

C0. Introduction

C0.1

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

Sibanye-Stillwater is an independent, global, precious metals mining company producing a unique mix of metals that includes platinum group metals (PGMs) and gold. The mining house is a top tier gold producer, ranking 3rd globally, on a gold-equivalent basis. With its head office in South Africa, Sibanye-Stillwater's diverse portfolio includes:

- 5 PGM mining operations in southern Africa with associated infrastructure, plant, equipment and smelting and refining capacity.
- 4 gold operations and several gold and PGM projects in South Africa.
- 2 PGM mining operations and a PGM recycling business and metallurgical facility in the United States.
- Various copper, gold and PGM exploration properties in North and South America.

Notably in June 2019, Sibanye-Stillwater acquired Lonmin Plc, becoming the largest primary producer of platinum and rhodium, and the 2nd largest producer of palladium.

Sibanye-Stillwater's purpose is defined by the slogan "our mining improves lives". We seek to achieve our vision of superior value creation for all our stakeholders through responsible mining and beneficiation of our mineral resources. We create and share value to improve lives through our business activities. In so doing, we invest in and optimise the responsible use of our capital inputs, to ensure sustained value creation in the long term.

Sibanye-Stillwater recognises that global warming and associated climate change are realities that requires global action. The company is equally committed to contributing to a global solution through the deployment of responsible strategies and actions which are outlined in our Carbon Management Policy Statement, endorsed by our CEO. Furthermore, the Sibanye-Stillwater CARES values underpin our strategy, how we conduct business and interact with stakeholders. In living these values, we show that we care about safe production, our stakeholders, our environment, our company and our future.

In improving the reporting and management of environmental, social and governance (ESG) issues, Sibanye-Stillwater formed a dedicated ESG committee in 2019 that reviews sustainability issues. This committee reports into the Social, Ethics and Sustainability Committee, which previously operated as the Social and Ethics Committee.

United States PGM segment

The East Boulder and the Stillwater (including Blitz) mines are located in Montana. The Columbus Metallurgical Complex, which smelts the material mined to produce PGM-rich filter cake, also recycles PGMs from auto catalysts. The US PGM operations primarily produce palladium and platinum (78% palladium and 22% platinum). The PGM-bearing ore mined is processed and smelted to produce a PGM-rich filter cake. A third party refines the filter cake.

Southern Africa PGM segment

The Kroondal, Platinum Mile, Marikana operation and Rustenburg operations are located on the western limb of the Bushveld Complex in South Africa, while the Mimosa 50% joint venture is situated on the southern portion of the Great Dyke in Zimbabwe. Platinum Mile is a retreatment facility, which reprocesses arisings from Rustenburg. The primary PGMs produced at the operations in South Africa and Zimbabwe are platinum, palladium and rhodium and gold. The PGM-bearing ore is processed to produce PGMs-in-concentrate, which is processed and refined by third parties.

South Africa gold segment

The Driefontein, Kloof and Cooke surface operations and associated processing facilities are located on the West Rand of the Witwatersrand Basin, while Beatrix is in the southern Free State goldfields. Sibanye-Stillwater also has an interest in surface tailings retreatment facilities located from the East Rand to the West Rand through our stake in DRDGOLD Limited. Post year-end, Sibanye-Stillwater increased its interest in DRDGOLD Limited, a leader in the retreatment of gold tailings, from 38.05% to 50.1%.

Sibanye-Stillwater mines, extracts and processes gold-bearing ore at its South African gold operations to produce a beneficiated product, doré, which is then refined at Rand Refinery Pty Ld into gold bars with a purity of at least 99.5% in accordance with the London Bullion Market Association's standards of Good Delivery. Sibanye-Stillwater holds a 33.1% interest in Rand Refinery, one of the largest refiners of gold globally, and the largest in Africa. Rand Refinery markets and sells refined gold on international markets to customers around the world. DRDGOLD holds an 11.3% share in Rand Refinery.

Sibanye-Stillwater has its primary listing on the JSE, South Africa, where it is included in the FTSE/JSE Responsible Investment Index. The company is also listed on the NYSE, with its shares quoted as American Depositary Receipts.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

C0.3

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

South Africa
United States of America

C0.4

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

ZAR

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-MM0.7

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

Row 1

Mining

Gold
Platinum group metals

Processing metals

Please select

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 Sibanye-Stillwater, the Social, Ethics and Sustainability Committee as well as the Risk Committee, both Board-level committees, are responsible for addressing climate-related issues. The Social, Ethics and Sustainability Committee is a statutory committee which assists the Board in guiding and monitoring the Group's performance in relation to corporate citizenship, environmental, social and governance factors, Sustainable Development Goals and sustainability and ethics, which includes climate-related issues. Sibanye-Stillwater formed a dedicated Environmental, Social and Governance Committee in 2019 dedicated to reviewing sustainability issues. This committee reports into the Social, Ethics and Sustainability Committee. The Risk Committee oversees risk management on behalf of the Board. In particular, the committee is responsible for ensuring the Group sustainability by evaluating and overseeing implementation of efficient risk management processes and controls to identify, monitor and mitigate risks and to act on opportunities identified. Climate-related issues are integrated as part of the risk management and opportunity identification processes. We are cognisant that climate change is impacting on environmental conditions at our operating sites to an increasingly greater extent due to changes in weather patterns. For example, water scarcity may have a more substantial effect on our South African operations, while extreme weather events such as increasingly intense winter storms may be experienced at our United States operations. In line with this, an example of a climate-related decision made by the Social, Ethics and Sustainability Committee was to implement a programme at our South African operations which aims to reduce water consumption that will allow us to continue operating in a more water scarce environment. This will ensure that our operations in this region are prepared for the impact of climate change on the operating environment. Another example is the Social, Ethics and Sustainability Committee's climate-related decision to consider a broader water management strategy across our South African operations that will enable water deficits to be offset by water surpluses in other districts.

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	Scope of board-level oversight	Please explain
Scheduled – all meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p> <p>Other, please specify (The Board contributes to and approves the mission, vision and strategy of the company)</p>	<Not Applicable>	<p>The Board is responsible for evaluating, determining and ensuring the implementation of corporate strategy and policy. The Board defines the strategic policy intent and objectives of the Company as a business enterprise as well as its values and approves the mission, vision and strategy of the company. The Board satisfies itself that the strategy and business plans do not give rise to risks that have not been thoroughly assessed by management and considers sustainability as a business opportunity that guides strategy formulation. The Group's strategy is consistent with integrated thinking, which links different capitals and ensures sustainable outcomes. Notably, the 'Natural Capital' resource incorporates climate-related matters, which are thus considered at the highest levels of the organisation. Accordingly, the Board participates in an annual strategy session, in which the Group's strategy, assessed risks and opportunities are deliberated. Progress of implemented strategies are also considered, to ensure alignment with Group values with a view to ensuring the long term success and sustainability of the Group. The Social, Ethics and Sustainability Committee, a Board-level committee, assists the Board in monitoring the fulfilment of this mandate. It is a statutory committee which assists the Board in guiding and monitoring the Group's performance in relation to corporate citizenship, environmental, social and governance factors, the Sustainable Development Goals as well as sustainability and ethics matters, which include climate-related issues. The Committee meets on a quarterly basis and reports directly to the Board of Directors. The quarterly Social and Ethics Report to the Board includes, amongst others, climate change risks and opportunities affecting the company, major climate-related management plans and performance on objectives and targets. An example of governance oversight in 2019 related to climate change matters included the identification of 'changing energy and transport needs' as an opportunity for the PGM sector. Increased demand for cleaner transport fuels was identified as a key PGM opportunity wherein Sibanye-Stillwater has the opportunity to capitalise on the evolving emerging technologies market. This will not only create new applications for PGMs, many of which will be linked with the hydrogen economy, but will also open new opportunities for alternative minerals, particularly those associated with battery technologies.</p>

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)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (: Executive Vice President – US PGM segment))	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Executive Vice President – SA PGM segment)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Executive Vice President – SA Gold segment)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	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).

Below Board-level, our CEO carries the highest-level management position with responsibility for climate-related issues for the Group. The CEO reports directly to the Board on a quarterly basis. The embedding of our values, underpinning our corporate culture and driving decision-making throughout the organisation is led by the CEO and senior leadership, supported by the Board. Our CEO provides leadership in the area of policy and strategic direction and provides the Board with comprehensive information, analysis and timely advice on all aspects of the business, which also includes climate-related issues. Specifically, the CEO endorses our carbon management policy statement and the commitment to contributing to a global solution through the deployment of responsible strategies and actions which filters down to the operations.

Rationale for assigning responsibility for climate-related issues at management level to the CEO: the Sibanye-Stillwater CEO, in conjunction with the respective Executive Vice Presidents, leads and manages daily operations and is therefore able to report any important climate-related issues identified at operational level to the Board where strategic decisions are made (bottom-up approach). At the same time, the CEO is in the position to guide the efficient and correct implementation of policy and strategy approved by the Board (top-down approach).

At the US PGM operations, the Executive Vice President carries the overall responsibility for climate-related issues, specifically the monitoring, measuring and reporting of sustainability issues, including climate-related ones. The monitoring includes assessment of the regulatory framework and changes therein, annual monitoring and performance assessments, regulatory and social reporting, and initiatives for emission reductions. The monitoring, measuring and reporting tasks are delegated via the Vice President - Legal, Environment and Governmental Affairs, who sits below the Executive Vice President, to the environmental department. The Vice President – Legal, Environment and Government reports to the Executive Vice President who reports to the Group Social, Ethics and Sustainability Committee on a quarterly basis and where oversight is sought.

Rationale for assigning management responsibility for climate-related issues at US PGM operations to the Executive Vice President: the combined responsibilities of the Vice President – Legal, Environment and Government and the Sibanye-Stillwater leadership ensure alignment with the Group regarding climate-related aspects. They are also responsible for providing an enabling environment to achieve carbon emissions reductions throughout the US operations.

At the SA Gold and SA PGM operations, the Executive Vice Presidents carry the overall responsibility for climate-related issues at the respective operations, specifically related to the monitoring, measurement and reporting of sustainability and in turn climate-related issues. The monitoring includes international developments, assessment of the regulatory framework, programmes and initiatives to address risks and opportunities and measurement, analysis and performance reporting on emissions against objectives and targets. The Executive Vice Presidents delegate these tasks to their respective environmental department through the Senior Vice President: Environment. The Senior Vice President: Environment reports to the Executive Vice Presidents who then report to the Social, Ethics and Sustainability Committee on a quarterly basis, where board oversight is sought.

Rationale for assigning management responsibility for climate related issues at the SA Gold and SA PGM operations to the respective Executive Vice President: Sibanye-Stillwater can best monitor climate change issues through the environmental department and report any important findings directly to the Board, as these issues form part of our broader enterprise risk management process. Also, the management responsibility for climate-related issues lies with these positions because the Sibanye-Stillwater leadership (Executive Vice Presidents and Senior Vice President: Environment) provide an enabling environment to achieve carbon emissions reductions, the deployment of innovations and ensuring that carbon management considerations are included into the decision-making process throughout the SA operations.

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	This forms part of the overall incentive scheme for the company, and is linked to our performance management system. Performance assessments are held annually.

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 incentivized	Comment
Board/Executive board	Monetary reward	Behavior change related indicator Other (please specify) (Environmental performance)	Sibanye-Stillwater's Board of Directors is monetarily rewarded for values-based decision-making through which Sibanye-Stillwater is able to achieve the Group's strategic objectives. Our incentive system also aims to actively support the associated change in leadership behaviour which is required for value-based decision-making.
Corporate executive team	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Efficiency project Behavior change related indicator	Sibanye-Stillwater's corporate executive team is rewarded for cost reduction optimisations, including efficiencies from energy consumption reduction, emissions reduction and risk mitigation and management. In addition, Sibanye-Stillwater's corporate executive team receives external recognition for climate change related efforts in the form of awards, such as the CDP Climate A-List, Dow Jones Sustainability Index leader, FTSE Russell LCE Index listing and Carbon Rankings by Environmental Investment Organisations. This type of recognition provides additional incentives that have the potential to positively change behaviours and attitudes to environmental stewardship.
Energy manager	Monetary reward	Energy reduction project Efficiency project	Sibanye-Stillwater's energy managers are monetarily rewarded for meeting energy, emission reduction targets and generating business related to the Group climate change strategy. The performance indicator is the implementation of projects resulting in effective energy and carbon emission reductions. Engineering (Energy) Management's balance scorecards are related to these performance indicators.
Environmental, health, and safety manager	Monetary reward	Energy reduction project Efficiency project	Sibanye-Stillwater's environment/sustainability managers are monetarily rewarded for identifying and managing (on a continuous basis) risks and opportunities related to climate change (the indicator is whether relevant risks and opportunities have been identified and communicated to the Senior Management) and meeting emission reduction targets. The Environmental Managers' balanced scorecards are related to the performance indicators presented above.

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	5	In 2019, Sibanye Stillwater conducted a TCFD scenario-analysis and developed a low carbon plan. This timeframe was used in the aforementioned processes and informs the company's risk and opportunity assessment process.
Medium-term	5	10	In 2019, Sibanye Stillwater conducted a TCFD scenario-analysis and developed a low carbon plan. This timeframe was used in the aforementioned processes and informs the company's risk and opportunity assessment process.
Long-term	10	15	In 2019, Sibanye Stillwater conducted a TCFD scenario-analysis and developed a low carbon plan. This timeframe was used in the aforementioned processes and informs the company's risk and opportunity assessment process.

C2.1b

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

Sibanye-Stillwater has a well-formulated risk management process supported by the company's governance structure that comprises experienced and skilled teams who are committed to the delivery of our strategic objectives. Part of the executive management's role is to identify risks through annual group risk workshops and well as reviewing of the strategic risk register on a biennial basis. Through this process, Sibanye-Stillwater has defined strategic or substantive financial impact as the realisation of any risk or opportunity related to earnings or capital with a value above R500 million. The quantifiable indicators that have been used to define a substantive financial impact is linked to both the income statement (revenues and expenditures) as well as the balance sheet (Assets and liabilities and capital) of the business. Any climate related occurrence that has an impact of R500 million or more on the company's income statement or balance sheet is considered to be substantive. In addition, climate change risks have been identified as having potential strategic impacts, for example related to market-risks, and hence these are considered to be substantive.

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

Risk management process

A specific climate-related risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process

The Sibanye-Stillwater Board is responsible for risk governance and sets the tone for overseeing the entire risk management process. The Risk Committee is appointed with delegated powers from the Board to assist the Board with the risk management process. The Risk Committee convenes quarterly or as required to review the risk management processes. Sibanye recognises that climate change has an uncertain and unpredictable nature and that the investment decisions made today, could be significantly affected by weather variability associated with long-term climate change in the future. Climate related risks are identified through evaluations of input from the business environment, enterprise risk management, stakeholder engagement, market analyses and scenario analysis. In 2019, Sibanye conducted a TCFD Scenario analysis aimed at identifying and assessing the various climate change related risks and opportunities that may have a substantive financial impact on its business model. As a member of the International Council on Mining and Metals (ICMM), the analysis also drew from the principles of the ICMM report: Adapting to a changing climate: implications for the mining and metals industry, which includes an assessment of the impact that climate change will have on Sibanye-Stillwater's direct (core) operations, value chain, as well as its broader community. The assessment included an analysis of both the physical risks (acute and chronic) as well as the transitional risks (regulatory, markets and technology and reputational) that climate change presents for Sibanye-Stillwater's direct operations based on three scenarios: 1. No-mitigation scenario which is consistent with the IPCC's RCP 8.5 scenario. Climate modelling show that if the global temperature increase is 4°C, then the expected increase in South Africa will be in excess of 6°C. 2. Limited-mitigation scenario which is consistent with the IPCC's RCP4.5 scenario which will see an increase of average temperatures in the range of 2.7 to 3.7°C. 3. High-mitigation scenario which is consistent with the IPCC's RCP 2.6 scenario that assumes that the international community takes sufficient action to limit greenhouse gas emissions to a level that will stabilise the global average temperature increase at 2°C. Based on the scenarios above, the greatest chronic physical risks that climate change presents for Sibanye-Stillwater are changes in precipitation levels and droughts. Changes in precipitation extremes and droughts in South Africa have the potential to impact on surface infrastructure as well as underground mining at Sibanye-Stillwater's operations. The greatest acute physical risks that Sibanye faces are extreme weather events such as thunderstorms and hail storms. Hail with diameters between 25 mm and 37.5 mm could cause damage to PV modules. Based on these physical risks, Sibanye modelled a case study which indicated that the company's operating expenditure could increase due to climate change impacts such as increased cooling requirements on deep level mines as well as repair work to infrastructure such as its solar power systems. This could have a substantive financial impact on Sibanye's income statement, as well as its balance sheet. In order to manage these risks, environmental audits and inspections are conducted regularly and monthly operational reports are compiled for information and action. From transitional risk perspective, Sibanye's direct operations will primarily be impacted by the regulatory aspects such as the South African Carbon Tax Act 15 of 2019. South Africa's carbon tax legislation came into effect on 1 June 2019. Based on Sibanye-Stillwater's emissions from its direct operations, the direct financial implication of the carbon tax for the 2019 carbon tax year (1 June 2019 to 31 December 2019) will be approximately R3.3 million calculated on the basic carbon tax rate of R120 per tonne of CO₂e. Although the company's direct carbon tax liability is not considered to have a substantive financial implication, a case study conducted by the Minerals Council of South Africa indicated that based on Sibanye's scope 1 emissions, the company's direct carbon tax liability could increase significantly up to 2030 as the allowances provided for in the Carbon Tax Act are phased out gradually. There is however uncertainty on how the carbon tax allowances of the Carbon tax Act will work, post 2023. In order to manage this risk, Sibanye Stillwater continually engages with the relevant government stakeholders including , National Treasury and the Department of Environment Forestry and Fisheries, as well as private sector entities such as the Minerals Council (formerly the Chamber of Mines), Industry Technical Task Team on Climate Change, Business Unity South Africa and the Davis Tax Committee. Review and prioritisation of these aforementioned risks are undertaken by the Executive Committee which includes allocation of responsibilities to ensure mitigation and control. Scenario planning will also be done in early 2020, to gauge the projected quantum of the carbon tax especially when Phase 2 has kicked-in. During the risk register reviews, new and emerging risks and opportunities may also become evident and in these cases, control measures and mitigating strategies are developed and periodically reviewed. The Executive Committee reviews and assesses the corporate strategic risk register twice a year. The Risk Register is also reviewed by the Risk Committee twice a year. In addition, a Risk workshop is held annually.

