies utilising the unique properties of PGMs. Our longer term partnership research programmes include piloting platinum-based fuel cells for mobile and stationary power systems. In February 2017, Anglo American and 13 other companies launched the global Hydrogen Council. Through the Council we confirmed our ambition to accelerate investment in the development and commercialisation of both hydrogen and fuel cell sectors.
Operating costs	Impacted	The South African carbon tax has been evaluated and liability at an operational level used to inform financial planning (budget setting). Through FutureSmart Mining™, we are investing in novel mineral processing technologies that are more energy- efficient than conventional methods. For example, our tests show that there is a possibility of reducing comminution energy by 30% over current methods. Securing adequate bulk water supply has capital and operating cost implications for Anglo American and is factored into the company's financial planning. For example, Anglo American has been actively involved in partnerships, through the Olifants River Water Forum and Lebalelo pipeline, to source water into the Northern and Eastern Limb platinum operations and communities. This has included collaboration with 30 organisations to provide bulk water services to mines and communities in the area. Used (grey) water is also sourced for the Northern Limb operations through partnerships with the municipalities of Polokwane and Mokopane. In 2017 Anglo American commissioned the strategic Limpopo regional source-water project in collaboration with the Department of Water and Sanitation, to restate regional water balances of quaternary catchments in Limpopo. The objective is to understand water deficits and surpluses before undertaking a conceptual source-water project to meet shortfalls in collaboration with other industry partners and government. Preliminary findings indicate significant supply shortfalls in 2022 and the importance of water supply and demand management at our operations, other mining operations and municipalities. The project is currently evaluating source-water options.
Capital expenditures / capital allocation	Impacted	We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible. Meeting our ambitious, long term, GHG reduction target will require additional capital investment. We are extending the ECO2MAN programme, the Anglo American Energy and CO2 management programme, to include deep dive assessments. This will include a three-year programme to undertake technical and financial reviews at each of our major operating sites to determine an optimal path to achieving the 2030 target. The results of this process will feed into capital planning and allocation processes. Additionally, capital allocation planning has considered the requirements of FutureSmart Mining™ where we plan on investing significantly by 2021 in Concentrate the Mine, The Waterless Mine initiative and The Modern Mine innovation programmes.
Acquisitions and divestments	Impacted	Independent forecasters foresee coal as an important part of the energy mix up to 2040 however fossil fuels will be increasingly contested by society and, as a result, the role of thermal coal will decline in the long term. The sale of the Eskom-tied domestic thermal coal operations consisting of New Vaal, New Denmark, and Kriel collieries, as well as four closed collieries (together, 'Eskom-tied operations') by Anglo American Operations Proprietary Limited and Anglo American Inyosi Coal Proprietary Limited to a wholly owned subsidiary of Seriti Resources Holdings Proprietary Limited was announced on 10 April 2017 for a consideration payable, as at 1 January 2017, of R2.3 billion (approximately USD164 million). The transaction was completed on 1 March 2018. Through the PGM Investment Programme, we make strategic investments in a portfolio of activities ranging from research, product development and demonstration through to investments in early-stage businesses that use or enable the use of PGMs in the longer term. This includes companies with expertise in the advancement of hydrogen fuel cells and hydrogen-storage solutions.
Access to capital	Not yet impacted	Access to capital has not been impacted by our climate change performance but we actively engage and respond to shareholder concerns in this regard. Responding to the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD) is an example.
Assets	Not yet impacted	We have been working with the UK Met Office and other recognised experts on climate science since 2010. Initial climate studies identified our highest-risk sites as being located in Peru and Chile, with several other operations also vulnerable to extreme weather events. In 2012, we developed climate scenarios for vulnerable regions, which we then used to develop best-practice guidance for our operations and new investment projects. In 2016, we undertook a high-resolution modelling exercise with the UK Met Office, for the Los Bronces underground project in Chile. The scenario data has informed our catchment-based water-model, air-quality and natural-hazard assessments and control measures. Recent water project expenditure at Los Bronces was USD70 million which excludes the operational costs of purchasing water. These are once off costs and derived from quotations and invoices. In 2018, we undertook a similar high-resolution climate modelling exercise with South Africa's Council for Scientific and Industrial Research (CSIR), for all our PGM operations in South Africa and Zimbabwe. In 2019, similar exercises are planned for Quellaveco in Peru and Gahcho Kué in Canada.
Liabilities	Not impacted	Anglo American's Operational Risk Management (ORM) programme for operations, and the Investment Development Model (IDM) for projects has not identified any material climate risks impacting our liabilities. We will continue to monitor risks to our liabilities and will update our financial planning processes if climate risks to our liabilities become material.
Other	Not impacted	Not applicable

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

i) Our strategy is to secure, develop and operate a portfolio of high quality and long life resource assets, from which we will deliver leading shareholder returns. We achieve this through innovative practices and technologies – in the hands of our world class people – towards a common purpose. Anglo American has applied our FutureSmart Mining™ approach to the development of our Sustainable Mining Plan. Holistic, integrated and flexible to the characteristics of individual operating sites, our strategy comprises mutually reinforcing elements that together are expected to positively transform how our stakeholders experience our business, both locally and globally. The strategy is focused on three global sustainability pillars – Trusted Corporate Leader, Thriving Communities, Healthy Environment – each encompassing three global stretch goals. These goals relate to Anglo American as a whole, at an aggregate level. They are deliberately ambitious, they will challenge our business to innovate and change, and we are mobilising our people and resources to deliver them by 2030.

ii) At Anglo American we are re-imagining the future of mining. We believe that mines will be carbon neutral and we have begun detailed work to develop a pathway and timeframe to carbon neutrality, based on:

· Radically reducing energy consumption through FutureSmart Mining™ methods and technology adoption

· Switching to low carbon energy sourcing, increasing renewables in our energy mix

Aligned with this approach, we have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. We are on track to achieve our 2020 targets of an 8% improvement in energy use and a 22% saving in GHG emissions, against our projected 'business as usual' (BAU) consumption. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations.

iii) In 2018 we extended our climate scenario work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. Climate scenario analysis has informed our strategy in the following ways:

· Our significant growth optionality in metals and minerals that are required for the low carbon transition. In copper this includes our existing long life Chilean assets and the development of the Quellaveco operation in Peru. Meanwhile, our flagship PGMs mine at Mogalakwena in South Africa, is well placed to provide not only a wide variety of PGMs, but also material volumes of high quality nickel.

· We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. Climate scenario analysis has informed our decision to halve our position in thermal coal through the sale of our South African Eskom-tied domestic coal operations and the Drayton, Dartbrook and Callide operations in Australia. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible

· In regions where carbon pricing is an emerging government policy, we already include carbon pricing in our budget guidance and project evaluations. Going forward, we will take into account a carbon price for our pricing and forecasting in all jurisdictions

· We have built optionality into our operational strategy, across our products and growth areas, coupled with a disciplined approach to capital allocation. This allows for targeted interventions to mitigate risk

· We are using the analysis to actively assess long term growth opportunities (e.g. expansion into other promising metals and minerals and potential adjacent growth opportunities)

iv) We expect that climate change will affect our business in three principal ways: regulation, taxation and the cost of 'decarbonising' energy systems (if passed on to consumers) will have a financial impact; demand for PGMs and copper – critical products in enabling alternative energy technologies – will increase, while coal is likely to feature less prominently in the long term global energy mix; and the physical and social impacts of a changing climate may affect our operations and host communities. There is also the potential for a range of carbon pricing and offset/incentive policies to emerge in the medium term.

v) In the short term (1-6 years), climate change has driven more efficient use of energy and emissions reductions via the ECO2MAN programme (delivering a cumulative saving of 6.1 million tCO2e in 2018 – a 25% reduction relative to BAU), switching to and investigating low carbon energy sources (e.g. in Brazil, the furnace at Codemin uses biomass instead of fossil fuels in the processing of nickel); recovering energy (electricity from waste heat recovery at Platinum's Waterval smelter), and mitigating coal-mine methane emissions (more than 140MW of methane-powered electricity generation at our underground metallurgical coal operations in Australia).

vi) The most significant long-term (more than 6 years) strategic consideration has been the impact on our portfolio of potential risks and opportunities related to climate change. At a product level, based on our scenario analysis, we expect profit pools to grow in both scenarios for copper and nickel and to reduce for coal (thermal and metallurgical). The outlook for iron ore is positive or negative depending on the scenario and the upside outlook for PGMs is less certain, given the potential for significant growth if the hydrogen economy develops at scale. The range relative to our scenario cashflow could be between 20% higher and 10% lower in 2030.

vii) Partnerships and innovation in the context of the low-carbon transition are positioning us as to be mining industry leaders in the long term. FutureSmart Mining™ is Anglo American's innovation-led approach to responsible and sustainable mining – and it is critical for the future of how we do business.

viii) Anglo American recognises the need to make a contribution to the global journey to address climate change and that this is inextricably linked to remaining a successful business into the future. The Paris Agreement and the achievement of the SDGs played a fundamental role in shaping our Sustainability Strategy and the long term (2030) GHG reduction target.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
IEA Sustainable development scenario IEA NPS	In 2015, we conducted an assessment of the climate-related scenario risks and opportunities for the thermal coal market to 2030 and beyond. In 2016 we undertook a qualitative analysis of the climate-change signposts and indicators affecting copper and PGM demand to 2035. In 2018 we extended this work and developed scenarios for possible future worlds that represent combinations of a potential set of outcomes related to physical impacts on our operations and neighbouring communities and demand for our mined products. To build these scenarios we drew on global best practice, including among others, the UK Met. Office's view on physical impacts and the International Energy Agency's (IEA) perspectives on market demand impacts, supplemented with our own views on issues materially relevant to Anglo American. The IEA's three scenarios – Current Policies, New Policies, and Sustainable Development – formed the baseline against which we have developed our scenarios. We call the scenarios we have developed: New Policies Scenario (NPS)+ and 2oC. NPS+: Under NPS+, we assume that the global economy will have undergone major changes by 2050, in particular in the power generation/energy, transport and steel sectors: the global power mix will have shifted significantly, with renewables delivering more than 50% of that power, and various electric vehicle technologies will have become the norm in most markets for light vehicles. 2°C: Derived from IEA's 'Sustainable Development' scenario, this scenario tracks a transition pathway in which global temperature would, with reasonable probability, increase by less than 2°C by 2100. In addition to abatement levers contained in NPS+, 2°C assumes a higher share of renewables in the energy mix, the phasing out of coal power, and extensive deployment of low carbon technologies such as carbon capture and storage (CCS), by 2050. It also assumes focused and productive global cooperation, as well as radically altered consumer and business behaviour resulting, in part, from widespread adoption of the circular (reduce and reuse) economy. We expect the overall industry profit pool to be robust and grow under NPS+. Uptake of new technologies required to achieve a 2°C outcome could lead to an overall flat profit pool outlook post-2035. At a product level, we expect profit pools to grow in both scenarios for copper and nickel and to reduce for coal (thermal and metallurgical). The outlook for iron ore is positive under NPS+ and negative under 2oC and the upside outlook for PGMs is less certain, given the potential for significant growth if the hydrogen economy develops at scale. Financially, based on our current asset footprint and ignoring any future adjustments to the portfolio beyond the execution of our potential suite of organic growth projects or any other changes, our cashflow could grow significantly to 2030 under NPS+. Under the IEA's 2°C scenario we remain resilient, although there is greater uncertainty depending on what assumptions are made on critical levers. The range relative to our NPS+ cashflow could be between 20% higher and 10% lower in 2030. Climate scenario analysis has informed our strategy in various ways including, for example, • Our significant growth optionality in metals and minerals that are required for the low carbon transition. In copper this includes our existing long life Chilean assets and the development of the Quellaveco operation in Peru. Meanwhile, our flagship PGMs mine at Mogalakwena in South Africa, is well placed to provide not only a wide variety of PGMs, but also material volumes of high quality nickel. • We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. We do not intend to acquire any additional thermal coal assets. Over time, we expect to continue to reduce our thermal coal footprint but the way we transition the business will be considered and responsible.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

At Anglo American we are re-imagining the future of mining. We believe that mines will be carbon neutral and we have begun detailed work to develop a pathway and timeframe to carbon neutrality, based on:

· Radically reducing energy consumption through FutureSmart MiningTM methods and technology adoption

· Switching to low carbon energy sourcing, increasing renewables in our energy mix

Aligned with this approach, we have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. We are on track to achieve our 2020 targets of an 8% improvement in energy use and a 22% saving in GHG emissions, against our projected 'business as usual' (BAU) consumption. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations.

