Welcome to your CDP Climate Change Questionnaire 2020

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. 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. The technologies and digitalisation referred to are critical enablers to our stretching healthy environment goals, particularly in relation to climate change and GHG emissions, as well as water usage. Some of these are now being rolled out at scale in our operations – in Chile, in Brazil and South Africa. The implementation of our Sustainable Mining Plan gathered pace in 2019, including in relation to addressing society's most pressing challenge – climate change – and to consumers' desire to understand the provenance of the products that they buy.
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've met our 2020 target of reducing GHG emissions by 22% and continue to pursue our 2020 target of reducing energy use by 8% and are confident that our FutureSmart MiningTM technologies will be a key driver of our emissions reductions to 2030 and of driving our operations towards carbon neutrality. With the Sustainable Mining Plan and FutureSmart MiningTM gathering pace in 2019, we have committed to using 100% renewable energy from 2021 in Chile, for example; and we have committed to the highest standards of ethical production by putting all our managed mines through rigorous social and environmental responsibility certification processes by 2025, starting with our Unki PGMs mine in Zimbabwe.
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 35 years and 51 years, respectively.
Anglo American Platinum (held through a 78% interest in Anglo American Platinum Limited) is the world's leading Platinum Group Metals (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/2020/aa-annual-report-2019.pdf
· Our Sustainability Report - https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-sustainability-report-2019-v1.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
Reporting year	January 1, 2019	December 31, 2019	No

C0.3

(C0.3) Select the countries/areas 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 chosen approach for consolidating your GHG 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

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 also feature periodically 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's 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. In 2019, the Board approved the Sustainable Mining Plan which is designed specifically to drive business efficiencies, resilience and agility. The Sustainable Mining Plan includes the climate change stretch targets and emphasises the ambition to achieve carbon neutrality.

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 Sustainability Committee, and also feature periodically as stand-alone items on the agenda. In addition to the discussions at the Sustainability Committee, the Audit Committee reviews the company's material risks, including climate change, twice a year. The Remuneration Committee takes into account financial as well as sustainability indicators in its decision-making process The following relevant climate change matters were discussed in 2019: • Sustainable Mining Plan Climate Change Stretch Goal Targets and ambition for Carbon Neutrality • Climate change scenario analysis and Scope 3 greenhouse gas emissions • Sustainability bench marking – comparing performance and global trends across the industry In line with Task Force on Climate-related Financial Disclosures (TCFD) recommendations, in 2019, we published the report Climate Change: Our Plans, Policies and Progress. This report explored the impact of climate change across our portfolio through quantitative scenario analysis. The analysis helped us understand that our business is fundamentally resilient. 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 who is an executive member of the Board and a member of the Sustainability Committee, as well as part of 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, 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 and clean energy generation (relevant to the solar PV and hydrogen truck projects at our Platinum 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?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	At Anglo American, all employees are incentivised through either monetary or non-monetary rewards. Performance is incentivised through several mechanisms. They are linked to reward through the bonus scheme; the Long-Term Incentive Plan (LTIP) through the business scorecard process. The LTIP performance measures are aligned to our strategic objectives over a three-year performance period, with portion of this awarded based on achievement of GHG emissions savings.

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).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Corporate executive team	Monetary reward	Emissions reduction target	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, and which was achieved in 2019. Since 2017, our 2020 energy and carbon targets are included within the plan.
Environment/Sustainability manager	Monetary reward	Emissions reduction target	A portion of environment/sustainable development managers' variable remuneration is linked, where relevant, to quantitative GHG and climate change reductions in line with ECO2MAN targets. 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.

Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target	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.
All employees	Non-monetary reward	Emissions reduction target Energy reduction target	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) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	Text field [maximum 2,400 characters
Medium-term	3	5	

Long-term	5	30	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

‘Substantive change’ would be anything that could materially affect our ability to meet business objectives and, or, is of material importance to stakeholders. Materiality is defined as a matter that, in the view of the Board, senior management and key stakeholder groups, is of such importance that it could in the short, medium or long term:

• have a significant influence on, or is of material interest to our stakeholders

• substantively influence the company’s ability to meet it strategic objectives

• has a high degree of inter-connectivity with other material issues.

From a financial perspective and with respect to climate change, a ‘substantive change’ would be a disruption to our operations or supply chain caused by climate change that results in a change in production or increase in costs. Examples 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) or 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. Considering this definition and to quantify substantive change, Anglo American uses its risk assessment methodology and in particular the financial consequence rating within the risk methodology to identify and measure a substantive financial or strategic impact to our business.

Financially Anglo American defines substantive change as a loss in revenue or increase in operating costs of more than $250 million

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Upstream

Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

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 Investment Criteria by Stage (ICBS) 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 2019 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.

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). An example of a principal transition-related 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 and relevant for our Platinum operations.

C2.2a

(C2.2a) Which 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.
Emerging regulation	Relevant, always included	Regulations related to carbon pricing (for example 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	Technology development has the potential to enable more cost-effective achievement of our long term GHG mitigation target. There is a risk, however, that if Anglo American is not proactively searching for and using new technologies that we will not meet this 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 MiningTM 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 research on vent air methane abatement and investment into CCS (through the Australian Coal 21 Fund, 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)

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 58 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 ICBS for projects include acute physical risks.

		We have worked 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. For example, acute events, such as larger than normal rainfall events driven by climate change can contribute to discharge of polluted water into the environment. 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. Chronic events such as rising temperatures caused by climate change, for example, impacts on water availability in our water stressed operations. 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.

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 & Primary climate-related risk driver

Current regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

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. The first levy payable to the South African Revenue Service (SARS) is due on 30 July 2020.

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 1 679 634 tCO2e of Scope 1 emissions in 2019.

Time horizon

Short-term

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)

Potential financial impact figure – minimum (currency)

1,958,621

Potential financial impact figure – maximum (currency)

6,120,755

Explanation of financial impact figure

The estimated exposure to carbon tax, with the commencement of the scheme for 2020 is USD 2.0 million at 2019 USD prices. This assumes the basic and some additional allowances. Given uncertainty around allowances the liability ranges from USD 1.9 million to USD 6.1 million at 2019 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).

Cost of response to risk

12,000,000

Description of response and explanation of cost calculation

We have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. 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

For example, in 2019, the Copper business signed agreements to purchase all electricity from renewable sources, which will substantially reduce GHG emissions at all Copper sites in Chile. The world's first floating solar photovoltaic plant over a tailing storage facility pond was piloted at Los Bronces in Chile. It generates 86 kWhp of solar electricity and minimises evaporation in the pond-covered area. At our platinum operations we have several projects, including the installation of large-scale solar photovoltaic panels at Mogalakwena; piloting the use of hydrogen fuel cell powered mining haul trucks; and generating electricity from waste heat recovered from the converting process at the Waterval smelter.

Our ECO2MAN energy and GHG management programme mitigates our exposure by reducing operational GHG emissions. In 2019, approximately 280 energy efficiency and business improvement projects saved 7.5 million tonnes (Mt) CO2e – a 29% reduction relative to the BAU 22.8 MtCO2e. 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.

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.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

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

Short-term

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)

4,519,499

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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). In 2019, no ACCUs were purchased or relinquished.

Cost of response to risk

1,200,000

Description of response and explanation of cost calculation

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. Anglo American spent $1.2million in research and development work in the reporting year to concentrate methane in order to flare and reduce GHG emissions.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

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 1 913 719 tCO2e (representing 18% of our Scope 1 emissions), representing a potential financial liability.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

17,338,295

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 of USD17.3million is based on Anglo's internal carbon price (R120 or USD 9.06 / direct CO2e), based on the South African carbon price multiplied by its Scope 1 emissions. The lower range is zero considering the uncertainty of this risk.

Cost of response to risk

15,000,000

Description of response and explanation of cost calculation

To achieve carbon neutrality across our operations, we are focusing on radically reducing energy consumption through our FutureSmart Mining™ programme, switching to low-carbon energy sourcing and increasing the role of renewables in our energy mix. We have set 2030 targets to improve energy efficiency and reduce absolute GHG emissions by 30%. As an example, Our FutureSmart™ Mining programme includes technology solutions that substantially reduce energy use through changes to processes and equipment. Comminution (the grinding and crushing of rock) is the biggest consumer of energy in mineral processing. We are implementing bulk sorting and developing new comminution technologies that fragment particles using 30% less energy than conventional means. Through De Beers, we have started investigating the potential for mineral carbonation of kimberlite tailings as a CCS-technology solution. We spent approximately USD15 million in the reporting year on piloting energy and GHG reduction technologies at various operations linked to comminution.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Water scarcity and stress is considered one of Anglo American's most significant water risks considering 50% of operations are located in water scarce areas. 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. 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. For example, Los Bronces which is Anglo American's largest operation in Chile and one of the largest copper deposits in the world is particularly exposed to water stress as the mine is located in a semi-arid area with little to no surface and groundwater. Chile's central zone, where the operation is located, continues to face unprecedented climate conditions, with 2019 being the driest year since the start of the current decade-long drought, and one of the driest years on record. The Los Bronces operation experienced a reduction in water availability and storage owing to the ongoing drought during 2019. As a result, production decreased by 9% to 335,000 tonnes (2018: 369,500 tonnes), with planned higher grades (0.83% vs 2018: 0.76%) offset by production losses owing to lower water availability. The result was a substantive financial impact due to the 9% reduction in production.