Value chain stage(s) covered

Upstream

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

Upstream risks are always considered as it is critical for the business. The TCFD Scenario analysis considered the impact of climate change on Sibanye Stillwater's upstream value chain. The assessment was based on the main materials used by Sibanye-Stillwater, which include timber, cyanide, explosives, lime, cement, diesel and water. From a physical risk perspective, climate change poses a risk to the production of mining timber. The timber is required for safe mining and any disruption in supply can affect safety and production. As a practical case study, the supply of mining timber relies on the growing of trees which can be impacted by physical climatic changes such as prolonged periods of drought and fire. Areas such as Mpumalanga, Limpopo and KwaZulu-Natal, key timber production areas, have all recently suffered longer periods of drought and all face increased fire risk as a result of climate change. However, the TCFD Scenario analysis found that the climate risks associated with the supply of timber is low and the insurance cover sufficient. In order to manage this risk, the TCFD Scenario analysis found that the climate change risks associated with timber should be reassessed every 5 years. Sibanye Stillwater also engaged with its timber supplier, Bedrock, that have a diversified operations footprint across 6 provinces in South Africa in order to take advantage of different climatic conditions, thereby mitigating potential climate risks associated with certain provinces. Sibanye-Stillwater's upstream value chain will also be faced with certain transitional climate change risks. Predominantly, the transitional risks are regulatory changes in the form of carbon pricing instruments such as the South African carbon tax. The production of certain upstream products such as cement, lime and explosives are also subject to the South African carbon tax. As such, producers of upstream materials will likely pass through the increased costs associated with the production of such products to end-users such as Sibanye, thereby increasing the company's expenditure on such products. Based on a case study that undertaken by the Minerals Council, the cumulative pass-through of carbon tax from products such as lime, cement, petrol and diesel will cost Sibanye approximately R1.3 million in 2019 escalating to potentially R12 million by 2030. The impact such pass-through costs is particularly important for marginal business units where increased cost can affect their continued viability. In order to manage this risk, Sibanye-Stillwater's supply chain are engaged on climate change aspects (risks and opportunities). Sibanye-Stillwater's mature South African mines are by nature energy intensive and without any reasonable alternatives, are dependent on upstream carbon intensive power from Eskom. Although Eskom will not be impacted by the Carbon tax for the first phase of the carbon tax (1 June 2019 – 31 December 2022), the entity will be taxed from 2023 onwards, and could pass through its carbon tax liability to its consumers. This regulatory transitional risk will have a substantive financial impact on Sibanye Stillwater's operations from 2023 onwards, as we expect to pay

approximately R320 million more for electricity based on a case study conducted by the Minerals Council. In order to manage the impact of the carbon tax pass-through on electricity, Sibanye-Stillwater is committing to increase the use of renewable energy at its operations. We have confirmed the feasibility and concluded the design of a 150MW solar photovoltaic generating plant located between our Driefontein and Kloof operations. This will help reduce the direct as well as the indirect regulatory strain that the carbon tax will have on our income statement.

Value chain stage(s) covered

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

Downstream risks are always considered in climate-related risk assessments and formed an integral part of Sibanye-Stillwater's TCFD Scenario analysis. As the largest primary producer of PGMs in the world, Sibanye-Stillwater's products are used in various downstream applications, chief of which is the production of catalytic converters in automobiles to remove noxious gases from exhaust fumes. In this regard, Sibanye-Stillwater's downstream value chain will be affected by an interplay between physical and transitional risks, where regulatory and technological changes in the automotive sector will be triggered by a need to respond to climate change as a result of emissions from the automotive sector. A trend towards the phasing out of emission intensive internal combustion vehicles is already observed as a result of regulatory and technological changes. The TCFD Scenario analysis identified various scenarios pertaining to the phasing out of the internal combustion engine. In this regard, the report found that transitional risks associated with climate change to the platinum industry is high. A continuing decline in the market for internal combustion vehicles can significantly impact on the value of Sibanye-Stillwater's PGM business. In order to manage this transitional risk, Sibanye-Stillwater acquired SFA (Oxford) early in 2019. SFA (Oxford) is a world-renowned authority on platinum-group metals and provides in-depth market intelligence on battery raw materials and precious metals for industrial, automotive, and smart city technologies, as well as on jewellery and investment trends. The strategic decision to acquire SFA Oxford will help Sibanye-Stillwater to broaden its commodities intelligence platform and identify opportunities in PGMs to hedge against any possible downturn in the demand for platinum in the automobile sector. As a producer of copper, the Scenario Analysis has also identified certain transitional opportunities for Sibanye in the energy sector where this metal is a key component of many Renewable Energy application, especially wind and solar technologies. The climate change impact on the copper market will be positive with an increase in demand from the renewable energy market. The case study revealed that every scenario leads to the increased uptake of renewable energy and that Sibanye will benefit from the increase in demand for copper from the energy sector. From a physical risk perspective, mechanisms have been put place in order to reduce waste and the company's environmental footprint. We identify and where possible, prioritise research or implementation of alternative solutions for disposal to landfill to reduce our environmental footprint, reduce resource utilisation, thereby minimising costs. Our strategic intent is to reduce the generation of waste, whilst engaging in research into long-term viable options with the aim of achieving zero waste to landfill in future. Our shaft and plants segregate wastes into general and hazardous waste streams and further separation into recyclable waste streams, allowing for more effective downstream recycling and reuse opportunities.

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	Current legislation is always included in climate-related risk assessments as compliance is paramount and non-negotiable. Emerging regulation is used to inform business decisions on projects development and technology and to minimise the risk of having stranded assets. The TCFD Scenario analysis considered an in-depth analysis of current climate change related laws and policies which could impact on Sibanye-Stillwater's business operations. As an example, South Africa saw the introduction of the Carbon Tax Act 15 of 2019 in May 2019, as well the publication of the Carbon Offset Regulations in November 2019. Whilst the publication of the Carbon Tax Act presents a transitional risk for the company as a result of the Sibanye-Stillwater's direct and indirect carbon tax liabilities (as an expenditure), the publication of the Carbon Offset Regulation have provided Sibanye-Stillwater with clarity on the eligibility of carbon offsets in the country. In this regard, our Beatrix methane project was issued with 53,956 carbon credits during 2019. The publication of the Carbon Offset Regulations has provided Sibanye with a transitional opportunity to either sell or utilise the carbon credits in order to reduce the company's direct carbon tax liability. Also, the eligibility of future projects such as the planned 150 MW solar photovoltaic project, to be commissioned in three phases of 50MW each, is being assessed in terms of the Carbon Offset Regulations. The TCFD Scenario analysis also analysed regulatory developments in the international and foreign markets which are relevant to Sibanye-Stillwater's operations. Numerous countries have published regulatory instruments indicating a ban on the sale and/or production of internal combustion vehicles in the long term, including Denmark, Iceland, France, Israel, Netherlands, Norway, Portugal and Spain to name a few.
Emerging regulation	Relevant, always included	Emerging regulation are always included in climate-related risk assessments and has also formed a part of the TCFD scenario analysis. Emerging regulation pose a financial and transitional risk to the company. In considering the emerging regulation, it provides an opportunity to influence the legislative process and also provides the opportunity to align practices and processes proactively to manage such risks. One emerging regulatory risks for our South African operations is the finalisation of the carbon budgeting system. Carbon budgets have been allocated to more than 20 companies by the Department of Environmental Affairs for the first phase (2016 – 2020). Companies may approach the Department and request a carbon budget. Section 12 and Schedule 2 of the Carbon Tax Act provides a 5% tax relief for companies with carbon budgets. For the first phase, platinum mining is not required to have an approved carbon budget. In addition, the Draft Climate Change Bill requires that companies must draft and submit carbon budgets. The carbon budgets will therefore change from being voluntary to being mandated. The South African Government has repeatedly stated that the Climate Change Act will be finalised in 2020. The platinum mining sector may be included in the second phase of the carbon budgeting process, post 2020. This will mean that Sibanye-Stillwater may be required to compile a carbon budget and therefore increase expenditure on renewable energy and associated infrastructure in order to meet its carbon budget commitments. This may also result in increased spending on energy efficiency and could therefore affect the company's expenditures and capital. Sibanye-Stillwater is actively engaged in discussions with the relevant stakeholders on how the carbon budgeting system should work. For example, we commented that if a carbon budget is allocated to a company based on the IPCC sectors, companies can find themselves having to comply with more than one sector's emissions targets and where for example, they consistently reduce emissions in line with their overall emissions reduction targets, their emissions in certain sectors could still be exceeded.
Technology	Relevant, always included	Technology is always included in climate-related risk assessments by Sibanye-Stillwater so as to keep abreast of latest developments. Technological changes were also a fundamental transitional risk which formed part of the TCFD scenario analysis. As the world's largest producer of PGMs, technological changes in the automotive sector, such as the phasing out of internal combustion vehicles and the increased uptake of low-carbon automotive technologies can have a significant impact on Sibanye's revenue stream. For this reason, our acquisition of SFA Oxford early in 2019 represents a strategic decision to broaden our commodities intelligence platform and to take advantage of the application of PGMs in new low-carbon automotive technologies. Furthermore, advances in energy technologies provide the company with an opportunity to diversify its electricity procurement. An example is at the SA operations where the operations are largely dependent on electricity purchased from the national utility provider, Eskom, which is primarily generated from coal. With the cost of solar technologies decreasing and as part of the company's medium- to long-term energy management strategy, Sibanye-Stillwater is pursuing the first 50MW phase of its 150MW solar photovoltaic project to be built on a site strategically placed between the Driefontein and Kloof mining complexes on the West Rand. The project represents a partial solution the ailing electricity crisis in South Africa and to securing alternative electricity supply that enables the power generated to be injected directly into the mine's electrical reticulation. This not only reduces our overall electricity expenditure, but also increases our renewable energy generation and consumption and contributes to reducing our Scope 2 emissions.
Legal	Relevant, always included	Legal aspects (regulation and legal liabilities) are always included in climate-related risk assessments as compliance with legal requirements is non-negotiable. An example where legal aspects is considered is in the management of return water facilities where overtopping frequencies are regulated. At the SA operation water balance management has been upgraded to include real-time monitoring of dam levels, cleaning of silted dams during the dry season to create more storage capacity and improving return pump capacities. An example of legal liabilities is on the maintenance of storage facilities where a breach of infrastructure can result in legal action (such as a failure of a tailings storage facility). Sibanye-Stillwater also takes pride in going beyond what is legally required in order to protect its immediate and surrounding environment. As an example and unique within the mining industry in the US, the Good Neighbour Agreement provides an innovative framework for the protection of the natural environment while encouraging responsible economic development. It legally binds us to certain commitments and holds us to a higher standard than that required by federal and state regulatory processes. In order to keep track of all the legal requirements, an electronic legal aspect register has been developed and integrated into systems as of May 2020 at all SA gold and PGM operations as part of the company's ISO 14001 and ISO 45001 commitments.
Market	Relevant, always included	The demand for the metals produced by Sibanye-Stillwater is driven by various markets. These markets may be influenced by scenarios of climate change. The most relevant market for Sibanye-Stillwater is the automotive market. Sibanye-Stillwater scenario-analysis considered the effect climate change may have on the automotive market and the use of its primary products (PGMs) across 3 different scenarios, including a 2°C pathway. – Under this scenario the most precarious outcome for Sibanye-Stillwater would be a scenario where there is disruptive market change based on a high uptake of battery powered vehicles. Such vehicles do not require the volumes of PGMs required in internal combustion or fuel cell technologies and could have a major impact on Sibanye's revenue stream. Although there are some risks associated to a 2°C scenario for our PGM operations, other sources of our revenue stream such as gold and copper will perform well under changing market conditions. For example, copper demand is likely to exceed supply in the energy market under a 2°C scenario as a result of its applications in renewable technologies.
Reputation	Relevant, always included	Reputation risks are always included in climate-related risk assessments and Sibanye considers it to be a transitional risk linked to its response to the physical risks of climate change. We recognise the ever more stringent standards for responsible mining and business conduct to which stakeholders are holding companies accountable, and the increasing trends in responsible investment in low-carbon technologies. We aim to capitalise on the opportunity to strengthen our brand and reputation and to tap into the growing spectrum of responsible investment funds and low carbon technologies. In order to protect our reputation and our social license to operate, Sibanye-Stillwater will keep on disclosing its emissions in annual reports and to the CDP. In this regard, Sibanye-Stillwater submitted a Science Based Emission Target to the Science Based Target Initiative. The SBTi approved our Group target in March 2019, demonstrating that Sibanye-Stillwater's emissions reduction targets conform to the required science-based calculation methodology and is aligned to contribute to the global climate change challenge. Furthermore, our decision to build a 150MW solar photovoltaic project between the Driefontein and Kloof mining complexes on the West Rand will not only reduce our electricity consumption from the emissions-intensive national grid, but will also contribute towards protecting our reputation as an active participant in the transition to a low carbon economy and society.
Acute physical	Relevant, always included	Acute physical risks are always included in climate-related risk assessments. From the risk assessments conducted, the acute physical risks to Sibanye-Stillwater are change in precipitation extremes and droughts. Changes in precipitation extremes and droughts in South Africa have the potential to impact on surface infrastructure as well as underground mining at Sibanye-Stillwater's operations. The likelihood of both, increased rainfall variability and increased intensity of rainfall events in the areas where Sibanye-Stillwater operates have been assessed as part of our TCFD scenario-analysis. Severe storm events may also damage water infrastructure exacerbating water scarcity, especially at our SA PGM operations, with extreme winter storm conditions specifically affecting our Montana operations. To prepare our operations for the any sudden acute climate change impacts on the operating environment, we have an active programme to reduce water consumption that will allow us to continue operating in a more water scarce environment.
Chronic physical	Relevant, always included	Chronic physical risks are always included in climate change risk assessments. From the risk assessments conducted, climate change will generally lead to increased temperatures. We are taking into account the implications of potential variations in environmental conditions and temperatures for post-closure economic activity in the areas where we operate. This consideration is being used for example, in the selection of vegetation species for concurrent rehabilitation. Furthermore, to adapt to the potential climatic impacts of drought and water scarcity, consideration is being given to a broader water management strategy across our South African operations that would enable water deficits to be offset by water surpluses in other districts.

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?

Upstream

Risk type & Primary climate-related risk driver

Current regulation	Carbon pricing mechanisms
--------------------	---------------------------

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

The introduction of the South African carbon tax is a transitional risk for Sibanye which will not only have direct implications for the company, but will also have an indirect impact on the company's income statement. The direct financial impacts are easier to quantify and manage compared to the indirect impacts. Indirect impacts will arise as several upstream commodities purchased and used by Sibanye-Stillwater are emission intensive and the production of such products will also be subject to the carbon tax. These products include cement, lime, steel, petrol and diesel. The producers of these products will pass through their carbon tax liability to end-user consumers such as Sibanye-Stillwater in order to absorb the impact of their own direct carbon tax liabilities. In the short term during the first phase of the carbon tax (1 June 2019 - 31 December 2022) the impact of the pass-through can be calculated with relative certainty. However, the carbon tax rate will increase during the second phase of the carbon tax (1 January 2023 - 31 December 2030) as a result of the gradual phase out of certain relief measures set out in the Carbon Tax Act. As such, the medium-long term impact of the pass-through cannot be calculated with certainty, as the South African government has yet to provide clarity on the changes to the Carbon Tax Act during the second phase of the carbon tax. This uncertainty poses potential significant risks to Sibanye-Stillwater in terms of financial planning.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

6000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The figure provided (R6 million) has been calculated in accordance with the carbon tax formula set out in the Carbon Tax Act 15 of 2019 (as well as the Tax Laws Amendment Act 43 of 2019) and represent an amount per annum. The value is calculated based on the value of Sibanye-Stillwater's direct GHG emissions (in tCO₂e) that are eligible for the tax, less the respective allowances that the company is eligible for. For example, Sibanye-Stillwater is allowed to offset its tax liability with eligible carbon credits issued from the Beatrix Methane project which is registered with the CDM. The tax liability is based on the direct emissions multiplied by the basic tax rate of R120/tCO₂e. The tax liability for the 2019 carbon tax year is however approximately R3.3 million, as the carbon tax period for 2019 only consisted of 7 months (1 June 2019-31 December 2019). Notably, the annualised tax liability figure of R6 million expected in the future excludes the pass-through cost of the carbon tax related to upstream supplier products, such as electricity. Hence, the financial impact will increase once the national electricity utility, Eskom, is required to pay carbon tax expected from 2023 onwards.

Cost of response to risk

0

Description of response and explanation of cost calculation

The calculations related to the potential carbon tax liabilities, in order to address and integrate this risk into broader company strategies, have been collated in-house. As such no external cost was incurred. However, Sibanye-Stillwater continuously engages with its upstream supply chain on climate change aspects (risks and opportunities) and on the need to decrease emission intensive activities in order to reduce emissions and the effects of carbon pricing mechanism such as the South African carbon tax.