We are re-imagining mining through our operating model, FutureSmart Mining™ and our Sustainable Mining Plan. Reducing our climate impact is facilitated through our operating model which provides clarity, produces stability and reduces variability.

FutureSmart Mining™ is Anglo American's innovation-led pathway to sustainable mining, the blueprint for the future of our business. It is a new way of thinking that will transform the nature of mining – how we discover, mine, process, move and market our products – and how our stakeholders experience our business. It is about our environmental and societal footprint. We are looking well beyond our own industry to re-imagine the future of mining, using open-innovation principles and partnerships to find solutions that will materially improve efficiencies and our competitive positions. As part of FutureSmart Mining™ we are planning on investing significant capital by 2021 in the following initiatives:

· Digitalisation: the Intelligent Mine that leverages, for example, advanced process control (yielding potential production benefits but also up to 5% energy efficiency improvements) and Internet of Things, artificial intelligence, etc.;

· Concentrate the Mine: designed to provide a step change increase in an operations metal output, reducing energy and water consumption through more efficient processing techniques;

· The Waterless Mine: focused on innovative ways to separate and transport waste, evaporation measurement, dry-tailings disposal and non-aqueous processing; and

· The Modern Mine: aiming to achieve a step change in mining efficiency through the development and implementation of new technologies, automation, and processes.

As an example, as part of FutureSmart Mining™, we are exploring hydrogen (H2) haulage. The approach oversizes solar PV, leverages tariff arbitrage opportunities and produces H2 with excess solar PV generation to fuel trucks. Potential value includes reducing GHG emissions on large sites by 30% in plant and 100% in trucks; increasing truck power by 5%; improving energy security, creating resilience to electricity price increases, contributing to a shift to the hydrogen economy (increasing our PGM product demand), innovating around next generation mining vehicles and including host communities.

The transition to lower carbon, climate resilient economies is expected to have impacts on the demand for our products and these trends are factored into our low-carbon transition plan. There is likely to be demand growth for copper and nickel, a potential reduction for thermal and metallurgical coal and iron ore. Demand for PGMs could grow significantly if the hydrogen economy develops along with other metals that have specific physical characteristics that support the application of new science and technologies. We are confident that our high quality asset portfolio and our ability to adapt to evolving markets ensure our resilience across the scenarios we have tested.

We invest in low-carbon research and development (R&D), equipment, products, and services. This includes investment into CCS (through the Australian Coal 21 Fund, the South African Centre for Carbon Capture and Storage and through De Beers work on CO2 mineralisation of kimberlite tailings). We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures(APV), which targets growth of early stage hydrogen enablers. We also support the development of carbon reduction and removal technologies. We are founding sponsors of the World Bank's Climate Smart Mining Facility launched in May 2019.

Our management systems, structures, governance and engagement processes ensure that climate change is a consideration in all our business decisions. We believe that being resilient is not enough. We are actively working to be part of the solution and will continue to take targeted and meaningful steps to do so through delivering on our business objectives.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Scope
Scope 1+2 (location-based)

% emissions in Scope
100

Targeted % reduction from base year
30

Base year
2016

Start year
2017

Base year emissions covered by target (metric tons CO2e)
14593333

Target year
2030

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

% of target achieved
0

Target status
Underway

Please explain
Our energy-efficiency target for 2030 is a 30% reduction in our absolute energy intensity against our 2016 performance, while our long term GHG emissions target is a net 30% reduction in emissions against the 2016 level. The long term stretch targets align with our aspiration to develop a carbon-neutral mine. Building on the outcomes of the FutureSmart Mining™ Innovation Open Forum on energy that we held in December 2016, we held an energy efficiency workshop in October 2017 to further assist in identifying and prioritising opportunities, and in developing action plans meet our longer term targets. By the end of 2020, we will have assessed all our sites and prioritised the top 15 in terms of energy consumption, identifying the priority energy and carbon reduction options at these operations. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations. A science-based target currently requires the inclusion of scope 3. An appropriate methodology for the mining industry is being developed. Although not verified, our target meets the scope 1 and 2 requirements of a science-based target. Zero % of the target has been achieved, when comparing emissions on a like-for-like basis (i.e. excluding divested operations and the non-managed JVs previously included in the reporting scope). A net increase in emissions is predominantly due to ramping up of production particularly at our Met Coal operations in Australia.

Target reference number
Abs 2

Scope
Scope 1+2 (location-based)

% emissions in Scope
100

Targeted % reduction from base year
22

Base year
2015

Start year
2016

Base year emissions covered by target (metric tons CO2e)
14042500

Target year
2020

Is this a science-based target?
No, but we anticipate setting one in the next 2 years

% of target achieved
100

Target status
Underway

Please explain
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 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 the 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. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target
Energy usage

KPI – Metric numerator
GJ

KPI – Metric denominator (intensity targets only)
NA

Base year
2015

Start year
2016

Target year
2020

KPI in baseline year

KPI in target year
105.4

% achieved in reporting year
100

Target Status
Underway

Please explain
Our energy-reduction target for 2020 is 8%. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

Part of emissions target
This forms part of Anglo American's GHG reduction target relating to the energy component of Anglo American's GHG emissions.

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

C-CO4.2a

(C-CO4.2a) If you do not have a methane-specific emissions reduction target for your coal mining activities or do not incorporate methane into your target(s) reported in C4.2 please explain why not and forecast how your methane emissions will change over the next five years.

The 2020 and 2030 GHG reduction targets incorporate methane emissions for both Thermal and Metallurgical Coal operations.

Anglo American's thermal coal and metallurgical coal operations represent different contexts with respect to the generation of methane emissions. In the case of Anglo American's thermal coal operations, the intermittent release of exceptionally low concentration fugitive methane from underground thermal coal mines is a challenge for estimating emissions. There are very few technically feasible opportunities to reduce fugitive methane emissions due to the low concentration of methane, apart from the mobile flaring units at New Denmark (now divested), which only operated intermittently as the methane concentrations were often too low to sustain a flare.

The first continuous VAM measurements have commenced at Greenside and Zibulo. Currently, VAM is estimated using IPCC tier 2 calculations. The emissions from VAM will have an impact on the underground operations in terms of carbon tax, thus it is important to have accurate emissions measurements. The aim is to accurately measure VAM emissions, thereby possibly reducing our carbon footprint and our potential carbon tax liability. Initial results show that the VAM quantities measured are lower than what is currently being reported using the IPCC 2006 Tier 2 methodology. Pre-drainage is not widely practised in South Africa because the methane concentration is low thus methane is dealt with through the normal ventilation process.

In the case of metallurgical coal operations, coal mine methane emissions are included in our Group GHG target and are key to our mitigation actions in Australia. We have two sources of gas: rich gas that can be used for power generation and VAM. Due to low concentrations in VAM there are very few opportunities to mitigate this dilute or lean gas. Through pre-drainage we try to shift VAM into rich gas for use. As we mine deeper we are producing more gas, including both rich and VAM.

We lead the industry in using coal mine methane to generate electricity rather than flaring it. At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations in Australia, waste mine methane is captured and used to generate more than 140 MW of electricity. In Australia the abatement of VAM is being continuously researched by industry bodies such as the Australian Coal Association Research Program and Australian Coal Association Low Emissions Technology Limited). We support research through our contribution to the Australian Coal 21 Fund, which invests in the development of technologies relating to carbon capture, geological storage and methane emissions abatement at underground coal mines. In South Africa, we are founding members of the Centre for Carbon Capture and Storage. To date, we have invested approximately USD10 million in clean-coal technology.

Anglo American is not in a position to comment on changes in metallurgical coal methane emissions at this stage as it is commercially sensitive.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	170	2547688
To be implemented*	39	150007
Implementation commenced*	3	288
Implemented*	114	75445
Not to be implemented	105	256290

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type
Other, please specify (Various fuel reduction initiatives)

Description of initiative
<Not Applicable>

Estimated annual CO2e savings (metric tonnes CO2e)
57302

Scope
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
95739

Investment required (unit currency – as specified in C0.4)
317067

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment

Initiative type
Other, please specify (Various electricity reduction initiatives)

Description of initiative
<Not Applicable>

Estimated annual CO2e savings (metric tonnes CO2e)
18143

Scope
Scope 2 (location-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
15334

Investment required (unit currency – as specified in C0.4)
124488

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for low-carbon product R&D	Anglo American Platinum, together with the Public Investment Corporation, has launched a USD200 million fund to invest in platinum-based technology companies in South Africa through AP Ventures. 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.
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 is 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.

C4.5

(C4.5) 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

C4.5a

(C4.5a) 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
Group of products

Description of product/Group of products
PGMs are used in autocatalysts and in the case of more fuel-efficient diesel vehicles, our PGMs enable manufacturers to meet stringent air quality requirements on diesel vehicles thereby enabling greater use of diesel vehicles that produce fewer GHG emissions than gasoline ICE vehicles in the short term. Looking further ahead, hydrogen fuel cell electric vehicles (FCEVs) offer a zero emissions alternative to ICE vehicles, without the need for consumers to change their behaviour. Platinum is used in FCEVs as the catalyst which turns hydrogen gas into electrical power. We believe that our actions can help shape this demand in the future. Based on our scenario analysis, the upside outlook for PGMs is not certain, given the potential for significant growth if the hydrogen economy develops at scale. Although the long-term outlook for the automotive sector is positive, demand for vehicles could be lower in 2°C than in NPS+, owing to accelerated shared mobility and autonomous vehicles trends. The uptake of electric vehicles is positive for both copper and nickel. The effects on demand for PGMs is less clear. The emergence of BEVs as a major alternative drivetrain in the long term would reduce demand for auto catalysts and thus have a negative impact on PGMs demand. However, across both of our scenarios, hybrids would maintain a share of sales in the next decade, thus ensuring a level of continued demand from autocatalysts. We expect FCEVs, which today rely on PGMs-based fuel cells, to contribute to the electrified drivetrain for vehicles, especially in the heavy duty segment of the market. Anglo American is the leading primary producer of platinum group metals, produced 4 962 ounces of refined PGMs in 2018, and is best placed to benefit from this potential increase in demand.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (own calculations in line with IPA LCA)

% revenue from low carbon product(s) in the reporting year
15

Comment
We continue to invest in the development of the hydrogen economy through our membership of the Hydrogen Council and the spin-off of AP Ventures(APV), which targets growth of early stage hydrogen enablers. We also support the development of carbon reduction and removal technologies. Partnering with the South African state pension fund manager, Public Investment Corporation (PIC), the parties committed USD100 million each to the endeavour. AP Ventures will continue with the original intention of the PGM investment programme, investing in high-growth companies developing patentable technologies that use PGMs to address some of society's biggest challenges. AP Ventures will invest globally in companies that support development of innovative and competitive technological uses of PGMs. Examples include Altergy Systems, Hydrogenious Technologies: Greyrock Energy, Ballard Power Systems, Hyet Hydrogen, United Hydrogen, Ergosup and It's Fresh. We take a positive policy advocacy stance to accelerate investment in developing and commercialising both the hydrogen and fuel cell sectors through initiatives such as the Hydrogen Council, of which we are a founding member. We are also a member of and actively participate in China-based International Hydrogen and Fuel Cell Association, the UK-based Hydrogen and Fuel Cell Association as well two USA-based associations. An example of an initiative being explored, as part of FutureSmartMining, is the use of hydrogen (H2) haulage. The approach oversizes solar PV, leverages tariff arbitrage opportunities and produces H2 with excess solar PV generation to fuel trucks. Potential value includes reducing GHG emissions on large sites by 30% in plant and 100% in trucks; increasing truck power by 5%; improving energy security, creating resilience to electricity price increases, contributing to a shift to the hydrogen economy (increasing our PGM product demand), innovating around next generation mining vehicles and including host communities.