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)

207,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential financial impact was calculated at $207million and represents potential lost revenue. It is assumed that the 34,500 tonnes of reduced production compared to 2018 at Los Bronces was due to water. The potential lost revenue was thus calculated by multiplying this figure by the average price of copper per tonne in 2019 ($6000/tonne).

Cost of response to risk

17,000,000

Description of response and explanation of cost calculation

We have been working with the UK Met Office and other recognised experts on climate science since 2010. 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.

Production decreases due to lower water availability at Los Bronces were partly offset by several water-management initiatives such as increased reuse and recycling, contingency purchases of surplus industrial water from the Andina´s Ovejeria tailings dam on the neighbouring mine and the use of new technology like Coarse Particle Recovery and Hydraulic Dry Stacking. In addition, Los Bronces have implemented a water recycling system where water is transported to the operation via a 56-kilometre pipeline from the Las Tórtolas tailings dam. In 2018 we

developed a tailings water recovery scheme whereby horizontal wells were drilled into the bottom of the dam to facilitate drainage of tailings water for re-use in the site's plant. Solar conductive evaporation covers have also been installed to reduce water loss from tailings dams with results showing that the covers can reduce evaporation by up to 90%. This will facilitate the recovery of several million m3 of water annually, while generating 0.5MW of solar energy at Los Bronces. Recent water project expenditure at Los Bronces was US$17 million which excludes the operational costs of purchasing water. These are once off costs and derived from quotations and invoices.

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation

Shifts in consumer preferences

Primary potential financial impact

Decreased revenues due to reduced demand for products and 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 58 million tonnes of CO2 annually. Our thermal coal business represented 6% of our revenue for 2019. 61% 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)

1,832,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Underlying EBITDA for coal operations was USD 1 832 million in 2019 (USD3 196 million in 2018).

Cost of response to risk

11,200,000

Description of response and explanation of cost calculation

Anglo American has been reducing its thermal coal production footprint for some time, more than halving production since 2015 through the sale of our Eskom mines in South Africa and thermal coal assets in Australia. We are continuing along that pathway – ensuring a responsible transition – taking care to consider the needs of our employees, host communities and other stakeholders and to continue to nurture our assets through appropriate investment. Given the significant scale and diversification of Anglo American and the capital allocation options we have across our global portfolio – combined with our overall trajectory towards those products that enable a cleaner, greener, more sustainable world – we believe that the long term prospects of our thermal coal operations in South Africa may be best served under different ownership. We are therefore working towards a possible demerger of our thermal coal operations in South Africa as our likely preferred exit option, expected in the next two to three years, with a primary listing on the Johannesburg Stock Exchange for the demerged business. We will continue to consider other exit options as we engage with stakeholders as part of our commitment to a responsible transition.

At the same time, 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). Our investment in clean coal technology amounts to approximately USD10 million and we spent an additional USD1.2million on R&D work in order to be able to flare and reduce GHG emissions in our coal mines in Australia.

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Technology

Substitution of existing products and services with lower emissions options

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Amplats is the leading primary producer of platinum group metals. The risk relates to the potential decrease in demand for PGMs in the long term. 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.

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)

13,900,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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 2019 prices) over a year long period.

Cost of response to risk

100,000,000

Description of response and explanation of cost calculation

Amplats will invest USD100 million (approximately R1.4billion at 2019 prices), through AP Ventures, into a specialist 12-year Fund dedicated to investment in advanced companies utilising the unique properties of PGMs. 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.

Comment

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, please specify

Energy efficiency

Primary potential financial impact

Reduced indirect (operating) costs

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

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)

6,565,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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 USD6.56 million.

Cost to realize opportunity

268,522

Strategy to realize opportunity and explanation of cost calculation

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 (1 project at Mogalakwena) and Kumba Iron Ore (7 projects at Sishen and 3 projects at Kolomela).

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. The cost to realize the opportunity is for the Measurement and Verification (M&V) of the projects which is estimated to be USD268 522.

Comment

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

Primary potential financial impact

Increased revenues through access to new and emerging markets

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)

Potential financial impact figure – minimum (currency)

212,981

Potential financial impact figure – maximum (currency)

612,075

Explanation of financial impact figure

With regard to the South African Carbon Tax Act, it is estimated that offsets could reduce compliance costs by between USD 0.2 million to 0.6 million in 2020 (2019 prices).

Cost to realize opportunity

145,666

Strategy to realize opportunity and explanation of cost calculation

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. 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.

Comment

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

Primary potential financial impact

Increased revenues through access to new and emerging markets

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. We believe that our actions can help shape this demand in the future. Anglo American Platinum is the leading primary producer of platinum group metals and is best placed to benefit from this potential increase in demand.

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)

13,900,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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 2019 prices) over a year long period.

Cost to realize opportunity

100,000,000

Strategy to realize opportunity and explanation of cost calculation

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.

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.

Comment

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

Primary potential financial impact

Other, please specify

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. For example, a project to develop a large-scale (75MW) solar PV facility to supply power to our Mogalakwena complex in South Africa is progressing. The solar PV plant would cater for 21% of the mine's annual electricity consumption (an average of 167GWh per annum versus its total annual energy requirement of some 777GWh.) The plant design includes the option to scale up to 120MW and then 340MW. The longer-term aim is to use electricity from solar PV to generate green H2 for use as fuel in fuel cell haul trucks. For example, we plan to start testing a haul truck at our Mogalakwena mine that has been specially adapted to fit the hybrid hydrogen and battery power plant, which is replacing the existing diesel engine. In addition, the 4,500-litre diesel tank is being replaced with hydrogen tanks to fuel the power module.

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)

7,700,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

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 7,7 million at 2019 prices).

Cost to realize opportunity

43,900,000

Strategy to realize opportunity and explanation of cost calculation

We have undertaken an assessment of options for increasing the use of renewable energy and incorporated these into our Sustainable Mining Plan. In South Africa, our Waterval smelter generates electricity from waste heat recovered from the converting process. We are investigating options for recovering energy from truck braking systems and pipeline slurry flows. We are currently evaluating tenders for a 75MW solar photovoltaic (PV) facility supplying Mogalakwena Mine. As part of this project we have announced intentions to develop a fuel cell solution for heavy-duty haul trucks. This will provide sustainable economic returns while creating next-generation mining vehicles as part of our FutureSmart Mining initiative. The project entails oversizing the solar PV capacity planned for Mogalakwena, then using the additional energy to produce the hydrogen needed to power this vehicle. In 2019 we signed a partnership with ENGIE, a leading energy services company, to develop the hydrogen generation, storage and dispensing solution, for what will be the world's largest hydrogen-powered mine haul truck. The truck will be trialed in 2020 and this approach will go a long way to decarbonising our operation as the combination of a hydrogen fuel cell powered by solar-generated green H2 could reduce current levels of CO2e emitted by 50%. In Brazil, more than 85% of the electricity we use comes from

renewable sources. In 2019, we signed contracts to enable our Copper operation in Chile to draw all electricity from renewable sources from 2021. In Chile we are rolling out a fleet of electric buses for transporting mine workers to and from Santiago. Los Bronces mine has also initiated a pilot to generate power through floating PV cells located over its tailings facility, which will reduce evaporation for an operation constrained by water supplies. In Australia, our Moranbah North, Grosvenor and Capcoal metallurgical coal operations capture waste methane for power generation. In 2019, we increased this capacity to 140 MW, by reducing low concentrations of methane emissions in ventilation air.
The actual costs of the solar PV and hydrogen truck project are still confidential as tenders are being evaluated. As an example, a 75MW solar PV plant would cost in the region of USD43.9 million (over the life of the asset (including capital & operational costs). This is based on the Renewable Energy Independent Power Producer Programme bid window 4 average prices for solar PV projects