Comment**Identifier**

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Technology	Transitioning to lower emissions technology
------------	---

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

As stated previously, Sibanye-Stillwater is the largest producer of PGMs in the world. The automotive sector being is the key downstream consumer of PGMs due to the production of catalytic converters. Climate change and environmental concerns have resulted in governments, cities and automotive manufacturers restricting the sale and/or production of internal combustion engines. The physical risks associated with the emissions emanating from internal combustion technologies have resulted in

technological advances in battery and fuel-cell technologies which are significantly less emission intensive. More specifically, technological advances and cost reductions in battery technologies pose a significant threat to Sibanye-Stillwater as PGMs are generally not used in battery technology applications. Should the world opt to predominantly turn towards battery powered vehicles in pursuit of achieving a below 2°C climate scenario, Sibanye-Stillwater could face significant revenue losses in the long term. Such revenue decreases would occur as a result of decreased demand for PGMs from the automotive sector. However, it must be noted that fuel-cell technologies make use of platinum. As such, should the world opt for fuel-cell technologies, the development of fuel cells could mitigate the drop in demand caused by the reduction in the auto catalyst market. Certainty regarding the world's preferred automotive technology (battery or fuel cell) will only be evident in the long term.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

12300000000

Potential financial impact figure – maximum (currency)

16400000000

Explanation of financial impact figure

The World Economic Forum forecasts that electric and hybrid vehicles are expected to seize a third of the market by 2025 and 51% by 2030. Should battery technologies dominate the automotive market, Sibanye-Stillwater can expect a significant decrease in platinum and palladium demand of between 30-40% by 2030. Based on the 2019 revenue figures (Platinum: R13 billion + Palladium: R28 billion = R41 billion) a switch to battery powered vehicles could result in a loss of revenue of between R12.3 billion – R16.4 billion for its PGM operations. This is a significant impact and would most likely lead to financial turmoil for the company.

Cost of response to risk

127000000

Description of response and explanation of cost calculation

On 21 February 2019, Sibanye-Stillwater announced it had agreed to acquire SFA (Oxford) Limited (SFA Oxford), an established analytical consulting company that is a globally recognised authority on PGMs and has for several years provided in-depth market intelligence on battery materials and precious metals for industrial, automotive, and smart city technologies. The acquisition consideration amounts to R127 million. The acquisition of SFA Oxford is a strategic action to assist in research with regards to the application of PGMs in automotive and other technologies. This will also enable Sibanye-Stillwater to evaluate the impact that the phase out of internal combustion engines will have on its revenue stream and identify appropriate cost containment in its PGM operations to accommodate lower market prices and possible demand shrinkages.

Comment

Identifier

Risk 3

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

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Sibanye-Stillwater's operations are subject to the provisions of the South African Carbon Tax Act 15 of 2019. The introduction of a carbon tax in South Africa is a transitional risk with the potential to have a substantive financial impact on the company's direct operating costs. Entities with scope 1 emissions above the specified thresholds are required to pay the carbon tax. The carbon tax will have a negative impact on the competitiveness of the South African mining sector and therefore poses a risk to Sibanye-Stillwater. The carbon tax rate for the 2019 carbon tax year (1 June 2019 – 31 December 2020) is set at R120 per tonne of CO₂e. Sibanye Stillwater's carbon tax liability for 2019 was based on the relief mechanisms set out in the Act which includes a 60% tax-free threshold as well as the application of trade exposure allowance of 8%. There is however immense uncertainty beyond 2022, as the government announced that the tax-free threshold and allowances will be adjusted. It is not known what the adjustment would entail and the projection of the impact of the carbon tax beyond 2022 cannot be predicted with certainty. This makes planning beyond 2022 difficult. However, based on projections which result in the total phase out of the relief mechanism by 2030, Sibanye-Stillwater can expect a direct carbon tax liability in excess of between R36million –R91million by 2030. It is also worth noting that in addition to the direct tax liability discussed above, Sibanye Stillwater will also be subject to indirect carbon tax expenditures as a result of the passthrough of the carbon tax on certain upstream consumables such as cement, lime, steel, petrol and diesel. In addition from 2023, Eskom would pass through the costs of their own carbon tax liability to their consumers. This results in an approximate increase on the electricity price of 14c/kWh by 2030 (CPI included). In addition to what Sibanye is paying for electricity, the carbon tax passthrough could amount to an additional electricity expenditure of between R344 million and R862 million by 2030, depending on how government will structure the phase out of the relief mechanism.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

3300000

Potential financial impact figure – maximum (currency)

10000000

Explanation of financial impact figure

The first phase of South African carbon tax has been introduced at a rate of R120 per tonne CO₂e from 1 June 2019 and increase by the consumer price index plus 2% per annum until 31 December 2022. A 60% tax-free threshold will apply during the first phase (up to December 2022). A trade exposure allowance of 8% is applied for the mining sector. Based upon the calculation provisions in section 6 of the Carbon Tax Act, Sibanye-Stillwater's carbon tax liability for 2019 amounts to approximately R3.3 million. The annualised tax liability figure is expected to be R6 million, for the first phase of the carbon tax (up to the end of 2022). This amount will increase as the carbon tax rate escalates and the relief mechanisms are phased out. It is estimated that without relief mechanisms, Sibanye-Stillwater's tax liability could increase to approximately R10 million.

Cost of response to risk

1100000

Description of response and explanation of cost calculation

Sibanye-Stillwater has two registered projects under the CDM, in South Africa namely the Beatrix mine methane capture and flaring project and the Beatrix ventilation fans project. The Beatrix methane project generated 36,010 carbon credits during the first crediting period from 2011 to June 2018. The first issuance was finalised in 2013. During 2019, the second batch of 53,956 carbon credits was verified and issued by the UNFCCC. The third verification of carbon credits is ongoing. Section 13 of the Carbon Tax Act allows for companies to reduce either 5% or 10% of their carbon tax liability (based on the company's scope 1 emissions) by surrendering carbon credits against such carbon tax liability. The issuance of the carbon credits allows Sibanye-Stillwater to offset 10% of its carbon tax liability, thereby reducing the expenditure of the company. The technical and auditing costs related to the first, second and third verifications/issuances have amounted to approximately R1.1 million.

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

Resilience

Primary climate-related opportunity driver

Other, please specify (Increased market capitalisation)

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Companies worldwide are increasingly required to set targets for the reduction of their carbon footprints in line with international regulatory pressures set out in national legislation as well as international instruments such as the Paris Agreement. This is especially true for companies operating in emissions intensive industries such as Sibanye-Stillwater, as well as suppliers within Sibanye's value chain. In response to these pressures, Sibanye-Stillwater developed a science-based target which was approved in March 2019. Targets are considered to be 'science based' if it is in line with the level of decarbonisation required to keep global temperature increase well below 2°C compared to preindustrial temperatures as set out in the Paris Agreement. Our target has been set to reduce our absolute Scope 1 and 2 emissions by 27% by 2025 from a 2010 base year. Sibanye-Stillwater views the setting of a science-based target as an opportunity to increase innovation in emission reduction possibilities, reduce regulatory uncertainty, strengthen investor confidence and credibility and improve profitability and competitiveness. These measures have the potential to increase Sibanye-Stillwater's long-term sustainability, which could positively increase investor confidence in the company. Increased investor confidence would result in an increase in market capitalisation (total value of the company's shares). It must be noted that the target was set prior to the acquisition of the Marikana operations. As such the base year is being reviewed to include the Marikana operations and is expected to be completed in 2020. Thereafter, the Group emissions reduction target will be reviewed.

Time horizon

Medium-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)

240000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Investors are increasingly concerned with how companies intend to ensure their long-term sustainability. Current market and shareholder pressures with regards to “sustainable investments” and consideration of climate change in investment could potentially impact Sibanye-Stillwater’s share price. The setting of a science-based target could showcase the company’s commitment to mitigating climate change and playing a contributing role in realising the Paris Agreement. As such, it is estimated that the company’s share price could increase by a conservative figure of 0,25%, due to positive investor sentiment as a result of Sibanye-Stillwater’s climate related measures. In this event, and based on the 2019 share price, the company’s market capitalisation could thus increase by approximately R240 million.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Sibanye-Stillwater developed our science-based target in-house. The cost for developing the target was therefore an internal remuneration cost. Furthermore, as South Africa is a developing country, the Science-Based Target Initiative reviewed and approved the target free of charge, effectively reducing Sibanye’s expenditure on realising this climate change related opportunity. Sibanye-Stillwater is actively pursuing methods of achieving the science-based target. The appointment of energy service companies to assist with energy optimisation initiatives (optimisation of compressed air and water refrigeration circuits) has been instrumental in the continuous reduction of our carbon footprint which feeds into the realisation of our science-based target. Scope 2 emissions (purchased electricity), excluding the Marikana operations, decreased by 0.6% from 5,002,404 tCO₂e to 4,972,750 tCO₂e, primarily due to the implementation of energy efficiency initiatives. Reducing electricity consumption would, by extension, reduce our carbon emissions, and feed into our science-based target. As part of our energy management strategy to help realise the target, we focus on holistic energy efficiency using digital applications, such as digital twinning, and the application of new technologies; as well as ongoing improvements in the use of compressed air, pumping, ventilation and refrigeration and the optimisation of our footprint. Our planned 150MW solar photovoltaic project in the West Rand, which would be initiated by a first phase of 50MW, will also contribute towards achieving the target.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Gold is Sibanye-Stillwater’s second largest source of revenue. Gold has historically been considered to be a safe-haven commodity in the wake of geo-political instability and provides investors with a hedge against the possible adverse impacts associated with uncertainties in the market. This is evident when considering the gold price and increased demand for the metal during historic events such as 9/11 or the current COVID-19 pandemic which has resulted in substantial surges in the price of gold. Furthermore, the world gold market in 2019 had its best performance since 2010, rising by 18.4% in US dollars terms last year. Our TCFD Scenario analysis highlighted that under any one of the scenarios analysed, climate change is likely to exacerbate such geopolitical uncertainties. As such, the gold market presents Sibanye with an opportunity to increase its revenue stream in the short, medium, as well as the long term.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12000000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Gold’s position as a material of choice is expected to continue over the coming decades amidst the increasing uncertain impacts that climate change will have on the world’s risk landscape. It is expected that the price of gold can increase to between \$2000-\$3000 by 2030 per oz as a result of increased demand for the commodity due to its proven reputation as a safe-haven metal. The gold price mid August 2020, amidst the COVID-19 pandemic and global geopolitical uncertainty, reached \$2067/oz. Based on an average price of \$2500 per oz and based on the amount of gold sold in 2019, Sibanye-Stillwater could see a substantial increase in its gold revenues in the medium-long term. Using the August 2020 gold price figure of \$2067/oz indicates an increase of approximately R12 billion.

Cost to realize opportunity

261000000

Strategy to realize opportunity and explanation of cost calculation

In August 2018 a transaction between DRDGOLD and Sibanye-Stillwater was completed, whereby Sibanye-Stillwater traded selected assets from its WRTRP project (now

DRDGOLD Far West Gold Recoveries – FWGR) for a 38.05% shareholding in DRDGOLD. Effective on 22 January 2020, Sibanye-Stillwater increased its holding in DRDGOLD, and exposure to the gold market, from a 38.05% to 50.1% equity interest; securing the majority holding. DRDGOLD is a South African gold producer and a world leader in the recovery of gold from the retreatment of surface tailings. The decision to increase equity in DRDGOLD was taken in 2019 and gives Sibanye-Stillwater greater access to the opportunities within the gold market. The projected increase for the demand for gold and its associated price increases will contribute to a growing revenue stream for the company. The total amount of consideration paid to the DRDGOLD shareholders for the increased equity amounted to just over R261 million. The purchase consideration was calculated as 61.95% of the fair value of Far West Gold Recoveries assets and liabilities.

Comment

Identifier

Opp3

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

Reduced direct costs

Company-specific description

South Africa's electricity grid, predominantly coal-fired, is under significant strain as a result of much-needed maintenance and a myriad of governance related challenges. In terms of NRS048-9, in the event that Eskom cannot supply national electricity demand and initiates a system emergency, the operations are issued a 'load curtailment' instruction several hours in advance, requiring electricity consumption reduction of 10% (Stages 1 to 2), 15% (Stage 3) or 20% (stage 4), depending on the severity of the event. In response to the 28 load curtailment events experienced through Q1 2019 to Q4 2019, the operations managed to meet our obligations while minimising production losses. Further, optimised response plans have been put in place to minimise impact and risks associated with any potential future load curtailment events. As part of the medium- to long-term energy management strategy, Sibanye-Stillwater is still pursuing the first 50MW phase of its 150MW solar photovoltaic project to be built on a site strategically placed between the Driefontein and Kloof mining complexes on the West Rand. The project represents a partial solution to securing alternative electricity supply and enables the power generated to be injected directly into the mine's electrical reticulation while reducing our overall electricity expenditure and carbon footprint. Constrained by regulatory constraints, the project has stalled over the last two years. Sibanye-Stillwater is however encouraged by Government's recent public announcements that the red tape and bureaucracy that has inhibited such projects will be removed, allowing the private sector to aid in relieving the national power supply deficit. The project team is now actively working with government to remove the regulatory barriers and, subject to the required reforms, the project will be progressed through to financial close in 2020. The solar plant will not only result in fewer Scope 2 emissions, but will also represent an opportunity for Sibanye to relieve the pressure on the strained national electricity grid and to reduce electricity expenditure. Less dependency on electricity from Eskom will also reduce our indirect carbon tax liability which Eskom will pass through to consumers from 2023 onwards.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The solar plant will not only result in fewer Scope 2 emissions, but will also represent an opportunity for Sibanye to reduce electricity expenditure as the PPA tariff is expected to be lower than the current rates paid for electricity. It is anticipated that the electricity cost savings that may be realised from purchasing electricity for the first phase of the solar PV project, 50 MW, will amount to approximately R2 million /year. This figure is based on a comparison of the current electricity tariffs applicable in 2019, compared to the expected PPA tariff (which is subject to change on finalisation of the PPA). The estimated financial impact does not account for additional benefits related to the PV project. Such benefits include the diversification of energy supplies, which will reduce the risks of downtime due to power shortages in South Africa, as well as reduced risk of carbon tax passthrough costs that are expected to be levied by the national utility, Eskom, post 2022.

Cost to realize opportunity

59000000

Strategy to realize opportunity and explanation of cost calculation

It is estimated that Sibanye-Stillwater will pay approximately R59 million per year for the purchase of electricity generated by the first phase of the PV facility, which is expected to have a capacity of 50 MW. The proposed solar PV facility will be developed and commissioned by an independent power producer. Sibanye-Stillwater will purchase the renewable electricity, generated by the solar PV facility. The finalisation of the power purchase agreement is a key component to ensure the bankability of the project. As the solar PV facility is still in development, the annual cost to Sibanye, for the purchase of the renewable electricity, has been estimated using a provisional solar PV tariff. The tariff is subject to change on the finalisation of the PPA.

