Module: Introduction

Page: Introduction

CC0.1

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

Gold Fields Limited is an unhedged, globally diversified producer of gold with eight operating mines in Australia, Ghana, Peru and South Africa. Together these mines have an attributable annual gold production of approximately 2.2 million ounces. In February 2013, Gold Fields unbundled the Sibanye Gold assets which included the Beatrix and KDC mines in South Africa. Gold Fields expanded its presence in Western Australia by acquiring the Yilgarn South Assets (Darlot, Granny Smith and Lawlers mines) from Barrick Gold in October 2013.
Gold Fields has attributable gold mineral reserves of 46 million ounces and mineral resources of 102 million ounces. Attributable copper mineral reserves total 532 million pounds and mineral resources 910 million pounds. Gold Fields has a primary listing on the JSE Limited, with secondary listings on the New York Stock Exchange (NYSE) and the Swiss Exchange (SWX).

Foreword by Nick Holland, CEO Gold Fields:

Gold Fields recognises that climate change is a reality that any organisation doing business in the 21st century needs to understand and respond to. It is a material issue for Gold Fields due to:

- The long-term risks posed by climate change both to the Group's own operations and to wider society
- Growing efforts to regulate carbon emissions in a range of jurisdictions
- The taxes increasingly attached by governments to non-renewable energy consumption

To attain our corporate vision of being the global leader in sustainable gold mining, with the associated underpinning responsibilities, we have designed and implemented an integrated strategy that seeks to reduce the company's carbon footprint and improve energy efficiency at our operations.
Transparency around our emissions and efforts to mitigate their impact was the first step and Gold Fields has done much work to establish itself as a credible, responsible corporate citizen: since its launch in South Africa in 2007 the company has determined and disclosed its carbon footprint to the CDP.
As a result of the quality of its submissions Gold Fields has been ranked in the South African JSE Top 100 Climate Disclosure Leadership Index (CDLI) for six or more of the eight years that the CDLI has been in place. The company has also excelled in its performance in mitigating the impact of climate change, having been ranked as part of JSE Top 100 Climate Performance Leadership Index (CPLI) in three of the six years this index has been in place.
Gold Fields' leadership commitment includes a commitment to installing 20% renewable energy generation at all new projects. We have installed solar photovoltaic (PV) panels at our corporate office, significantly reducing our grid electricity consumption there and are at an advanced project feasibility stage on a 40 MW PV plant

at our South Deep mine. Further, we have embarked on an initiative to replace a diesel fired power plant with a gas plant at our Granny Smith mine in Australia and have entered into a 20 year power purchase agreement with an independent power producer at our Ghanaian operations for gas fired power plants.
Gold Fields also supports global initiatives that seek to co-ordinate efforts to reduce emissions. Gold Fields supported the statement by the International Council on Mining & Metals (ICMM) in support of the COP 21 and signed the Paris Pledge for Action to demonstrate our support for the worldwide efforts to reduce global carbon emissions.
We remain committed to responsible leadership to mitigate the impact that Gold Fields has on the climate while seeking to build resilience for our operations to adapt to the effects of a changing climate. Underpinning this is a commitment to transparent reporting on these impacts.

CC0.2

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

Enter Periods that will be disclosed
Thu 01 Jan 2015 - Thu 31 Dec 2015

CC0.3

Country list configuration

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

Select country
South Africa
Ghana
Peru
Australia

CC0.4

Currency selection

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

USD($)

CC0.6

Modules

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.
If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

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

CC1.1a

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

(i) The highest level of direct responsibility for climate change within Gold Fields sits with the Safety, Health and Sustainable Development Committee (SHSD Committee). This Committee is a standing committee established by the Board with delegated authority from the Board.
(ii) The Committee is appointed by Gold Fields' Board of Directors and provides quarterly and annual reports on climate change risks, opportunities and recommendations to the Board for consideration. It is the responsibility of this Committee to assist the Board in its oversight of Gold Fields' socio-economic, environmental, health and safety programs, including climate change responsibilities. In particular, this includes the monitoring of Gold Fields' efforts to minimise its environmental footprint, including energy consumption and carbon emissions as well as social, health, safety and environment-related incidents and accidents. The Committee also ensures Gold Fields' compliance with relevant legislation and regulations around society, health, safety and the environment. All members of the Committee have been selected on the basis of their considerable experience in the field of sustainable development. The Committee consists of six independent directors (one of the six independent director attends by invitation) who monitor management performance in regard to Gold Fields' policies and guidelines, as well as the implementation of any recommendations made by the Committee.

CC1.2

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

Yes

CC1.2a

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

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Corporate executive team	Monetary reward	Emissions reduction target Energy reduction target Efficiency project	Gold Fields integrates energy and carbon management into all aspects of its business through its Integrated Energy and Carbon Management Strategy. This strategy seeks to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities, and investigate and implement viable sources of renewable energy. During 2015, all regions were tasked with developing and implementing five-year energy security plans, with South Deep and the Ghanaian mines identified as facing the greatest energy-security risks. But these operations also present the most significant opportunities for renewable energy integration. Energy and carbon performance, with a strong focus on costs savings, and energy security – including the evaluation of renewable energy – were contained in the performance scorecards of senior and line management in 2015.
Other: Executive vice president and vice president of group sustainability	Monetary reward	Other: Overseeing, managing and tracking the implementation and development of energy and carbon management structures and targets.	Incentivized carbon and climate change related activities include: •Overseeing the development of structures and capabilities in the regions for the delivery on energy and carbon management. •Ensuring regional progress on carbon emissions reduction target setting and obtaining an external review of the targets. •Tracking of progress against the updating and development of emissions reduction baselines and targets in the quarterly board sub-committee reports. •Updating the existing target setting guidelines. •Developing and reporting on carbon and climate change related performance indicators. •Obtaining external assurance on key energy, carbon and climate change related performance indicators. Business as usual activities, which are required as part of annual remuneration (i.e. salary), related to incentivized climate change actions pertain to: •Communicating Gold Fields' support for climate change issues effectively in the public domain. •Drive the group goal of 20% renewable energy for all new projects.
Other: Sustainable development heads of the regions	Monetary reward	Other: Develop and implement five-year energy security plans and maintain energy and carbon baselines.	Energy and carbon performance, with a strong focus on cost savings and energy security – including the evaluation of renewable energy – were contained in the performance scorecards of senior and line regional management in 2015. The regions were also required to set targets for reducing energy consumption and carbon emissions in 2016.
Other: Group Head of Energy and Carbon	Monetary reward	Other: Support and implement regional energy and carbon management strategy and action plan including managing regional	A permanent Group Head of Energy and Carbon was appointed in October 2015, taking over from the Energy and Carbon consultant. This position is at corporate level and further emphasizes Gold Fields'

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
		energy & emission reduction targets and the baseline against which targets will be measured.	commitment to implementing operational change, across all the regions, in light of climate change. The Group Head of Energy and Carbon drives progress with regards to energy and carbon management, reduction and efficiency initiatives. Business as usual activities, which are required as part of annual remuneration (i.e. salary), related to incentivized climate change actions pertain to : • Ensure third party verification of the energy and emissions targets as well as the baselines. • Develop and implement five-year energy security plans. • Actual energy and emission reductions achieved and costs saved against the baseline.

Further Information

Page: CC2. Strategy

CC2.1

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

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

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

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Board or individual/sub-set of the Board or committee appointed by the Board	The geographical areas considered in the risk management process are those countries where Gold Fields has operations. These currently consist of Australia, Ghana, Peru and South Africa.	> 6 years	Climate change risks and opportunities are assessed and evaluated as part of business planning in Gold Fields, for both current operations and projects. Business planning is influenced typically by the following risks: water scarcity, flooding, changing legislative landscapes pertaining to carbon management and the increasing need to find alternatives to traditional energy provision and improved energy efficiency. Reporting to the Board in this regard is done on a quarterly basis.