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

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

Yes, qualitative and quantitative

C3.1b

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

Climate-related scenarios and models applied	Details
IEA Sustainable development scenario IEA NPS	In 2018 we extended previous work and developed quantitative 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 products. We then assessed how sectors of key significance to mining in general, and Anglo American in particular, may evolve in those worlds. This includes all parts of our business as it involved reviewing the outcomes on all commodities we produce. By combining these analyses with knowledge of our operations, we tested how our business might be affected. The scenarios are developed up to 2050, in line with the Paris agreement, which is relevant given the long life of mine of our assets, expected to extend well beyond this time horizon. To build these scenarios we drew on global best practice, including 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 2°C: - NPS+ assumes 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 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, phasing out of coal power and extensive deployment of low carbon technologies such as carbon capture and storage, by 2050. The results of the scenario analysis impact Anglo American in different ways. 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 2°C. The upside outlook for PGMs is less certain, given the potential for significant growth if the hydrogen economy develops at scale. Financially, our cashflow could grow significantly to 2030 under NPS+. Under the 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. Much of our growth is aligned with

	key climate change trends, driven by our well-placed position in metals such as copper, nickel and PGMs that are expected to support the acceleration of abatement efforts. Climate scenario analysis has informed our strategy in various 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. Our flagship PGMs mine at Mogalakwena in South Africa is well suited to supply the metals needed in the low carbon transition for the transport sector. The results have emphasized the importance of investing capital to reduce our own GHG footprint at these assets, demonstrated by the roll-out of solar projects at both Los Bronces and Mogalakwena. • 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.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	We believe mining will remain a relevant industry across the scenarios considered, however, the mix of products it supplies could shift away from bulk minerals towards base and other metals. The demand for renewable energy and energy storage technologies is projected to increase as we transition to a lower carbon global economy. Three of Anglo American's commodities – copper, platinum and nickel – will become even more critical in this move to low-carbon technology and renewable energy. 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. Our scenario analysis has shown that the time horizon for this is the phasing out of coal power by 2050. Thermal coal supply is the most significant climate exposure for Anglo American, with the indirect downstream GHG emissions accounting for 58 million tonnes of CO2 annually. The most significant decision we have made, influenced by this risk, is that 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.
Supply chain and/or value chain	Yes	Our supply chain has a vital role to play in meeting our carbon-neutral ambitions, through helping us develop and source energy-efficient technology. In 2019, we rolled out new electro-hydraulic rock drill technology across selected underground PGM operations. Developed in collaboration with suppliers, the new drills significantly improve energy efficiency and productivity compared to our previous, pneumatic rock drills. We have worked with vehicle suppliers on upgrading the engine-management systems of our large dump-truck fleets, helping to reduce our fuel consumption by 4%. Working with suppliers on more consistent vehicle capacities has also helped us to plan payloads more effectively and driven further fuel savings. We have implemented a start-stop system for trucks at our major opencast operations, to further reduce engine idling and driving further fuel savings. We are also working with suppliers to develop new processing equipment for crushing, grinding, flotation and fine-particle recovery. The most important strategic decision made relates to our integration of environmental issues, including climate change, into our Responsible Sourcing Standard. This took place in the last few years and will help us drive the changes needed to meet our 30% net GHG reduction target by 2030.
Investment in R&D	Yes	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 carbon capture ansd storage (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 development of the hydrogen economy through the global Hydrogen Council. The most important strategic decision made

		relates to the USD100million investment in AP Ventures in 2018 which is a fund that will invest in emerging companies in the fuel cell, hydrogen and energy storage value chain that support or use fuel cell/clean technology. The purpose of the R&D investment is to assist meet our 30% net GHG reduction target by 2030 and also support in driving the growth of the low carbon economy in the longer term.
Operations	Yes	Our operations are directly impacted by climate change regulations in the form of carbon taxes in South Africa, for example. One of the ways in which we plan to address this is through the increasing use of renewable energy and hydrogen. We undertook an assessment of our options for increasing the use of renewable energy in the last 2 years and incorporated these into our Sustainable Mining Plan. The most important strategic decision we have made is in South Africa where we are currently evaluating final tenders for a 75MW solar photovoltaic facility supplying Anglo American Platinum's Mogalakwena Mine. As part of this project we have announced intentions to develop a fuel cell solution for heavy-duty haul trucks. This will provide sustainable economic returns while creating next-generation mining vehicles as part of our FutureSmart Mining technology and innovation initiative. The project entails oversizing the solar photovoltaic (PV) capacity planned for the Mogalakwena site, then using the additional energy to produce the hydrogen needed to power this vehicle. In 2019, we signed a partnership with ENGIE, a leading global energy and energy services company, to develop the hydrogen generation, storage and dispensing solution, for what will be the world's largest hydrogen-powered mine haul truck. The truck will be trialled in 2020 and this approach will go a long way to decarbonising our operations.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Capital expenditures	Revenues: The potential impact of changing market demands for products driven by the transition to an increasing carbon

	Acquisitions and divestments	constrained global economy will impact demand for PGMs, nickel, copper and high-quality iron ore (produced by Anglo American's Kumba Iron Ore). Much of our growth in revenue is aligned with key climate change trends, driven by our well-placed position in metals such as copper, nickel and PGMs that are expected to support the acceleration of abatement efforts. This shift is underpinned by strong optionality in our portfolio. In copper, we are currently developing Quellaveco, one of the few tier one projects in the world. Additionally, our portfolio includes Los Bronces and Collahuasi, which have reserve lives of 30 and 63 years respectively, and have some of the largest resource bases in the industry, offering further growth optionality. Given the long life of mine of these assets, the time horizons over which we will continue to invest is long-term (beyond 30 years). Capital expenditures: Meeting our ambitious, long term, GHG reduction target will require additional capital investment. An example is in South Africa where we are currently evaluating final tenders for a 75MW solar photovoltaic facility supplying Anglo American Platinum's Mogalakwena Mine. As part of this project we have announced intentions to develop a fuel cell solution for heavy-duty haul trucks. The project entails oversizing the solar photovoltaic (PV) capacity planned for the Mogalakwena site, then using the additional energy to produce the hydrogen needed to power this vehicle. We anticipate that this particular project will be implemented in 2020 and will supply the line with renewable energy for at least the next 20 years. Given the long life of mine of Mogalakwena, the time horizon over which we will continue to invest in CAPEX on GHG mitigation projects is long-term (beyond 30 years). Acquisitions and divestments: 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. Our own scenario analysis has shown that the time horizon for this is the phasing out of coal power by 2050. We have reduced our thermal coal footprint by half in the last five years through a responsible divestment strategy. 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 was announced on 10 April 2017. 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.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

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

Year target was set

2017

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2016

Covered emissions in base year (metric tons CO2e)

14,593,333

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2030

Targeted reduction from base year (%)

30

Covered emissions in target year (metric tons CO2e) [auto-calculated]

10,215,333.1

Covered emissions in reporting year (metric tons CO2e)

17,743,984

% of target achieved [auto-calculated]

-71.9655338503

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)

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 absolute 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.

Target reference number

Abs 2

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2015

Covered emissions in base year (metric tons CO2e)

14,042,500

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2020

Targeted reduction from base year (%)

22

Covered emissions in target year (metric tons CO2e) [auto-calculated]

10,953,150

Covered emissions in reporting year (metric tons CO2e)

17,743,984

% of target achieved [auto-calculated]

-119.8143298752

Target status in reporting year

Achieved

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

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.

The total GHG reduction of 29% was achieved against our BAU scenario, which meets our 2020 target a year ahead of schedule. To receive the LTIP benefit in full, Anglo American needed to achieve the 2020 GHG target a year ahead of schedule, in 2019, which we have met.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2015

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Target denominator (intensity targets only)

Base year

2015

Figure or percentage in base year

105.4

Target year

2020

Figure or percentage in target year

8

Figure or percentage in reporting year

8

% of target achieved [auto-calculated]

100

Target status in reporting year

Achieved

Is this target part of an 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

Please explain (including target coverage)

Our energy-reduction target for 2020 is 8%. In 2019, approximately 280 energy efficiency and business improvement projects saved 4.8 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 5% reduction). GHG emission savings in 2019 amounted to 7.5 million tonnes (Mt) CO2e – a 25% reduction relative to the BAU 22.8 MtCO2e.

C-CO4.2c

(C-CO4.2c) Indicate which targets reported in C4.1a/b incorporate methane emissions, or if you do not have a methane-specific emissions reduction target for your coal mining activities, please explain why not and forecast how your methane emissions will change over the next five years.

The 2020 and 2030 GHG reduction targets (abs 1 and abs 2 as identified in C4.1a) 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, with one unit approved at Goedehoop North. The aim is to accurately measure VAM emissions, thereby possibly reducing our carbon footprint due to the inaccuracy of calculating the methane emissions using the current methodology and our carbon tax liability. We are setting up a measurement methodology, reviewing reporting requirements, reviewing maintenance agreements for the systems and compiling costs to motivate for additional monitoring units for other ventilation shafts. We have started engagement with the Department of Environment, Forestry and Fisheries (DEFF). 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 were founding members of the Centre for Carbon Capture and Storage. To date, we have invested approximately USD10 million in clean-coal technology.