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

C3.1b

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

Climate-related scenarios and models applied	Details
RCP 2.6	<p>Changes in the natural environment as a result of climatic changes can result in physical risks. The physical changes can at the same time indirectly lead to impacts on markets, policies and/or technologies (transitional risks). Physical risk scenarios are described by a change in the atmospheric concentration of greenhouse gases, which can be translated into a change in global temperatures. The IPCC categorised these concentration and associated temperature changes in their Fifth Assessment Report in four different scenarios called "Representative Concentration Pathways" (RCPs). The RCP 2.6 scenario is based on the assumption that the international community uses the ratchet mechanism in the Paris Agreement effectively to limit the average global temperature to 2°C, with countries increasing their ambitions for emissions reduction by 2025. In the short-term, climate change is projected to generally lead to increased temperatures and increased variability in rainfall. In this scenario, the risks from climatic changes on businesses would be manageable. The RCP 2.6 scenario is relevant to Sibanye-Stillwater because of the transitional risks (including magnitude of impact) that are caused by the underlying environmental physical changes. Notable transitional risks for the company include shifts in market behaviour and changes in the regulatory environment that can affect future developments, for example in the automotive market which Sibanye serves. Sibanye-Stillwater considers the RCP 2.6 scenario both in the short- and long-term, although the greatest changes in the climate under this scenario are expected in the short-term, while stabilising in the long-term. It is thus expected that the regulatory impact of the RCP 2.6 scenario will be high in the short term as there will be significantly more stringent regulatory pressure. The business area considered as part of the scenario analysis is the demand for metals such as chromium, copper and platinum. The result of applying the RCP 2.6 scenario and linking it to transitional risks in the aforementioned business areas is that Sibanye-Stillwater expects there to be increased demand for renewable and cleaner energy, resulting in increased demand for metals such as chromium which is used in wind turbines. We further envisage that the electric vehicle market will increase, primarily hybrids, which utilise PGMs in auto catalysts. Our view is that the hybrid vehicles market is expected to make up the majority of "new vehicle tech" growth. Platinum is likely to be mostly balanced for the remainder of this decade, thereafter reverting to material deficits as primary production from SA contracts. Copper demand for the motors in electric vehicles and hybrids is also expected to increase; electric vehicles and hybrids use about two to three times the amount of copper compared to conventional internal combustion vehicles. There may also be an increased demand for platinum used in fuel cell electric vehicles. Based on these results, Sibanye-Stillwater acquired SFA Oxford in February 2019, which is an established analytical consulting company, a globally recognised authority on PGMs, providing in-depth market intelligence, for several years, on battery materials and precious metals for industrial, automotive and smart city technologies. Going forward, the acquisition of SFA Oxford will help fast-track our strategic objective of diversifying into battery metals which is a natural hedge against the PGMs market changes. Sibanye-Stillwater also concluded a transaction with Regulus Resources creating a strategic partnership to unlock value at the Altar copper-gold project. In order to improve chrome recovery, fine fraction chrome recovery technology trade-off studies were conducted in 2018. The project envisages the recovery of an additional 10,000 tonnes per month of chrome concentrate.</p>
RCP 8.5	<p>Changes in the natural environment as a result of climatic changes can result in physical risks. The physical changes can at the same time indirectly lead to impacts on markets, policies and/or technologies (transitional risks). Physical risk scenarios are described by a change in the atmospheric concentration of greenhouse gases, which can be translated into a change in global temperatures. The IPCC categorised these concentration and associated temperature changes in their Fifth Assessment Report in four different scenarios called "Representative Concentration Pathways" (RCPs). The RCP 8.5 scenario is a high emission scenario in which the global greenhouse gas emissions lead to a radiative forcing of 8.5 W/m2 and a temperature rise of 4°C or more by the end of the century (in South Africa: > 6°C; Montana, USA: ca. 6°C). This is the scenario where the majority of countries worldwide do not manage to implement the greenhouse gas mitigation commitments they have made in terms of the Paris Agreement. The RCP 8.5 scenario is relevant to Sibanye-Stillwater because the physical risks associated with the projected dramatic changes in the climate in the USA and in South Africa could have detrimental impacts on our ability to operate. For example, operations may have disruptions to power and/or water supply, equipment could fail, shafts could flood, workers may be unable to get to work or other interruptions in the supply chain. The RCP 8.5 scenario identifies risks to our business under "worst-case scenario" conditions. Sibanye-Stillwater considers the RCP 8.5 scenario both in the short- and long-term. The physical risk is low in the short term but will increase over time due to the warming of the planet, and become high in the long term. The transitional risks for both South Africa and Montana associated with this scenario are low, as RCP 8.5 represents the case where governments and markets do not take climate change action. The areas of our Company that have been considered as part of the scenario analysis include the critical supplies of electricity and water to our facilities. The results of the scenario analysis under the RCP 8.5 scenario indicate generation of electricity in South Africa is especially at risk as a result of physical impacts such as water shortages and floods. Electricity distribution infrastructure in the country is also at risk of extreme weather events such as storms. Sibanye-Stillwater requires uninterrupted power supplies to operate safely. Further, the results indicate that rising temperatures and droughts would lead to water insecurity. Our operations require large quantities of water, without which our operations would be interrupted. From a transitional risk perspective, there is a probability that climate change may increase global geopolitical uncertainty if the No-mitigation scenario materialises, in which case the price of gold may go up. This would be beneficial for Sibanye. This benefit needs to be weighed against the physical climate change risks on our operational efficiency. Based on these results, Sibanye-Stillwater has taken action to manage the risks highlighted in this scenario, including the climate change assessment conducted to identify the physical aspects (such as high intensity rainfall and hail which could result in physical damage) for consideration for the 150 MW solar PV project. Sibanye-Stillwater has also developed a strategy to reduce dependence on municipal water purchased by the South African operations to minimise water disruptions in the event of dry spells and droughts.</p>
Nationally determined contributions (NDCs)	<p>Changes in the natural environment as a result of climatic changes can result in physical risks. The physical changes can at the same time indirectly lead to impacts on markets, policies and/or technologies (transitional risks). Physical risk scenarios are described by a change in the atmospheric concentration of greenhouse gases, which can be translated into a change in global temperatures. The IPCC categorised these concentration and associated temperature changes in their Fifth Assessment Report in four different scenarios called "Representative Concentration Pathways" (RCPs). The IPCC's RCP 6.0 scenario speaks to a scenario in which countries manage to implement the actions committed to in their Nationally Determined Contributions (NDCs), but do not manage to increase the ambition. In this scenario, global average temperatures are expected to increase by around 3.5°C by 2100. In the case of South Africa, the NDC pledges are consistent with the country's long-term goal to constrain its emissions to follow a peak-plateau-decline (PPD) trajectory. Based on this, South Africa's emissions should peak between 2020 and 2025, plateau for approximately a decade and then decline in absolute terms. The PPD trajectory targets an absolute emissions level in the range of 398–614 million ton CO2e over the period 2025 to 2030. The NDC (RCP 6.0) scenario is relevant to Sibanye-Stillwater because it enables our Company to identify an operational environment which gives a more realistic outlook for the physical and transitional risk future as it is neither a worst-case (RCP 8.5) nor a best-case (RCP 2.6) scenario. Sibanye-Stillwater considers the NDC scenario both in the short- and long-term. In the NDC scenario, the short-term physical risk is low and the regulatory risk is medium. In the long-term the physical risk increases and the transitional risk remains the same. The area of our Company that has been considered as part of the scenario analysis is the change in regulatory developments. The results of the NDC scenario analysis highlights transitional risks to Sibanye's operations. The transitional risk in South Africa is taken in the context of the existing regulatory developments. This includes: • A carbon tax from June 2019 onwards; • Risk of mandatory Carbon budgets and Pollution Prevention Plans for the mining industry from 2021 onwards. Although the USA announced its withdrawal from the Paris Agreement, coming into effect on/after 4 November 2020, our US operations will still be exposed to transitional risks as the global community shifts towards more climate-friendly energy and transport systems. The application of minerals will evolve creating substantial new demand opportunities and even threats to demand. To remain market relevant and compliant with regulatory requirements in the global regions in which we our products are used, we would be impacted by regulatory requirements enforced in these regions (e.g. EU). At the same time, transitional risks and opportunities are relevant for managing our own carbon footprint (South Africa & USA). The escalating urgency to reduce global carbon emissions, with the European Union aiming for a net zero emissions target by 2050, imposes the imperative of intensifying our work to reduce the emissions of carbon and other contributors to global warming related to our operations. Based on these results, Sibanye-Stillwater's business strategy was influenced in that it now considers opportunities to reduce the organisation's tax liability through the use of eligible carbon offsets from CDM projects. As the potential financial implications of a carbon tax has been determined & provisioned, Sibanye-Stillwater has two CDM projects which could potentially generate carbon offsets. With the South African carbon tax legislation having come into effect on 01 June 2019, Sibanye-Stillwater continues engaging with the Department of Environmental Affairs on legislation such as the Climate Change Bill.</p>

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	Our fundamental strategic purpose is 'improve lives through our mining' while strengthening our position as a leading international precious metal mining company. Our vision is 'to create superior value for all our stakeholders'. As climate change can affect delivery of our vision, climate-related risks and opportunities are integrated into our business strategy through various mechanisms. Notably, our carbon management policy commits us to contributing to a global solution through the deployment of responsible strategies and actions. How our strategy has been influenced by climate-related risks and opportunities related to our products: Our short (0-5 year) and long-term (5-10 year) business strategies are guided by climate-scenario analysis, our Group risk and opportunity assessments as well as close attention to national and international developments in the climate change space. These processes enable us to identify and react to market shifts. Case study: The development of the global renewable and clean energy industries will increase the demand for various minerals, such as chromium for wind energy facilities and PGMs for hydrogen and fuel cell technologies (source: World Bank report "The growing role of minerals and metals for a low carbon future". The strategic direction of our Company has therefore been aligned with anticipated market demands. Accordingly, Sibanye made the substantial strategic decision to improve chrome recovery. A chrome spiral recovery plant currently exists at the Waterval UG2 concentrator to treat flotation tails. To further improve chrome recovery, fine fraction chrome recovery technology trade-off studies were conducted in 2018. The results envisage the recovery of an additional 10,000 tonnes per month of chrome concentrate equivalent to 20% of current production. Another substantial strategic decision influenced by climate-related opportunities was the acquisition of Lonmin in June 2019. This enabled us to grow our PGM operations. PGMs could benefit from the uptake of hydrogen and fuel cell technologies used to reduce carbon emissions and pollutants in the energy sector.
Supply chain and/or value chain	Yes	Sibanye-Stillwater recognises that climate impacts have the potential to disrupt the supply of critical inputs along the company's value chain. Disruptions along the value chain have the potential to negatively impact Sibanye-Stillwater's operations, revenues and therefore long-term sustainability. How our strategy has been influenced by climate-related risks and opportunities along the value chain: Our short (0-5 year) and long-term (5-10 year) business strategies are guided by climate-scenario analysis, our Group risk and opportunity assessments as well as close attention to national and international developments in the climate change space. These processes enable us to identify and react to impacts along our value chain. Case study: The Sibanye-Stillwater South Africa operations have categorised its suppliers and contractors into three groups: strategic, tactical and local. Through this process, critical suppliers have been identified and can be engaged with on climate-related issues to jointly address risks and opportunities in our supply chain. E.g., in 2018, a tornado-like storm destroyed the main and backup Eskom power lines that feed the shafts of Sibanye-Stillwater's Beatrix operations in South Africa. The result was a total power outage and damage to critical technical equipment. This contributed to lower gold production of about 330 kg (+/- R167,5 million loss). These events have influenced our short-term strategy: we needed to identify alternative, renewable power supply in the event that Eskom is unable to supply electricity to our operations, to ensure continued production and the safety of our workforce. Engagements with Eskom lead to an agreement on specific protocols to mitigate the impact of load curtailment at our operations. Influence on our medium- to-long-term energy management strategy: the most substantial strategic decision made to date, influenced by this climate-related risk, was the development of a 150MW solar PV plant for private generation. We are pursuing the first 50MW phase, to be located between the Driefontein and Kloof mining complexes. This project represents a partial solution to securing alternative electricity supply. While regulatory constraints have caused delays in commissioning, the project is expected to reach financial close in 2020.
Investment in R&D	Yes	Sibanye-Stillwater recognises that various minerals are expected to be instrumental in future low carbon technologies. This presents an opportunity to Sibanye-Stillwater in the short-to-medium term, where our strategic intelligence can position our business as a supplier of minerals that are critical to support the global challenge of mitigating climate change. This will include a continuing focus on our recycling operations to enable production of minerals with a lower carbon footprint. How our strategy has been influenced by climate-related risks and opportunities along the value chain: Our short (0-5 year) and long-term (5-10 year) business strategies are guided by climate-scenario analysis, our Group risk and opportunity assessments as well as close attention to national and international developments in the climate change space. These processes enable us to identify areas for R&D investment. Case study: The most substantial strategic decision made in this area to date that has been influenced by this climate-related opportunity is the partnership with BASF on research and development on a tri-metallic catalyst (platinum, palladium and rhodium). This research is expected to provide greater versatility of applications of PGMs and have a positive impact on the platinum/palladium market balance. Another strategic decision made in line with this opportunity is that Sibanye-Stillwater acquired SFA Oxford in 2019, which is an established analytical consulting company, a globally recognised authority on PGMs, providing in-depth market intelligence on battery materials and precious metals for industrial, automotive and smart city technologies. The acquisition of SFA Oxford will help fast-track our strategic objective of diversifying into battery metals which is a natural hedge against the PGM market changes. The acquisition cost compares favourably with the cost of setting up a similar analytical and research group internally but significantly leapfrogs the time required to build up the intellectual knowledge. While Sibanye-Stillwater will have Board representation consistent with its equity holding, SFA Oxford will continue to operate as an independent company, providing services to global clients on metal market analysis. As such SFA Oxford is expected to be operating cost neutral to Sibanye-Stillwater.
Operations	Yes	Sibanye-Stillwater's short (0-5 year) and long-term (5-10 year) operational strategies have been influenced by climate-related risks and opportunities. How our strategy has been influenced by climate-related risks and opportunities related to our operations: Sibanye-Stillwater's operational strategies are guided by climate-scenario analysis, our Group risk and opportunity assessments as well as close attention to national and international developments in the climate change space. Accordingly, Sibanye-Stillwater has identified low carbon tax incentives offered by the South African government in the form of rebates offered by the Section 12L of the Income Tax. The 12L Tax incentive provides an allowance for businesses to implement energy efficiency savings. The savings allow for tax deduction of 95c/kwh saved on energy consumption. Sibanye identified this tax incentive as a climate-related opportunity where feasible as tax rebates may assist Sibanye to research and develop further innovative energy efficiency and greenhouse gas mitigation projects, which can have operational and additional revenue benefits. This influenced our strategy in that a stronger long-term drive towards increasing energy efficiency, which in turn lowers our operational emissions, is incorporated into our operating strategy. The most substantial strategic decision made that has been influenced by this climate-related opportunity is that our operations continue to deploy an array of energy efficiency projects through our energy management strategy. The strategy focuses on holistic energy efficiency using digital applications, such as digital twinning, the application of new technologies, as well as on-going improvements in the use of compressed air, pumping, ventilation and refrigeration and the optimisation of our footprint.

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 Direct costs Capital allocation Acquisitions and divestments Access to capital Liabilities	<p>Revenues Case study & related time horizon: The development & ongoing management of market shifts is an example of how climate-related opportunities have influenced our financial planning. We remain informed about the latest & future market developments, & in turn anticipate changes in the demand of mining products. According to the World Bank report "The growing role of minerals & metals for a low carbon future", the development of the global wind industry could increase the demand for chromium. This future demand increase was included into our financial planning as the recovery of chromium could increase our revenues. A chrome spiral recovery plant currently exists at the Waterval UG2 concentrator to treat flotation tails. To improve chrome recovery, fine fraction chrome recovery technology trade-off studies were conducted in 2018. The project envisages the recovery of an additional 10,000 tonnes/month of chrome concentrate equivalent to 20% of current production. As a result, the beneficial tonnes of chrome concentrate is expected to increase by 120 000 tonnes/year. At a chrome concentrate price of US\$230/tonne & a Rand/Dollar exchange rate of R14.95, the cost would be R3438/tonne. The increased chrome concentrate could increase revenue by R3438 x 120 000 = R413m. The recovery of chromium is a long-term measure (5-10 year horizon). Direct costs The development & ongoing management of energy efficiency (EE) projects is an example of how climate-related opportunities have influenced our financial planning. Our South African operations purchase electricity from the utility provider Eskom, which generates electricity primarily from coal-fired power stations. An environmental levy of R0.035 is charged per kWh on this purchased electricity to supplement the governments' revenue recycling incentive schemes. This levy is an increased direct cost for the operations & was therefore integrated into our financial planning. The levy, which is included in the electricity tariff, will fall away in the second phase of the carbon tax from 2022 onwards, & electricity rates are going to change. This change could also lead to an increase in the electricity charges for Sibanye-Stillwater. As a result of the increase in direct costs to our Company, we implemented EE projects at our Sibanye Rustenburg Platinum Mine (SRPM), resulting in section 12L energy efficiency tax certificates which were obtained in 2019. The Income Tax Act makes provision for businesses to claim a deduction against taxable income on EE savings of R0.95 per kWh saved. These tax certificates make it possible for deductions to be made from taxable income. The tax certificates amounted to R33.4m for SRPM. Each of the operations at Sibanye-Stillwater is taxed at a percentage calculated by either a gold mining formula, or in the case of PGM Operations, a fixed rate of 28% as determined from time to time. Income Tax benefit amounted to 28% of R33.4m & which is R9.4m. The cost for the monitoring & verification amounted to R400 000. EE measures at Sibanye-Stillwater have a long-term focus (5-10 year horizon). Capital allocation Case study & related time horizon: Capital allocation is an example of how climate-related opportunities have influenced our financial planning. According to the World Bank report, "The growing role of minerals & metals for a low carbon future", the development of the global wind industry presents a climate-related opportunity which could increase the demand for chromium. In response to that, Sibanye-Stillwater conducted fine fraction chrome recovery technology trade-off studies to identify means to allocate capital to improve chrome recovery in 2018. A chrome spiral recovery plant currently exists at the Waterval UG2 concentrator to treat flotation tails. The trade-off studies concluded that a reflux classifier was the preferred technology solution. The chrome optimisation project introduces two modular reflux classifiers to increase the recovery of chrome in the -75 micron tailings fraction. The project envisages the recovery of an additional 10,000 tonnes/month of chrome concentrate equivalent to 20% of current production. A contracting company, Linhleko Projects, will recover the chromite concentrate in terms of an outcome-based business model & the South African PGM operations will initially account for the contract as a finance lease that will be reflected as a right of use asset & finance lease liability (considered to be debt) of approximately R230m. Sibanye-Stillwater will not directly fund the project but will pay for the plant in terms of an outcome-based business model that is related to actual chrome production. The project is expected to have a long term (5-10 year) focus. Access to capital; liabilities Case study & related time horizon: The access to Revolving Credit Facility (RCF) is an example of how climate-related risks & opportunities have influenced our financial planning. Climate change impacts are progressing & impacting our operations either through physical impacts or transitional ones (e.g. market shifts & investor demands). There is in turn a continuous need to identify business risks & opportunities to remain operational, competitive & market relevant. Our financial planning therefore needs to ensure that Sibanye-Stillwater has access to credit at all times, e.g., in the event that major investments into infrastructure are required to realise climate-related opportunities and/or mitigate climate-related risks. To ensure access to capital, on 25 October 2019 the R6.0bn RCF was successfully refinanced with a R5.5bn RCF maturing on 10 November 2022. On 6 April 2018, Sibanye-Stillwater refinanced its USD Revolving Credit Facility. The new facility increased from US\$350 million to US\$600 million. This measure has short (0-5 year) & long (5-10 year) term horizons. Acquisitions & divestments Case study & related time horizon: Strategic acquisitions are examples of how climate-related opportunities have influenced our financial planning. The growth in the uptake of hydrogen & fuel cell technologies used to reduce carbon emissions & pollutants requires PGMs. This presented Sibanye-Stillwater with the climate-related opportunity, with a long-term focus (5-10 years), to grow our PGM operations. Our financial planning always considers acquisitions to realise opportunities like this. As a result, Lonmin Plc was acquired in June 2019, which consists of PGM operations in northern South Africa, smelting & refining operations in Gauteng. This makes us largest primary producer of platinum & rhodium, & the second largest producer of palladium, which enabled us to strategically position ourselves in the PGM market & in the "mine-to-market" space. The Lonmin operations are being consolidated into the Sibanye-Stillwater business & will be reported on in detail in the next CDP response. The time horizon for this measure is the long-term (5-10 years).</p>

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

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2010

Covered emissions in base year (metric tons CO2e)

7808692

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

100

Target year

2025

Targeted reduction from base year (%)

27

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

5700345.16

Covered emissions in reporting year (metric tons CO2e)

5743693

% of target achieved [auto-calculated]

97.9439891398514

Target status in reporting year

Underway

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)

This target was set in 2018. This target is made up of all Sibanye-Stillwater operations at the time. The bulk of the emissions is from the operations in South Africa, comprising more than 95%. The SA national emissions trajectory, the sectoral decarbonisation approach methodology and the CDP criteria of 2.1% reduction have been considered in setting this target. This target has been sent to the Science-based targets initiative for review and was approved on 26 March 2019. The SA operations scope 2 emissions is made up of emissions from purchased electricity from Eskom and purchased electricity from Aggreko who own and operate the electricity generators at Beatrix Mine. These generators use methane extracted from the mine as its fuel source. As Beatrix exercises a choice in its electricity purchases, the market-based method is applicable. All the other SA operations electricity is location-based. The US operations electricity is also purchased from more than one source (market-based). According to the GHG protocol, if a multi-regional company has any operations within the corporate inventory where the market-based method applies, then a market-based method total shall be calculated for the entire corporate inventory to ensure completeness and consistency. For any individual operations in the corporate inventory where market based method data on the hierarchy is not applicable or available, data from the location-based method should be used to represent the emissions from the facility. For these operations, the calculated scope 2 according to the market-based method will be identical to the location-based. Sibanye acquired the Marikana operations (ex Lonmin) in the reporting year (June 2019). A restatement of the base year and the target is still to be undertaken to include these operations. When comparing the target to the base year and excluding the Marikana Lonmin operations, Sibanye has achieved a 26.4% reduction in their Scope 1 and 2 emissions.