Level of aggregation
Product

Description of product/Group of products
Copper is used in several low-carbon technology and 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. In both of the climate scenarios we assessed, increased wind and solar power generation would increase demand for copper, as these technologies are much more copper intensive than fossil fuel power generation. Anglo American produced 668 Kt of copper in 2018.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (own calculations (GHG Protocol-aligned))

% revenue from low carbon product(s) in the reporting year
16

Comment
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
Product

Description of product/Group of products
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 43,300t of Nickel in 2018.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (own calculations (GHG Protocol-aligned))

% revenue from low carbon product(s) in the reporting year
4

Comment
Nickel demand is expected to increase due to the growth in low carbon technologies that rely on nickel-containing alloy. Our climate scenarios suggest the demand for Nickel will increase.

Level of aggregation
Product

Description of product/Group of products
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 production. In addition, Kumba's iron ore has a high lump-to-fines ratio compared to its competitors. During 2017, Kumba maintained a high lump-ore to fine-ore ratio at 68:32. 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. Kumba is primarily a lump producer with a product of recognised exceptional chemical and metallurgical quality.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify (own calculations (GHG Protocol-aligned))

% revenue from low carbon product(s) in the reporting year
11

Comment

C-CO4.6

(C-CO4.6) Describe your organization's efforts to reduce methane emissions from your activities.

There are no viable technologies for the capture of dilute ventilation air methane. There have been several investigations into applying these technologies at operating underground coal mines, both in Australia and elsewhere in the world. However, full-scale introduction of these technologies faces technology constraints, and also a safety risk as a potential ignition source.

Anglo American's thermal coal and metallurgical coal operations represent different contexts with respect to the generation of methane emissions and therefore opportunities to reduce them.

In the case of thermal coal operations, the exceptionally low inherent methane concentration presents challenges for monitoring and reporting. are very few technically feasible opportunities to reduce fugitive methane emissions due to the low concentration of vent air methane (VAM), apart from the mobile flaring units at New Denmark (divested as of 1 March 2018) which only operated intermittently as the methane concentrations were often too low to sustain a flare. Pre-drainage is also not an option for this reason and thus methane is dealt with through the normal ventilation process.

In the case of metallurgical coal operations, mine methane emissions are included in our Group GHG target and are key to our mitigation actions in Australia. At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations in Australia, waste mine methane is captured and used to generate more than 140 MW of electricity. Their combined environmental benefit is a reduction in GHG emissions of 5 Mt of CO_2e emissions a year. Excess rich gas is sold to adjacent Coalbed Methane (CBM) producers for pipeline sales. Any excess above these disposal methods is flared to reduce the Greenhouse impact. In Australia the abatement of dilute (or VAM) methane is being constantly researched by industry bodies such as Australia's Coal21. As part of its investment in research and development of low-emissions coal technologies, COAL21 has invested in two projects aimed at addressing the safety concerns associated with implementing technology for lowering greenhouse emissions from mine ventilation air. Both projects focus on the safety features that would be necessary in the duct work connecting the abatement technology to an operating mine:

· University of Newcastle Methane Reduction Project: This project has produced a comprehensive scientific assessment of potential safety hazards and elimination options. This assessment is providing vital input to the Methane Reduction Demonstration Project by Centennial Coal.

· Centennial Coal- Methane Reduction Demonstration Project: This project will deliver validated design concepts to be able to connect a VAM abatement unit that is safe, does not impact the mine ventilation system, and can provide a suitable basis for a future demonstration project.

While the primary focus for COAL21 is the safe deployment of commercially available methane abatement technology, emerging technologies that offer an alternative will be examined if there has been sufficient testing to establish their potential. VAM abatement by chemical looping is one such emerging technology which could offer some advantages, such as more flexible operation and smaller-sized equipment. COAL21 is investing in ongoing research into the safe deployment of VAM abatement technology with the aim of demonstrating safe abatement from an operating coal mine.

The current projects will provide a valuable step towards that goal and will inform future development. Once safe abatement from coal mines has been successfully demonstrated, the industry will have the option to employ such abatement of methane in mine ventilation air at other mines.

We support this research through our contribution to the Australian Coal21 Fund.

In South Africa, we are founding members of the Centre for Carbon Capture and Storage. To date, we have invested approximately USD10 million in clean-coal technology across various R&D areas. We also invest directly in reducing our emissions. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO_2e – a 25% reduction relative to the BAU 22.8 $MtCO_2e$.

C-CO4.7

(C-CO4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from coal mining activities?

Yes

C-CO4.7a

(C-CO4.7a) Describe the protocol through which methane leak detection and repair or other methane leak detection methods are conducted for your coal mining activities, including predominant frequency of inspections, estimates of assets covered, and methodologies employed.

At our Australian operations, leak detection is conducted every two years using handheld “sniffer” gas detectors across all of our underground operations where gas collection systems are in place (100% of underground operations). Monitoring and measuring is done for all gas flows, required by law (including auditing). This does not cover leaks. Leak detection is more of an operational issue and driven by safety objectives predominantly. Leaks are detected by independent contractors’ accurate methanometers, monitored continuously.

C-CO4.8

(C-CO4.8) If flaring is relevant to your coal mining operations, describe your organization’s efforts to reduce flaring, including any flaring reduction targets.

At our South African operations there are very few technically feasible opportunities to reduce fugitive methane emissions due to the low concentration of vent air methane, apart from the mobile flaring units at New Denmark (divested as of 1 March 2018) which only operated intermittently as the methane concentrations were often too low to sustain a flare.

In the case of metallurgical coal operations, coal mine methane emissions are included in our Group GHG target and are key to our mitigation actions in Australia. Our industry leading efforts to use gas (to fire power stations) mitigates the need to flare significant volumes. At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations in Australia, waste mine methane is captured and used to generate more than 140 MW of electricity. Excess rich gas is sold to adjacent CBM producers for pipeline sales. Any excess above these disposal routes is flared to reduce the Greenhouse gas impact.

We support research through our contribution to the Australian Coal 21 Fund, which invests in the development of technologies relating to carbon capture, geological storage and methane emissions abatement at underground coal mines. In South Africa, we are founding members of the Centre for Carbon Capture and Storage. To date, we have invested approximately USD10 million in clean-coal technology.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2016

Base year end
December 31 2016

Base year emissions (metric tons CO2e)
7991667

Comment
Base year emissions exclude operations not included in our 2018 reporting scope: divested operations and the De Beers non-managed JVs, Debswana and Namdeb.

Scope 2 (location-based)

Base year start
January 1 2016

Base year end
December 31 2016

Base year emissions (metric tons CO2e)
6601667

Comment
Base year emissions exclude operations not included in our 2018 reporting scope: divested operations and the De Beers non-managed JVs, Debswana and Namdeb.

Scope 2 (market-based)

Base year start
January 1 2016

Base year end
December 31 2016

Base year emissions (metric tons CO2e)
703770

Comment
Base year emissions exclude operations not included in our 2018 reporting scope: divested operations and the De Beers non-managed JVs, Debswana and Namdeb.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.
Australia - National Greenhouse and Energy Reporting Act
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
9665897

Start date
January 1 2018

End date
December 31 2018

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
As of October 2015, Chile is among the countries/regions where the I-REC Standard board has authorised the issuers to implement attribute tracking systems. A total of 2,167,906 MWh of electricity were purchased by our operations in Chile in 2018. 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.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
6349170

Scope 2, market-based (if applicable)
729284

Start date
January 1 2018

End date
December 31 2018

Comment

C6.4

(C6.4) 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

C6.4a

(C6.4a) 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
F-Gasses

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
After review, the contribution of F-gasses to Anglo American's carbon footprint was considered negligible (significantly below the materiality threshold).

Source
N2O

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
After review, the contribution of N2O to Anglo American's carbon footprint was considered negligible (significantly below the materiality threshold).

Source
CO2 emissions from spontaneous combustion (sponcom)

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
Coal South Africa historically reported spontaneous combustion emissions based on a factor of approximately 10% loss of stockpiles as ROM to combustion per annum. However, due to lack of global consensus on how to calculate these emissions, the business stopped reporting these emissions in 2011 / 2012.

Source
Emissions from explosives detonation

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
The emissions have previously been assessed and found to be immaterial.

C6.5

(C6.5) Account for your organization’s Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
209645

Emissions calculation methodology
This category includes upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by Anglo American's Platinum (Platinum), Nickel, 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. Kumba identified explosives, steel, tyres and cement as its top four purchased goods using supplier invoices to obtain the total masses in tonnes. Nickel data relates to explosives purchased. IOB includes explosives and LPG. 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) NNP explosives: 0.17 per tCO2e and 0.55 per tonne N20 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, Nickel Niobium & Phosphates, Iron Ore Brazil, and Copper) Financial Control (Kumba)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Explanation

Capital goods

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Emissions associated with this category are measured and reported by the following Business Units: Kumba and Coal South Africa. However, the category is not material at the Anglo American level: emissions from capital goods represented less than 1% of our Scope 3 emission and purchases of capital goods are relatively low given the current focus on driving cost and productivity efficiencies through the operations, and on continuing to upgrade the quality of our portfolio.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
732051

Emissions calculation methodology
This category includes emissions related to the extraction and/or production of fuels and energy purchased and consumed by all Anglo American's business units that are not accounted for in Scope 1 and Scope 2. This includes the emissions from coal for heating, coal for metallurgical processes, heavy fuel oil, intermediate fuel oil, marine gas oil, diesel, petrol, LPG, natural gas, paraffin, used oil for combustion and pet coke. Transmission and Distribution losses have been accounted for under Scope 2 emissions and have not been included in this section. Activity data: The activity data was obtained from the central Anglo American Enablon system based on site reported records of the quantity of each type of fuel purchased in GJ. Emission factors: DEFRA 2018 Well to Tank - Fuels emission factors. 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. 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.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Explanation

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
198414

Emissions calculation methodology
For platinum, transport services include products taken by air to Rand Refinery (close to OR Tambo) in helicopters. From ORT, the products are transported by flight to the relevant customers; hence this category only includes air travel. Diesel and Biodiesel are material to Nickel. Coal SA's material T&D: Transport of product from respective operations, or from the Rapid Loading Terminal, to the Richards Bay Coal Terminal via Rail within South Africa. Anglo American Kumba Iron Ore factored in diesel along with other products which were billed as purchased transport services in kilometres. For platinum, the activity data for this category is established by the hours of all helicopter flights and the weight of the refined product transported via air from OR Tambo International Airport to the customer's destination. Emission factors: Helicopter flights: 523.26 kg CO2e/hour. This was calculated based on 170 litres/hour (Source: Universal Helicopters http://www.uhnl.nf.ca/fleet.htm) and 3.078 kilogram CO2e/litre (Defra 2012 - Annex 1 - Table 1b) Air Domestic (<425 km): 0.426 kg CO2e/tonne.km (Scope 3 Indirect) Defra 2012 and 2.065 kg CO2e/tonne.km (Scope 3 Direct) Defra 2012. Air Long-haul international (>3700 km) 0.641 kg CO2e/tonne.km (Scope 3 Direct) Defra 2012 and 0.132 kg CO2e/tonne.km (Scope 3 Indirect) Defra 2012. GWP values: Carbon dioxide = 1 Methodology: the total hours travelled was estimated and 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. For our other business units activity data was obtained from supply chain records of the quantity of each type of fuel purchased. Emission factors: Defra; 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 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. Allocation methods: Operational Control (Platinum and CoalSA) Financial Control (Kumba)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Explanation

Waste generated in operations

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Emissions associated with upstream waste generated constitute less than 1% of Anglo American's scope 3 emissions and is therefore not deemed to be material.