Met Coal has formed the Met Coal Carbon and Energy Steering Committee to address the significant work required to achieve the 2020 and 2030 sustainability targets. The current focus for the Committee is to demonstrate achievement of the 2020 Carbon and Energy Targets.

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	303	742,909
To be implemented*	2	617
Implementation commenced*	0	0
Implemented*	13	9,229
Not to be implemented	187	538,586

C4.3b

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

Initiative category & Initiative type

Other, please specify

Other, please specify

Fuel saving initiatives

Estimated annual CO2e savings (metric tonnes CO2e)

6,474

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

2,415,834

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

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

Initiative category & Initiative type

Other, please specify

Other, please specify

Fuel saving initiatives

Estimated annual CO2e savings (metric tonnes CO2e)

2,755

Scope(s)

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

15,198

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

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 4 650 kilo-ounces of refined PGMs in 2019, 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

23

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 638 Kt of copper in 2019.

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

13

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 42,600t of Nickel in 2019.

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

5

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

24

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 CO2e 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, were 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 2019, approximately 280 energy efficiency and business improvement projects saved 4.8 million GJ in energy consumption relative to the projected consumption in a BAU scenario (a 5% reduction). GHG emission savings in 2019 amounted to 7.5 million tonnes (Mt) CO2e – a 29% reduction relative to the BAU 22.8 MtCO2e.

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 and 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)

7,991,667

Comment

Base year emissions exclude operations not included in our 2018 reporting scope: divested operations, all non-managed JVs 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)

6,601,667

Comment

Base year emissions exclude operations not included in our 2018 reporting scope: divested operations, all non-managed JVs 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)

703,770

Comment

Base year emissions exclude operations not included in our 2018 reporting scope: divested operations, all non-managed JVs 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 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)

10,879,399

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

6,864,584

Scope 2, market-based (if applicable)

785,803

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 gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,759,511

Emissions calculation methodology

Activity data for goods purchased in large quantities and with known environmental impacts were calculated based on the quantity procured by each operation, and industry average emissions factors per unit mass applied to each. Non-material goods and services were calculated using a spend-based method. A proxy for emissions per unit expenditure for the company was calculated using the company's Scope 1 and Scope 2 emissions and the operating expenditure to yield an emissions factor per unit expenditure.

Activity data source: Anglo American data management systems providing quantity of selected goods purchased in 2018 and spend on non-material goods and services. Emissions data source: Secondary industry average data (Department of Business, Energy, & Industrial Strategy

(BEIS UK, 2019), Eco-Invent 2016, IPCC 2006, Calc 2014, World Steel 2019) and Anglo American Scope 1 and Scope 2/2018 group spend (for spend-based and non-material goods and services).

It was assumed to be fair to assume that suppliers of the goods and services produce emissions in line with industry average estimates, and that general emissions factors may be applied for appropriately for specialised materials. Average representative conversion factors were applied in the instances where internal systems data for groups of goods had to be converted to alternative units for available emissions factors.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

745,527

Emissions calculation methodology

The emissions from this category are not material but are relevant to the company's Scope 3 emissions inventory and for the users of the data; for raising internal awareness and providing the basis from which opportunities for mitigation may be identified and performance tracked.

The company does have considerable control over the

design and type of capital good purchased. The inclusion is also relevant as these goods are long-term in nature and, particularly with regard to equipment and plant machinery, can be made more efficient and less environmentally harmful through innovation and investment in superior capital goods.

The group's 2018 spend on plant, property and equipment was drawn from the Integrated Annual Report (2018) and an industry average emissions factor applied using a spend-based methodology.

Activity data source: Anglo American Annual Report (2018) as USD spend on capital goods for 2018

Emissions data source: Quantis Suite Scope 3 Evaluator

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,193,948

Emissions calculation methodology

The upstream emissions arising from the fuels purchased are not material considering the overall Scope 3 emissions. However, this category has been calculated as the consumption of fuels in operations is a key activity and accounts for considerable expenditure for the company. Mapping the upstream emissions from these fuels allows consideration for the broad footprint of these activities beyond Scope 1 and Scope 2 combustion emissions.

The volume or mass of each fuel procured by the operations was multiplied by the corresponding well-to-tank emissions factors to yield the total upstream emissions attributed to each fuel/energy type.

For electricity used in each operation, the transmission and distribution (T&D) losses, well-to-tank emissions for generation and T&D were taken from Department of Business, Energy & Industrial Strategy (2016) factors and used for the corresponding activity data.

Activity Data Source: Anglo American data management systems as volumes for liquid and gaseous fuels; mass for solid fuels; and MWh for electricity purchased.

Emissions Data Source : Secondary, industry average data (BEIS UK, 2019, Eco-Invent 2016, BEIS UK 2016).

It has been assumed that the suppliers of the fuels and energy products produce emissions in line with industry average estimates.

Final journey of transportation and distribution emissions not included from central hub to final destination (estimated to be immaterial at this time at approximately 1% of total Scope 3 Category 3 emissions).

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the

major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

448,330

Emissions calculation methodology

The upstream transportation and distribution of purchased goods is not considered to have a material impact on the overall Scope 3 emissions; however, the company's influence over suppliers, delivery frequencies and modes and the company's exposure in this regard to climate-risks makes these activities a priority for this exercise.

The methodology allows for the computation of emissions based on the journey distance and journey transport modes (per journey or part of journey) between a supplier's facility and the delivery address. This information was not available at the time of assessment and expert estimation of distances from a local regional hub and attributed transport mode was made.

An industry-average emissions factor for the mode of transport (truck, rail, or ship) was applied to the corresponding distance to yield an emissions factor per unit mass purchased for each good. In turn, this was multiplied by the mass of key operational inputs purchased in 2018 to yield total emissions.

The GHG Protocol categorises Scope 3 emissions as upstream or downstream based on financial transactions. For transportation and distribution of the company's products, the availability and granularity of information concerning freight costs and responsibilities was not determined; as such all transportation and distribution emissions from these activities have been allocated to Category 9. In aggregate, Category 4 and Category 9 should provide a materially complete report of these types of emissions for the company.

Goods and services not captured in Category 1 have similarly been excluded from these calculations, estimated to be immaterial at this time.

Activity Data Source: Anglo American data management systems for goods and services purchased and Google Maps for haulage distances estimates

Emissions Data Source: Secondary, industry average data (BEIS UK, 2019)

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

20,342

Emissions calculation methodology

Scope 3 emissions from waste generated in operations is not material but has been calculated due to the influence that the company has over these activities and the importance given to the mitigation and treatment of waste by stakeholders.

The activity data received from the internal systems in the form of mass per waste type was recorded for each operation. The emissions data comprised of the industry average (secondary) data for waste treatment and for goods freighting (to quantify the waste transportation emissions) using BEIS UK (2019) emissions factors. The primary data on the distance from the operations to the waste treatment site were aggregated to

provide an average waste transportation distance per operation. The goods freighting emissions factors were multiplied by the average distance per operation to yield waste transportation emissions that were added to the waste handling and treatment emissions for waste generated and treated off-site.

It was assumed that all materials and respective quantities were hauled off site and treated in facilities not owned or controlled by the company. Bulk mining wastes were not included, on the basis that these wastes are not handled off-site.

Distances to the various waste treatment site were aggregated for each operation and multiplied by a goods freighting emission factor, meaning that the emissions are based on aggregated transportation estimates. It was assumed that the waste was transported on a heavy goods vehicle.

Activity Data Source: Anglo American data management systems as mass and type of waste produced in 2018

Emissions Data Source: Secondary, industry average data (BEIS UK, 2019)

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

14,697

Emissions calculation methodology

The emissions under this category are not considered to be material to the overall Scope 3 emissions inventory; these have been calculated in accordance with the principles of completeness and transparency. The company has substantial influence over the extent, modes and class of travel undertaken for business travel and opportunity to create internal awareness, adapt behaviour and reduce emissions in this category.

Activity data was provided for flight trips and average flight trip distances, hotel stays, and car rental data for 2018 by Anglo American's corporate travel service provider, which also provided emissions factors for car rental and hotel accommodation based on spend. The emissions factors for flights were based on industry averages for domestic, short-haul, and long-haul flights and included combustion emissions with radiative forcing as well as well-to-tank emissions for the trip, provided by BEIS UK (2019).

Activity Data Source: Anglo American's corporate travel service provider activity data in the form of flight trips and distances, car rental days, and hotel accommodation stays in 2018.

Emissions Data Source: Anglo American's corporate travel service provider for hotel stays and daily car rental emissions factors; and secondary, industry average data for flights (BEIS UK, 2019).