C4.2

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

No other climate-related targets

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	72	0
To be implemented*	18	14622
Implementation commenced*	16	33416
Implemented*	16	121863
Not to be implemented	1	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

2548

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

3413667

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

3413667

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

Sibanye has implemented a compressor control optimisation initiative resulting in 2 548 tCO2e savings in emissions. This is an ongoing initiative

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

322

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

431933

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

431933

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

Sibanye has implemented a compressor optimisation project resulting in 322 tCO2e savings. This is an ongoing initiative

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

1695

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

2271133

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

2271133

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

Sibanye has implemented a compressed air supply optimisation project resulting in 1 695 tCO2e savings. This is an ongoing initiative

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

811

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1086800

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

1086800

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

Sibanye has implemented a compressed air valve control project resulting in 811 tCO2e savings. This is an ongoing initiative.

Initiative category & Initiative type

Energy efficiency in production processes	Other, please specify (Ventilation fans)
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Estimated annual CO2e savings (metric tonnes CO2e)

9861

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

13211099

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

8298443

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented a ventilation fans related initiative at their K4 shaft which resulted in 9 861 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

9234

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

12371100

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

6703742

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project at their Karee compressors resulting in 9 234tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

5284

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

7078858

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

3904345

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project at their East compressors resulting in 5284 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

1985

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

2659999

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

1779997

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project at their Smelter blowers resulting in 1 985 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

2050

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

2745926

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

1283261

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project at their Smelter blowers resulting in 2 050 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

13095

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

13356832

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

2253897

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project in their ventilation network and surface fans resulting in 13 095 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

21282

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

21707352

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

3663005

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to optimize their pumping system and water consumption resulting in 21 282 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

5913

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

6031421

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

1017771

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to optimize their compressor system and consumption resulting in 5 913 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

1618

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1650170

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

278458

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to optimize their refrigeration systems resulting in 1 618 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

6833

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

6969453

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

1176060

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to optimize their process plant resulting in 6 833 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

34952

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

35651448

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

0

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to reduce their electrical distribution footprint resulting in 34 952 tCO2e savings. The lifetime of this initiative is the life of mine.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

4380

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

4467600

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

753885

Payback period

<1 year

Estimated lifetime of the initiative

11-15 years

Comment

Sibanye has implemented an energy efficiency project to reduce their electrical distribution footprint resulting in 4 380 tCO2e savings. The lifetime of this initiative is the life of mine.

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Some of Sibanye-Stillwater operations undertake prescribed activities that require Atmospheric Emissions Licences (AELs). These operations have AELs or provisional AELs in place. A general condition of the Atmospheric Emissions Licences is that the licence holder must investigate cleaner production processes and practices that are relevant to its operations with a view towards reducing energy consumption and atmospheric emissions related to the processes taking place on site.
Dedicated budget for energy efficiency	The Sibanye-Stillwater Carbon Management Policy Statement requires carbon management considerations to be included into the decision making processes of the company's' various functions. To this effect, Sibanye-Stillwater is committed to designing and implementing strategies that seek to improve our energy efficiency and pursue any potential opportunities where feasible. For example, the SA Region Engineering Department has dedicated budgets for energy efficiency projects which reduce our scope 2 emissions. Other departments such as the Safe Technology Department have dedicated budgets for new technology and research and development which also seek to achieve energy efficiency. Our Transport Department has dedicated budgets for fleet maintenance and replacements which enables optimised performance (fuel consumption – thereby minimising emissions).
Dedicated budget for other emissions reduction activities	The Sibanye-Stillwater Carbon Management Policy Statement requires carbon management considerations to be included into the decision making processes of the company's' various functions. To this effect, the company is committed to designing and implementing strategies that seek to reduce the carbon emissions of the company and to pursue any potential opportunities and utilise carbon friendly technologies where feasible. To achieve this, emission reduction activities are integrated within the various disciplines. For example the Safe Technology Department also has dedicated budgets for new technology and research and development targeting the reduction of diesel particulate matter through alternative low carbon fuel use (switch from diesel to highly efficient battery-driven units). New Technology can also realise reductions in carbon emissions, as well as cost savings and co-benefits from the processes. The Beatrix operation has a Clean Development Mechanism project in place for the destruction of mine methane. Electricity is generated from the methane at the Beatrix site, which reduces scope 1 emissions and further reduces scope 2 emissions as it displaces the consumption of electricity from the national grid, which is primarily generated from coal.
Employee engagement	The Sibanye-Stillwater Carbon Management Policy Statement requires carbon management considerations to be included into the decision making processes of the company's' various functions. Emission reduction activities are integrated within the various disciplines. Employee engagements take place with personnel from disciplines such as Energy Division, Procurement and Social. Procurement liaises directly with supply chain and evaluates supplier products and costs. They also manage the supplier portal where related information is collated. This process also raises awareness amongst Contractors and Suppliers and creates a climate for healthy competition while promoting emissions reductions of Supplier products and services. Our Energy Management Team is leading investigations into amongst others, renewable and alternative energy utilisation. Engagement also takes place with our Social Team to incorporate carbon reduction aspects in social projects where co-benefits can be realised from those processes. Individual employee behaviour is shaped through awareness and induction programmes.
Financial optimization calculations	The Sibanye-Stillwater Carbon Management Policy Statement requires carbon management considerations to be included into the decision making processes of the company's' various functions. Emission reduction activities are integrated within the various disciplines. Projects are motivated as business cases using financial optimisation calculations to demonstrate return on investment such as use of alternative fuel types (e.g. electricity generation from mine methane gas).
Internal price on carbon	Sibanye-Stillwater GHG inventory is dominated by electricity purchased from Eskom which contributes 74% of total Scope 1 and 2 emissions. At the SA operations, an environmental levy is applied on purchased electricity from Eskom. This environmental levy is used as a proxy for carbon pricing and is applied to Sibanye-Stillwater SA operations Scope 2 emissions. The environmental levy of R 0.035/kWh amounted to an equivalent cost of R 179 359 390 for 2019, based on 4 779 612 MWh of electricity purchased (4 779 612 MWh x R35/MWh). The CO2e emissions from purchased electricity, using a grid emission factor of 1.04 is 4 972 750 tonnes CO2e. The equivalent Rand value of R36 per tonne CO2e (R 179 359 390/ 4 972 750 tonnes CO2e) was a cost to the company during 2019. This equivalent Rand value of R36 per tonne CO2e has been used internally as the price of carbon to assess and evaluate viability of projects such as the concentrated solar power project for elution circuit heating at the Driefontein No. 1 Gold Plant and the planned 150 MW solar photo voltaic project. A price of R 36 per tonne CO2e is used in instances like these to show a cost saving should alternative technology be utilised to offset fossil fuel energy.

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?

No

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 2010

Base year end

December 31 2010

Base year emissions (metric tons CO₂e)

1086490

Comment

Sibanye-Stillwater acquired the Lonmin Marikana operations in FY19 however the baseline restatement has not yet been conducted. As such the base year emissions reported here do not include the Lonmin Marikana operations. Sibanye-Stillwater has elected to retain the base year at 2010 to facilitate the ease of comparison of the company emissions reductions over time to that required globally as determined by science. The IPCC AR5 emissions scenario RCP 2.6 indicates that emissions in 2050 need to decrease from 49 to 72% relative to 2010 emissions. This scenario is used to inform our target-setting and to ensure that we do our fair share in contributing to the global solution.

Scope 2 (location-based)

Base year start

January 1 2010

Base year end

December 31 2010

Base year emissions (metric tons CO₂e)

5002404

Comment

Sibanye-Stillwater acquired the Lonmin Marikana operations in FY19 however the baseline restatement has not yet been conducted. As such the base year emissions reported here do not include the Lonmin Marikana operations. At the SA operations, Sibanye-Stillwater scope 2 emissions are from a location-based source (utility provider, Eskom). Sibanye-Stillwater also acquires electricity generated from mine methane at the Beatrix operation in the Free State province. The generation of electricity is done by a third-party, Aggreko. The methane used for electricity generation is piped from underground and forms part of the Beatrix methane project. The Beatrix methane project is a registered Clean Development Mechanism (CDM) project that entails the extraction and destruction of methane by electricity generation and flaring. The emissions are accounted for in our scope 1 emissions inventory. The electricity purchased at the US operations, located in Montana are from the grid and the market-based emissions.

Scope 2 (market-based)

Base year start

January 1 2010

Base year end

December 31 2010

Base year emissions (metric tons CO₂e)

95084

Comment

Sibanye-Stillwater acquired the Lonmin Marikana operations in FY19 however the baseline restatement has not yet been conducted. As such the base year emissions reported here do not include the Lonmin Marikana operations. Electricity procurement at the US PGM operations follows two distinct schemes due to nuances in Montana's electricity regulation laws. The Stillwater mine and Columbus Metallurgical Complex can purchase power on the wholesale market as a "choice" customer. The East Boulder mine is required to procure power from a local rural electricity co-operative. In July 2018, the Stillwater mine and Columbus Metallurgical Complex signed a new contract to purchase power from a hydro-electric dam in north central Montana owned and operated by a local Native American tribe. This contract replaced another that sourced power from thermal resources.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

Other, please specify (Technical guidelines for monitoring, reporting and verification of greenhouse gas emissions by industry; A companion to the South African national greenhouse gas reporting regulations: Version No. TG-2016.1 April 2017)

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

In accordance with the WRI greenhouse gas protocol, preference has been given to sourcing of appropriate emission factors. In terms of the hierarchy, preference has been given to local, national and then internationally recognised emission factors. To this effect, the Technical guidelines for monitoring, reporting and verification of greenhouse gas emissions by industry; A companion to the South African national greenhouse gas reporting regulations: Version No. TG-2016.1 April 2017 was used for South African operations.

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)

688640

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

Sibanye-Stillwater scope 1 emissions are determined in accordance with the operational control consolidation approach.

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

At the SA operations, we acquire electricity from a single source, Eskom with the exception of the Beatrix operation where a portion of the electricity is sourced from Aggreko in addition to Eskom. Sibanye-Stillwater extracts methane from its Beatrix mine. Aggreko uses this methane to produce electricity on site. Sibanye-Stillwater has an agreement with Aggreko to acquire the electricity generated by them and use it on the Beatrix site. In the 2019 reporting year Sibanye acquired 3 747 MWh of electricity from the methane to electricity project. This electricity was generated and sourced within the 2019 financial year period and is based in the same geographical location and grid boundary as which Sibanye-Stillwater (Beatrix) operates in. There is no double counting by using this electricity and it is only used by Sibanye-Stillwater (Beatrix operation). The Beatrix methane project entails extraction of methane from underground. The methane is used for electricity generation as the first preference. A flare is also positioned to destruct any methane that may not be utilised by the generators to minimise emissions. The total emissions are monitored as part of a CDM project. A 30:70% split has been taken between the electricity generation and flaring. The flaring methane is accounted by Sibanye as its scope 1 emissions. The emissions from the electricity generation is accounted by Sibanye as its scope 2 emissions. Electricity procurement at the US PGM operations follows two distinct schemes due to nuances in Montana's electricity regulation laws. The Stillwater mine and Columbus Metallurgical Complex can purchase power on the wholesale market as a "choice" customer. The East Boulder mine is required to procure power from a local rural electricity co-operative. In July 2018, the Stillwater mine and Columbus Metallurgical Complex signed a new contract to purchase power from a source in north central Montana owned and operated by a local Native American tribe. This contract replaced another that sourced power from thermal resources.

C6.3

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

Reporting year

Scope 2, location-based

6719352

Scope 2, market-based (if applicable)

6725197

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

At the SA operations, we acquire electricity from a single source, Eskom with the exception of the Beatrix operation where a portion of the electricity is sourced from Aggreko in addition to Eskom. Sibanye-Stillwater extracts methane from its Beatrix operations. Another company, Aggreko uses this methane to produce electricity on site. Sibanye-Stillwater has an agreement with Aggreko to acquire the electricity generated by them and use it on the Beatrix site. In the 2019 reporting year Sibanye acquired 3 747 MWh of electricity from the methane to electricity project. This electricity was generated and sourced within the 2019 financial year period and is based in the same geographical location and grid boundary as which Sibanye-Stillwater (Beatrix) operates in. There is no double counting by using this electricity and it is only used by Sibanye-Stillwater (Beatrix operation). The Beatrix methane project entails extraction of methane from underground. The methane is used for electricity generation as the first preference. A flare is also positioned to destruct any methane that may not be utilised by the generators to minimise emissions. The total emissions are monitored as part of a CDM project. Electricity generation accounts for approximately 30% of the project emissions. The flaring methane is accounted by Sibanye as its scope 1 emissions. The emissions from the electricity generation is accounted by Sibanye as its scope 2 emissions. Electricity procurement at the US PGM operations follows two distinct schemes due to nuances in Montana's electricity regulation laws. The Stillwater mine and Columbus Metallurgical Complex can purchase power on the wholesale market as a "choice" customer. The East Boulder mine is required to procure power from a local rural electricity co-operative. In July 2018, the Stillwater mine and Columbus Metallurgical Complex signed a new contract to purchase power from a source in north central Montana owned and operated by a local Native American tribe. This contract replaced another that sourced power from thermal resources.

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?