Business travel

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Emissions associated with business travel constitute less than 1% of Anglo American's scope 3 emissions and is therefore not deemed to be material.

Employee commuting

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Emissions associated with employee commuting constitute less than 1% of Anglo American's scope 3 emissions and is therefore not deemed to be material.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
6971742

Emissions calculation methodology
Kumba Iron Ore's products are transported by railway from Sishen and Kolomela to Saldanha. The product due for international export 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 long and short haul flights, domestic rail as well as export by ship. Emission factors: Air Long-haul international: 0.641 kg CO2e/tonne.km (Direct, Defra 2012) and 0.132 kg CO2e/tonne.km (Indirect, Defra 2012). CoalSA 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: 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 (CoalSA) Financial Control (Kumba).

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Explanation
Platinum's outbound logistics (e.g., of sold products) is paid for by Anglo American Platinum and therefore constitutes a purchased transport service and is included in "Upstream Transportation and Distribution". No material transportation of product to our direct clients is paid for by the client and therefore this source is not deemed material.

Processing of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
105081532

Emissions calculation methodology
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), Nickel, Copper 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 the energy involved in the manufacturing of auto-catalysts and jewellery is immaterial. Allocation methods: Operational Control (Platinum, Nickel and Copper) Financial Control (Kumba)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
38

Explanation
CoalSA 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.

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
65973189

Emissions calculation methodology
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

Percentage of emissions calculated using data obtained from suppliers or value chain partners
33

Explanation
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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
669618

Emissions calculation methodology
This category includes emissions from the disposal and end-treatment of products sold by Anglo American's Platinum (Platinum), Coal South Africa (CoalSA) 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 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 CoalSA) Financial Control (Kumba)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
47

Explanation
In South Africa, ash/fly is discarded on dumps and no further treatment is done, as a result, this category is immaterial to CoalSA. 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

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Anglo American and its business units do not lease out their assets and as such this category is irrelevant in this respect.

Franchises

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
The franchise category is not relevant to the Anglo American business model.

Investments

Evaluation status
Relevant, calculated

Metric tonnes CO2e
956360

Emissions calculation methodology
This category includes scope 3 emissions associated with Anglo American's Coal South Africa (CoalSA) and Platinum (Platinum) investments in the reporting year. Non-managed (equity share) operations, Mafube Colliery (50%) and Cerrejon 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 2018, i.e. the CO2 equivalent emissions / refined ounces). The reported direct scope 1&2 emissions were utilised for CoalSA'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 2018 as well as the percentage shareholding in order to estimate the emissions from these operations. The CoalSA 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 CoalSA)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
40

Explanation
Anglo American's Kumba Iron Ore primarily has investments in holding companies without any direct operational footprints and as such reports zero emissions for this category.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Anglo American has no other relevant/material upstream emissions.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Explanation
Anglo American has no other relevant/material downstream emissions.

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00058

Metric numerator (Gross global combined Scope 1 and 2 emissions)
16015067

Metric denominator
unit total revenue

Metric denominator: Unit total
27610000000

Scope 2 figure used
Location-based

% change from previous year
15.2

Direction of change
Decreased

Reason for change
Scope 1 and 2 GHG emission decreased by 11% and group revenue increased by 5% compared to the previous reporting year (reported here as total revenue in USD). The decrease in emissions was the result of a combination of emission reduction initiatives, divestments, a change in reporting scope and a change in output. The most significant change was due to a change in boundary: the 2018 data excludes the De Beers non-managed JVs, Debswana and Namdeb. New and additional emission reduction initiatives saved an additional 75 445 tCO2e during the year. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

Intensity figure
7.82445

Metric numerator (Gross global combined Scope 1 and 2 emissions)
16015067

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
2046797

Scope 2 figure used
Location-based

% change from previous year
9.3

Direction of change
Decreased

Reason for change
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 following long term prices are used: Platinum USD 1 246 / oz; Palladium USD 1 207 / oz; Rhodium USD 1 986 / oz; Ruthenium USD 115 / oz; Diamonds USD 170 / ct; Copper USD 7 055 / t; Nickel USD 18 563 / t; Iron Ore USD 62 / t; Thermal Coal USD 85 / t; Met Coal USD 149 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. The decrease in emissions was the result of a combination of emission reduction initiatives, divestments, a change in reporting scope and a change in output. The most significant change was due to a change in boundary: the 2018 data excludes the De Beers non-managed JVs, Debswana and Namdeb. New and additional emission reduction initiatives saved an additional 75 445 tCO2e during the year. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

Intensity figure
2.54309

Metric numerator (Gross global combined Scope 1 and 2 emissions)
963367

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
378817

Scope 2 figure used
Location-based

% change from previous year
0.9

Direction of change
Increased

Reason for change
Iron Ore (Kumba) GHG emissions per tonne of copper equivalent production: A 3.4% decrease in emissions was offset by a 4.2% decrease in copper equivalent production mainly as a result of lower production at Sishen and Kolomela mines. The following long term price is used: Iron Ore USD 62 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years.

Intensity figure
3.14271

Metric numerator (Gross global combined Scope 1 and 2 emissions)
85932

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
27343

Scope 2 figure used
Location-based

% change from previous year
120.3

Direction of change
Increased

Reason for change
Iron Ore (Brazil) GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 55.6% and copper equivalent production decreased by 79.9% reflecting the suspension of operations from March to December 2018, following the two leaks in the 529 kilometre iron ore pipeline from the mine to the Port of Açu. The following long term price is used: Iron Ore USD 62 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years.

Intensity figure
7.43764

Metric numerator (Gross global combined Scope 1 and 2 emissions)
1004141

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
135008

Scope 2 figure used
Location-based

% change from previous year
22.4

Direction of change
Decreased

Reason for change
Thermal Coal GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 30.8%. We have divested less attractive assets and replaced them with assets of a higher quality and cash generation profile, thereby lifting the overall quality of the portfolio, and we will continue that discipline. The sale of the Eskom-tied domestic thermal coal operations, comprising New Vaal, New Denmark, and Kriel collieries, as well as four closed collieries, to Seriti Resources was completed on 1 March 2018. Additionally, a 553 kWp solar PV plant was installed at Goedehoop mine. Copper equivalent production decreased by 10.9%. The following long term price is used: Thermal Coal USD 85 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years.

Intensity figure
2.49313

Metric numerator (Gross global combined Scope 1 and 2 emissions)
567281

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
227537

Scope 2 figure used
Location-based

% change from previous year
70.2

Direction of change
Decreased

Reason for change
De Beers GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 69.3%. The following long term price is used: Diamonds USD 170 / ct. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. The 2018 data excludes the De Beers non-managed JVs, Debswana and Namdeb. The data for prior years (2014-2017) includes these De Beers operations.

Intensity figure
2.70151

Metric numerator (Gross global combined Scope 1 and 2 emissions)
1140707

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
422247

Scope 2 figure used
Location-based

% change from previous year
25

Direction of change
Decreased

Reason for change
Copper GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 9.1% and copper equivalent production increased by 21.1%. The following long term price is used: Copper USD 7 055 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. Projects newly implemented during the reporting year resulted in additional GHG reductions of 20 223 tCO2e. The decrease is also due to shorter hauling distances in 2018.

Intensity figure
18.81523

Metric numerator (Gross global combined Scope 1 and 2 emissions)
6852452

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
364197

Scope 2 figure used
Location-based

% change from previous year
3

Direction of change
Decreased

Reason for change
Coal Australia-Canada GHG emissions per tonne of copper equivalent production: GHG emissions increased by 7.7% and copper equivalent production increased by 11%. The following long term prices are used: Thermal Coal USD 85 / t; Met Coal USD 149 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. Met Coal continues to abate a significant amount of emissions at underground operations, through the sale of rich gas to EDL who operate power stations adjacent to our gas plants, and to Arrow Energy. In the reporting year, Met Coal abated approximately 38% of its fugitive emissions through the sale of rich gas.

Intensity figure
10.82827

Metric numerator (Gross global combined Scope 1 and 2 emissions)
4118232

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
380322

Scope 2 figure used
Location-based

% change from previous year
9.6

Direction of change
Increased

Reason for change
PGM GHG emissions per tonne of copper equivalent production: Emissions decreased by 10.7%. This decrease was coupled with a 1.2%, decrease in copper equivalent production. The following long term prices are used: Platinum USD 1 246 / oz; Palladium USD 1 207 / oz; Rhodium USD 1 986 / oz; Ruthenium USD 115 / oz. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years.

Intensity figure
10.90636

Metric numerator (Gross global combined Scope 1 and 2 emissions)
1214151

Metric denominator
Other, please specify (Copper Equivalent Production)

Metric denominator: Unit total
111325

Scope 2 figure used
Location-based

% change from previous year
2.7

Direction of change
Increased

Reason for change
Nickel GHG emissions per tonne of copper equivalent production: GHG emissions decreased by 0.9% due in part to emission reduction initiatives (Electric Furnace and Rotatory Kiln stability improvements at Barro Alto and the heavy fuel oil replacement by woodchips at Codemin) and a lower in use of hydroelectric-based power. Copper equivalent production decreased by 3.5%. The following long term price is used: Nickel USD 18 563 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years.