CC2.1b

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

The Group Executive Committee and Board oversee the overall risk and assessment system at group and operational levels. The Audit Committee, a sub-set of the Board, is responsible for the identification and mitigation of new and existing risks, including climate change related risks. In light of increased focus on risk management, the Board recently established a Risk Committee as a standalone Board subcommittee, in order to assist the Board in overseeing the integrity & effectiveness of Gold Fields' risk management processes.
The Vice-President & Group Head of Internal Audit provides quarterly-feedback to the Audit Committee and reports directly to the Audit Committee Chair. The Group Risk Manager is responsible for risk management at company level. Gold Fields' Enterprise Risk Management process is aligned with the ISO 31000 risk management standard and the requirements of South Africa's King III Code. All risks identified have control measures & mitigating strategies in place.

Processes used to assess climate change risks, opportunities & material issues at a company level:
1.Identification of key risks & mitigating actions through Enterprise-wide Risk Management
2.Identification and collection of stakeholder's inputs through direct & indirect engagement
3.Interviews with key management & analysis of the short, medium & long-term strategic trends affecting the business provide critical data & form part of Integrated Reporting
4.Material sustainability issues are assessed & prioritised as per the GRI G4 Guidelines and internal & external stakeholder interviews
Processes used to assess climate change risks and opportunities at an asset level:
1.An on-going physical risk management program which monitors risks, including climate change
2.Gold Fields' insurance review with our insurers, annually
3.The group energy & carbon management guideline which requires risk assessments to be integral parts of all energy & carbon management plans & energy security plans

CC2.1c

How do you prioritize the risks and opportunities identified?

Gold Fields uses criteria aligned with the GRI G4 Guidelines to assess and prioritise its material sustainability issues. Aligned with the ISO 31000 risk management standard and South Africa's King III Code, the group's mature Enterprise-wide Risk Management process also prioritises risks on the basis of probability and severity. This entails:
1.Ongoing workplace risk assessments by managers in accordance with international standards (e.g. ISO 31000)
2.Mine/region reviews of top risks and mitigating strategies by each regional and mine Executive Committee (Exco) on a quarterly basis
3.Presentation to the Group Exco of top 10 risks and mitigation actions by each Mine Manager during quarterly business reviews. Mitigating actions are assessed for relevance and effectiveness.
4.Compilation of Group Risk Register by the Group Risk Manager who extracts the top risks from the regional and operational registers, in line with the tolerance levels set by the Board
5.Risk assessment and moderation at Group-level by relevant risk owners and Exco
6.Exco risk meeting where top risks are reviewed and Group-wide mitigation strategies are set/ monitored, every six months
7.Audit Committee review of top risks and mitigation strategies undertaken twice a year, responsibility moved to the Risk Committee in 2016
8.Regular internal audit review assesses progress against – and adherence to – mitigation strategies.

The probability of physical risks related to climate change is determined using information such as climate change projections and past experience. The probability of climate change regulatory risks is determined according to draft policies and Government response papers. The materiality of a risk is used to prioritize its management.

During 2016, Gold Fields will undertake risk-based climate change assessments at its operations to identify vulnerabilities and develop short- and long-term adaptation measures.

CC2.1d

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

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

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

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

i. Gold Fields integrates energy and carbon management into all aspects of its business through its Integrated Energy and Carbon Management Strategy. Climate related information is also collected for the Group's integrated reporting process. The outputs of the Enterprise-wide Risk Management and stakeholder engagement processes are analysed alongside the information collected for the Integrated Annual Report. These include:

- Operational, financial and sustainability data generated through data management systems;
- Interviews with managers and executives at operation-, region- and Group-level;
- Short-, medium- and long-term strategic analysis of the external environment.

The collection and reporting of climate change data assist the company to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities and investigate renewable energy alternatives.

ii. Gold Fields' short term business strategy has been influenced by climate change in the following ways:

- Energy and carbon management have been integrated across operations and projects;
- Carbon and energy reduction performance are measured and reported on;
- Viable sources of alternative energy are regularly sought;
- The physical impacts of climate change pertaining to the workforce and operations are recognised;
- Water is recognised as a key factor influencing operations. The group's catchment-based water management approach requires understanding the social, cultural, economic and environmental value of water at the catchment scale to identify material water stewardship risks and provide context for operational water management.

iii. Energy and water related factors are material to Gold Fields' future growth and therefore have considerable influence on the business strategy. The following are examples of climate change aspects that have influenced Gold Fields' strategy:

- A need to adapt due to increased operational costs and production disruptions as a result of changed weather patterns;
- Regulatory changes regarding energy reporting and carbon emissions in a range of jurisdictions as well as uncertain climate change regulatory requirements;
- Opportunities to develop green business including recognition of the strategic role of renewable energy within the group's energy mix;
- Reputational risk pertaining to Gold Fields' response to climate change. Recognising community impacts on the group's social license to operate and building resilience in host communities;
- The long-term risks posed by climate change to both operations and wider society.

Gold Fields anticipates that addressing climate change risks could realise potential opportunities, such as operational efficiencies and increased resilience of the

host communities. The group's business strategy therefore integrates both the emissions and energy reduction targets as part of operational efficiency initiatives. The Group's revised emission reduction targets are also expected to reduce the potential exposure of the company to carbon taxes and other related regulatory initiatives.

iv. Gold Fields' short term strategy is influenced by climate change. Examples include:
- Regional emission reduction targets;
- Regional five-year energy security plans which include a Group commitment for 20% renewable energy for all new projects;
- Continued investigation into the feasibility of low carbon energy sources including:
  - Installation of solar power at Gold Fields' head offices in Johannesburg to meet half of the electricity demand;
  - South Deep 40MW solar PV project which is at feasibility phase;
  - Conversion of a diesel power plant to gas in Australia, at our Granny Smith Mine;
  - Independent Power Purchase Agreement with Genser Energy (Gas) for 20 years;
- Enhanced water management guidelines which focusses on reuse, recycling and conservation initiatives;
- Potential loss of social licence to operate remains a pressing issue at all of the group's mines;

v. Gold Fields' long term strategy is influenced by climate change. These include life of mine planning related to operational efficiencies applicable to energy, carbon and water management. These efforts are supported by clear guidelines related to applicable mitigation and adaptation actions which have been integrated into operational designs.

Another of Gold Fields' long term strategy focuses is the target that all new mining projects must utilise a minimum of 20% of renewable energy. Gold Fields' Salares Norte project in Chile in the Atacama Desert, at some 4 500 meters-above-see-level; currently at pre-feasibility stage, is actively seeking to meet the 20% requirement as part of the pre-feasibility study. For operating mines, the following long term strategic commitments are in place:
- Review replacing of carbon-intense sources of energy with renewable energy or switching to less carbon-intense energy sources (gas);
- Identify short, medium and long term energy efficiency or renewable energy initiatives that meet regional and operational internal rate of return requirements;
- Responsible water management with a focus on water stewardship.

Long term climate change strategies are also related to the Nationally Determined Contributions in the respective countries in which Gold Fields operates.

vi. The incorporation of climate change into Gold Fields' short and long term strategies provides the Group with strategic advantage over its competitors. These advantages include:
- Reducing electricity and emissions intensity through a focus on renewable energy, efficiencies and environmental stewardship. This results in cost savings, energy security and prepares the Group for potential legislative changes;
- Identifying and optimising opportunities to re-use and conserve water at all operations;
- Strengthening 'social licenses to operate' through assisting community resilience which also provides a competitive advantage in the investment market.

vii. The most important business decisions during 2015, influenced by climate change driven aspects of the strategy, include:
- Regional five-year energy security plans were developed;
- Rolling energy savings performance targets were set at the beginning of the year, considering operational business plans;
- All new mine developments have been set a target of a minimum 20% renewable energy consumption;
- Energy and carbon performance were indicators considered in the balanced scorecards of senior and line managers;
- Pledge to intensify efforts for improved energy and carbon management in 2016 through a number of new initiatives, ranging from deepening understanding of energy drivers at mines to increased staff awareness and training;
- Signing of the Paris Pledge for Action, following the COP 21 climate negotiations.

During 2016, Gold Fields will undertake risk-based climate change assessments at its operations to identify vulnerabilities and develop short- and long-term adaptation measures.