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

26,834

Emissions calculation methodology

The emissions from employee travel are considered to be immaterial to the group's overall Scope 3 emissions. The reason for inclusion in the Scope 3 inventory is to raise awareness internally, encourage behavioural changes in employee commuting habits and contribute to completeness in the Scope 3 inventory.

For vehicular travel, daily commuting distances were multiplied by industry average emissions factors for each vehicle corresponding to the number of trips undertaken in the period.

Where data was available regarding fuel utilised for employee commuting, this was input with appropriate emissions factors sourced for the related fuel from BEIS UK (2019) in the assessment.

For bus, minibus and average car travel, the total daily distance travelled estimate is used as an activity data input. The distance is an average distance between the operation and the residential location of an assumed bulk of employees, or a weighted average of several locations.

Commuting behavioural attributes, trip frequencies and vehicle loading assumptions were applied for different employee groupings, and respective emissions rates were based on estimations of operational schedules, estimates of average daily distances, vehicle types and average efficiencies. These data points were composited to model emissions results for each operation.

Australian operations may have a proportion of air travel that would qualify for this Category due to the use of Fly-In Fly-Out (FIFO) arrangements which does not apply elsewhere. FIFO travel is arranged by a centralised travel agency, the data of which has been reported under Category 6 (Business Travel). To avoid double counting and because this data cannot be ring-fenced at this time, no FIFO based employee travel is recorded under Category 7.

Activity Data Source: Anglo American data management systems and internal divisions' existing Scope 3 emissions reports for Iron Ore, Copper

and Nickel operations and business units

Emissions Data Source: Secondary, industry average data (BEIS UK, 2019)

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

100

Please explain

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

This emissions inventory boundary is defined to include all assets for which the group has operational control. The company does not have upstream-leased assets for which it has operational control, and this category is therefore not relevant and not calculated.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

4,313,739

Emissions calculation methodology

Downstream transportation and distribution emissions of Iron Ore are considered as material to overall Scope 3 emissions. This product type accounts for most emissions arising from downstream transportation and distribution activities, due to customer distances being notably greater than for the other commodity types and the significance of the bulk product moved.

Each product is transported from the mine/smelter/refinery to either a customer directly, a departure port, regional logistics hub or to a further processing plant in its first journey. These distances were estimated for each operation based on reasonable assumptions and information provided by operational staff. Similarly, the mode of transport for this first journey for each of the products sold, given infrastructure in a given geography. Industry average emissions factors for the given transport mode were applied to the freight distance to yield an emission estimate for the first journey emission for each product.

Regarding the second journey emissions for products moved as marine freight (both containerised and bulk), information was sourced from a third-party provider commissioned to undertake detailed activity and emissions modelling; RightShip – a maritime risk management and environmental assessment organisation. Rightship records the shipping charters for the reporting company and the cargo types and volumes to determine the attributable carbon emissions. RightShip calculates emissions according to a certified methodology and includes well-to-propeller emissions Regarding the logistics of diamonds and refined PGMs, helicopter freighting followed by air freight was assumed. Helicopter emissions data was calculated as an average fuel usage per hour (Rindlisbacher, 2015) and the emissions factor for aviation spirit. This emissions factor was applied to the expected return flight duration with an assumption of flight speed for helicopters. Applying an assumption of the mass of product that is transported per flight, an emissions factor per flight was calculated. Lastly, an average helicopter distance across the operations was obtained and the emissions factor per flight divided by this average distance to yield an average emissions factor per km of helicopter flight for the applicable operations.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals,

Diamonds, and Manganese.

The GHG Protocol categorises Scope 3 emissions as upstream or downstream informed by financial and risk arrangements. For transportation and distribution of the company's products to customers, the availability and granularity of information concerning freight costs and responsibilities did not support this differentiation and was not determined; as such all transportation and distribution emissions from these activities have been allocated to Category 9 and none to Category 4. In aggregate, Category 4 and Category 9 should provide a materially complete report of these types of emissions for the company.

It was assumed that product sold to domestic customers undertakes only the first journey.

For commodities that are transported by helicopter, assumptions were applied regarding top speed and average product mass moved.

Distance estimates were made based on Google Map data between operations and their first journey's delivery point.

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

83,881,583

Emissions calculation methodology

Processing of Iron Ore, first a sinter production emissions factor was applied to the mass of Iron Ore bound for sintering, a pelletising emissions factor applied to the mass of Iron Ore bound for pelletisation, and the mass of Iron Ore sold in 'Lump' form was not associated with any iron preparation emissions factor, being applied directly to the blast furnace and blast oxygen furnace. Following the iron preparation stage, the Iron Ore product is converted to crude steel primarily by blast furnace followed by basic oxygen furnace processing, having accounted for estimated efficiency of conversion by Anglo American customers. Our methodology considers the potential over-accounting of emissions for the Iron Ore value chain converging with that of our Metallurgical Coal business, and a processing phase apportionment is applied to emissions arising from crude steel manufacturing.
Metallurgical Coal, the emissions factor from processing the coal into coking coal in a coking oven was used. The mass of coal sold by the

company was multiplied by the corresponding coking emissions. The calculated emissions arising from the convergent value chains and apportioned to the Metallurgical Coal product has been accounted for in Category 11 (whereas the portion to Iron Ore product is accounted for in this Category as described above).
For Thermal Coal, processing phase emissions arise from the pulverisation of the lump coal prior to combustion. These emissions were sourced per unit mass and multiplied by the tonnes of coal sold by the company in the reporting year.
For Copper processing phase, the emissions for each segment of the Copper value chain was determined, from Copper Concentrate mining and refining, Copper Anode production, Copper Cathode production, and Copper sheet rolling. Depending on the product produced at an operation, the processing emissions down the value chain to copper sheet rolling were applied. The emissions up the value chain were subtracted to avoid double counting of emissions. As a subset of Copper, Molybdenum is processed by open hearth roasting and applied to the manufacturing of stainless steel. Emissions arising from diamond cutting activities as a major processing step were accounted for based on the estimated energy intensity of equipment used for this purpose, average carbon intensity of the energy sources applied and sold quantities.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

The emissions attributed to the processing of sold products are considered material and of significant importance. These emissions have been calculated due to the magnitude of GHG emissions arising from the processing of the products sold, particularly Iron Ore, Copper and Metallurgical Coal. Processing emissions for each operation were calculated for completeness and to provide a holistic account of the downstream emissions profile.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

128,467,409

Emissions calculation methodology

In the use phase of crude steel, being the majority application for our Iron Ore and Metallurgical Coal products, global average use phase allocations have been applied. The emissions arising from the processing of crude steel have been apportioned to the Iron Ore product.
Secondary steel processing emissions factor (WSP Parsons Brinckerhoff, 2015) was applied to the tonnage of iron ore sold by the company.
The emissions factor from vehicle manufacturers data per vehicle produced was multiplied by the average mass of steel per vehicle (World Steel, 2019), and then multiplied by the activity data attributed to automotive and mechanical equipment use. For construction use emissions, industry estimate for the portion of produced steel used for construction was multiplied by the emissions factor for steel-based building products.
For the remaining mass of steel produced from Iron Ore , the emissions factor based on industry averages for stainless-steel production was applied according to the average iron content in stainless-steel (Thyssen Krupp, 2019). Emissions factors were derived from Ampofo-Anti, Dumani, & Van Wyk (2015), International Stainless Steel Forum (2015), and internal calculations based on vehicle manufacturers' Scope 1 and 2 emissions per vehicle produced.
The Metallurgical Coal sold was converted into an equivalent mass of crude steel. The calculated emissions arising from the convergent value chains and apportioned to the Metallurgical Coal product has been accounted for in this Category (whereas the portion to Iron Ore product is accounted for in Category 10). Due to the mass of 'Metallurgical Coal crude steel equivalents' being greater than that of the estimated 'Iron Ore crude steel equivalents' in 2018, the difference was applied to the NGER Metallurgical Coal combustion emissions factor less the coking emissions factor already applied to Metallurgical Coal in Category 10.
For Thermal Coal, BEIS UK (2019) coal combustion for electricity generation emissions factor was applied to the tonnage of thermal coal sold to yield the use phase emissions for Thermal Coal.
Refined PGM production was multiplied by an emissions factor proxy developed, based on reported Scope 1 and 2 emissions of a catalyst producer reported in 2014 (CDP, 2019) to derive emissions from catalyst production.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

The direct use phase of the sold products is considered to be material for the following commodity types: Iron Ore, Metallurgical Coal, and Thermal Coal. For completeness, direct use phase emissions for PGMs have been computed, although these are not considered material.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

929,274

Emissions calculation methodology

For Thermal Coal and Metallurgical Coal, an approximation was made for the mass of ash residue after combustion (Mahlaba, Kearsley, & Kruger, 2011). This result was applied to BEIS UK (2019) landfill placement emissions factor.