Intensity figure
260.29331

Metric numerator (Gross global combined Scope 1 and 2 emissions)
16015067

Metric denominator
full time equivalent (FTE) employee

Metric denominator: Unit total
61527

Scope 2 figure used
Location-based

% change from previous year
2.7

Direction of change
Decreased

Reason for change
Scope 1 and 2 GHG emission decreased by 11% and FTE decreased by 8.3% compared to the previous reporting year. The decrease in emissions was the result of a combination of emission reduction initiatives, divestments, a change in reporting scope and a change in output. The most significant change was due to a change in boundary: the 2018 data excludes the De Beers non-managed JVs, Debswana and Namdeb. New and additional emission reduction initiatives saved an additional 75 445 tCO2e during the year. In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	9444197	IPCC Third Assessment Report (TAR - 100 year)
CH4	221700	IPCC Third Assessment Report (TAR - 100 year)

C-CO7.1b

(C-CO7.1b) Break down your total gross global Scope 1 emissions from coal mining activities in the reporting year by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Total gross Scope 1 GHG emissions (metric tons CO2e)	Comment
Fugitives (Underground coal mining)	0	212858	5321457	
Fugitives (Surface coal mining)	0	10765	269133	
Fugitives (Post-mining and abandoned coal mines)	0	0	0	Post -mining is included in the above Underground and Open Cast values. Abandoned mines in South Africa all exceed the IPCC's 20-year reporting cut off and emissions are negligible.
Flaring	0	18206	455140	Flaring converts CH4 to CO2 at an assumed combustion efficiency. While there are residual volumes of CH4 which escape the combustion process we do not report these.
Utilized methane	0	0	0	At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations in Australia, waste mine methane is captured and used in a power generation plant with a total output of approximately 140 MW. This methane is used by a third party
Combustion (Underground coal mining, excluding flaring and utilization)	0	0	0	There is no internationally agreed method for the calculation of these emissions.
Combustion (Surface coal mining, excluding flaring and utilization)	0	0	0	There is no internationally agreed method for the calculation of these emissions.
Combustion (Electricity generation)	0	0	0	The spilt in electricity generated at Coal operations as a result of combustion of fuel is not material. Most fuel is used for mobile equipment.
Combustion (Other)	0	0	0	
Emissions not elsewhere classified	0	0	0	

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Australia	6169526
Brazil	1162855
Canada	196698
Chile	411535
Peru	56160
Other, please specify (Rest of World)	1212
South Africa	1657699
United Kingdom of Great Britain and Northern Ireland	1634
Zimbabwe	8578

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Coal South Africa	445193
Copper	411423
Corporate	58405
De Beers	321133
Iron Ore Brazil	70378
Kumba Iron Ore	539480
Metallurgical Coal	6169998
Nickel	1091792
PGMs	558095

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	6615190	<Not Applicable>	
Electric utility generation activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	9516024	<Not Applicable>	
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons 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)
Australia	682421	0	858543	0
Brazil	137923	0	1875189	0
Canada	26351	0	122183	0
Chile	729284	729284	2167906	2167906
Peru	86	0	153	0
Other, please specify (Rest of World)	1259	0	47875	0
South Africa	4676161	0	4820784	0
United Kingdom of Great Britain and Northern Ireland	16436	0	37677	0
Zimbabwe	79250	0	134322	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Coal South Africa	558949	0
Copper	729284	729284
Corporate	10399	0
De Beers	246147	0
Iron Ore Brazil	15554	0
Kumba Iron Ore	423887	0
Metallurgical Coal	682454	0
Nickel	122360	0
PGMs	3560136	0

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	1241403	0	
Metals and mining production activities	6241352	729284	
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) 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.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	522	Decreased	0	A 553 kWp solar PV plant was installed at Coal South Africa's Goedehoop mine (522/ 17 958 182)*100= 0.003%). In 2018, our Platinum business unit assessed current and anticipated renewable energy and energy-storage technologies and expected longer-term developments. At present, the most suitable technology delivering the greatest impact is solar photovoltaic. A project to develop a 75MW solar photovoltaic plant for Mogalakwena complex is in study phase, with planned implementation in 2021. Platinum's Waterval smelter generates electricity from waste heat recovered from the converting process. Through this process, we harvest around 16MW in thermal energy and return on average 3.2MW in electrical energy to the national grid.
Other emissions reduction activities	75445	Decreased	0.42	We have built the technical capability through the Energy and CO2 Management programme (ECO2MAN), launched in 2011, which has enabled us to analyse our activities and identify opportunities at operations to reduce energy consumption and GHG emissions in line with our targets. The cumulative avoided energy costs under the ECO2MAN programme over the past three years is estimated at more than $260 million based on 2017 energy prices. The GHG reduction projects we have implemented have a typical payback time of three years. In the reporting year an additional 75 445 tCO2e were reduced by our emissions reduction initiatives, and our total Scope and Scope emissions in the previous year was 17 958 182 tCO2e, therefore we arrived at 1% through (75 445/ 17 958 182)*100= 0.4%). In 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.
Divestment	891216	Decreased	5	We have divested less attractive assets and replaced them with assets of a higher quality and cash generation profile, thereby lifting the overall quality of the portfolio, and we will continue that discipline. The sale of the Eskom-tied domestic thermal coal operations, comprising New Vaal, New Denmark, and Kriel collieries, as well as four closed collieries, to Seriti Resources was completed on 1 March 2018. The sale of Union Mine to Siyada Resources was completed on 1 February 208. The sale of Drayton was completed in February 2018. The emissions associated with divested operations in 2017 (proportional to the number of months relevant: 12 months less the number of months in 2018 up until the point of divestment) were aggregated and calculated as a percentage of total 2017 emissions (891216/ 17958182)*100= 5%).
Acquisitions	743	Increased	0	We completed the acquisitions of the remaining 50% interest in the Mototolo joint operation in South Africa from Glencore and Kagiso Platinum Ventures; and in Canada, the Chidliak Diamond Resource (through De Beers) through the acquisition of Peregrine Diamonds Limited. The effective date of transfer of Mototolo Mine operations to RPM was 1 November 2018.
Mergers	0	No change	0	Not applicable
Change in output	266312	Increased	1	In 2018, we produced 10% more product on a copper equivalent basis from half the number of assets we had in 2012.This change in output explains the remaining difference in emissions year on year (266 312 / 17 958 182 * 100 = 1%). This combined with the other explanatory variables explains the 11% decrease year on year.
Change in methodology	0	No change	0	Not applicable
Change in boundary	1242987	Decreased	7	The 2018 data excludes the De Beers non-managed JVs, Debswana and Namdeb. The data for prior years (2014-2017) includes these De Beers operations. The emissions associated with these operations in 2017 were aggregated and calculated as a percentage of total 2017 emissions (1242987/ 17958182)*100= 7%).
Change in physical operating conditions	0	No change	0	Not applicable
Unidentified	0	No change	0	Not applicable
Other	0	No change	0	Not applicable

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 10% but less than or equal to 15%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	569460	12658790	13228250
Consumption of purchased or acquired electricity	<Not Applicable>	995	10063636	10064631
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	570455	22722427	23292882

C-MM8.2a

(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	LHV (lower heating value)	12093800
Consumption of purchased or acquired electricity	<Not Applicable>	9875726
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0
Total energy consumption	<Not Applicable>	22538985

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Bituminous Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
2238302

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Metallurgical Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
1030040

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
8224237

MWh fuel consumed for self-generation of electricity
736789

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
120936

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
245985

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Motor Gasoline

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
13435

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Kerosene

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3616

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Comment

Fuels (excluding feedstocks)
Petroleum Coke

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
19399

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Biodiesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
47432

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Other, please specify (Heavy Fuel Oil)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
703023

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Other, please specify (Biomass)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
521694

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
521694

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Marine Gas Oil

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
56353

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

Fuels (excluding feedstocks)
Other, please specify (Smaller quantity fuels used)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3464

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Biodiesel

Emission factor
2.69

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment

Bituminous Coal

Emission factor
2.44

Unit
metric tons CO2e per metric ton

Emission factor source
IPCC

Comment

Diesel

Emission factor
2.68

Unit
metric tons CO2e per m3

Emission factor source
IPCC.

Comment
Business unit specific –CoalAus: 2.67 metric tons CO2e per m3

Kerosene

Emission factor
2.83

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment

Liquefied Petroleum Gas (LPG)

Emission factor
2.98

Unit
metric tons CO2e per metric ton

Emission factor source
IPCC

Comment
Business unit specific –CoalAus: 1.53 metric tons CO2e per metric tonne

Marine Gas Oil

Emission factor
2.669

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment

Metallurgical Coal

Emission factor
2.44

Unit
metric tons CO2e per metric ton

Emission factor source
IPCC

Comment

Motor Gasoline

Emission factor
2.4

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment
Business unit specific –CoalAus: 2.28 metric tons CO2e per m3

Natural Gas

Emission factor
0.00215

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment

Petroleum Coke

Emission factor
3.17

Unit
metric tons CO2e per metric ton

Emission factor source
IPCC

Comment

Other

Emission factor
2.46

Unit
metric tons CO2e per m3

Emission factor source
IPCC

Comment
Emission factor for the primary source of energy in this category: used oil for combustion

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	95643	95643	334	334
Heat	170145	170145	170145	170145
Steam				
Cooling				

C-MM8.2e

(C-MM8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed for metals and mining production activities.

	Total gross generation (MWh) inside metals and mining sector boundary	Generation that is consumed (MWh) inside metals and mining sector boundary
Electricity	95610	95610
Heat	170145	170145
Steam		
Cooling		

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor
Contract with suppliers or utilities (e.g. green tariff), supported by energy attribute certificates

Low-carbon technology type
Other low-carbon technology, please specify (Mixed)

Region of consumption of low-carbon electricity, heat, steam or cooling
Latin America

MWh consumed associated with low-carbon electricity, heat, steam or cooling
2167906

Emission factor (in units of metric tons CO2e per MWh)
0.34

Comment
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 2,167,906 MWh of electricity were purchased by our operations in Chile in 2018. 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.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Land use

Metric value
17530

Metric numerator
Land rehabilitated (hectares)

Metric denominator (intensity metric only)

% change from previous year
9

Direction of change
Decreased

Please explain
Of the land altered for such activities, 18% (17,000 hectares) has been rehabilitated. These figures include Debswana and Namdeb but exclude processing-related operations. In 2018, we achieved 78% of the rehabilitation target set by our opencast operations.

C-CO9.2a

(C-CO9.2a) Disclose coal reserves and production by coal type attributable to your organization in the reporting year.

Thermal coal

Proven reserves (million metric tons)
458

Probable reserves (million metric tons)
276

Production (million metric tons)
29

Energy content of production (GJ per metric ton)
25.8

Heating value
Unable to confirm heating value

Emission factor of production (metric tons CO2e per metric ton)
35

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018, available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

Metallurgical coal

Proven reserves (million metric tons)
246

Probable reserves (million metric tons)
321

Production (million metric tons)
22

Energy content of production (GJ per metric ton)
25.8

Heating value
Unable to confirm heating value

Emission factor of production (metric tons CO2e per metric ton)
314

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018, available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

Other coal

Proven reserves (million metric tons)
0

Probable reserves (million metric tons)
0

Production (million metric tons)
0

Energy content of production (GJ per metric ton)

Heating value
Please select

Emission factor of production (metric tons CO2e per metric ton)
0

Comment

Total coal

Proven reserves (million metric tons)
705

Probable reserves (million metric tons)
597

Production (million metric tons)
50

Energy content of production (GJ per metric ton)
25.8

Heating value
Unable to confirm heating value

Emission factor of production (metric tons CO2e per metric ton)
156

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018, available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

C-CO9.2b

(C-CO9.2b) Disclose coal resources by coal type attributable to your organization in the reporting year.

Thermal coal

Measured resources (million metric tons)
3268

Indicated resources (million metric tons)
1368

Inferred resources (million metric tons)
871

Total resources (million metric tons)
5507

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

Metallurgical coal

Measured resources (million metric tons)
657

Indicated resources (million metric tons)
561

Inferred resources (million metric tons)
541

Total resources (million metric tons)
1759

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

Other coal

Measured resources (million metric tons)
0

Indicated resources (million metric tons)
0

Inferred resources (million metric tons)
0

Total resources (million metric tons)
0

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

Total coal

Measured resources (million metric tons)
3925

Indicated resources (million metric tons)
1929

Inferred resources (million metric tons)
1413

Total resources (million metric tons)
7266

Comment
Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

C-CO9.3a

(C-CO9.3a) Break down the coal production attributed to your organization in the reporting year by grade.

	Production (%)	Comment
Lignite	0	Not applicable
Subbituminous	57	This includes production from our South African Thermal Coal business as well as thermal coal produced as a secondary yield from Capcoal (part of our Australian business)
Bituminous	43	This includes production from our Australian Metallurgical Coal business
Anthracite	0	Not applicable
Other	0	Not applicable

C-MM9.3a

(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.