CC2.2b

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

CC2.2c

Does your company use an internal price of carbon?

Yes

CC2.2d

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

Gold Fields' internal price of carbon is applied based on the regulatory carbon price that is set in the jurisdictions in which it operates. Two regions in which Gold Fields' operates currently have set carbon prices, namely South Africa and Chile.

In South Africa, the Draft Carbon Tax Bill sets a rate of R120 (US$ 9.46) per ton CO2 with tax free exemptions ranging from 60% to 95%. The effective tax rate is therefore between R6 (US$ 0.47) and R48 (US$ 3.79) per ton CO2. At South Deep Mine in South Africa, when motivating for energy efficiency initiatives, the carbon price of R48 (US$ 3.79) per ton CO2 is factored in to enhance the investment case.

From 2018, in Chile, Gold Fields notes exposure to a carbon price of US$ 5 per ton CO2 for the Salares Norte project. The project is currently at pre-feasibility stage and the carbon price based on the expected emissions profile is factored in our overall project costing.

CC2.3

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

Direct engagement with policy makers
Trade associations
Funding research organizations

CC2.3a

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

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Carbon tax	Neutral	Gold Fields is engaging with respect to the Draft Carbon Tax Bill published in November 2015 in South Africa. Although Gold Fields' South African operations will be directly impacted by the carbon tax to a limited extent, they will be exposed to increased fuel prices, as fuel for mobile combustion will be taxed under the fuel tax regime. There is uncertainty as to whether Gold Fields' may be impacted directly by the carbon tax post 2020. Gold Fields is engaging on this legislation through its membership of the South African Chamber of Mines and the Energy Intensive Users Group.	Gold Fields supports efforts to reduce carbon emissions in South Africa, but wishes that any taxation schemes serve to incentive industry to invest in the adaptation of low carbon energy options and improved efficiency, thus we remain neutral regarding the Draft Carbon Tax Bill in its current draft.
Cap and trade	Support	Gold Fields is engaging with respect to the Emissions Reduction Fund (ERF) legislation in Australia. The Emissions Reduction Fund assists with meeting Australia's emission reduction targets by incentivizing businesses to adopt emission reduction initiatives for which emission reduction credits can be issued. The Clean Energy Regulator will issue Australian Carbon Credit Units for emissions reductions from registered projects. Once credits have been issued they can be purchased by the Government through the Emissions Reduction Fund or sold to organizations that wish to offset their emissions. Gold Fields Australia was granted ERF credits following a blind auction in early 2016.	Gold Fields' supports the Emission Reduction Fund in Australia. The conversion of the Granny Smith power plant from diesel to gas will save an estimated 13 000 tCO2e per year. The avoided emissions could be auctioned under the Emissions Reduction Fund.

CC2.3b

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

Yes

CC2.3c

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

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
International Council on Mining & Metals (ICMM)	Consistent	The ICMM recognizes that comprehensive and sustained global action is required to reduce the scale of human-induced climate change and to adapt to its impact. In 2009, the ICMM published a policy on climate change. This was superseded by the Principles for climate change policy design which were published in June 2011. In October 2015, the ICMM issued a statement on climate change addressed to the UN Framework Convention on Climate Change, offering support for an international climate change agreement. The ICMM supports: •An effective binding global agreement on climate change; •A price on carbon and other market mechanisms that drive reduction of GHG emissions and incentivise innovation; •Greater use of renewable energy and other cost-effective low-emission technologies. In addition the ICMM recognises the need to reduce emissions from the use of coal and supports approaches to accelerate the use of low-emission coal technologies as part of a measured transition to a lower-emissions energy mix. Continuous engagement with peers, governments and society is encouraged by the ICMM to share solutions and develop effective climate change policy. Gold Fields has representatives on the 'Communications', 'Health, Safety and Product Stewardship', 'Environmental Stewardship and Social Progress', 'Water' and the 'Climate Change' committees and working groups, and the CEO represents the company at the CEO Council of the ICMM.	Climate change may result in increased severe events (such as storms and floods) which will impact the stability of tailings storage facilities (TSFs). The ICMM initiated a global review of TSF standards and critical control processes across its member companies. Gold Fields' CEO Nick Holland is acting as the CEO sponsor for the review and Gold Fields also chairs the member company working-group. Gold Fields joined its ICMM peers in the signing of the Paris Pledge for Action following the COP 21 negotiations.

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Carbon Policy and Energy Efficiency Reference Group (CPEERG) meeting hosted by The Chamber of Minerals and Energy of Western Australia	Consistent	In Australia, Gold Fields is part of the Carbon Policy and Energy Efficiency Reference Group (hosted by the Chamber of Minerals and Energy of Western Australia) which engages in monthly meetings on all carbon policy and energy efficiency matters (related to the minerals and energy sector of Western Australia). Depending on the topic, an industry opinion is voiced and presented to Government. The CME's climate position has been to support a measured transition to a low-emissions global economy. This is centred on three policy pillars including a global agreements, a market based mechanism and a substantial investment in low emissions technology and abatement.	Gold Fields participate in the Carbon Policy and Energy Efficiency Reference Group meetings.
South African Chamber of Mines	Consistent	The South African Chamber of Mines recognises that anthropogenic factors have contributed to climate change and that meaningful action is required at a global and local level. The Chamber of Mines is committed to support South Africa's international commitment to lowering its GHG emissions through the National Climate Change Response White Paper and the National Development Plan.	Gold Fields supports and endorses the Chamber of Mines of South Africa, the principal advocacy organisation for policy positions affecting employers in the mining industry. Gold Fields' CEO, Nick Holland, is a member of the Council.

CC2.3d

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

No

CC2.3e

Please provide details of the other engagement activities that you undertake

CC2.3f

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

Gold Fields integrates energy and carbon management into all aspects of its business through its Integrated Energy and Carbon Management Strategy (IECMS). This strategy seeks to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities; and investigate viable sources of alternative energy. A 'Group Energy and Carbon Management Guideline', was developed in 2013 to provide guidance to all the regions across the group with regard to energy and carbon management. The purpose of this Guideline document is to ensure that Gold Fields' vision and climate change strategy is consistent across the different operations and geographical regions, while allowing for different focus areas and specific circumstances. Following the ICMM's climate change statement, Gold Fields communicated this position statement to its employees.

Any external engagement with key industry bodies and other key stakeholders must be consistent with Gold Fields' Strategy. Engagement is almost always undertaken by senior representatives who have a good understanding of the company's strategy. Stakeholder engagement, beyond the regular interaction with Gold Fields' shareholders and investors, is becoming an increasingly critical issue and the Board devotes a large amount of time to ensure that Gold Fields' management deals appropriately with the challenges, issues and concerns of the key stakeholders in our host governments who may influence policy.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

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

Absolute target
Renewable energy consumption and/or production target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1+2 (market-based)	29%	16%	2014	381493	2015	Yes	Abs 1 is a short term target for Gold Fields' Australian operations: Darlot, St Ives, Granny Smith and Agnew. A 2 year target window was set based on the GHG Protocol Mitigation Goal Standard. The goal type is a base year emissions goal. The target is an ambitious science-based target as it exceeds the 2.1% reduction requirement to stabilise temperature increases below 2 degrees. This target relates to the energy target for Australian operations reported in Gold Fields' Integrated Annual Report on page 96.
Abs2	Scope 1+2 (location-based)	28%	1.4%	2013	381758	2015	No, but we are reporting another target which is science-based	Abs 2 is a short term target for Gold Fields' Ghanaian operations: Tarkwa and Damang. A 3 year target window was set based on the GHG Protocol Mitigation Goal Standard. The goal type is a base year emissions goal. This target relates to the energy target for Ghanaian operations reported in Gold Fields' Integrated Annual Report on page 96.
Abs3	Scope 2 (location-based)	62%	22%	2015	489525	2025	Yes	Abs 3 is a medium term target for Gold Fields' South African operation South Deep, whose carbon emissions are predominately from electricity purchased (Scope 2). Although the South Deep mine is currently ramping up, Gold Fields is planning a 40 MW solar PV project for the mine, to reduce electricity consumption. A target window of 10 years was set. This target was calculated based on