No

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

146074

Emissions calculation methodology

Includes timber, HCl, lime, cement, caustic soda, water, oil, grease and cyanide. Information on quantities purchased is obtained from Supplier invoices. This information is managed by Sibanye personnel (data owners) managing the receipt of the products. The data owners are responsible for ensuring the integrity of the information. GHG emissions quantification is influenced by the quality of the information on purchased goods and services as well as the emission factors used. Care is taken to obtain the most appropriate recognized emission factors, with preference to country-specific emission factors and where necessary, An external independent service provider reviews and updates the emission factors. Internationally recognized emission factors are sourced and utilised. The calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol –Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators including CO₂e scope 3 emissions takes place. In determining the CO₂e emissions, an assumption has been made that the goods purchased are the same as the consumption and thus the quantities of purchased goods and services were multiplied by the appropriate emission factors. The emission factors used are as follows: Timber 0.0586tCO₂e/t source - Timber Supplier, Bedrock; Hydrochloric acid 0.75 tCO₂e/t source - International Sustainability & Carbon Certification, 205 GHG Emissions Calculation Methodology and GHG Audit Report (v2.3EU); Lime 0.78 tCO₂e/t source - UEA inventory of carbon and energy; Cement 0.95 tCO₂e/t source - UEA inventory of carbon and energy; Caustic soda 1.42 tCO₂e/t source - University of Manchester Ccalc tool; SA operations Purchased water 1.4 tCO₂e/ML source Rand Water 2017 Annual Report calculation; US operations purchased water 0.2865 tCO₂e source – calculated average emission intensity x grid emission factor x conversion to ML; oil 0.0003tCO₂e/L source - Defra 2019; grease 0.00038tCO₂e/kg source - Defra 2019 and Cyanide 10.96 tCO₂e/t source -Unregistered CDM project document - Increase in hydrogen cyanide production by the Andussow process.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO₂e

Capital goods

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

1660

Emissions calculation methodology

This category includes the capital goods such as equipment and vehicles purchased. Information on quantities purchased is obtained from Supplier invoices and is managed by relevant data owners within the respective disciplines. These data owners are responsible for ensuring the integrity of the information. Greenhouse gas emissions quantification is influenced by two factors; the quality of the information as well as the emission factors used. Care is taken to obtain the most appropriate recognized emission factors, with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. The calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol –Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and the CO₂e scope 3 emissions are conducted. In this category, no assumptions were made or allocation methods applied. The steel emission factor of 1.95 tCO₂e/tonne - source Inventory of Carbon and Energy 2011 was applied to the respective weights of the individual capital goods purchased (equipment and vehicles). The weights were sourced from the equipment manufacturers' specifications.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO₂e

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

208839

Emissions calculation methodology

Transmission and distribution (t&d) losses as well as contractor fuel are included. Electricity purchased is obtained from Supplier invoices and is multiplied with the t&d emission factor. Contractor fuel is also obtained from Supplier invoices and multiplied with the diesel emission factor for combustion of diesel. This information is managed by relevant personnel from Sibanye-Stillwater (data owners) managing the receipt of the products within the respective disciplines. These data owners are responsible for ensuring the integrity of the information. Greenhouse gas emissions quantification is influenced by two factors; the quality of the information as well as the emission factors used. Care is taken to obtain the most appropriate recognized emission factors, with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. The calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol –Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO₂e scope 3 emissions are conducted. In this category, no assumptions were made or allocation methods applied. The emission factors applied are as follows: Diesel 0.6262 tCO₂e/kL source - DEFRA 2019; Petrol 0.5979 tCO₂e/kL source - DEFRA 2019; LPG 0.0004 tCO₂e/kg source - DEFRA 2019; Coal 0.3696 tCO₂e/t source - DEFRA 2019; Blasting agents 2.63 tCO₂e/t source - Ccalc Tool Manual; Acetylene 0.003 tCO₂e/kg source - Greentech Methodology – emissions associated with calcium carbide production, then converted to acetylene using molecular weights and chemical equation and Electricity t&d for SA operations 0.02 tCO₂e/MWh source – 2019 Eskom report; Electricity t&d for US operations 0.0253 tCO₂e/MWh source – carbonfootprint.com; Paraffin 0.5282 tCO₂e/kL source DEFRA 2019; Propane 0.0004 tCO₂e/kg source DEFRA 2019; Natural gas 0.0003 tCO₂e/m³ source DEFRA 2019; Dyed diesel 0.6262 tCO₂e/kL source DEFRA 2019; Biodiesel 0.3667 tCO₂e/kL source DEFRA 2019

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO₂e

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

12912

Emissions calculation methodology

The upstream transportation and distribution category includes transportation of goods and services, as well as fuel and energy related products. Information on upstream transportation and distribution is obtained from relevant personnel from affected disciplines within Sibanye-Stillwater (data owners) and the respective service providers. Greenhouse gas emissions quantification is influenced by two factors; the quality of the information management as well as the emission factors used. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. The calculation of the carbon emissions inventory is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO₂e scope 3 emissions are conducted (please refer to the attached verification statement for procedures performed). Primary and secondary data is multiplied by emission factors. Assumptions made for transportation distances are based on personnel interviews and practical in-situ experience. It is assumed that delivery is done by Suppliers making use of dedicated trips to the Operations (accounting for full distance travelled). The emission factor of 0.0002 tCO₂e/tonne.km for road freight average rigid truck was sourced from DEFRA 2019 and used.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO₂e

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

10900

Emissions calculation methodology

Waste generated at the operations is obtained from the relevant data owners and multiplied with the appropriate waste emission factors. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO₂e scope 3 emissions are conducted (please refer to the attached verification statement for procedures performed). In this specific category, no assumptions were made or allocation methods applied. Emission factors applied are 0.5865 tCO₂e/t for waste to landfill, sourced from DEFRA 2019; 0.0007 tCO₂e/t for wastewater treated, sourced from DEFRA 2019 and 0.0998 tCO₂e/t hazardous waste, sourced from DEFRA 2019

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO₂e

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

2542

Emissions calculation methodology

This category covers air travel, claimed business km travelled and car hire. Car hire and air travel is obtained from the travel agents that Sibanye-Stillwater utilises, while the claimed km is obtained from the internal SAP system or data providers. This data is then processed utilizing the relevant emission factors. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and CO2e scope 3 emissions are conducted. In this specific category, no assumptions were made or allocation methods applied. Emission factors for this category include the following: Average car 0.0002 tCO2e per km source - DEFRA 2019; Short haul flights (less than 3700km) 0.00008 tCO2e per km per person source - DERFA 2019; Long haul flights (greater than 3700 km) 0.0001 tCO2-e per km per person source - DEFRA 2019.

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

50

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

64145

Emissions calculation methodology

This category relates to the emissions associated with employees travelling from residences to work and back. Activity data is obtained from Human Resources personnel and from personal interviews on the number of employees, places of residence, modes of transport used and distances travelled. This data is then processed utilizing the relevant emission factors. An external independent service provider reviews and updates the emission factors. The methodology deployed is to determine the total number of people commuting and apply the appropriate emission factor. The number of employees and distances commuted varies from operation to operation and in order to minimize uncertainty, the following site-specific assumptions were used: Driefontein 10% travel with own vehicle (130km return), 70% travel with public transport (12km return) and 20% reside within walking distance to work; Kloof, 10% travel with own vehicle (120km return), 40% travel with public transport (12km return) and 50% reside within walking distance to work; Beatrix, 10% travel with own vehicle (60km return), 40% travel with public transport (10km return) and 50% reside within walking distance to work; Cooke 1, 2, 3, 10% travel with own vehicle (100km return) and 90% reside within walking distance to work; Cooke 4, 10% travel with own vehicle and 90% travel with public transport (taxi) (50 km return); Burnstone 40% travel with own vehicle (80km return) and 60% travel with public transport (30km return); SA platinum operations 75% travel with own vehicle (150km return) and 25% travel with public transport (50km return), Stillwater 59% travel by company bus system (174km return) and 41% travel with own vehicle (161km return), East Boulder 54% travel by company bus system (231km return) and 46% travel with own vehicle (161km return) and Metallurgical complex 52% travel by company bus system (77km return) and 48% travel with own vehicle (161km return). An emission factor of 0.0002tCO2e per km sourced from DEFRA 2019 was used for people travelling to work by car. An emission factor of 0.00002 tCO2e per passenger.km was applied for those travelling to work in taxis, sourced from Toyota Quantum technical specifications. An emission factor of 0.003 tCO2e per km sourced from DEFRA 2019 was used for those travelling by bus.

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

25

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Upstream leased assets relate to assets that may be leased by the Company that are not included in Scope 1 and 2 emissions. The Company did not have any upstream leased assets in the reporting year.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

29835

Emissions calculation methodology

Downstream transportation and distribution relates to emissions associated with the transportation and distribution of sold products in vehicles not owned or controlled by the Company. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and CO2e scope 3 emissions are conducted. The transportation of gold by helicopter is accounted for under this category. The activity data is the number of hours taken to transport the gold from the operations to Rand Refinery. The transport of platinum group metals is also accounted for. The following factors have been used: 190 litres per hour of aviation fuel – source Coldstream Helicopters and 0.00239 tonnes CO2e per litre of aviation turbine fuel – source SA Technical Guidelines. For road transport average rigid truck 0.0002 tonnes CO2e per kilometer source DEFRA 2019 was used. No assumptions were made or allocation methods applied.

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

50

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

577374

Emissions calculation methodology

This category covers the emissions associated with the refining and smelting of gold and platinum group metals produced by Sibanye-Stillwater. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO2e scope 3 emissions are conducted. The activity data is the quantity of gold and platinum group metals produced. The emissions are calculated utilizing the following factors: 0.416 tCO2e per oz for PGMS taken from the SA Draft regulations for carbon tax performance allowances, 0.012tCO2e per oz for PGMs in the USA calculated from the Marikana operations, 0.0022 tCO2e per oz for Gold – Rand Refinery 2011 IAR.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

The emissions associated with the use of sold gold and platinum group metal products are estimated to be insignificant. Only processing and end of life treatment of sold products are expected to have a significant amount of emissions. A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

192651

Emissions calculation methodology

This category relates to the end-of-life treatment of gold and platinum group metals produced by Sibanye-Stillwater. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO2e scope 3 emissions are conducted. The activity data is the quantity of gold and platinum group metals produced. The emissions factor to smelt one ounce of gold has been determined to be 0.0000018 tonnes CO2e based on the following: 31.1 g/troy ounce and 67 MJ smelting energy required per tonne of gold – source Engineering Toolbox. The emission factor to smelt one tonne of PGM has been determined to be 0.1 tCO2e/tonne based on a 103 MJ smelting energy required per tonne of PGM – source Engineering Toolbox.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Downstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

27933

Emissions calculation methodology

This category includes emissions from assets that are owned by the Company (acting as lessor) and leased to other entities that are not already included in scope 1 or scope 2. This category is applicable to lessors (i.e. companies that receive payments from lessees). Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO2e scope 3 emissions are conducted. The emissions from leased assets are applicable to the SA operations and include those from consumption of electricity. The following emission factors were applied: Electricity consumption grid emission factor 1.04 tCO2e/MWh source calculated using data from Eskom 2019 Annual Report; Electricity grid transmission and distribution losses 0.02 tCO2e/MWh source Eskom 2019 Annual Report. No assumptions were made or allocation methods applied.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Sibanye-Stillwater does not have any franchises; this category is therefore not applicable to the company.

Investments

Evaluation status

Relevant, calculated

Metric tonnes CO2e

320811

Emissions calculation methodology

This category relates to emissions associated with entities the company has investments in. Calculation of the carbon emissions was carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. Care is taken to obtain the most appropriate recognized emission factors with preference to country-specific emission factors and where necessary, internationally recognized emission factors are sourced and utilised. An external independent service provider reviews and updates the emission factors. Calculation of the carbon emissions is carried out in accordance with the criteria of the ISO-14064 part 1 Standard and GHG Protocol – Corporate Value Chain (scope 3) Accounting and Reporting Standard. An Internal Audit function carries out ad hoc verifications on the carbon emissions determination (emissions inventory). Furthermore, limited assurance by an independent third party on selected sustainability indicators and total CO2e scope 3 emissions are conducted. Sibanye-Stillwater has investments in Living Gold, Rand Refinery, Mimosa and DRDGOLD. The emissions are proportionally accounted for as follows: 50% of Living Gold, 33.1% of Rand Refinery, 50% of Mimosa and 38.05% of DRDGOLD. No assumptions were made or allocation methods applied.

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

100

Please explain

A relevancy level of 1% of Scope 3 emissions has been set. This equates to 15 966 tCO2e

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

There are no other upstream emissions applicable

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

There are no other downstream emissions applicable

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

0.000079

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

5791598

Metric denominator

unit total revenue

Metric denominator: Unit total

7300000000

Scope 2 figure used

Market-based

% change from previous year

28

Direction of change

Decreased

Reason for change

Revenue increased by 44% to R73,000 million in 2019 from R50,656 million in 2018. The solid production results from both the US and SA PGM operations and higher PGM basket prices, offset lower revenue from the SA gold operations, due to the operational disruptions and a flat rand gold price year-on-year. Note: The total scope 1 and 2 market-based emissions have been used in the calculation. The location based emissions have been used as a proxy for market based as per the WRI protocol guidance. Group Scope 1 and 2 carbon emissions increased by 2% from 5 667 890 tCO2e in 2018 to 5 791 598 tCO2e in 2019 as a result of the acquisition of the Lonmin Marikana operations.

Intensity figure

0.12

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

5791598

Metric denominator

metric ton of ore processed

Metric denominator: Unit total

47578419

Scope 2 figure used

Market-based

% change from previous year

13

Direction of change

Decreased

Reason for change

Total tonnes ore processed is used in this calculation (i.e. 100% of the Sibanye-Stillwater facilities under operational control. Tonnes increased by 21% to 47 578 419 in 2019 from 39 180 321 in 2018, attributable in part to the acquisition of the Marikana operations. Note: The total scope 1 and 2 market-based emissions have been used in the calculation. The location based emissions have been used as a proxy for market based emissions as per the WRI protocol guidance. Group Scope 1 and 2 carbon emissions increased by 2% from 5 667 890 tCO2e in 2018 to 5 791 598 tCO2e in 2019 as a result of the acquisition of the Lonmin Marikana operations.

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	240185	IPCC Third Assessment Report (TAR - 100 year)
CH4	385747	IPCC Third Assessment Report (TAR - 100 year)
N2O	9246	IPCC Third Assessment Report (TAR - 100 year)
HFCs	62400	IPCC Third Assessment Report (TAR - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
South Africa	634496
United States of America	54144

C7.3

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

By business division

By facility

By activity

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
SA Gold operations	470313
SA PGM operations	164184
US PGM operations	54143

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Beatrix	417459	-28.258209	26.784375
Burnstone	177	-26.651626	28.671646
Cooke 1,2,3	295	-26.217323	27.726253
Cooke 4	4	-26.35542	27.711957
Driefontein	25806	-26.387645	27.49445
Kloof	26378	-26.390355	26.597354
Kroondal	25946	-25.72449	27.30428
Marikana	72489	-25.726334	27.431385
Rustenburg Platinum Mines	23732	-25.679776	27.30501
Stillwater	37345	45.389303	-109.874989
East Boulder	9532	45.504744	-110.086756
Metallurgical Complex	7266	45.631431	-109.234889
Central Services	194	-26.354274	27.608722
Limpopo	22	-24.350563	29.44769
PMR	41995	-26.26585	28.388236

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Gold production	470313
PGMs production	218327

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

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

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	688446	<Not Applicable>	
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
South Africa	6528335	6528335	6250891	3747
United States of America	191017	196862	345067	125

C7.6

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

- By business division
- By facility
- By activity

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)
SA gold operations	3543935	3543935
SA PGM operations	1428815	1428815
US PGM operations	191017	196862

C7.6b

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Beatrix	509952	509952
Burnstone	19132	19132
Cooke 1,2,3	173698	173698
Cooke 4	230848	230848
Driefontein	1180636	1180636
Kloof	1429670	1429670
Kroondal	315006	315006
Marikana	1468614	1468614
Rustenburg Platinum Mines	1106236	1106236
Stillwater	101385	104488
East Boulder	46166	47579
Metallurgical Complex	43466	44796
Central Services	0	0
Limpopo	68667	68667
PMR	18304	18304

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Gold production	3543935	3543935
PGM production	3175417	3181262

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	6719352	6725197	At the SA operations, we acquire electricity from a single source, Eskom with the exception of the Beatrix operation where a portion of the electricity is sourced from Aggreko in addition to Eskom. Sibanye-Stillwater extracts methane from its Beatrix operations. Aggreko uses this methane to produce electricity on site. Sibanye-Stillwater has an agreement with Aggreko to acquire the electricity generated by them and use it on the Beatrix site. In the 2019 reporting year Sibanye acquired 3 747 MWh of electricity from the methane to electricity project. This electricity was generated and sourced within the 2019 financial year period and is based in the same geographical location and grid boundary as which Sibanye-Stillwater (Beatrix) operates in. There is no double counting by using this electricity and it is only used by Sibanye-Stillwater (Beatrix operation). The Beatrix methane project entails extraction of methane from underground. The methane is used for electricity generation as the first preference. A flare is also positioned to destruct any methane that may not be utilised by the generators to minimise emissions. The total emissions are monitored as part of a CDM project. Electricity generations accounts for approximately 30% of the project emissions. The flaring methane is accounted by Sibanye as its scope 1 emissions. The emissions from the electricity generation is accounted by Sibanye as its scope 2 emissions.
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

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

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 (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption		<Not Applicable >		Not applicable
Other emissions reduction activities	121863	Decreased	2	Sibanye Stillwater has implemented various energy efficiency projects which resulted in a decrease of 121863 tCO2e. The emissions value was calculated as follows: Emission value = (Change in emissions/Previous year emissions)*100 Emissions value = (121863/5620412)*100=-2%
Divestment		<Not Applicable >		Not applicable
Acquisitions	1670090	Increased	30	Sibanye-Stillwater acquired the Lonmin Marikana operations in the reporting year. This resulted in an increase of 1 670 090 tCO2e in Scope 1 and 2 emissions. This equates to an increase of 30% which was calculated in accordance with the CDP guidance as follows Emissions value = Change in emissions/Previous year's emissions*100 Emissions value = (1 670 090/5 620 412)*100=30%
Mergers		<Not Applicable >		Not applicable
Change in output		<Not Applicable >		Not applicable
Change in methodology	336952	Increased	6	Gross Scope 1+2 emissions increased by 6%, due to change in methodology. The published grid emission factor for both South Africa and the USA changed in the reporting year and the new factor was used. The South African grid emission factor increased from 0.97tCO2e/MWh to 1.04tCO2e/MWh while the USA grid emission factor increased from 0.56tCO2e/MWh to 0.57tCO2e/MWh. The change in emissions was calculated by multiplying the electricity consumption by the difference in these factors for the respective countries. The change in emission factors resulted in a change of emissions of 336 852tCO2e. The percentage value shown in the emissions value was calculated in accordance with the CDP guidance as follows: Emissions value = (Change in emissions/previous year emissions)*100 Emissions value = (336 952/5 620 412)*100=6%
Change in boundary		<Not Applicable >		Not applicable
Change in physical operating conditions		<Not Applicable >		Not applicable
Unidentified		<Not Applicable >		Not applicable
Other		<Not Applicable >		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?

Market-based

C8. Energy

C8.1

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

More than 15% but less than or equal to 20%

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)	0	811871	811871
Consumption of purchased or acquired electricity	<Not Applicable>	3872	5976128	5980000
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	3872	6787999	6791871

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)	811871
Consumption of purchased or acquired electricity	<Not Applicable>	5980000
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0
Total energy consumption	<Not Applicable>	6791871

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)

Acetylene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

9197

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

9197

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

3.4

Unit

metric tons CO2e per metric ton

Emissions factor source

Calculated using a mass balance

Comment

Acetylene is used for metal cutting

Fuels (excluding feedstocks)

Aviation Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

75

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

75

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.003

Unit

metric tons CO2e per liter

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Aviation Gasoline is used for helicopter fuel in Sibanye Stillwater's helicopter

Fuels (excluding feedstocks)

Biodiesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6187

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

6187

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.0025

Unit

metric tons CO2e per liter

Emissions factor source

Direction Emissions from Stationary Combustion Sources - EPA

Comment

Biodiesel is used in mobile machinery as fuel

Fuels (excluding feedstocks)

Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

319919

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

319919

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

2.31

Unit

metric tons CO2e per metric ton

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Coal is used for comfort heating

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

242542

MWh fuel consumed for self-generation of electricity

1740

MWh fuel consumed for self-generation of heat

240802

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.0028

Unit

metric tons CO2e per liter

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Diesel is used in both standby generators and mobile machinery. The majority of diesel is used in mobile machinery as generators are only run when the electricity supply goes down.