Output product
Diamonds

Capacity, metric tons

Production, metric tons
0

Production, copper-equivalent units (metric tons)
227537

Scope 1 emissions
321133

Scope 2 emissions
246147

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Diamonds USD 170 / ct. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report mining capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Platinum group metals

Capacity, metric tons

Production, metric tons

Production, copper-equivalent units (metric tons)

Scope 1 emissions
558095

Scope 2 emissions
3560136

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure

Comment
Anglo American does not report mining capacity. Production is disclosed in terms of own-mined production and purchase of metal in concentrate. It reflects a commodity basket and is therefore captured under "metals" production. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Copper

Capacity, metric tons

Production, metric tons

Production, copper-equivalent units (metric tons)

Scope 1 emissions
411423

Scope 2 emissions
729284

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure

Comment
Anglo American does not report mining capacity. Production is disclosed in terms of own-mined production and purchase of metal in concentrate. It reflects a commodity basket and is therefore captured under "metals" production. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Nickel

Capacity, metric tons

Production, metric tons

Production, copper-equivalent units (metric tons)

Scope 1 emissions
1091792

Scope 2 emissions
122360

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure

Comment
Anglo American does not report mining capacity. Production is disclosed in terms of own-mined production and purchase of metal in concentrate. It reflects a commodity basket and is therefore captured under "metals" production. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Iron ore

Capacity, metric tons

Production, metric tons
43100000

Production, copper-equivalent units (metric tons)
378817

Scope 1 emissions
539480

Scope 2 emissions
423887

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
Kumba Iron Ore: Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Iron Ore USD 62 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report mining capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Iron ore

Capacity, metric tons

Production, metric tons
3400000

Production, copper-equivalent units (metric tons)
27343

Scope 1 emissions
70378

Scope 2 emissions
15554

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
Minas Rio: Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Iron Ore USD 62 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report mining capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Other mining (Please specify) (Metallurgical Coal)

Capacity, metric tons

Production, metric tons
21800000

Production, copper-equivalent units (metric tons)
364197

Scope 1 emissions
6169998

Scope 2 emissions
682454

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Met Coal USD 149 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report mining capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Other mining (Please specify) (Thermal Coal)

Capacity, metric tons

Production, metric tons
28600000

Production, copper-equivalent units (metric tons)
135008

Scope 1 emissions
445193

Scope 2 emissions
558949

Scope 2 emissions approach
Location-based

Pricing methodology for copper-equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Thermal Coal USD 85 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report mining capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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C-CO9.3b

(C-CO9.3b) Break down the coal production attributed to your organization in the reporting year by mine type.

	Production (%)
Underground	46
Surface	54

C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

Output product
Copper

Capacity (metric tons)

Production (metric tons)
668000

Annual production in copper-equivalent units (thousand tons)
422247

Scope 1 emissions (metric tons CO2e)
411423

Scope 2 emissions (metric tons CO2e)
729284

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Copper USD 7 055 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report metals processing capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Nickel

Capacity (metric tons)

Production (metric tons)
42300

Annual production in copper-equivalent units (thousand tons)
111325

Scope 1 emissions (metric tons CO2e)
1091792

Scope 2 emissions (metric tons CO2e)
122360

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term price is used: Nickel USD 18 563 / t. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment
Anglo American does not report metals processing capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

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Output product
Platinum group metals

Capacity (metric tons)

Production (metric tons)
70

Annual production in copper-equivalent units (thousand tons)
380322

Scope 1 emissions (metric tons CO2e)
558095

Scope 2 emissions (metric tons CO2e)
3560136

Scope 2 emissions approach
Location-based

Pricing methodology for-copper equivalent figure
Copper equivalent production, expressed as copper equivalent tonnes, shows changes in underlying production volume. It is calculated by expressing each commodity's volume as revenue, subsequently converting the revenue into copper equivalent units by dividing by the copper price (per tonne). Long-term forecast prices (and foreign exchange rates where appropriate) are used, in order that period-on-period comparisons exclude any impact for movements in price. The following long term prices are used: Platinum USD 1 246 / oz; Palladium USD 1 207 / oz; Rhodium USD 1 986 / oz; Ruthenium USD 115 / oz. Long-term forecast prices are used in order that period-on-period comparisons exclude any impact for movements in price. These prices are updated annually, causing potential differences in copper equivalent reported volumes between years. When calculating copper equivalent production, all volumes relating to domestic sales are excluded, as are volumes from Samancor and sales from non-mining activities. Volume from projects in pre-commercial production are included.

Comment

Anglo American does not report metals processing capacity. Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

C-CO9.4a

(C-CO9.4a) Explain which listing requirements or other methodologies you have used to provide reserves data in C-CO9.2a. If your organization cannot provide data due to legal restrictions on reporting reserves figures in certain countries, please explain this.

The Ore Reserve and Mineral Resource estimates presented in this report are prepared in accordance with the Anglo American plc (AA plc) Group Ore Reserves and Mineral Resources Reporting Policy. This policy requires that the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 edition (the JORC Code) be used as a minimum standard. Some Anglo American plc subsidiaries have a primary listing in South Africa where public reporting is carried out in accordance with the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code). The SAMREC Code is similar to the JORC Code and the Ore Reserve and Mineral Resource terminology appearing in this section follows the definitions in both the JORC (2012) and SAMREC (2016) Codes. Ore Reserves in the context of this report have the same meaning as 'Mineral Reserves' as defined by the SAMREC Code and the CIM (Canadian Institute of Mining and Metallurgy) Definition Standards on Mineral Resources and Mineral Reserves.

The information on Ore Reserves and Mineral Resources was prepared by or under the supervision of Competent Persons as defined in the JORC or SAMREC Codes. All Competent Persons have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking. All the Competent Persons consent to the inclusion in this report of the information in the form and context in which it appears. The names of the Competent Persons (CPs) along with their Recognised Professional Organisation (RPO) affiliation and years of relevant experience are listed in the Ore Reserve and Mineral Resource Report 2018. Anglo American Group companies are subject to a comprehensive programme of reviews aimed at providing assurance in respect of Ore Reserve and Mineral Resource estimates. The reviews are conducted by suitably qualified Competent Persons from within the Anglo American Group or by independent consultants. The frequency and depth of the reviews is a function of the perceived risks and/or uncertainties associated with a particular Ore Reserve and Mineral Resource. The overall value of the entity and time that has elapsed since an independent third-party review are also considered.

The JORC and SAMREC Codes require due consideration of reasonable prospects for eventual economic extraction for Mineral Resource definition. These include long-range commodity price forecasts which are prepared by in-house specialists largely using estimates of future supply and demand and long-term economic outlooks. The calculation of Mineral Resource and Ore Reserve estimates are based on long-term prices determined at the beginning of the second quarter of each year. Ore Reserves are dynamic and are more likely to be affected by fluctuations in the prices of commodities, uncertainties in production costs, processing costs and other mining, infrastructure, legal, environmental, social and governmental factors which may impact the financial condition and prospects of the Group. Mineral Resource estimates also change and tend to be influenced mostly by new information pertaining to the understanding of the deposit and secondly by the conversion to Ore Reserves. Unless otherwise stated, Mineral Resources are additional to (exclusive of) those resources converted to Ore Reserves and are reported on a dry tonnes basis.

The appropriate Mineral Resource classification is determined by the appointed Competent (or Qualified) Persons. The choice of appropriate category of Mineral Resource depends upon the quantity, distribution and quality of geoscientific information available and the level of confidence in these data. To accommodate the various factors that are important in the development of a classified Mineral Resource estimate, a scorecard approach is generally used. Mineral Resource classification defines the confidence associated with different parts of the Mineral Resource. The confidence that is assigned refers collectively to the reliability of the Grade and Tonnage estimates. This reliability includes consideration for the fidelity of the base data, the geological continuity predicated by the level of understanding of the geology, the likely precision of the estimated grades and understanding of grade variability, as well as various other factors (in particular density) that may influence the confidence that can be placed on the Mineral Resource. Most business units have developed commodity-specific scorecard-based approaches to the classification of their Mineral Resources. The estimates of Ore Reserves and Mineral Resources are stated as at 31 December 2018.

Further information is available in our Ore Reserves and Mineral Resources Report 2018 available here: https://www.angloamerican.com/~/media/Files/A/Anglo-American-PLC-V2/documents/annual-updates-2019/aa-ore-reserves-and-mineral-resources-2018.pdf

C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date
January 1 2014

Investment end date
December 31 2020

Investment area
R&D

Technology area
Carbon capture and storage/utilisation

Investment maturity
Pilot demonstration

Investment figure
8124

Low-carbon investment percentage
81-100%

Please explain
No additional investment was made in 2018 but we remain involved as observers. Anglo American Coal was a founding member of SACCCS. We have participated actively in the Board of Governors (until this was dissolved due to structural changes at SACCCS), the steering committee and chaired a stakeholder engagement sub-committee at SACCCS. SACCCS was established to determine the feasibility (techno-economic) of carbon capture and storage research in South Africa. Given South Africa's emissions from coal-fired power stations as well as coal-to-liquids plants, CCS in South Africa would help to reduce the country's emissions substantially. The SACCCS Pilot Carbon Dioxide Storage Project (PCSP) is the third milestone in the South African CCS Roadmap. The PCSP involves the injection, storage and monitoring of 10,000 – 50,000t Carbon Dioxide in South African conditions. The project has also been structured to maximise the skills transfer to the country. The pilot storage project is being funded by the World Bank, Norway and the South African Department of Energy.

C-MM9.6

(C-MM9.6) Disclose your organization's low-carbon investments for metals and mining production activities.

Investment start date
January 1 2016

Investment end date
December 31 2020

Investment area
R&D

Technology area
Other, please specify (Carbon Capture, Storage, and Utilisation)

Investment maturity
Applied research and development

Investment figure
3000000

Low-carbon investment percentage
81 - 100%

Please explain
De Beers is continuing to fund Project Minera, an R&D programme which investigates the carbon storage potential of processed kimberlite (fine-grained material leftover from diamond mining). Kimberlite belongs to a family of rare rocks that are highly reactive with CO2 and can form stable carbonate minerals. This natural carbonation process has the potential to offset a significant portion of mine-related carbon emissions. Project Minera aims to assess the carbonation potential of processed kimberlite at De Beers mines through various analytical and experimental programs. The project is being carried out in collaboration with external mineral carbonation experts from the University of British Columbia, the University of Alberta, Trent University, and the University of Queensland. To date, work has focused on Venetia and Gahcho Kué where detailed mineral carbonation potential assessment studies and laboratory-scale experiments are ongoing. The purpose of the laboratory-scale studies is to evaluate different technologies that could be applied to promote and enhance mineral carbonation. The preliminary results indicate several technologies, including biotechnologies and CO2 injection, show excellent potential for accelerating the formation of carbonate minerals in kimberlite tailings. Specific technologies will be evaluated in field-scale experiments to be initiated at Gahcho Kue (Q3 2019) and at Venetia (Q1 2020). Mineral carbonation assessment studies will be initiated at Jwaneng and Orapa mines in Botswana, following sample collection site visits to be carried out in Q3 2019.