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
								the projected grid emission factor of South Africa in 2025. This projection uses the Policy Adjusted Scenario of South Africa's Integrated Resource Plan 2010 (IRP 2010). This national level medium term planning takes into consideration the Peak, Plateau and Decline (PPD) document on which the country's INDC is based. It projects the national grid emission factor to be reduced to 0.79 tCO2/MWh from the current 1.01 tCO2/MWh. The target is an ambitious science-based target as it exceeds the 2.1% reduction requirement to stabilise temperature increases below 2 degrees.
Abs4	Scope 1+2 (location-based)	28%	15%	2015	381758	2030	No, but we are reporting another target which is science-based	Abs 4 is a medium term target for Gold Fields' Ghanaian operations Tarkwa and Damang. The Ghana INDC sets a national reduction target of 15% by 2030. Gold Fields' has a long standing corporate policy of always being legally compliant and giving the necessary support to the host country of operations. This support relates to the implementation of national targets and objectives. In this regard Gold Fields' supports Ghana's long term climate change objectives and have therefore set an indicative target that matches the national ambitions as expressed in the INDC. This 15 year target has been framed in the context of Ghana's position as a developing country in the international community.
Abs5	Scope 1+2 (location-based)	6%	30%	2015	78662	2030	No, but we are reporting another target which is science-based	Abs 5 is a medium term target for Gold Fields' Peruvian operation Cerro Corona. The Peruvian INDC sets a national reduction target of 30% by 2030. Gold Fields' has a long standing corporate policy of always being legally compliant and giving the necessary support to the host country of operations. This support relates to the implementation of national targets and objectives. In this regard Gold Fields' supports Peru's long term climate change objectives and have therefore set an indicative target that matches the national ambitions as expressed in

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
								the INDC. This 15 year target has been framed in the context of Peru's position as a developing country in the international community.
Abs6	Scope 1+2 (location-based)	29%	28%	2015	382211	2030	No, but we are reporting another target which is science-based	Abs 6 is a medium term target for Gold Fields' Australian operations Darlot, St Ives, Granny Smith and Agnew. The Australian INDC sets a national reduction target of 26% to 28% below 2005 levels by 2030. Gold Fields' has a long standing corporate policy of always being legally compliant and giving the necessary support to the host country of operations. This support relates to the implementation of national targets and objectives. In this regard Gold Fields' supports Australia's long term climate change objectives and have therefore set an indicative target that matches the national ambitions as expressed in the INDC.
Abs7	Scope 1+2 (location-based)	100%	62%	2015	1322614	2035	No, but we are reporting another target which is science-based	Abs 7 is a long term target for all of the existing operating assets in the current Gold Fields' portfolio: South Deep, Tarkwa, Damang, Cerro Corona, Darlot, St Ives, Granny Smith and Agnew. The target was calculated on the basis of the remaining life-of-mines of the existing asset portfolio. This calculation takes into consideration the fact that given current known mineral reserves, all of the existing operations with the exception of South Deep will be decommissioned before 2035. Mine closure and post-closure plans are developed for each operation according to strict standards, in compliance with the various regulatory requirements.

CC3.1b

Please provide details of your intensity target

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

CC3.1c

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

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

CC3.1d

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

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
RE1	All energy	2012	0	0%	2025	20%	In support of reducing emissions and energy consumption, Gold Fields set

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
	consumed						a renewable energy target of 20% renewable energy generation at all new projects, in 2012. At the Salares Norte project in Chile, Gold Fields is actively seeking renewable energy sources as part of its ongoing activities.

CC3.1e

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

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	100%	84%	Gold Fields' Australian operations set an ambitious target of 16% in 2014 with a target year of 2015. Emission reduction projects reduced Australia's emissions by 13.82% against a target of 16%. Emissions reduction projects implemented during the target period include Campaign Milling at both the Granny Smith and St Ives operations, as well the Agnew capacitor bank installation.
Abs2	100%	100%	Gold Fields' Ghanaian operations exceeded their target. Emission reduction projects reduced Ghana's emissions by 4.9% which is 3.4% higher than the target of 1.4%.
Abs3	0%	0%	The base year is set at 2015, therefore progress on the target will be reported from 2016 onwards.
Abs4	0%	0%	The base year is set at 2015, therefore progress on the target will be reported from 2016 onwards.
Abs5	0%	0%	The base year is set at 2015, therefore progress on the target will be reported from 2016 onwards.
Abs6	0%	0%	The base year is set at 2015, therefore progress on the target will be reported from 2016 onwards.
Abs7	0%	0%	The base year is set at 2015, therefore progress on the target will be reported from 2016 onwards.
RE1	0%	0%	Gold Fields' is unable to report progress on this target as the Salares Norte project is still at pre-feasibility stage.

CC3.1f

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

CC3.2

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

Yes

CC3.2a

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

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Product	As well as gold, Gold Fields produces copper (28 700 tonnes in 2015) at the Cerro Corona mine in Peru. Copper is a highly efficient conduit which is used in renewable energy systems to transmit power from solar, hydro, thermal and wind energy. Using more copper in the wiring reduces thermal resistive losses and assists in reducing emissions as it lowers the amount of energy needed to generate a single electricity unit. Therefore Gold Fields' copper product assists third parties in avoiding emissions.	Avoided emissions	Other: Gold Fields does not currently calculate the avoided emissions associated with copper.			

CC3.3

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

Yes

CC3.3a

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

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	
To be implemented*	2	4613
Implementation commenced*	1	616
Implemented*	3	13031
Not to be implemented	0	

CC3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Processes	Gold Fields' Australian operation, Agnew has implemented a Capacitor Bank Installation. Agnew's crushing circuit at the mill is currently powered by a set of diesel generators. The installation of the capacitor bank will modify the power factor of the plant, thereby reducing diesel consumption and associated emissions.	1126	Scope 1	Voluntary	378540	407000	1-3 years	11-15 years	
Energy efficiency: Processes	Gold Fields' Australian operation St Ives has implemented Campaign Milling at its processing plant. Campaign milling refers to the situation where the milling process is only in operation when sufficient ore has been provided for the mill to run for a prolonged period. The aim of campaign milling is to reduce the operating time of the St Ives processing plant. The project involves optimizing the milling strategy to minimise operating costs and energy consumption whilst maximizing recovery and planned shutdown time for scheduled maintenance. The processing plant runs at full capacity for 60% each month, and is shut down for the remainder of the time. This is beneficial as it reduces electricity consumption and associated emissions.	11340	Scope 2 (market-based)	Voluntary	3402000	0	<1 year	Ongoing	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Processes	Gold Fields' Ghanaian operation, Tarkwa implemented a capacitor bank installation in 2015. Tarkwa's crushing circuit at the mill is currently powered by a set of diesel generators. The installation of the capacitor bank will modify the power factor of the plant, thereby reducing diesel consumption and associated emissions.	565	Scope 1	Voluntary	385021	220010	<1 year	11-15 years	The equipment is expected to be in operation for the life of mine which is 15 years.

CC3.3c

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

Method	Comment
Dedicated budget for energy efficiency	Gold Fields has a dedicated budget for energy efficiency.
Dedicated budget for other emissions reduction activities	Regional heads are encouraged to allocate budgets for implementation of energy efficiency initiatives
Other	Gold Fields consciously raises awareness among employees in regard to the need for carbon emissions reduction. Regional and Group newsletters highlight emissions performance and initiatives.
Other	Gold Fields includes energy and carbon emissions performance in key personnel's performance indicators. Improved performance for energy and carbon is measured and rewarded through an incentive scheme for executives and managers.

Method	Comment
Other	A combination of cost abatement through replacement of grid electricity with low carbon alternatives together with dedicated budgets for energy efficiency and carbon emissions reduction initiatives.