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

13017

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

13017

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.003

Unit

metric tons CO2e per m3

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

LPG is used for heating purposes

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

48775

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

48775

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.00214

Unit

metric tons CO2e per m3

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Natural gas is used in stationary sources for heating buildings, firing the portal heaters, boilers & water heaters; firing the smelter rotary kilns (TBRCs) and used in the concentrate & matte dryers

Fuels (excluding feedstocks)

Petrol

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

9505

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

9505

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.0024

Unit

metric tons CO2e per liter

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Petrol is used in mobile machinery as fuel

Fuels (excluding feedstocks)

Propane Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

53663

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

53663

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.0029

Unit

metric tons CO2e per m3

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Propane is used in stationary sources for heating buildings, firing the portal heaters, boilers & water heaters; firing the smelter rotary kilns (TBRCs) and used in the concentrate & matte dryers

Fuels (excluding feedstocks)

Other, please specify (Paraffin)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1009

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

1009

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

2.71

Unit

metric tons CO2e per metric ton

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Paraffin is used in stationary combustion equipment

Fuels (excluding feedstocks)

Other, please specify (Dyed Diesel)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

95680

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

95680

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.0031

Unit

metric tons CO2e per liter

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Dyed Diesel is used in both stationary and mobile equipment.

Fuels (excluding feedstocks)

Jet Gasoline

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

833

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

833

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

2.91

Unit

metric tons CO2e per metric ton

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

Jet Gasoline (Jet Fuel A1) is used as helicopter fuel.

Fuels (excluding feedstocks)

Other, please specify (HFO)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

11469

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

11469

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

3.34

Unit

metric tons CO2e per metric ton

Emissions factor source

SA Technical Guidelines VNo. TG-2016.1

Comment

HFO is used in stationary combustion equipment

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	626	626	0	0
Heat	0	0	0	0
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	626	626
Heat	0	0
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

Power purchase agreement (PPA) with on-site/off-site generator owned by a third party with no grid transfers (direct line)

Low-carbon technology type

Other, please specify (Methane)

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

Africa

MWh consumed accounted for at a zero emission factor

3747

Comment

Sibanye-Stillwater extracts methane from its Beatrix operation and has in the past been flaring the methane. Another company is using this methane to produce electricity on site. Sibanye-Stillwater has an agreement with the external company to acquire the electricity generated from them and use it on site. In the reporting year Sibanye-Stillwater acquired 3 747 MWh of electricity from the methane to electricity project. There is no double counting by using this electricity and it is only used by Sibanye-Stillwater (Beatrix operation). This electricity was generated and sourced within the 2019 financial year period and is based in the same geographical location and grid boundary as which Sibanye-Stillwater (Beatrix) operates in. Electricity generation from methane is included here as electricity from a low carbon source. It is accounted for in section 6.3.

Sourcing method

Power purchase agreement (PPA) with a grid-connected generator without energy attribute certificates

Low-carbon technology type

Low-carbon energy mix

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

North America

MWh consumed accounted for at a zero emission factor

125

Comment

The US operations Metallurgical Complex obtains electricity through an agreement which provides a mix of renewable energy.

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

0.56

Metric numerator

MWh

Metric denominator (intensity metric only)

Tonnes processed

% change from previous year

2

Direction of change

Increased

Please explain

The energy intensity from direct fuel sources and purchased electricity per tonne processed in 2018 equals 0.55 MWh/tonne. The energy intensity from direct fuel sources and purchased electricity per tonne processed in 2019 equals 0.56 MWh/tonne. This results in a 2% increase $(0.56 - 0.55) / 0.55 * 100$ from the 2018 intensity.

C-MM9.3a

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

Output product

Gold

Capacity, metric tons

52.4

Production, metric tons

29.01

Production, copper-equivalent units (metric tons)

206479

Scope 1 emissions

470313

Scope 2 emissions

3543935

Scope 2 emissions approach

Market-based

Pricing methodology for copper-equivalent figure

The copper equivalent for gold production was determined by multiplying the tonnes of gold produced in 2019 (29.01 tonnes) by the average price of gold in 2019 (R648 662 000/tonne) divided by the average price of copper in 2019 (R111 904/tonne). The average Rand/US\$ exchange rate was taken as R14.5. The capacity (metric tons) was determined by the sum of the individual gold mines processing plants milling capacities multiplied by the average mineral reserve grades multiplied by the plant recovery percentages.

Comment

Output product

Platinum group metals

Capacity, metric tons

103.1

Production, metric tons

68.49

Production, copper-equivalent units (metric tons)

485015

Scope 1 emissions

218327

Scope 2 emissions

3181262

Scope 2 emissions approach

Market-based

Pricing methodology for copper-equivalent figure

The copper equivalent for platinum group metals production was determined by the sum of the 4E production (19 994oz) and 2E production (20 287oz) where 4E entails approximately 58% platinum (Pt), 32% palladium (Pd), 8% rhodium (Rh) and 2% gold (Au) and 2E entails approximately 78% palladium (Pd) and 22% platinum (Pt). The copper equivalent for 4E production was determined by multiplying the tonnes of 4E produced (50.01 tonnes) in 2019 by the average price of 4E in 2019 (19 994 R/oz) divided by the average price of copper in 2019 (R111 904/tonne). The copper equivalent for 2E production was determined by multiplying the tonnes of 2E produced in 2019 (18.5 tonnes) by the average price of 2E in 2019 (R20 287/oz) divided by the average price of copper in 2019 (R111 904/tonne). The average Rand/US\$ exchange rate was taken as R14.5. The capacity (metric tons) was determined by the sum of the individual platinum operations processing plants milling capacities multiplied by the average mineral reserve grades multiplied by the plant recovery percentages.

Comment

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-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	0%		Sibanye-Stillwater's partnership with BASF on the research and development of a tri-metallic catalyst (Pt, Pd, Rh) (platinum, palladium and rhodium) continued during 2019. This research is expected to provide greater versatility of applications of PGMs and have a positive impact on the platinum/palladium market balance. Due to market sensitivities we are not in a position to disclose the investment figure. The percentage of total R&D investment cannot be obtained as yet.
Green metals	Applied research and development	0%		During 2018, Sibanye-Stillwater has agreed to acquire SFA Oxford. SFA Oxford is an established analytical consulting company that is a globally recognised authority on PGMs and has, for several years, provided in-depth market intelligence on battery materials and precious metals for industrial, automotive, and smart city technologies. The acquisition cost compares favourably to the cost of setting up a similar analytical and research group internally but significantly leapfrogs the time required to build up the intellectual knowledge. The acquisition of SFA Oxford was completed in March 2019. Due to market sensitivities we are not in a position to disclose the investment figure. The percentage of total R&D investment cannot be obtained as yet.
Metal recycling	Small scale commercial deployment	0%		Sibanye Stillwater's Columbus Metallurgical Complex recycles 3E PGM's at its operations. The recycling process is less energy intensive than primary production. The recycled metals at the operation are Platinum, Palladium and Rhodium. A total of 853 130 ounces were recycled in the reporting year. This is in the implementation stage of the R&D process. The percentage of total R&D investment cannot be obtained as yet.

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	Third-party verification or assurance process in place

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

Assurance Statement FY19.pdf

Page/ section reference

Sibanye-Stillwater Integrated Annual Report 2019: Page: 257- 259/Section: Statement of assurance

Relevant standard

ISAE3000

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

Assurance Statement FY19.pdf

Page/ section reference

Sibanye-Stillwater Integrated Annual Report 2019: Page: 257- 259/Section: Statement of assurance

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-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

Assurance Statement FY19.pdf

Page/ section reference

Sibanye-Stillwater Integrated Annual Report 2019: Page: 257- 259/Section: Statement of assurance

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3 (upstream & downstream)

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

Assurance Statement FY19.pdf

Page/section reference

Sibanye-Stillwater Integrated Annual Report 2019: Page: 257- 259/Section: Statement of assurance

Relevant standard

ISAE3000

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
C8. Energy	Energy consumption	ISAE5000	As part of the verification of the greenhouse gas emissions. Limited assurance was provided for the electricity and diesel consumed at Sibanye Stillwater's operations. The verification was conducted in accordance with ISAE5000. The verification covered organization wide energy consumption and is conducted annually. Assurance Statement FY19.pdf

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.

South Africa carbon tax

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

4

Total cost of tax paid

3300000

Comment

The South African Carbon Tax was implemented on 1 June 2020. Taxable entities are therefore liable for payment of the seven remaining months of 2019: June – December 2019. Payment for the 2019 tax year is only due to the South African National Revenue Services in October 2020. The value of R3.3 million is the anticipated cost calculated for seven-month period, which has been calculated using the published carbon tax calculation formula. The basic rate is R120 per tonne of CO₂e.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The South African government has introduced a carbon tax system effective from 01 June 2019. Our strategy is to proactively transition to a low carbon economy. Sibanye-Stillwater has a carbon management policy statement endorsed by the CEO which states "Sibanye-Stillwater recognizes the importance of proactively managing its carbon footprint in the local and global context. Considering our vision of superior value creation for all stakeholders through mining our multi-commodity resources in a safe and healthy environment, Sibanye-Stillwater is committed to contributing to a global solution through the deployment of responsible strategies and actions."

Sibanye-Stillwater is committed to achieving its Carbon Management vision through:

- designing and implementing strategies that seek to reduce the carbon footprint of the Company, improve our energy efficiency, pursue potential opportunities and utilise carbon friendly technologies where feasible
- determining the risks that climate change may present to the company and assigning appropriate actions to mitigate such risks
- accurately determining our carbon footprint and providing comprehensive disclosure on carbon related issues
- complying with applicable legal requirements and with other requirements to which the organisation subscribes, that relate to carbon management, and
- encouraging business partners and suppliers to adopt similar principles to minimise carbon emissions.

Responsible management of our carbon footprint is the duty of each Sibanye-Stillwater employee. The Sibanye-Stillwater leadership and line management commit to the implementation of this Carbon Management policy, through effective and visible leadership, improving awareness regarding carbon related issues, providing an enabling environment to achieve carbon savings, the deployment of innovations and ensuring that carbon management considerations are included into the decision-making process.

We have processes in place to continually reduce our carbon emissions as part of our low carbon transition plan. We have conducted a detailed assessment of the legislation and quantified the impacts from the respective contributing emission sources. Our carbon tax liability, based on the current emissions profile for phase 1 which is from 01 June 2019 to 31 December 2022 is expected to be in the region of R6m per annum. We have voluntarily implemented a vast number of projects that have reduced emissions over time and which have also reduced the potential tax liability as far as practicable. These include the replacement of boilers at the Beatrix mine, which is expected to reduce scope 1 emissions by ~35 000 tCO₂e while also reducing operating cost. The coal boilers replacement project is expected to be completed by Q2 2020. Following the Beatrix example, we are currently reviewing replacement of coal boilers at the Marikana operations with natural gas or diesel and are also investigating compressed natural gas alternatives in the Free State where natural gas is readily available.

We also have two Clean Development Mechanism projects to generate carbon credits to offset a portion of the carbon tax. We have an emissions purchase agreement with Mercuria Energy Trading for the sale of the carbon emission reductions (CERs) from the Beatrix methane project, which is estimated to mitigate 25,000 tCO₂e per annum. We already have 35 290 CERs that were issued from the first verification of the Beatrix methane project. During 2019, the second batch of 53,956 carbon credits was verified and issued by the UNFCCC. The third batch of CERs is being verified.

As the bulk of our emissions are associated with purchased electricity from Eskom which is primarily from coal-fired generation, one of the considerations is to supplement a portion of the purchased electricity through the establishment of a solar PV plant. This can provide a useful way to reduce the carbon tax liability in the event that the tax net is extended to purchased electricity after the first phase of the carbon tax.

We are also aware that the Department of Environment, Forestry and Fisheries is considering introducing carbon budgets. To this effect, we have proactively set our carbon emissions reduction target that has been approved by the Science-based Targets Initiative. Monitoring and measurement processes are underway to track progress against this target.

In addition, we recognise that Sibanye-Stillwater has the ability to influence emission reductions along our value chain (Scope 3 emissions). For example, we are reviewing gypsum opportunities with cement suppliers and have also communicated with suppliers encouraging them to build resilience to climate change and providing notifications of government initiatives to support the country's low carbon transition.

C11.2

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

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit origination

Project type

Other, please specify (Mining/mineral production and energy generation)

Project identification

The Beatrix Methane Project (#4728) was registered with the CDM on 10 June 2011. The Beatrix Mine is a gold mine owned by Sibanye. Beatrix is located in the Free State Province of South Africa. The project activity involves the destruction of methane through flaring and the utilisation of methane to generate clean electricity that displaced emission intensive grid electricity. The methane in the project activity originates from underground, intersecting geological faults. This methane is routed to electricity generators and a backup flare. Approximately 3,747 MWh of electricity was generated in the reporting period. The backup flare combusted any methane that was not consumed by the electricity generators. Through flaring, the methane is transformed into carbon dioxide and thereby reduces the greenhouse gas effect. The Beatrix methane project generated carbon credits during the first crediting period from 2011 to June 2018. During 2019, the second batch of 53,956 carbon credits was verified and issued by the UNFCCC.

Verified to which standard

CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)

53956

Number of credits (metric tonnes CO2e): Risk adjusted volume

219896

Credits cancelled

No

Purpose, e.g. compliance

Compliance

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

Application

South Africa's Carbon Tax became effective on 1 June 2019, imposing a direct (scope 1) carbon tax liability on Sibanye-Stillwater and other companies in South Africa, notably along Sibanye-Stillwater's value chain (e.g. scope 2). The carbon price is applied to the entire corporate structure. Carbon pricing is factored into business case calculations for energy efficiency and renewable energy within South Africa, for example the pass through costs of the anticipated carbon tax on Eskom, South Africa's electricity utility provider, were factored into the costing and payback periods for the proposed solar PV installation.

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

120

Variance of price(s) used

The South African carbon tax rate was set at R120/tCO2e in 2019, escalating annually at CPI +2% until 31 December 2022. The rate of tax will be increased thereafter by the CPI, as determined by Statistics South Africa.

Type of internal carbon price

Shadow price

Impact & implication

The internal carbon price has impacted Sibanye-Stillwater's business because it has revealed opportunities to reduce the company's direct and indirect carbon tax exposure. For example, the shadow pricing allows Sibanye-Stillwater to evaluate the business case for renewable/clean energy and energy efficiency projects, based on estimated cost savings and reduced payback periods which consequently impact the investment decision.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

- Yes, our suppliers
- Yes, our customers
- 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

1

% total procurement spend (direct and indirect)

% of supplier-related Scope 3 emissions as reported in C6.5

14

Rationale for the coverage of your engagement

Sibanye-Stillwater has in excess of 3700 suppliers. Sibanye-Stillwater's South African operations have a supplier portal, Ariba, on which suppliers are requested to provide information on their carbon emissions. In addition and in order to keep engagements focussed and meaningful, a risk-based approach is used to prioritise key engagements. The criteria used for prioritising key engagements with suppliers is based on assessments of products supplied and of its vulnerability to climate change, supply demand and availability. Sibanye-Stillwater has categorised its suppliers and contractors into three groups: strategic, tactical and local. The strategic suppliers provide services and products that have a high impact on Sibanye-Stillwater's operations, such as reagents and underground support. Without their inputs, production would be seriously hampered and engagement with them is interactive and contracted to minimise any potential risk our health and safety requirement with a focus on production. Tactical suppliers provide Sibanye-Stillwater with the bulk of the day-to-day goods and services required for production. This engagement takes place at an operational level and any issues are managed through the supply chain. The focus on the local suppliers is to ensure community participation and both financial and non-financial assistance offered to them if required. Through this process, critical suppliers have been identified and are sensitised to climate change impacts so that they can proactively position themselves to implement more climate resilient processes. Our priority engagement are with suppliers of the following products: Electricity; Blasting agents; Cyanide; Lime; Water; Timber; Diesel; Hydrochloric acid; Caustic soda; LPG and Cement. Facilitating climate awareness along the value chain may assist these suppliers to prepare for adverse climate impacts, which will reduce the risk of supply interruptions to the Sibanye facilities.