Investment start date
January 1 2009

Investment end date
December 31 2025

Investment area
Products

Technology area
Other, please specify (Platinum-based technology development)

Investment maturity
Small scale commercial deployment

Investment figure

100000000

Low-carbon investment percentage
81 - 100%

Please explain
In February 2017, Anglo American and 12 other companies launched the global Hydrogen Council. The Hydrogen Council is a global initiative of leading energy, transport and industry companies with a united vision and long-term ambition for hydrogen to foster the energy transition. The Council plans to invest USD1.9 billion per year from 2017 to 2021, supporting a transition to a hydrogen-based transportation system. Together with the Chinese Ministry of Science and Technology, Anglo American Platinum was instrumental in establishing the International Fuel Cell and Hydrogen Association in China in 2016. We are also a member of a number of additional organisations through which we advocate for clean energy related to PGMs. We also invest in R&D through a number of universities. In 2018, Anglo American Platinum spun off its internal PGM investment programme by establishing independent fund manager AP Ventures llp. Partnering with the South African state pension fund manager, Public Investment Corporation (PIC), the parties committed USD100 million each to the endeavour. AP Ventures will continue with the original intention of the PGM investment programme, investing in high-growth companies developing patentable technologies that use PGMs to address some of society's biggest challenges. In December 2018, Mitsubishi Corporation became the third limited partner of AP Ventures, further endorsing the fund's mandate. AP Ventures will invest globally in companies that support development of innovative and competitive technological uses of PGMs. Examples include: • Altergy Systems is a California-based, global leader in manufacture and supply of proton exchange membrane ("PEM") fuel cells. • Hydrogenious Technologies: a company that has developed disruptive technology that allows for more efficient transportation of hydrogen in liquid form. • Greyrock Energy, Inc. Through a propriety PGM based catalyst GreyRock produces premium clean burning liquid fuels from alternative and waste resources at less than one percent of the cost of traditional technologies. It eliminates all down-stream processing steps historically required by existing technologies. AP Ventures announced a follow-on investment in Greyrock in May 2019 • Other examples include investments in Ballard Power Systems Inc., Hyet Hydrogen, United Hydrogen, Ergosup and It's Fresh. The investment is open-ended.

Investment start date
January 1 2017

Investment end date
December 31 2027

Investment area
Property, plant and equipment

Technology area
Other, please specify (Platinum-based technology development)

Investment maturity
Full/commercial-scale demonstration

Investment figure

Low-carbon investment percentage
81 - 100%

Please explain
In 2017, Anglo American co-funded the construction of seven hydrogen refuelling stations in California to promote the roll-out of hybrid fuel cell electric vehicles. Some of the stations have started operations while others still being constructed. Stations will operate for a minimum of 10 years.

Investment start date
May 1 2019

Investment end date
May 31 2023

Investment area
R&D

Technology area
Green metals

Investment maturity
Applied research and development

Investment figure
1000000

Low-carbon investment percentage
81 - 100%

Please explain
Anglo American committed to the World Bank's Climate Smart Mining initiative, by becoming a founding donor to the Climate Smart Mining Facility. It is the first-ever fund that is dedicated to making mining for metals and minerals a more sustainable practice that complements the energy transition. Building on the World Bank's initial USD2 million investment, Anglo American joins partners from the private sector and governments as a donor, providing USD1 million to the Facility over the next five years. The Facility's work will support the sustainable extraction and processing of mining products used in developing clean energy technologies, such as copper used in energy storage and electric vehicles. The fund will also work with governments and operators in developing countries to establish strategies for sustainable mining operations and legal frameworks that promote smart mining.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope
Scope 1

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
aa-sustainability-report-2018.pdf

Page/ section reference
Page 80 - Independent Auditor's Assurance Report on the Selected Sustainability Information in Anglo American Plc's Sustainability Report

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

Scope
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
aa-sustainability-report-2018.pdf

Page/ section reference
Page 80 - Independent Auditor's Assurance Report on the Selected Sustainability Information in Anglo American Plc's Sustainability Report

Relevant standard
ISAE 3410

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C5. Emissions performance	Year on year change in emissions (Scope 1 and 2)	ISAE 3000 (Revised) and ISAE 3410	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.
C8. Energy	Other, please specify (Total Energy Consumption (million GJ))	ISAE 3000 (Revised) and ISAE 3410	As part of our 2018 sustainability reporting process we also requested that the assurer audit energy data for expression of limited assurance

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

Australia ERF Safeguard Mechanism

South Africa carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Australia ERF Safeguard Mechanism

% of Scope 1 emissions covered by the ETS

46

Period start date

January 1 2018

Period end date

December 31 2018

Allowances allocated

4475235

Allowances purchased

271494

Verified emissions in metric tons CO2e

4475235

Details of ownership

Facilities we own and operate

Comment

In Australia, the federal government implemented the climate change Safeguard Mechanism in July 2016, to restrict GHG emissions. It covers facilities with emissions greater than 100ktCO2e (i.e. all our Metallurgical Coal sites). It is a benchmarking framework where a baseline emissions level is set for each operation based on the last five years (FY 2009-10 to FY 2013-14) of data for Scope 1 emissions reported under the National Greenhouse and Energy Reporting Scheme (NGERS). The baseline is set at the highest level of reported emissions within that five-year period. New operations that do not have sufficient data for that reporting period (Grosvenor) will need to apply for a calculated emissions baseline. For any exceedances over the set emissions baseline, the Clean Energy Regulator (CER) may consider enforcement options as appropriate for an operation, ranging from issuing an infringement notice through to a civil penalty. In the event of an exceedance the facility may also consider the following the mitigation options; • Use of Australian Carbon Credit Units (ACCUs) as an offset • Multi-year monitoring which allows emissions to exceed in one year as long as the average over two or three years is below the baseline; and Apply for an exemption where there are exceptional circumstances (e.g. natural disaster). In Australia, the federal government implemented the Climate Change Safeguard Mechanism in July 2016, to restrict GHG emissions. In 2017 Anglo American's Capcoal Mine relinquished 133,107 Australian Carbon Credit Units (ACCUs) at a cost of AUS $ 1,768,952 (USD 1.36 million). In 2018 Anglo American's Capcoal Mine and Moranbah North Mine purchased a combined 171,494 ACCUs in anticipation for 2017-18 exceedances at a cost of AUS $ 4,232,748 (USD 3.16 million).

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

South Africa carbon tax

Period start date

June 1 2019

Period end date

December 31 2019

% of emissions covered by tax

17

Total cost of tax paid

0

Comment

The first tax period differs and includes emissions from 1 June 2019 to 31 December 2019. The tax levied on emissions over that period will be due by 31 July 2020. Payment thereafter will be due in July based on the previous full calendar year (aligned with Department of Environmental Affairs reporting)

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Recognising the potential for a range of carbon pricing and offset/incentive policies to emerge in the medium term, we continue to work with governments, industry peers and other stakeholders in developing and implementing effective, efficient and equitable climate-change policies.

We focus on mitigating risk through reducing our GHG emissions. We have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. Achieving the GHG target is linked directly to executive remuneration through the Long Term Incentive Plan. We will deliver against our 2030 stretch goals and have an ambition to run carbon neutral operations.

We are re-imagining the future of mining. We believe that mines will be carbon neutral and we have begun detailed work to develop a pathway and timeframe to carbon neutrality, based on:

• Radically reducing energy consumption through FutureSmart Mining™ methods and technology adoption

• Switching to low carbon energy sourcing (we are currently evaluating tenders for a 75MW solar photovoltaic facility supplying Mogalakwena Mine).

Through FutureSmart Mining™, we are exploring innovative technologies to reduce our exposure. For example, More than 60% of the energy used at a mine is used to crush ore to a particle size that is suitable for liberating minerals. To tackle this, we have developed a new method for crushing ore that uses 30-50% less energy than conventional mills. In August 2018, we began testing our full-scale demonstration unit in South Africa to confirm the energy savings were as expected, and to demonstrate the wear characteristics of the components within the demonstration unit. In 2019, we are installing a second pilot unit at a new site to augment and accelerate our learning. We are also exploring hydrogen (H2) haulage. The approach oversizes solar PV, leverages tariff arbitrage opportunities and produces H2 with excess solar PV generation to fuel trucks. Potential value includes reducing GHG emissions on large sites by 30% in plant and 100% in trucks; increasing truck power by 5%; improving energy security, creating resilience to electricity price increases, contributing to a shift to the hydrogen economy (increasing our PGM product demand), innovating around next generation mining vehicles and including host communities.

We are exploring low carbon and renewable energy options, have implemented energy recovery at Platinum's Waterval Smelter, are industry leaders in using rich gas (methane) from our underground coal mines in Australia to power electricity plants and are exploring carbon capture and storage options (e.g. through De Beers, we are investigating the potential for mineral carbonation of kimberlite tailings as a carbon capture and storage (CCS) technology solution).

Carbon offset projects will be pursued to further reduce emissions. Our budget guidelines include provision for the South African carbon tax and the guidance for new investments evaluations include sensitivity to carbon pricing.

In South Africa, a carbon tax is now effective from June 2019. 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 Minerals Council South Africa, 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 2018, approximately 440 energy efficiency and business improvement projects saved 6.7 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 6.5% reduction). GHG emission savings in 2018 amounted to 6.1 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

At our Australian business we use a carbon price aligned with the Safeguard Mechanism. We continue to explore options for offsets should there be a potential exceedance, including the use of carbon credits. At our Moranbah North, Grosvenor and Capcoal underground metallurgical coal operations, waste mine methane is captured and used to generate more than 140 MW of electricity. Their combined environmental benefit is a reduction in GHG emissions of 5 Mt of CO2e emissions a year. In Australia the abatement of dilute (or VAM) methane is being constantly researched by industry bodies such as the Australian Coal Association Research Program (ACARP) and Australian Coal21 however significant safety issues have to be overcome before the easiest technology (high temperature oxidation) can be implemented at an Australian mine. We support research through our contribution to the Australian Coal 21 Fund, which invests in the development of technologies relating to carbon capture, geological storage and methane emissions abatement at underground coal mines.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities
Supplier engagement

GHG Scope
Scope 1
Scope 2
Scope 3

Application
Budget guidance and project evaluations

Actual price(s) used (Currency /metric ton)
9.06

Variance of price(s) used
The price will vary as carbon tax systems evolve. For example, the exemptions associated with the carbon tax in South Africa will be removed over time and the effective tax rate will move towards USD9.06 (R120) per tonne, and increase in line with the rate escalation articulated in the Carbon Tax Act.

Type of internal carbon price
Implicit price

Impact & implication
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 (USD9.06 (R120) per tonne with various exemptions that takes it down to an average rate of USD3.62 (R48) per tonne). A carbon price is included in assessing brownfield expansion projects (such as was the case for Mafube extension). At our Australian operations the internal price is aligned with the Safeguard Mechanism. We are currently assessing long-term carbon pricing scenarios that impact on the global business, including the demand for our products.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Compliance & onboarding

Details of engagement
Included climate change in supplier selection / management mechanism
Code of conduct featuring climate change KPIs
Climate change is integrated into supplier evaluation processes
Other, please specify (Information collection)

% of suppliers by number
1

% total procurement spend (direct and indirect)
23

% Scope 3 emissions as reported in C6.5
0

Rationale for the coverage of your engagement
Anglo American's approach to procurement is guided by the Responsible Sourcing Standard for Suppliers, which details performance expectations across 5 pillars of value: labour and human rights; safety and health; business integrity and ethics; environment and social accountability. Anglo American has strengthened its risk-based approach to responsible sourcing, which supports prioritised engagement with suppliers who have a higher likelihood of sustainability related risk. Selected suppliers were requested to a complete self-assessment questionnaire, including information on energy and climate impacts and management. During 2018, 152 supplier self-assessments were completed, which is approximately 23% of supplier expenditure. Special clauses in Anglo American's standard supply contracts request suppliers to comply with the sustainability requirements defined in the Standard. The standard requires suppliers to monitor water usage and identify opportunities to reduce usage. A penalty of non-

compliance could result in that supplier losing its contract.

Impact of engagement, including measures of success
The self-assessment questionnaire requests whether the supplier has measures in place to measure and manage their greenhouse (GHG) emissions, energy consumption and water use and impact, as well as their related control to manage these impacts. From the self-assessments, selected suppliers are requested to undertake third party on-site assessments. Where risk issues, including non-compliance with the requirements of the Responsible Sourcing Standard for Suppliers, were identified, corrective action plans have been developed and agreed with suppliers. High risk findings identified are monitored closely until they are resolved. The number of corrective actions is monitored. From the self-assessment questionnaires, the number of suppliers measuring greenhouse gas emissions is tracked and will be compared on a yearly basis to monitor the percentage of suppliers measuring GHG emissions and energy usage, and their water consumption.