CC3.3d

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

Further Information

Page: CC4. Communication

CC4.1

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

Publication	Status	Page/Section reference	Attach the document	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	Gold Fields' Integrated Annual Report for the year ended 31 December 2015 Pages: 16, 17, 23, 24, 90, 91, 92, 93, 95, 96, 97.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/Gold Fields IAR 2015.pdf	
In other regulatory filings	Complete	SEC Form 20 F. Pages; 24, 63, 88 – 89, 99 – 100, 106, 109 – 111, 134.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/GF Form 20F 14 April 2015.pdf	
In voluntary communications	Complete	ESG-Presentation 03-12-2015. Whole document.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/ESG-Presentation 03-12-2015.pdf	

Publication	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	Analysing Global Energy Security Plans and the Role of Renewables 01-07-2015. Whole document.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/Analysing Global Energy Security Plans and the Role of Renewables 01-07-2015.pdf	
In voluntary communications	Complete	Gold Fields eyes solar option - BDlive - 30-11-2015. Pages; 2-3.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/Gold Fields eyes solar option - BDlive - 30-11-2015.pdf	
In voluntary communications	Complete	Gold Fields to invite solar power tenders for South Deep - Mining Weekly - 06-11-2015. Pages; 1-2.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/Gold Fields to invite solar power tenders for South Deep - Mining Weekly - 06-11-2015.pdf	
In voluntary communications	Complete	Media releases - Gold Fields among leader in CDP climate change rankings 06-11-2015. Whole of 1 page document.	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC4.1/Media releases - Gold Fields among leader in CDP climate change rankings 06-11-2015.pdf	

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

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

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

CC5.1a

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	In South Africa, a carbon tax of R120 per ton CO2e has been proposed and is likely to be introduced in the beginning of 2017. The initial Carbon Tax Policy Paper outlined the proposed carbon tax and was subsequently updated in November 2015 through the publication of the Draft Carbon Tax Bill. There is a 60% tax free threshold, as well as additional allowances such as carbon offsets and trade exposure. Taking the additional allowances into account, the carbon tax rate may vary between R6 – R48 per ton CO2e.	Increased operational cost	Up to 1 year	Direct	Likely	Low-medium	It is estimated that the price of diesel and petrol may increase by R0.12/litre. This may increase South Deep's fuel costs by US$ 23 000.	Gold Fields is managing the risk of carbon tax in three ways: 1. Gold Fields engages with Government on carbon tax related issues through its membership of the Chamber of Mines and the Energy Intensive Users Group. 2. During 2015, all regions were tasked with developing and implementing five-year energy security plans. The energy security plans aim to encourage renewable energy use within Gold Fields' operations, in order to reduce reliance on fossil fuels & to manage the carbon tax	These costs are best expressed via the company's 2015 membership fees associated with the Chamber of Mines engagement: US$ 54 480 (the fee is not exclusively for climate change activities) and the Energy Intensive Users Group: US$ 7 417. The financial implication of keeping the internal emission reporting system up to date is estimated to amount to an annual internal cost of approximately US$ 20,000.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Under the current tax design Gold Fields faces two risks due to the South African carbon tax: 1.Fuel for mobile combustion will be taxed under the fuel tax regime, and it is anticipated that fuel levies will be increased. Gold Fields may therefore be exposed to an increase in fuel prices. 2.The electricity price may be impacted, though the government is on record as saying that this will not be the case. 3.The impact of the carbon tax on Gold Fields is becoming certain up to 2020. However the long term impact of carbon tax on operating costs after 2020 is unknown. This is specifically relevant because South Deep has a relatively high emission factor per							risk. This strategy has the potential to reduce Gold Field's carbon tax liability by focusing on reducing Gold Field's carbon footprint. 3. Gold Field's carbon footprint is reduced through behavioural changes, energy efficiency projects and through the implementation of renewable and alternative energy projects. As part of South Deep's five-year Energy Security Plan, it is mitigating the impact of carbon tax through energy efficiency improvements and seeking alternative energy sources. An essential component of the plan is the use of solar power at the mine. South Deep	Extracting, verifying and reporting on carbon emission performance costs about US$ 100,000/yr.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	ounce of gold relative to open cast mines, but is significantly deeper than many underground mines.							last year issued an initial Expression of Interest for a 40 MW photovoltaic on-site solar electricity generation plant. South Deep will provide the land for the solar plant and consider entering into a 25-year PPA in accordance with the selection criteria.	
Uncertainty surrounding new regulation	In line with South Africa's vision of moving towards a low carbon economy, several South African Government regulations have been drafted in relation to emissions/energy reporting and associated reductions: •The Department of Environmental Affairs published the Draft Declaration of	Increased operational cost	1 to 3 years	Direct	More likely than not	Low-medium	The financial impact might be related to an increase in reporting costs, increased operational costs due to the management of emission reduction targets and reduced growth possibilities. In addition the regulations specify that a penalty between	This risk is managed by engaging on a regular basis with Government to communicate the impact of such regulations on the mining sector. Gold Fields' engages on such topics with Government in South Africa via the Chamber of Mines and the Energy Intensive Users Group. This	These costs are best expressed via the company's 2015 membership fees associated with the Chamber of Mines engagement: US$ 54 480 (the fee is not exclusively for climate change activities) and the Energy Intensive Users Group: US$ 7 417.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Greenhouse Gases as Priority Pollutants in conjunction with the Draft Pollution Prevention Plans regulations at the beginning of 2016. These regulations identify specific greenhouse gases as priority pollutants, namely: CO2, CH4, N2O, HFCs, PFCs, SF6. RA list of production processes required to submit pollution prevention plans, if they exceed the limit of 0.1 Megatonnes, is provided in the regulations. Currently gold mining is excluded from the first phase of reporting. However there is the risk that the list of production processes will be re-examined to include gold mining in the future. •The Department of Environmental Affairs published the						US$394 322 – US$788 644 may be imposed if a company fails to comply with the regulations.	management method could potentially decrease the magnitude of the risk over the next year.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Draft National Greenhouse Gas Emissions Reporting Regulations during 2015. Data providers are required to report direct greenhouse gas emissions to the National Atmospheric Emission Inventory System (NAEIS) in line with the 2006 IPCC Guidelines. •The Department of Energy published the Draft Regulations Regarding Registration, Reporting on Energy Management and Submission of Energy Management Plans during 2015. The regulations stipulate that if energy consumption is above 180 TJ, companies may be required to measure and collect energy consumption data to be submitted to the Department. In								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	addition, if energy consumption is above 400 TJ, companies may be required to submit an energy management plan. It is expected that Gold Fields' South African operation, South Deep will be required to report energy consumption data and submit an energy management plan, as its energy consumption is above 400 TJ. The risks associated with the above mentioned regulations are multiple: •Costly and time consuming reporting of data is probable. •Due to the fact that the above mentioned regulations are all in draft stages, much uncertainty remains. •Increased operational costs due to the management of emission reduction								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	targets.								
Uncertainty surrounding new regulation	The Liberal/National coalition government in Australia has brought in the Direct Action Plan, under the Emissions Reduction Fund, which will serve as the nation's primary climate change policy. The objective of the Emissions Reduction Fund is to assist with meeting Australia's emission reduction target of 5% below 2000 levels by 2020. The Emission Reduction Fund incentivises businesses to adopt initiatives to reduce emissions by purchasing these emissions reductions. The regulation does however include a 'safeguard mechanism" to prevent emissions growth in other sections of the economy. It is this	Increased operational cost	3 to 6 years	Direct	Likely	Low-medium	None of Gold Fields' Australian operations have baseline peak emissions above 100 000 tCO2e and therefore they are not currently exposed to any penalties for increases in direct emissions based on their historical baselines. However if the Granny Smith operation does exceed 100 000 tCO2e in the future it will be liable for penalties on any further increases. However the legislative rulings are still being finalised and currently no indication of the cost of the penalty has been	Gold Fields manages the risk of uncertainty related to the Direct Action Plan through engagement with government and through emissions reduction strategies. Government engagement is conducted via the Chamber of Minerals & Energy of Western Australia. The Chamber hosts the Carbon Policy and Energy Efficiency Reference Group (CPEERG) where Goldfields can discuss carbon policy and energy efficiency matters. Gold Fields integrates energy and carbon management into all aspects of its business through	Membership fee of the Chamber of Minerals and Energy of Western Australia was approximately US$ 125 286 in 2015. (The fee is not exclusively for climate change activities).