Impact of engagement, including measures of success

The success of these interactions is measured implicitly by how much they assist Sibanye-Stillwater in identifying supplier-related risks (and opportunities) and in informing our strategy for the future. This engagement has assisted Sibanye-Stillwater in identifying several key supplier related climate change risks. An example of an engagement undertaken in 2019 includes our review of gypsum opportunities with cement suppliers, as cement is a key input in our operations. The use of gypsum to replace a portion of the clinker in the production of cement is a viable option to reduce resulting GHG emissions. Sibanye-Stillwater has also had key engagements with AEL, an explosives service provider, on climate related matters. Engagement with AEL was targeted as explosives are in our top 10 suppliers list in terms of emissions contributions. AEL monitors the carbon emissions from their product and have shared that information with us on the purchases per mine and also per shaft on a monthly basis. This information is also useful in tracking and comparing performance per mine and also per shaft. Engagements with key suppliers are done on a rotational basis year-on-year. Additionally in 2019, Sibanye-Stillwater's Support Supply Chain sent a communication to key suppliers encouraging suppliers to build resilience to climate change. The communication also included notification of government initiatives to support low carbon transition and our position on the carbon tax. The latter included notification that Sibanye-Stillwater will not be paying for carbon tax passthroughs to all our suppliers.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

86

% of customer - related Scope 3 emissions as reported in C6.5

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

Our key customers are Rand Refinery (SA gold segment), Anglo American Platinum (SA PGMs segment) and Johnson Matthey, Tiffany and Company, Heraeus Metals, Mitsubishi International Corporation and BASF (US PGMs segment). Our customer, Rand Refinery is one of our priorities. Rand Refinery has been engaged regarding the management of carbon in their operations and why and how it is of relevance to our carbon management inventory accounting and reporting. We also engage with the International Platinum Group Metals Association (IPA) as this grouping entails a large portion of our customers, namely Anglo American Platinum, Johnson Matthey, BASF and Heraeus Metals. The IPA is an association that represents the worldwide leading mining, production and fabrication companies in the global platinum group metals (PGMs) industry. The major aim of the organization is to act as a platform for discussion and information exchange between its members and with the outside world. Furthermore, the IPA serves as an early warning system for the PGM industry by monitoring legislation (emissions control, recycling etc.) and industry related topics such as trade, health & safety, and sustainable development. The IPA has a Sustainability Committee with the following aims: •to serve as a common platform for the exchange on sustainability and of best practices; •to support IPA member companies in acting as responsible players through communicating the responsibility of the industry; •to share knowledge and evolve best practices; •to discuss and communicate issues openly with IPA members to further raise the level of sustainability thinking. Through engagement with the IPA, we are able to engage with our customers such as Anglo American Platinum, Johnson Matthey, BASF and Heraeus Metals. In addition, our US operations are continually engaging with Tiffany and Company on sustainability issues.

Impact of engagement, including measures of success

Sibanye-Stillwater is committed to sharing climate knowledge and ideas with key customers. For example, our engagements with Rand Refinery have resulted in the sharing of pertinent information which has improved the quantification of our carbon emissions inventory. Feedback to Rand Refinery on emissions serves to sensitise Rand Refinery on emission trends and impacts and also builds relationships. Rand Refinery has accordingly agreed to provide regular updates on their processes which are used to track data and emission trends. Success is measured by the timeous completion of our carbon inventory, inclusive of the emissions from Rand Refinery and which has been achieved for the 2019 year. The measure of success from the engagement with the International Platinum Association is the greater understanding of the PGM industry and a key decision taken, was to carry out a second life cycle assessment (LCA) on vehicle auto catalyst. This is a follow up study from one conducted in 2012 and would include updated data and would include more regions and more secondary production inputs. One of the outcomes of the LCA would be the quantification of the global warming potential category. The assessment is underway and expected to be completed presently.

C12.1d

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

Sibanye-Stillwater uses our quarterly board note extensively for internal communication and awareness on carbon and climate change related issues. We report, inter alia, on carbon-related legislation and risks, general carbon management, specifics such as the Beatrix methane project, carbon reduction initiatives and specific carbon emissions and related information for a particular quarter and comparisons with the previous quarters.

These board engagements form the basis of engagements with several other stakeholders on climate related issues, on a regular basis. Our partners in the value chain include our employees with whom engagement takes place through induction and environmental bulletin updates. Other partners in the value chain with whom we engage are investment partners, including Living Gold, Mimosa and DRDGOLD. Sibanye-Stillwater has a 50% equity share in Living Gold and we account for 50% of the emissions from Living Gold in the investment category of our scope 3 emissions inventory. To facilitate this process, we engage with Living Gold to collate information on fuels and electricity purchased to determine the associated emissions. Sibanye-Stillwater also has a 50% share in Mimosa. We engage with Mimosa to acquire emissions data and account for 50% in our scope 3 investments category. We also engage with DRDGOLD to acquire emissions data and in 2019 accounted for 38.05% in our scope 3 investments category. In 2020, Sibanye-Stillwater increased its interest in DRDGOLD Limited, a leader in the retreatment of gold tailings, from 38.05% to 50.1%. This change will be reflected in reporting on the 2020 financial year.

Furthermore, we are committed to reducing energy consumption and managing emissions across the group. In 2019 we therefore engaged the services of dedicated energy management companies at the Kloof and Driefontein facilities. These companies are incentivised to ensure ongoing energy efficiencies.

In addition to the above, several stakeholders were asked to participate in our Stakeholder Perception Index in 2019. This index is intended to measure and monitor stakeholder perceptions and the quality of relationships, in line with King IV. Stakeholders included were the following:

- Communities
- Employees
- Organised Labour Unions
- Investors & Capital Providers
- Government & Regulators
- Non-Governmental Organisations, Community- and Faithbased Organisations
- Traditional Leaders
- Industry Bodies and Associations
- Suppliers
- Customers

The methods of engagement employed are as diverse as the stakeholders engaged with. These engagements include regular meetings, publications of various reports, communications via email and much more.

For example:

The support of local communities is very important for Sibanye-Stillwater's social license to operate. Local communities are actively engaged with by us on various matters. During one such engagement with local communities in the US, water monitoring and assurance planning were the main topics of discussion. Climate change is predicted to change the availability of water, such as through changes in rainfall patterns. Thus, maintaining existing water resources in good conditions ensures that local communities will be able to adapt better to changes in water availability in the future. In response to this, we are amending our Good Neighbor Agreement with the addition of an Adaptive Management Plan. This will trigger actions from us in response to water quality metrics that are more stringent than required by state and federal law. Mitigation activities will be triggered even when levels of water contaminants are well below state and federal trigger limits. It provides a proactive method for catching potentially impacted areas much earlier than under state and federal law.

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?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Mandatory carbon reporting	Support with minor exceptions	At the SA operations, the Department of Environment, Forestry and Fisheries (DEFF) promulgated the National Greenhouse Gas (GHG) Emissions Reporting Regulations in April 2017 for implementation from the 2017 calendar year. Sibanye-Stillwater has been engaging with DEFF on these regulations on an ongoing basis. Aspects of engagement included the Technical Guidelines which were based broadly on the Intergovernmental Panel on Climate Change (IPCC) guidelines. The National Atmospheric Emissions Inventory System (NAEIS) has been developed for the primary purpose of Listed Activities in terms of the Air Quality Act and the scope has been extended to include GHGs. The DEFF requires companies to carry out mandatory reporting on GHGs for the national inventory in accordance with the categories as per the IPCC guideline. Sibanye-Stillwater generally supports this form of mandatory reporting however we have had some concerns regarding areas of uncertainty and have raised these with the DEFF. The IPCC Guidelines make reference that the latest GHG global warming potential (GWP) conversion factors should be used. However, under the UNFCCC, non-Annex 1 countries are required to use the GWP provided by the IPCC 2nd Assessment Report. Furthermore, the GHG Protocol states that the IPCC 2nd, 3rd or 4th Assessment Report GWPs can be used, as long as they are referenced correctly. The National Atmospheric Emissions Reporting Regulations (R283) of 02 April 2015 requires amongst others, the reporting of GHGs by individual operations. The National GHG Reporting Regulations (Notice 275) of 03 April 2017 further requires the reporting of GHGs at holding company-level, corporation or legal entity-level where operational control resides. The National Atmospheric Emission Reporting Regulations, R283 of 02 April 2015 also requires the reporting GHG emissions. This however is at facility-level. The reporting of GHG emissions by these two regulations through different mechanisms can result in confusion and duplicate reporting and may lead to double counting. In 2019 specifically, we engaged with DEFF on the proposal that fugitive methane from gold mines be excluded from mandatory reporting until such time approved methodologies have been developed.	Sibanye-Stillwater has adopted the use of the 3rd Assessment Report for the GWP references in its GHG emissions calculations for mandatory reporting as per the legislation. For consistency, the 3rd Assessment report is also used in its carbon inventory for voluntary reporting (such as in annual integrated reports). The following is proposed to further improve the reporting regulations: 1. Clarity is required on classification of sewage treatment works into aerobic or anaerobic where treatment works utilise both aerobic and anaerobic processes in different stages. This clarity can be included in the next revision of the technical guideline supporting the mandatory reporting regulations 2. The five-year transitional period (as per the promulgated mandatory reporting regulations) to move from one tier to another may require extensive work that should best be approached as a national initiative rather than by companies individually. It is proposed that a national working committee be established to oversee this process. 3. The 2006 IPCC Guidelines is used as the basis for accounting for the national inventory. The IPCC Guidelines make no provision for accounting for methane from gold mines. Apart from the Sibanye-Stillwater, Beatrix Operation, gold mines do not generally quantify and report on methane due to its diffuse nature. Beatrix has spent approximately R54 million to capture and destruct methane as far as possible and should not be penalised for this initiative. In this regard the DEFF agreed to our proposal that fugitive methane from gold mines be excluded from mandatory reporting until such time approved methodologies have been developed. 4. The draft pollution prevention plans regulations and the draft carbon budgets requirements should be aligned with the mandatory reporting regulations. The GHG reporting regulations should be aligned to minimise double reporting and possible double counting.
Other, please specify (Climate Change Bill)	Support with minor exceptions	On 08 June 2018, the Department of Environment, Forestry and Fisheries (DEFF) released the draft Climate Change Bill for comment. Sibanye-Stillwater submitted written comments to DEFF on this draft Bill. Sibanye-Stillwater is in support of the Climate Change Bill and we are of the view that the Climate Change Bill is a step in the right direction towards fulfilling the objectives of the national climate change response white paper which presents the South African Government's vision for an effective climate change response and the long-term, just transition to a climate-resilient and lower-carbon economy and society. We understand that South Africa's response to climate change has two objectives, namely to: • Effectively manage inevitable climate change impacts through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity and • Make a fair contribution to the global effort to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner.	The following comments and suggestions were submitted. The term "sector" needs to be further clarified as to whether it have the same meaning as the IPCC definition and that which was used in the greenhouse gas reporting regulations (and its Technical Guideline). Further clarity is required on carbon budgets and sectoral emissions targets. It is understood that carbon budgets may be allocated to companies that have emissions above a certain threshold. Companies may operate in more than one IPCC sector. It would be useful to clarify if companies would be required to comply with the individual IPCC sector targets or a combined company budget. The definition of "sector" may be able to provide clarity on this. It is unclear how Ministers will be allocated to a sector department and how they would be expected to report. For example, the mining industry would have a Minister of Mining but mining would be reporting under different IPCC sectors such as energy and waste. It is unclear how carbon budgets would be determined and allocated to persons/companies. It is important that the structure be considered for example if it is allocated to a company based on the IPCC sectors, companies can find themselves having to comply with more than one sector emissions targets and where for example, they consistently reduce emissions in line with their science-based targets, their emissions in certain sectors could still be exceeded. The national adaptation strategy actions, roles and responsibilities are covered in the bill however, mitigation is not covered in any detail. It is suggested a similar section be added to clarify the national mitigation strategy actions, roles and responsibilities.

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

Minerals Council (formerly the South African Chamber of Mines)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Sibanye-Stillwater's view is consistent with the view held by the Minerals Council, as both believe that climate change related legislation should be implemented in cooperation and in consultation with industry to prevent a negative impact on competitiveness and sustainability of business. The Minerals Council gets its mandate from the member mines. Sibanye-Stillwater is a member of the Minerals Council. The Minerals Council, supported by Sibanye-Stillwater, therefore advocates that the impact of climate change legislation in the current economic climate should consider vulnerable industries such as mining in relation to the sustainable development goals and specific aspects such as energy pricing and constraints and commodity pricing. The Minerals Council largely engages with climate related authorities and policy makers through Business Unity South Africa (BUSA), an organised business association of sectors in the country. Sibanye-Stillwater's position is therefore further represented on BUSA, through membership with the Minerals Council, which enables us to engage in matters relating to the economic policy interventions that are required to resolve climate issues and related issues of competitiveness and growth in the South African economy.

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

Sibanye-Stillwater influences the Minerals Council position and engagement with Government through regular engagement and meetings, such as the Environmental Policy Committee meetings, where differences in positions are explored and discussed. The implication of the carbon tax on companies is constantly highlighted as part of the lobbying process. The CEO of Sibanye-Stillwater is also the Vice President of the Minerals Council and serves on the Executive Council, the highest decision-making body of the Minerals Council.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Sibanye-Stillwater recognises the important insights that research organizations can make to technology, trade, and other industry-relevant topics that are applicable to our business. We recognise that outputs from research programmes can be used to shape corporate strategy, products and positions.

Our support for universities includes the DigiMine project with Wits and the University of Johannesburg. The DigiMine project is a state-of-the-art mining laboratory and post graduate research entity. The aim of the laboratory is to make mining safer and more sustainable using digital technologies. We have also established training facilities at the University of Johannesburg's mining engineering faculty, which are used to establish complimentary infrastructure that supports Sibanye-Stillwater's long-term research and development strategy.

Sibanye-Stillwater also supports other companies in research and development, such as BASF, where we co-funded a Tri Metal Catalyst research development project. The technology enables partial substitution of high-priced palladium with lower-priced platinum in light-duty gasoline vehicles without compromising emissions standards. Adoption of the Tri-Metal Catalyst can reduce catalytic converter costs for automakers and partially rebalance market demand for PGMs, thereby enhancing PGM market sustainability.

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?

Climate change and its potential impact on our business is regarded as a strategic business issue, and as such, climate change response is overseen by the Board of Directors as an integral part of the Group-wide strategy. A Board committee, the Social, Ethics & Sustainability Committee, provide oversight of climate change response and strategy across the Group and reports to the Board.

Below the Board, our CEO is responsible for the Group strategy and provides executive direction.

A specific Carbon Management policy statement, endorsed by the CEO, is in place. Considering our vision of superior value creation for all stakeholders through mining our multi-commodity resources in a safe and healthy environment, Sibanye-Stillwater is committed to contributing to a global solution through the deployment of responsible strategies and actions through designing and implementing strategies that seek to reduce the carbon footprint of the Company, improve our energy efficiency, pursue potential opportunities and utilise carbon friendly technologies where feasible.

Responsible management of our carbon footprint is the duty of each Sibanye-Stillwater employee. The Sibanye-Stillwater leadership and line management commit to the implementation of this Carbon Management Policy.

The CEO is supported by the Group Executive committee. The Executive committee comprises of the following Group executive functions:

- Group Technical
- Corporate Affairs
- Business Development
- Legal and Compliance
- Finance and SA Integrated Services
- Organisational Growth
- SA Gold Segment
- SA PGM Segment
- US PGM Segment

While the climate change response strategy is centrally co-ordinated within the Group Technical function, each segment of the Executive committee is equally responsible and committed to upholding the principles of our climate change strategy. Direct communications take place between the operating segments on the roll-out and standardisation of carbon management approaches to ensure consistency.

SA Gold and SA PGM Segments

At the SA gold and SA PGM segments, carbon management is centrally coordinated within the Environmental function which reports into the Group Technical executive function. From there, consistent roll-out to the operational facilities takes place in terms of policy and climate change strategy as well as its implementation. A quarterly Board Note on processes and developments is compiled to report and feedback on developments and direction on pertinent matters from the Board. For external engagements on climate change, representations are duly mandated for consistency and feedback is given to the Social, Ethics & Sustainability Committee for information and response. Sibanye-Stillwater is a member of the Minerals Council (formerly the Chamber of Mines) and utilizes it as a vehicle for lobbying on amongst others, on climate change related matters. The following processes are in place to ensure consistency with the overall climate change strategy:

- Our CEO serves as Vice President on the Minerals Council Executive structure, the highest decision-making body of the Minerals Council. The Minerals Council obtains its mandate on climate change positioning from that Executive structure.
- Appointed and duly mandated representation from Sibanye-Stillwater at the Environmental Policy Committee of the Minerals Council.
- Feedback on climate change issues and approaches are given to the Minerals Council, and feedback from the Minerals Council and their interactions with either the Regulators and/or other industry associations are fed back into the organization for further interpretation and action where needed.
- The Minerals Council also represent Sibanye-Stillwater at fora such as Business Unity South Africa and the Industry Technical Task Team on Climate Change – this ensures that the same message and position is consistently passed-on to these bodies as well.
- Where appropriate and as dictated by external processes, Sibanye-Stillwater gives direct inputs and comments on climate-related policy and legislation to environmental Regulators such as the Department of Environment, Forestry and Fisheries, National Treasury and even the relevant Parliamentary Portfolio Committee or similar parliamentary structures.

US PGM segment

At the US PGM segment, the Executive Vice President carries the overall responsibility for climate-related aspects. The monitoring, measurement and reporting is delegated to the environmental department, through the Vice President - Legal, Environment, and Governmental Affairs. The Vice President reports to the Executive Vice President who reports to the Social and Ethics committee on a quarterly basis and where oversight is sought.

Climate issues are monitored by the environmental department. The monitoring includes assessment of the regulatory framework and changes therein, annual monitoring and performance assessments, regulatory and social reporting, and initiatives for emission reductions.

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

SSW-IR19.pdf

Page/Section reference

pg. 10 pg. 23 pg. 31 pg. 48 pg. 20 pg. 207 – 210 pg. 248

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Other metrics
- Other, please specify (Energy and consumables purchased)

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

SSW-FS19-beatrix-methane-project.pdf

Page/Section reference

Pg 1 – 3

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

SSW-Web-Celebrating World Environment Day 2020-08-24.pdf

Page/Section reference

Pg 5 – 6

Content elements

- Governance
- Emissions figures

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	Sibanye-Stillwater's Senior Vice President Environment is responsible for sign-off of the 2020 CDP climate change response.	Other, please specify (Senior Vice President Environment)

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	Investors	Public

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