For Iron Ore, Nickel, Copper and PGMs, global average product recycling rate estimates were sourced from UNEP (2011), Henckens, Driessen, & Worrell (2018) and Johnson Matthey (2018). The BEIS UK (2019) scrap metal closed-loop emissions factors were applied to the percentage of each metal recycled. The remaining percentage of each metal was multiplied by the BEIS UK (2019) scrap metal landfill emissions factor as this portion was assumed not to be recycled. This methodology attributes the emissions associated with the transportation and separation of the metal waste for the unrecycled mass, and the closed-loop (recycling) emissions for the recycled mass.

The end-of-life treatment of Diamond products was assumed to be zero, as Diamonds are incredibly hard wearing and are not recycled but are reused without considerable processing.

Recycling rates for relevant Anglo American products were assumed aligned to those reported by UNEP (2011).

It has been assumed that all the PGMs are used in auto catalyst manufacture.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

The emissions arising from the end-of-life treatment of the company's sold products is deemed to have immaterial contribution to the overall Scope 3 emissions. However, these are calculated for completeness and relevance, as intervention in this final stage of the product life-cycle may determine ultimate emissions. Emissions from the recycling and disposal of sold products are a priority as the industry seeks to transition towards sustainability and a more circular economy. Emission reduction from the use of recycled materials is of critical interest for stakeholders and industry players globally.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

This emissions inventory boundary is defined to include all assets for which the group has operational control. The company does not have upstream-leased assets for which it has operational control, and this category is therefore not relevant and not calculated.

Franchises

Evaluation status

Relevant, calculated

Metric tonnes CO2e

11,337

Emissions calculation methodology

In all respects aside from Diamonds (discussed below), the company does not operate on a franchise model and as such has no franchisees to which emissions can be attributed. As such, this category is not relevant and has not been calculated.

In terms of Diamonds, De Beers Jewellers was launched in 2017. Customer facing stores are operated on a franchise model, with stores in China, Russia, Japan, USA and Saudi Arabia. The emissions arising from the associated activities are not material and are reported for completeness and transparency.

The Scope 3 emissions for these franchises has been calculated by a third-party provider prior to the Scope 3 Anglo American Group-wide undertaking. The total Scope 3 emissions for the DeBeers and Forevermark franchises has been recorded and presented ‘as is’ from the third-party reports.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,921,158

Emissions calculation methodology

The emissions attributed to the company's economic interests in other entities not under operational control have been calculated and is not material. These non-managed operations are core to the company's business model and the rationale for calculation is the materiality of the revenue generated from these enterprises and, although not holding operational control, the potential influence that the company may exert on the performance of these entities.

Where primary Scope 1 and Scope 2 emissions data for operations was available, the 2018 reported emissions for these operations was multiplied by the percentage equity held by the company to yield emissions attributable to Investments. Where no reported Scope 1 and Scope 2 emissions were found in research, an emissions proxy was applied, computed as available emissions data from a company producing the same material as the operation in question to yield a usable factor for emissions per unit produced. This emissions factor was multiplied by the mass of material produced by the company's operation in question.

Activity Data Source: Equity investment stakes in joint-ventures and subsidiaries obtained from the Anglo American Integrated Annual Report (2018), supplemented with production, activity, revenue, expenditure and emissions published data by joint ventures and subsidiaries for the period; South African diesel and electricity price averages respectively from SAPIA (2019) and Eskom (2018) published data.

Emissions Data Source: Primary emissions data on the Scope 1 and Scope 2 emissions for each investment operation according to available Annual Reports. For operations with limited publicly disclosed emissions performance data, emissions intensity assumptions were based on available proxy emissions data for comparable or competitor operations, derived from publicly available disclosure; coal washing energy intensity from US Department of Energy, 2014; Eskom published grid emission factor. Further factors and data derived from UNECLAC, 2016 and Johnson Matthey, 2018.

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

100

Please explain

The Scope 3 emissions data has been extrapolated from the results of a comprehensive study undertaken by Anglo American for 2018 data.

For the purpose of determining Scope 3 emissions, product value chains have been identified as a meaningful approach for management and monitoring purposes. In our approach, emissions have been attributed to Operations and Business Units, that have been categorised by the

major commodity produced and traded (if relevant), namely: Metallurgical Coal, Thermal Coal, Iron Ore, Nickel, Copper, Platinum Group Metals, Diamonds, and Manganese.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic 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

0.00059

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

17,743,984

Metric denominator

unit total revenue

Metric denominator: Unit total

29,870,000,000

Scope 2 figure used

Location-based

% change from previous year

2.4

Direction of change

Increased

Reason for change

Scope 1 and 2 GHG emissions increased by 9.5% and group revenue increased by 8.2% compared to the previous reporting year (reported here as total revenue in USD). The change in emissions reflects a rise in fugitive methane in our Metallurgical Coal business, related to a change in the mining area. This increase already considers an additional 1.3Mt CO2e methane abatement initiatives implemented in the year. The increase is also explained by an increase in our total energy consumption to 86.5 million GJ (2018: 83.9 million GJ). This represents a 3% increase compared with 2018, and a 5% reduction against our BAU scenario. The rise in energy consumption, driven by the return to production at Minas-Rio and construction progress at the Quellaveco copper project, was partly offset by lower consumption at Los Bronces, where drought affected production. There was also a slight reduction partly due to the emission reduction initiatives that were implemented resulting in estimated savings of 9 229 tonnes CO2e.

The total GHG reduction of 24% was achieved against our BAU scenario, which meets our 2020 target a year ahead of schedule.

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	4,311,581	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	6,567,818	IPCC Third Assessment Report (TAR - 20 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	252,612	6,315,304	
Fugitives (Surface coal mining)	0	12,394	309,848	

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	23,131	578,266	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	7,426,953
Brazil	1,227,395
Canada	139,476
Chile	385,586
Peru	146,957
Other, please specify Rest of World	1,174
South Africa	1,538,727
United Kingdom of Great Britain and Northern Ireland	2,163
Zimbabwe	10,968

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	380,094

Copper	385,578
Corporate	149,240
De Beers	247,109
Iron Ore Brazil	134,713
Kumba Iron Ore	531,035
Metallurgical Coal	7,426,731
Nickel	1,092,534
PGMs	532,366

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	Comment
Coal production activities	7,807,444	
Metals and mining production activities	10,703,995	

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 for in Scope 2 market-based approach (MWh)
Australia	738,781	0	923,476	0
Brazil	200,458	0	2,644,963	0

Canada	11,846	0	56,705	0
Chile	785,803	785,803	1,930,620	1,930,620
Peru	66	0	121	0
Other, please specify Rest of World	3,494	0	12,015	0
South Africa	5,000,961	0	4,805,098	0
United Kingdom of Great Britain and Northern Ireland	25,750	0	60,104	0
Zimbabwe	97,426	0	165,128	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 (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Coal South Africa	524,532	0
Copper	785,803	785,803
Corporate	10,728	0
De Beers	232,980	0
Iron Ore Brazil	67,695	0
Kumba Iron Ore	468,116	0

Metallurgical Coal	738,821	0
Nickel	132,755	0
PGMs	3,903,153	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
Coal production activities	1,263,353	0	
Metals and mining production activities	6,735,877	785,803	

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?

Increased

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	Direction of change	Emissions value (percentage)	Please explain calculation

	(metric tons CO2e)			
Change in renewable energy consumption	43	Decreased	0	We have undertaken an assessment of our options for increasing the use of renewable energy and incorporated these into our Sustainable Mining Plan. In South Africa, our Waterval smelter generates electricity from waste heat recovered from the converting process, and we are investigating options for recovering energy from truck braking systems and pipeline slurry flows. We are also piloting the use of hydrogen-powered haul trucks. See Smart Energy case study. In Brazil, more than 85% of the electricity we use comes from renewable sources. In 2019, we signed contracts to enable our Copper operation in Chile to draw all electricity from renewable sources from 2021. Also, in Chile, we are rolling out a fleet of electric buses for transporting mine workers to and from Santiago, reducing air and noise pollution in the local area. Los Bronces mine has also initiated a pilot to generate power through floating photovoltaic cells located over its tailings facility, which will reduce evaporation for an operation facility constrained by water supplies. New projects undertaken in 2019 include a 75kW floating solar panel at Los Bronces, a 70kW solar PV system at De Beers offices in India and a 100kW solar PV system at De Beers offices in London. Collectively these projects delivered an additional 42.77 tCO2e saving (42.77/16 208 135*100 = 0.0003%). These initiatives contribute to achieving our GHG and energy targets and objectives.
Other emissions reduction activities	9,229	Decreased	0.06	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. We reviewed and refreshed the programme's guidelines and standards in 2019. These updates reflect new innovations in reducing energy use and alternatives for increasing our use of renewable energy and ensuring alignment with ISO requirements. To achieve carbon neutrality across our operations, we are focusing on radically reducing energy consumption through our FutureSmart Mining™ programme, switching to