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	mechanism that may pose a risk to Gold Fields' operations. The mechanism states that if an operation's baseline direct emissions (scope 1) have exceeded 100 000 tCO2e in the National Energy and Greenhouse Report (NGER) period between 2008/9 and 2013/14 then the operation will be required to maintain an emissions level below its historical 5 year baseline peak. In the event that this boundary is exceeded then a penalty will be incurred. During the reporting period of 2102/13, Granny Smith operation reported scope 1 emissions of 117,516 tCO2e, and a recent regulator determination has set this number as their baseline. None of the other Gold						disclosed.	its Integrated Energy and Carbon Management Strategy. This strategy seeks to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities, and investigate and implement viable sources of renewable energy. During 2015, all regions were tasked with developing and implementing five-year energy security plans.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Fields' Australian operations have exceeded 100 000 tCO2e in direct emissions, and have a default baseline of 100,000t CO2-e under the mechanism. Gold Fields runs the risk that if the emissions from the Granny Smith operations exceed 117 516 tCO2e, or any of the other operations exceed 100,000 tCO2e, they will be required to manage their emissions via a penalty based approach which may negatively impact Gold Fields.								
Other regulatory drivers	Ghana passed the Renewable Energy Act 832 in 2011. It makes provision for the development, management, utilisation, sustainability and adequate supply of renewable energy for heat and power	Increased operational cost	1 to 3 years	Direct	Very likely	Low-medium	Renewable energy (solar PV) is estimated to cost 44% more than the current agreed tariff of US$0.10/kWh that Gold Fields will pay under the Power	During 2015, all regions were tasked with developing and implementing five-year energy security plans, with South Deep and the Ghanaian mines being identified as facing	The cost of developing energy security plans is incorporated into the consultants fees for energy, carbon and water risk assessments which was US$ 106 046 in 2015.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	generation. It aims to provide an incentive for businesses to invest in renewable energy projects to help the country achieve 10% renewable energy production by 2020. This act provides for the establishment of two policy instruments. The first is the Feed in Tariff, a pricing incentive, and the second is the Renewable Energy Purchase Obligation (RPO). The RPO requires distribution utilities and bulk electricity consumers, to procure a certain proportion of their purchased electricity from renewable energy sources. The proportion of renewable energy is determined by a model, and premiums will have to be paid if the proportions are not						Purchase Agreement with Genser Energy for the next five years.	the greatest energy-security risks. But these operations also present the most significant opportunities for renewable energy integration.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	met. Gold Fields is a large electricity purchaser and it is likely that it will be affected by the RPO. However, the premiums for not meeting the obligations are still uncertain. The feed in tariffs for renewable energy have been confirmed and were discussed by the Energy Commission at a Renewable Energy Fair in November 2015. The tariffs ranged from US$0.1608/kWh for wind projects to US$0.2013/kWh for solar PV projects. While the Act's framework, applications and guidance are still being established the policy is gaining traction and has been reported in Ghana's Renewables Readiness								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Assessment, November 2015 and by the Netherlands Enterprise Agency. The risk for Gold Fields is in the uncertainty of the regulations which may impact on long term energy costs and planning.								

CC5.1b

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	The International Council on Mining and Metals (ICMM) has identified a number of risks relating to mining operations due	Reduction/disruption in production capacity	Up to 1 year	Direct	Likely	Medium-high	The financial implication estimated for the potential precipitation extreme and drought impacts is based on operational	This risk is being managed in the following ways: •All Gold Fields' operations are subject to risk analysis at regular 6 month intervals; •All of Gold Fields'	Costs associated with managing change in precipitation extremes and droughts form part of on-going environmental

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to changes in precipitation extremes and droughts as forecast in the IPCC Fifth Assessment Report (2014). The extent and frequency of drought conditions may exacerbate water scarcity in water stressed areas. Water is critical to many processes in mining and metals operations and as such changes in availability or quality will have implications for production, efficiency and cost. The remote Cerro Corona and water scarce South Deep operations may be particularly susceptible to the risks of						disruptions. Operational disruptions may cause mine shifts to be missed, resulting in a loss in revenue. During 2015 Gold Fields' operations at South Deep experienced stoppages of three reverse osmosis plants due to water shortages. The plants were not operational for several months. While running, the plants reduce the mine's water purchase costs by approx. US$ 10 000 per month. In the absence of these plants the water purchase costs are incurred by the mine. As a result of the	operations have an Environmental Management System for managing water use; •Each operation is required to have an operational and predictive water balance in place. The water balance is a complex but important tool for understanding current and future water management requirements; •Regional application of the Group water management guideline, including the development and implementation of water management action plans; •Our Ghanaian operations had to run diesel power generators for longer periods •The Cerro	management.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	drought. In FY2015 drought conditions caused a mine water shortage in South Deep, which affected the re-mining project and reverse osmosis plants. Mining is an extremely energy intensive activity which makes it very dependent on the supply of electrical power. Power generation is also dependent on water (hydropower and water for turbine cooling in conventional facilities). Energy generation constrained by water shortages will impact on mining operations either through increased cost or unavailability						drought that limited operations of hydro power schemes in Ghana, our operations had to spend in excess of US$10 million running diesel generators.	Corona operation stores rainwater within a closed circuit water system, where water is treated and reused by the operation; •In 2015 South Deep constructed storm water drainage systems to manage surface water runoff. South Deep successfully engaged in 2015 and 2016 with neighbouring mines to secure more process water to reactivate the reverse osmosis plants and reduce its intake from the regional water utility; •Gold Fields' has identified 20 water re-use, recycling and conservation initiatives, of which 16 will be implemented	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	of electricity. Ghana generates a significant amount of power from hydro power scheme. In FY2015 Ghana recorded the lowest 5-year annual rainfall which led to a national energy crisis and affected energy supply and usage at both Damang and Tarkwa Gold Mines. The drought has had a negative impact on energy costs and carbon emissions, as the mines had to frequently run diesel powered generators for much longer periods to offset the loss in grid electricity. Increases in the intensity and							during 2016.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	frequency of heavy precipitation events can be equally damaging to mining operations. Flooding events (and associated landslides) can disrupt supply chains and transmission pathways which impair operations. Furthermore storm events may inhibit downstream shipping and transportation of product. In particular, the remote operations in Western Australia and Peru may be at risk of being disconnected by heavy rains washing away roads. Heavy precipitation events may also								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	cause damage to core operational infrastructure by: destabilising tailing dams, flooding mine pits and increasing severe environmental events. Managing these risks at Gold Fields' operations can require operation stoppages and incur additional expenditures – both capital and operational in nature.								
Other physical climate drivers	Higher Temperatures The International Council on Mining and Metals (ICMM) has identified a number of risks relating to mining operations due	Reduction/disruption in production capacity	Up to 1 year	Direct	Likely	Low	The FY2015 energy costs totalled US$311 million and accounted for about 22% of Gold Fields' operating costs. An increase in temperatures and an	Maintaining a healthy workforce requires managing heat fatigue and dehydration in mining operations. Stringent heat stress and dehydration strategies are in	The cost of developing heat stress and dehydration strategies was managed in-house.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	to changes in temperature extremes as forecast in the IPCC Fifth Assessment Report (2014). Higher temperatures have an impact on both open cast (such as Tarkwa and Damang) and underground operations (such as South Deep). An increase in surface temperatures directly impacts the underground wet-bulb temperature. Wet-bulb temperature is defined as the air's capacity to absorb moisture and thus aid in cooling. An increase in the underground wet-bulb temperature has the potential to						associated increase in cooling demand will increase energy costs.	place to ensure the health and safety of employees in all of Gold Fields' operations.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	impact Gold Fields' operations in two ways. Operations are stopped and workers must be evacuated when the wet-bulb temperature in underground mines reaches a certain threshold. The wet-bulb temperature is then reduced below the threshold through refrigeration plant cooling. The effectiveness of the fridge plants decrease when temperatures increase and the energy consumption and cost to produce the required quality and quantity of cold air increases. In addition higher								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	temperatures directly increase the risk of heat stress to workers (outdoor and underground) and can exacerbate chronic diseases. Increases in vector borne diseases due to increased temperatures may also affect local communities in the region surrounding mining operations and this may have knock on effects to mining operation. All eight of Gold Fields' operations may be at risk of higher temperatures: •South Africa: South Deep •Australia: St Ives, Agnew,								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Darlot and Granny Smith. •Ghana: Tarkwa and Damang. •Peru: Cerro Corona.								