Comment

Type of engagement
Innovation & collaboration (changing markets)

Details of engagement
Other, please specify (Working with suppliers on innovation for energy efficiency, GHG emissions reduction and water conservation)

% of suppliers by number
1

% total procurement spend (direct and indirect)
1

% Scope 3 emissions as reported in C6.5
0

Rationale for the coverage of your engagement
Supply Chain Innovation sources high energy efficiency equipment and collaborates with suppliers on innovation and technology change. Efforts to reduce our energy, GHG emissions and water consumption footprint include working with key global and some selected startup suppliers to understand their innovation roadmaps and identify innovation opportunities. These are then scrutinized to identify ones with the most impact. The selected ones are actively pursued as group-wide initiatives. The approach is highly targeted and considers both existing as well as potentially new suppliers.

Impact of engagement, including measures of success
Supply Chain Innovation measures success based on a specific product or service procured. These always have measurable KPIs. For example, the extent to which a new product is able to suppress dust and associated water saving (m3 reduced) or the extent of energy efficiency achieved (kWh per tonne processed). Examples of products being explored include: • Software and hardware modifications performed on Engine Management Systems of our dump truck fleets contributed towards fuel consumption reductions of up to 4% and equivalent CO2 emission reductions across our business. In addition, maximizing haul truck payloads with narrowing their variations and ensuring optimal truck and shovel payload matching have significantly contributed to fuel savings. • One of Anglo American's supplier solutions for replacement of old pneumatic rock drills by the newly developed electro-hydraulic rock drill technology in underground platinum mining has potential for around 50% improvement of energy efficiency and 75% reduction of water usage. • An innovative organic and bio-degradable micro-biological dust suppression solution is being investigated that has potential to reduce approximately 90% of water being currently consumed during the dust suppression process in open pit mines. • In the processing space, several innovative energy efficient crushing, grinding, flotation and fine particle recovery equipment and processes developed by Anglo American's supplier base are jointly being investigated by Supply Chain and T&S functions. One of the examples is an investigation of opportunity to deploy non-spherical grinding media in a ball milling process, which has potential to reduce energy consumption by around 10% during the energy-demanding milling process. Another supplier of Anglo American has developed a simple and innovative crushing system with potential to reduce energy consumption of up to 10%-20% during the primary crushing process.

Comment
The work of the Supply Chain Innovation complements Anglo American's FutureSmart Mining™, however the focus includes looking at more mature technologies that can be implemented now with relatively low funds, and then working with current and potential new suppliers to develop these opportunities before passing them on to the organisation.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change

% of suppliers by number
1

% total procurement spend (direct and indirect)
1

% Scope 3 emissions as reported in C6.5
0

Rationale for the coverage of your engagement
In line with Anglo American's responsible-sourcing strategy, in 2018 continued supplier capability building initiatives aimed at supporting our small medium enterprise (SME) suppliers to identify and manage potential responsible sourcing risks. SME suppliers were selected as they required the most development support in complying with the Responsible Sourcing Standard for Suppliers. Our current model which has been developed and piloted over the past two years in South Africa consists of two-day training workshop which include detailed training on legal requirements, including requirements to protect the environment which includes climate change. SME participants were also provided with templates and other management tools to support compliance requirements. Anglo American plans to expand this approach to other regions by 2020.

Impact of engagement, including measures of success
The two-day programme provides Anglo American's small suppliers with the necessary knowledge, management tools and support to ensure that they follow the relevant environmental requirements, including climate change. We do not only build supplier capabilities, but also minimize procurement-specific risks and encourage smoother production processes through this initiative. At the end of the workshops, respondents completed self-assessments to allow Anglo American to monitor their progress in complying with Anglo American supplier requirements, including climate change. A sample of suppliers were selected for on-site assessment in 2018 to validate their progress.

Comment

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.

i. Methods of engagement

There is a growing level of awareness on climate change across society, including our key stakeholders: investors, customers, suppliers, governments, communities and the wider public. We are engaging proactively with these stakeholders and others as part of our role in the response to climate change.

Anglo American engages with partners as part of the Anglo American 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 FutureSmart™ 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.

Recognising the significance of our customers' emissions, we have invested in clean coal technology partnerships to develop CCUS with universities and associations such as the Australian Coal 21 fund.

Anglo American is a member of a number of fuel cell and hydrogen associations around the world including the Hydrogen Council.

Through our PGM Market Development activities, we are investing over USD100M in promising new technologies which use or facilitate the use of PGMs in PGM-based catalysts as well as companies in the fuel cell, hydrogen and energy storage value chain that support or use fuel cell/clean technology. This is through our own activities as well as investment in an independent fund management business, AP Ventures LLP. We are also supporting the development of a hydrogen economy through partnerships including the global Hydrogen Council and have put in place initiatives to proactively shape the PGM market

We are proud to be a founding sponsor of the World Bank's Climate Smart Mining Facility which will be launched in May. The Facility aims to decarbonise and reduce the material footprint of minerals needed for the clean energy transition, particularly in resource-rich developing countries.

We are committed to the transparent disclosure of climate related risks and opportunities for our business, and have officially expressed support for, and aligned with, the Task Force for Climate-related Financial Disclosures (TCFD) recommendations for voluntary reporting on climate related risks in 2018.

We maintain a dialogue with Climate Action 100+ group of investors to deepen a shared understanding on disclosure and our actions to build resilience. We also engage with the Church of England Investment Fund on the Transition Pathway Initiative's work aiming to develop a methodology to benchmark the mining sector's total GHG emissions against the 2°C scenario. Our work in 2019 to analyse our own Scope 3 emissions will help inform this.

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 American 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).

PGM Market Development activities seek 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. Success is contributing to a re-imagined mining industry where we believe that mines will be carbon neutral.

Success in the shorter term is measured based on our ability to meet our 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%.

Success for our PGM Market Development activities 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.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations
Funding research organizations
Other

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
Industry Task Team on Climate Change (ITTCC)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
We are members of the ITTCC in South Africa, which is a non-profit organisation 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.

How have you influenced, or are you attempting to influence their position?
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. The work of the Task Team feeds into Anglo American's strategy and informs our low-carbon transition planning.

Trade association
International Council on Mining and Metals (ICMM)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
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 coal as part of a measured transition to a lower carbon energy mix, greater use of renewables, adapting and helping communities to adapt to changes, considering climate change in planning and engaging and partnering for effective solutions.

How have you influenced, or are you attempting to influence their position?
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. Anglo American's water management standard has been developed in alignment with global best practice and the ICMM water reporting guidelines. A cornerstone of the new standard is a more focused and structured approach to managing catchment-wide water risks. Effective regional or catchment management is important in addressing the long-term impacts of mine-affected water.

Trade association
Minerals Council South Africa (previously the Chamber of Mines)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Anglo American's CEO is a council member of the Minerals Council of South Africa, which holds a range of positions on carbon policy issues. In general, the Minerals Council of South Africa 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 Minerals Council South Africa was not supportive of the carbon tax as proposed. Anglo American Coal South Africa's CEO is a member of the World Coal Association. Their position on climate change is that all low emission technologies are required to meet the Paris Agreement target and that this includes modern coal technologies which include High Efficiency, Low Emission (HELE) technologies as well as Carbon Capture Use and Storage (CCUS). These technologies are required in the face of continued coal use projections. The International Energy Agency's Sustainable Development Scenario (where coal use is forecast at its minimum) still has coal at 13% of global energy demand in 2040. Coal is also used for cement, aluminium, glass and steel production.

How have you influenced, or are you attempting to influence their position?
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.

Trade association
World Coal Association (WCA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Anglo American Coal South Africa's CEO is a member of the World Coal Association. Their position on climate change is that all low emission technologies are required to meet the Paris Agreement target and that this includes modern coal technologies which include High Efficiency, Low Emission (HELE) technologies as well as Carbon Capture Use and Storage (CCUS). These technologies are required in the face of continued coal use projections. The International Energy Agency's Sustainable Development Scenario (where coal use is forecast at its minimum) still has coal at 13% of global energy demand in 2040. Coal is also used for cement, aluminium, glass and steel production.

How have you influenced, or are you attempting to influence their position?
Anglo American has participated in working groups and various aspects of coal and climate change and has reviewed and provided inputs into messaging.

Trade association
Coal Industry Advisory Board (CIAB)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Seamus French (CEO of Bulk Commodities) is on the executive committee of the CIAB and was Chairman in 2016-2017. The CIAB is an advisory board to the International Energy Agency, focussing on key issues that may affect energy security. Their view is that given that most forecasts and scenarios envisage coal will continue to be a part of the global energy mix, particularly in India, China and South East Asia where rapid growth in coal-fired power is being seen, advanced coal technologies that reduce the CO2 emissions from coal-fired power, such as high efficiency, low emission power plants and carbon capture and storage are critical for achieving the goals and the Paris Agreement. Carbon Capture and Storage, in particular, requires increased policy support to achieve the levels of deployment required to meet the Paris Goals.

How have you influenced, or are you attempting to influence their position?
Anglo American participates actively in working groups, driving the direction of the annual work programme, reviewing documents and providing inputs and information to the IEA.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?
No

C12.3e

(C12.3e) 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 (now 39 companies). 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 (USD1.5 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 2°C target, as agreed in the 2015 Paris Agreement.

We are proud to be a founding sponsor of the World Bank's Climate Smart Mining Facility launched in May 2019. The Facility aims to decarbonise and reduce the material footprint of minerals needed for the clean energy transition, particularly in resource-rich developing countries

Anglo American also undertakes a range of engagements specific to various countries in which we operate. For example:
• Anglo American, through our Nickel 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, our Nickel business 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 organised 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 Minerals Council South Africa. 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.

C12.3f

(C12.3f) 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?

Anglo American's policy work related to climate change began almost twenty years ago. In 2001, we became a founding member of the International Council on Mining and Metals (ICMM), through Anglo American. ICMM released its first position statement on climate change in 2006, which was followed in 2011 by a set of principles for climate change policy design.

In 2015 Anglo American published our first position statement on climate change, joined the COP21 Paris Pledge for Action and welcomed the Paris Agreement. We understand that participating states will be expected to increase their ambition in reducing emissions as defined by their Nationally Determined Contributions in coming years.

In 2018, we conducted an audit of the 71 industry associations of which Anglo American is a member to ensure that those associations' policy and advocacy positions were aligned with Anglo American's positions. Some differences were identified and we have engaged with the industry associations in question to ensure that there is no suggestion that Anglo American is inconsistent in our positioning on climate change and our overall climate change strategy.

Anglo American implemented a group-level climate change policy in 2010. The aim of this policy is to achieve the maximum-sustainable energy and carbon saving in its business and in the use of its products. The climate change policy is guided by five principles, which includes contributing skills and knowledge to the development of responsible public policy.

As an integral part of Anglo American's strategy, the 2030 target will support enhanced business performance through cost reduction and aligns with the environmental value pillar objectives of energy and GHG emissions management. 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.

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

C12.4

(C12.4) 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
In mainstream reports

Status
Complete

Attach the document
aa-annual-report-2018.pdf

Page/Section reference
Page 30

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication
In voluntary sustainability report

Status
Complete

Attach the document
aa-sustainability-report-2018.pdf

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Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication
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Complete

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climate-change-our-plans-policies-and-progress2019.pdf

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Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C14. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Group Director – Technical	Chief Operating Officer (COO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
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