				low-carbon energy sourcing and increasing the role of renewables in our energy mix. Our FutureSmart MiningTM programme includes technology solutions that substantially reduce energy use through changes to processes and equipment. Comminution (the grinding and crushing of rock) is the biggest consumer of energy in mineral processing. We are implementing bulk sorting and developing new comminution technologies that fragment particles using 30% less energy than conventional means. The GHG reduction projects we have implemented have a typical payback time of three years. In the reporting year an additional 9 229 tCO2e were reduced by our emissions reduction initiatives, and our total Scope and Scope emissions in the previous year was 16 208 135 tCO2e, therefore we arrived at 0.06% through (9 229/16 208 134.5)*100= 0.06%).
Divestment	69,161	Decreased	0.43	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 Siyanda Resources was completed on 31 January 2018. The sale of Drayton was completed in February 2018. The emissions associated with divested operations in 2018 were aggregated and calculated as a percentage of total 2018 emissions (69 161/ 16 208 135)*100= 0.43%).
Acquisitions	0	No change	0	Not applicable
Mergers	0	No change	0	Not applicable
Change in output	1,457,417	Increased	9	The change in emissions reflects a rise in fugitive methane in our Metallurgical Coal business, related to a change in the mining area. This increase already considers an additional 1.3Mt CO2e methane abatement initiatives implemented in the year. The increase is also explained by an increase in our total energy consumption to 86.5 million GJ (2018: 83.9 million GJ). This represents a 3% increase compared with 2018, and a 5% reduction against our BAU scenario. The rise in energy

				consumption, driven by the return to production at Minas-Rio and construction progress at the Quellaveco copper project, was partly offset by lower consumption at Los Bronces, where drought affected production. The total GHG reduction of 24% was achieved against our BAU scenario, which meets our 2020 target a year ahead of schedule. This change explains the remaining difference in emissions year on year (1 457 417 / 16 208 135 * 100 = 9%).
Change in methodology	0	No change	0	Not applicable
Change in boundary	0	No change	0	Not applicable
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 5% but less than or equal to 10%

C8.2

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

	Indicate whether your organization undertook this energy-related activity in the reporting year
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 (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	562,329	12,867,263	13,429,592

Consumption of purchased or acquired electricity		995	10,597,290	10,598,285
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		563,324	23,464,553	24,027,877

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)	12,204,561
Consumption of purchased or acquired electricity		10,433,623
Consumption of self-generated non-fuel renewable energy		0
Total energy consumption		22,638,184

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

2,156,453

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.44

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Metallurgical Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,210,405

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.44

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

8,514,552

MWh fuel consumed for self-generation of electricity

257,721

MWh fuel consumed for self-generation of heat

0

Emission factor

2.68

Unit

metric tons CO2 per metric ton

Emissions factor source

IPCC

Comment

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

138,425

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

0.00215

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

245,377

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.98

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

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

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Fuels (excluding feedstocks)

Motor Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

20,556

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.4

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

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

Fuels (excluding feedstocks)

Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

3,485

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.83

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Petroleum Coke

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

13,441

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

3.17

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Biodiesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

486,691

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.69

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Other, please specify

Heavy fuel oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

513,628

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

3.13

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Other, please specify

Biomass

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

75,288

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

75,288

Emission factor

0

Unit

metric tons CO2e per metric ton

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Marine Gas Oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

44,336

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.669

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Other, please specify

Intermediate fuel oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.46

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

Fuels (excluding feedstocks)

Other, please specify

Smaller quantity fuels used

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6,604

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.46

Unit

metric tons CO2e per m3

Emissions factor source

IPCC

Comment

C8.2d

(C8.2d) 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	93,414	93,414	350	350
Heat	486,690	486,690	486,690	486,690
Steam	0	0	0	0
Cooling	0	0	0	0

C-MM8.2d

(C-MM8.2d) 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	93,161	93,161
Heat	486,690	486,690
Steam	0	0
Cooling	0	0

C8.2e

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

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Other, please specify

Low-carbon technology: Mixed

Country/region of consumption of low-carbon electricity, heat, steam or cooling

Latin America (LATAM)

MWh consumed accounted for at a zero emission factor

1,930,620

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 1,930,620 MWh of electricity were purchased by our operations in Chile in 2019. 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

Waste

Metric value

29,249

Metric numerator

Non-hazardous waste to legal landfill (tonnes)

Metric denominator (intensity metric only)

% change from previous year

4

Direction of change

Increased

Please explain

Description

Land use

Metric value

637,330

Metric numerator

Company-managed land (hectares)

Metric denominator (intensity metric only)

% change from previous year

Direction of change

Please explain

N/A

Description

Land use

Metric value

86,597

Metric numerator

Land altered by mining activities & infrastructure

Metric denominator (intensity metric only)

% change from previous year

6

Direction of change

Decreased

Please explain

Description

Land use

Metric value

12,246

Metric numerator

Land rehabilitated (hectares)

Metric denominator (intensity metric only)

% change from previous year

1

Direction of change

Increased

Please explain

We launched a concurrent rehabilitation strategy and will set new targets for land rehabilitation in 2020.

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)

343

Probable reserves (million metric tons)

307

Production (million metric tons)

36

Energy content of production (GJ per metric ton)

25.8

Heating value

LHV

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

25

Comment

Further information is available in our Ore Reserves and Mineral Resources Report 2019 available here

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.pdf

Metallurgical coal

Proven reserves (million metric tons)

238

Probable reserves (million metric tons)

369

Production (million metric tons)

24

Energy content of production (GJ per metric ton)

25.8

Heating value

LHV

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

337

Comment

Further information is available in our Ore Reserves and Mineral Resources Report 2019 available here

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.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)

25.8

Heating value

Unable to confirm heating value

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

Comment

Total coal

Proven reserves (million metric tons)

581

Probable reserves (million metric tons)

675

Production (million metric tons)

61

Energy content of production (GJ per metric ton)

25.8

Heating value

LHV

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

129

Comment

Further information is available in our Ore Reserves and Mineral Resources Report 2019 available here

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.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)

3,618

Indicated resources (million metric tons)

1,368

Inferred resources (million metric tons)

812

Total resources (million metric tons)

5,798

Comment

Metallurgical coal

Measured resources (million metric tons)

671

Indicated resources (million metric tons)

699

Inferred resources (million metric tons)

765

Total resources (million metric tons)

2,135

Comment

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

Total coal

Measured resources (million metric tons)

4,289

Indicated resources (million metric tons)

2,067

Inferred resources (million metric tons)

1,577

Total resources (million metric tons)

7,933

Comment

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	61	This includes production from our South African Thermal Coal business as well as thermal coal produced as a secondary field from Capcoal (part of our Australian business)
Bituminous	39	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

Production, copper-equivalent units (metric tons)

227,537

Scope 1 emissions

230,045

Scope 2 emissions

154,282

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. 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 2019 available here

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.pdf

Output product

Platinum group metals

Capacity, metric tons

Production, metric tons

138.8

Production, copper-equivalent units (metric tons)

380,322

Scope 1 emissions

524,532

Scope 2 emissions

3,902,984

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 2019 available here:

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.pdf

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Output product

Copper

Capacity, metric tons

Production, metric tons

Production, copper-equivalent units (metric tons)

Scope 1 emissions

385,578

Scope 2 emissions

785,803

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 2019 available here:

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Output product

Nickel

Capacity, metric tons

Production, metric tons

Production, copper-equivalent units (metric tons)

Scope 1 emissions

1,092,534

Scope 2 emissions

132,755

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 2019 available here:

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Output product

Iron ore

Capacity, metric tons

Production, metric tons

42,387,700

Production, copper-equivalent units (metric tons)

378,817

Scope 1 emissions

531,035

Scope 2 emissions

468,116

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. 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. 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 2019 available here:

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Output product

Other mining (Please specify)
Metallurgical Coal

Capacity, metric tons

Production, metric tons
24,262,900

Production, copper-equivalent units (metric tons)

Scope 1 emissions
7,426,731

Scope 2 emissions
738,821

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 2019 available here:

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Output product

Other mining (Please specify)

Thermal coal

Capacity, metric tons

Production, metric tons

27,841,500

Production, copper-equivalent units (metric tons)

Scope 1 emissions

378,828

Scope 2 emissions

485,420

Scope 2 emissions approach

Location-based

Pricing methodology for copper-equivalent figure

Comment

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Output product

Iron ore

Capacity, metric tons

Production, metric tons

23,114,900

Production, copper-equivalent units (metric tons)

27,343

Scope 1 emissions

134,713

Scope 2 emissions

67,695

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. 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.