CC5.1c

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

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other drivers	Social licence to operate: Mining operations typically require large volumes of water and are often located in areas that are already water	Other: Loss of social license to operate resulting in operational disruptions	Up to 1 year	Direct	Unlikely	High	The impact of losing social license to operate will severely impact on the long term sustainability of Gold Fields. Losing its social license to operate could result in delays to projects and disruptions at the operations, reduced gold production and ultimately reduced revenue. Other mining companies in Peru that have been impacted by social conflict, such as Newmont, which was required to pay a fine of US$500,000 to the Peruvian government (http://www.nytimes.com/2005/10/25/world/americas/tangled-strands-in-fight-over-peru-gold-mine.html?_r=0). In addition losing social license to operate can have a reputational risk for Gold Fields', as it would make the company	In Peru Gold Fields is improving water access and quality for communities in the Hualgayoc region. In partnership with local government Gold Fields is	Gold Fields' spent US$ 14 million on socio-economic development and shared value projects in 2015.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	stressed. Climate models predict that there may be increases in the extent and frequency of drought conditions in many of these areas which may exacerbate water scarcity. Gold Fields is aware of its social responsibility to safeguard water and natural resources for surrounding local communities which are often vulnerable and have						less palatable to investors, which could influence the share price.	remediating water impacts from legacy mining activities (not associated with Gold Fields). The programme involves the construction of a new water pipeline from a well at Cerro Corona, identifying and repairing water leaks in the existing water infrastructure, and remediation of environmental liabilities that are contaminating a local	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	limited amenities. Especially in Peru and Chile, water quality and availability are a key concern for local communities. Other mining companies in Peru have faced fierce opposition from local citizens and government because of water issues which have in the past caused some operations to shut down for a period. Thus the risk of losing the							stream. Close to 90% of households in Hualgayoc now have access to sufficient clean running water. Gold Fields' operation, Cerro Corona, also works closely with community elected representatives to monitor water quality & quantity at the Las Tomas spring and authorised discharge points around the operation. Gold Fields	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	social licence to operate remains high if the Gold Fields' Peruvian operations do not manage their water use under the pressures of climate change. Maintaining such licences is crucial to mining companies as they are physically 'tied' to their mineral deposits and the "life of mine" can span decades - making it essential for mining							remains committed to responsible water stewardship, which enables shared benefits for its stakeholders & security of supply for its operations. Key enabling factors to achieve effective water stewardship include public reporting of water usage & material water risks & engaging proactively with affected stakeholders. Gold	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	companies to be able to navigate inter-related and inter-generational social, economic and political dynamics over time. The risk of not attaining or maintaining a social license to operate can lead to operational disruption, project delays and community dissatisfaction which impacts on productivity and regulatory licensing.							Fields adopts a catchment-based water management approach to identify water stewardship risks & provide context for operational water management. At an operational level the mines are tasked with managing operational water inputs & maximising resource sustainability to achieve operational flexibility & cost savings.	
Reputation	Climate change can	Other: declining interest from	Up to 1 year	Direct	Unlikely	Medium	According to Goldman Sachs, “Companies that are considered leaders in ESG policies are also	Gold Fields has a	The cost of drafting

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	present a reputational risk to Gold Fields by affecting the perceptions of the company from its investors. If Gold Fields is not seen to be adequately contributing to climate change mitigation and adaptation efforts it may stimulate negative investor perceptions. Environmental, social and governance (ESG) indicators are	investors in your goods/services.					leading the pack in stock performance by an average of 25%." It is therefore expected that if investors perceive Gold Fields to have a good reputation, it may lead to an increase in share price over the long term.	number of management strategies aimed at maintaining its reputation as a leader in climate change and carbon performance. These strategies include integrated carbon and energy reduction targets, carbon emission reduction; energy efficiency projects as well as water conservation initiatives. Several investor/analyst roadshows were held to	the CDP was roughly US$ 25 000 in 2015. Roughly US$ 1 000 was spent on investor / analyst roadshows. Gold Fields also spent US$ 627 010 on implementing energy efficiency projects during 2015.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	becoming increasingly important to investors when evaluating investment decisions. There is a strong movement under large institutional investors to focus on ESG indicators. Gold Fields has been tracking investor's interest since 2010 with respect to their opinions regarding climate change issues. The company's share price can be							reach out to investors to share on the Group ESG policies and achievements. Public reporting to the CDP, GRI and the Dow Jones Sustainability Index is another strategy to manage reputation. In 2015 Gold Fields was recognised as follows: • Achieved 100% A- in the 2015 CDP; • In the Top 5 of globally listed mining companies in the Dow Jones Sustainability Index, with 80% rating	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	affected by negative investor perceptions and this in turn can impact on the state of new investor recruitment.							achieved in 2015;	
Other drivers	Supply chain risks: The increasing frequency and intensity of extreme weather events is forecast as one of the possible impacts of climate change. These climate change impacts have the potential to affect the	Other: Disruption of operations	3 to 6 years	Indirect (Supply chain)	About as likely as not	Low-medium	Disruption of the supply chain, causing a disruption of the operations, may result in revenue losses: • Ghana: Tarkwa US$ 610 000 per shift missed (2015) • Australia: Granny Smith US$ 313 500 per shift missed (2015) The above figures are purely estimates, Gold Fields did not experience any shifts missed during 2015. To ensure a reliable source of power, Gold Fields' can produce electricity with diesel generators which is approximately US$ 0.157/kWh more expensive than conventional grid electricity.	It is important for Gold Fields to know whether its suppliers have insight into potential climate change related risks that may impact its operations and whether they are managing these risks actively. Furthermore, Gold	The capital cost of the two Genser-owned gas turbine plants is estimated at US$ 82 million.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	supply chains which Gold Fields depends upon for many of its material needs. Disruptions in the supply of essential materials can reduce the productivity of operations and even cause them to cease completely. Disruptions in the supply chain can also lead to the increased cost of required materials. Extreme storm							Fields has recognized the potential impact of regulatory interventions, such as carbon tax, on its suppliers which might cause an increase in the costs of products. An important management method is the Power Purchase Agreement with independent US-based power producer, Genser Energy. Implementation of this plan commenced in 2015 and permits	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	events have the potential to disrupt and delay the shipping of materials and equipment. Similarly transport overland (particularly to more remote sites) can be disrupted by flash floods that may occur more frequently. Changing rainfall patterns and drought conditions may affect the availability of water in certain areas. The							have been received from the EPA for the construction of two Genser-owned gas turbine power plants near the Tarkwa and Damang mines. This management method will address the electricity constraints that have been experienced at both Ghana mines. The agreement is a 20 year PPA for an initial 40 MW plant with 20 MW of power being provided	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	scarcity of water may make purchasing water as a commodity a challenge. Water is also an important input in the production of a number of mining materials such as cyanide. Water is also an important input for electricity generation (hydropower and water for turbine cooling in conventional facilities). In Ghana hydropower schemes contribute							from duel-fuel turbines (primarily gas) at both Tarkwa and Damang. Cyanide is 51% of Gold Fields' scope 3 emissions from purchased goods and services. 92% of Gold Fields' cyanide is consumed by its Ghanaian and Australian operations. Both Ghana and Australia's suppliers of cyanide, Orica Africa and Australian Gold Reagents (a division of	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	some 47% of Ghana's power, but with dam levels still dropping rapidly, security of electricity supply at both Tarkwa and Damang remains under threat. Furthermore, the transmission of this electricity can be affected if transmission lines are damaged by extreme weather events. Gold Fields may also feel the price effects that carbon							CSBP Wes Farmers), respectively, are large listed companies that publish sustainability reports and are aware of their emissions. Gold Fields therefore believes that the supply chain risk from climate change is actively managed for cyanide.	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	regulations may have on other industries upon which it relies, such as cement, which is energy- and emissions-intensive.								
Other drivers	Local communities and workforce impacted by climate change: In areas which experience increases in temperature and precipitation there are likely to be increases in the prevalence of vector	Reduction/disruption in production capacity	3 to 6 years	Indirect (Supply chain)	About as likely as not	High	If Gold Fields workforce is negatively impacted by climate change then it may result in reduced productivity. This could result in a reduction of gold produced and ultimately revenue losses.	Gold Fields has a comprehensive Malaria strategy in place for Ghana, which incorporates education, prevention, prophylaxis and treatment. It also includes spraying accommodation (both on-mine and employee	Gold Fields spent approximately US$ 1 million on health and wellbeing during 2015.