C-CO9.3b

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

	Production (%)
Underground	47
Surface	53

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)

638,000

Annual production in copper-equivalent units (thousand tons)

422,247

Scope 1 emissions (metric tons CO2e)

385,578

Scope 2 emissions (metric tons CO2e)

785,803

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. 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 2019 available here:

https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.pdf

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Output product

Nickel

Capacity (metric tons)

Production (metric tons)

42,600

Annual production in copper-equivalent units (thousand tons)

111,325

Scope 1 emissions (metric tons CO2e)

1,092,534

Scope 2 emissions (metric tons CO2e)

132,755

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. 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. 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 2019 available here:

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Output product

Platinum group metals

Capacity (metric tons)

Production (metric tons)

145.3

Annual production in copper-equivalent units (thousand tons)

380,322

Scope 1 emissions (metric tons CO2e)

524,532

Scope 2 emissions (metric tons CO2e)

3,902,984

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. 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 2019 available here:

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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 2019. 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 2019.
Further information is available in our Ore Reserves and Mineral Resources Report 2019 available here:
https://www.angloamerican.com/~/media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2020/aa-ore-reserves-and-mineral-resources-2019.pdf

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

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

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Carbon capture and storage/utilisation	Pilot demonstration	0%	0	No additional investment was made in 2019 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.
Unable to disaggregate by technology area		81-100%	17,000	The International Energy Agency Clean Coal Centre (IEACCC) is a research group under the auspices of the International Energy Agency, that has its own membership and undertakes desktop based

				research, compiles 8-10 research reports per annum and convenes numerous conferences and workshops on specific areas of clean coal technology, such as carbon capture and storage, high efficiency, low emissions technology, mercury emission reductions amongst others. Coal South Africa has observer status on the executive committee and participates steers the directions of research through submission of proposals for new research, voting on proposals twice a year, assisting researchers to source information where possible and reviewing research reports.
Other, please specify Platinum-based technology development	Small scale commercial deployment			Anglo American and the Public Investment Corporation are the corner stone investors in AP Ventures. The total investment is $250 mil of which Anglo American has contributed $100 mil. Other investors in APV include Mitsubishi Corporation, Plastic Omnium and Sparx. 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. To date, AP Ventures have invested in ten portfolio companies consisting of Altergy, Ballard, It's Fresh, Greyrock Energy, Hydrogenious, Hyet Hydrogen, United Hydrogen, Ergosup, Zeg Power and most recently Plug Power.
Other, please specify Platinum-based technology development	Full/commercial-scale demonstration			Anglo American was one of the founding members of the Hydrogen council, which now has a total of 91 members. 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. In addition, Anglo American are also a member of the Fuel Cell and Hydrogen Energy Association (FCHEA), the California Fuel Cell Partnership (CFCP) and Hydrogen Europe through which we advocate for clean energy related to PGMs.
Other, please specify Platinum-based technology development	Full/commercial-scale demonstration			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. Five stations have started operations, one is currently in commissioning and the remaining one will begin construction in the 3rd quarter of 2020. Stations will operate for a minimum of 10 years.
Other, please specify Platinum-based technology development	Pilot demonstration			In 2019, Anglo American signed a partnership with ENGIE, a leading global energy and energy services company, to develop the hydrogen generation, storage and dispensing solution, for what will be the world's largest hydrogen-powered mine haul truck. This is part of our plan to create a smart energy mix that moves us closer towards our carbon and energy targets for 2030 and, ultimately, our vision of operating a carbon-neutral mine. Fabrication and construction of the mining truck and hydrogen infrastructure is underway with first movement of truck expected in the first quarter of 2021.

Other, please specify Platinum-based technology development	Applied research and development			In 2019, Anglo American Platinum and Platinum Group Metals Ltd launched a new venture, Lion Battery Technologies Inc, to accelerate the development of next-generation battery technology using platinum and palladium. This is all geared towards creating additional demand for platinum and palladium in the battery technology space. The Lion venture has entered into an agreement with Florida International University to further advance a research program that uses platinum and palladium to unlock the potential of lithium air and lithium sulphur battery chemistries to increase their discharge capacities and cyclability.
Other, please specify Platinum-based technology development	Applied research and development			Anglo American invests directly in R&D activities with universities. The collaboration with Columbia University on Dual Function Material (DFM) looks at the potential to capture CO2 from flue gas streams as well as directly from air.

C-MM9.6a

(C-MM9.6a) Provide details of your organization's investments in low-carbon R&D for metals and mining production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Green metals	Applied research and development	81 - 100%		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 emissions, and attach the relevant statements.

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-2019-v1.pdf

Page/ section reference

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Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

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-2019-v1.pdf

Page/ section reference

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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 are verified by a third party.
C8. Energy	Other, please specify Total energy used	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 reasonable assurance
C9. Additional metrics	Other, please specify Non-hazardous waste to landfill	ISAE 3000 (Revised),and ISAE 3410	As part of our 2018 sustainability reporting process we also requested that the assurer audit waste 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 - ETS

South Africa carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Australia ERF Safeguard Mechanism

% of Scope 1 emissions covered by the ETS

46

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2019

Period end date

December 31, 2019

Allowances allocated

4,475,235

Allowances purchased

271,494

Verified Scope 1 emissions in metric tons CO2e

4,475,235

Verified Scope 2 emissions in metric tons CO2e

0

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 you are regulated by.

South Africa carbon tax

Period start date

June 1, 2019

Period end date

December 31, 2019

% of total Scope 1 emissions covered by tax

15

Total cost of tax paid

1,958,621

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 you are regulated by or anticipate being regulated by?

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

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

3

% total procurement spend (direct and indirect)

40

% of supplier-related 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 are requested to complete a self-assessment questionnaire, including information on energy and climate impacts and management. 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 controls to manage these impacts.

Impact of engagement, including measures of success

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 energy and water usage and identify opportunities to reduce usage. A penalty of non-compliance could result in that supplier losing its contract. 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.

Success is measured through the number of self-assessment questionnaires, audits and training sessions conducted with suppliers. During 2019, 452 supplier self-assessments and 43 on-site assessments were completed, which was approximately 40% of supplier expenditure. In 2019, our capability-building programme was rolled out to 286 host community suppliers.

Comment

C12.1d

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

(i) Methods of engagement

We are engaging proactively with the stakeholders and others as part of our role in the response to climate change.

In South Africa, we participate in policy engagement processes through our membership of the National Business Initiative, Business Unity South Africa and the Industry Task Team on Climate Change. In Brazil, we submit data annually into the GHG Protocol programme, which awarded Iron Ore Brazil gold-level accreditation in 2019, for the third consecutive year.

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 was launched in May 2019.
In 2019, we also joined the Carbon Pricing Leadership Coalition, a voluntary initiative that catalyses action towards the successful implementation of carbon pricing around the world. The initiative, run by the World Bank, brings together leaders from government, business, civil society and academia to support carbon pricing, share experiences and enhance the global, regional, national and sub-national understanding of carbon pricing implementation.

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.
In 2018, we completed an independent audit of the international and national industry associations of which we are a member, to ensure that their approach was not inconsistent with our own in climate change and human rights positions. We have further refined the governance of all our memberships of industry associations and are making information about our memberships publicly available for the first time in mid-2020. We are in the early stages of working with the Initiative for Responsible Mining Assurance (IRMA), to develop a consistent approach to assess the carbon footprint of our products across the value chain, from the mine site to the end-user product.

(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
In 2019, we also joined the Carbon Pricing Leadership Coalition, a voluntary initiative that catalyses action towards the successful implementation of carbon pricing around the world. The initiative, run by the World Bank, brings together leaders from government, business, civil society and academia

to support carbon pricing, share experiences and enhance the global, regional, national and sub-national understanding of carbon pricing implementation. Our aim is to support the development and implementation of effective, efficient and equitable climate change policies.

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. We also submit data annually into the GHG Protocol programme, which awarded Iron Ore Brazil gold-level accreditation in 2019, for the third consecutive year.
• 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. The auditor made certain recommendations for engagement, which we published on our website. During 2018 and 2019, we further engaged with a small number of organisations whose position appeared to diverge from our own and ensured we were aligned.

Anglo American implemented a group-level climate change policy in 2010 which was refreshed in 2019. 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 and is aligned with the most recent ICMM position statement on climate change. 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-2019.pdf

Page/Section reference

Environmental matters: Climate Change Policy, pages 33 and 238.

Environmental matters: Energy and GHG Emissions Standard pages 33-34.

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-2019-v1.pdf

Page/Section reference

Environmental impacts and climate change page 50.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

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

Page/Section reference

Whole document.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C15. 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.

C15.1

(C15.1) 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

	I am submitting to	Public or Non-Public Submission
I am submitting my response		Public

Please confirm below

I have read and accept the applicable Terms