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	borne diseases and water borne diseases. Malaria is one such disease that the IPCC forecasts to spread in such areas. Local communities in the region surrounding mining operations may be affected by these impacts and this may have consequences for the mining operation and the associated work force. Similarly property							housing within the community), provision of mosquito repellent for workers, support for community health facilities and rapid diagnosis and treatment. Under this programme a total of 450 company housing units were sprayed in 2015. In South Africa Gold Fields also provides programs aimed at housing, lifestyle disease management and	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	damage associated with flooding may also affect local communities in the region surrounding mining operations which may impact Gold Fields' work force. Climate change also has the potential to affect food prices globally and this may lead to insecurity in mining communities and even social unrest. Social unrest in mining							financial wellness. The use of sports and awareness around nutrition has been used in Peru to bolster employee wellness.	

Risk driver	Description	Potential impact	Timeframe	Direct / Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	communities has been known to cause disruptions to mining operations. During 2015, Gold Fields tested 3 104 employees for malaria at both the Tarkwa and Damang mines, of whom 523 tested positive.								

CC5.1d

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

CC5.1e

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

CC5.1f

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

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

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

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

CC6.1a

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other regulatory drivers	Carbon Offsets: The South African government published the Draft Carbon Tax Bill for public comment in November 2015. The draft bill stated that a carbon offset mechanism would be included within the carbon tax design to provide additional flexibility for companies to reduce their carbon tax liabilities whilst at the same time investing in GHG emission reduction projects. Details regarding the development	New products/business services	Up to 1 year	Direct	About as likely as not	Low-medium	The Draft Carbon Tax Bill sets a rate of R120 per tCOR2R. Therefore Gold Fields could sell its carbon credits for anything less than R120. The price would probably be around R100 per carbon credit. This could generate an additional source of income for Gold Fields.	Gold Fields is managing the opportunity of carbon offsets by monitoring the developments on the Draft Carbon Tax Bill via its Chamber of Mines and Energy-Intensive Users Group memberships.	The costs are best expressed via the company's membership fee associated with the Chamber of Mines engagement: US$ 54 480 (2015)

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	of a carbon offset program were further elaborated in the Draft Carbon Offsets Regulations released on 20 June 2016. The offsets are to be used to encourage locally-based emissions reduction in sectors not directly covered by the tax. The eligibility criteria for carbon offset projects are as follows: • Only South African-based credits will be eligible for use within the carbon offset scheme, to encourage the development of locally based projects and GHG mitigation in								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	South Africa. • Projects that generate carbon offset credits must occur outside the scope of activities that are subject to carbon tax. This is to prevent double counting of the carbon reduction benefit should an offset project be implemented on an activity that is liable to the carbon tax. At this stage, based on the draft bill, Gold Fields will not be required to pay a direct carbon tax. Gold Fields' therefore has the opportunity to invest in offset projects with the aim of selling the credits to								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	companies impacted by the carbon tax. Gold Fields already has an energy efficient fans retrofit programme which was registered with the CDM in 2013. The project will enter its first validation stage in 2016.								

CC6.1b

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Induced changes in natural resources	Ghana has an abundance of natural resources from fertile soils to forests. However deforestation is an	Wider social benefits	1 to 3 years	Indirect (Supply chain)	About as likely as not	Medium	This opportunity has the potential to allow Gold Fields' to expand existing operations in	Ghana is actively managing this opportunity as it recently conducted a Biodiversity	The Biodiversity Baseline Project cost around US$ 62 281, with another US$ 16 316 to be spent

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	important environmental issue in the country. Ghana has one of the highest deforestation rates in Africa at 2% annually (UN 2007). Timber harvesting and slash-and-burn agriculture are the greatest threats. There is agreement that continuing changes in precipitation, temperature, and CO2 associated with climate change are very likely to drive important future changes in terrestrial ecosystems throughout Africa (IPCC AR5). Therefore it is apparent that Ghana's forest ecosystem and related biodiversity will be negatively impacted by climate change. Gold Fields' Tarkwa and Damang operations in Ghana are 20 825						Ghana which would improve revenue. The region as a whole reported net cash inflow of US$ 44 million during 2015. This figure is indicative of the estimated financial implications of expanding operations in Ghana.	Baseline Project which included a flora and fauna assessment in the active mining area. This covered aquatic life, an ecological study, water quality, and plant and animal population figures.	in 2016 on biodiversity management. Gold Fields' spent US$ 14 million on socio-economic development and shared value projects in 2015.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	ha and 23 666 ha, respectively. These are large mines that have the ability to protect parts of forests that are on their land but are not being mined. The mines are also instrumental in developing nurseries on site for rehabilitation purposes. These reforestation skills will empower the local communities. Gold Fields has the opportunity to protect local parts of forests particularly bearing in mind post mine closure, for the local communities. Through protecting local forests, Gold Fields may improve its reputation with local communities and government.								

CC6.1c

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Reputation	Gold Fields has a primary listing on the JSE Limited, with secondary listings on the New York Stock Exchange (NYSE) and the Swiss Exchange (SWX). Financial backing from investors is important to Gold Fields, and therefore Gold Fields' investors' opinions play a crucial role in the company's reputation. There has been a growing shift of investment interest towards companies that pursue sustainable and socially responsible practices. Investors are increasingly driven to find investment that meets and exceeds environmental, social and governance (ESG)	Increased stock price (market valuation)	Up to 1 year	Direct	Likely	Medium	If Gold Fields' reputation is a positive one then its share price may increase. A 1% increase in Gold Fields' share price would increase its market capitalization by US$ 37 million	Gold Fields manages its ESG status, and the opportunity to stimulate investment, through a number of internal strategies and standards. The company has: regional 5 year energy security plans, shared value projects and initiatives for water reuse, recycling and conservation. Gold Fields shares its progress on managing ESG risks and other relevant nonfinancial information through a number of reporting platforms. These include the GRI, DJSI, CDP, JSE SRI, MSCI and other ESG rating agencies, as	In FY2015 US$ 14 million was spent on social economic development projects. A further US$ 627,010 was spent on implementing energy efficiency projects at Gold Fields' operations. The cost of drafting the CDP was about US$ 25 000 in 2015.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	benchmarks performance. Data and indicators against these principles are also becoming increasingly available to investors. In 2015 the Morgan Stanley Institute for Sustainable Investing conducted a survey on ESG practices and investment. The results showed that investors appear to place a premium on sustainability. Approximately 72% of the investors surveyed believed that companies with good ESG practices are likely to achieve higher profitability and are thus better long-term investments. Barclays also conducted a study recently which							well as through direct engagement with investors and analysts. In 2015 Gold Fields was recognised as follows: • Achieved 100% A- in the 2015 CDP; • In the Top 5 of globally listed mining companies in the Dow Jones Sustainability Index, with an 80% rating achieved in 2015.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	discovered that investment-grade bonds with low ESG scores were outperformed between 2007 and 2015 by those with higher ESG scores. Climate change presents an opportunity for Gold Fields to showcase its environmental stewardship and demonstrate its leadership in ESG principles. With current investor trends this approach may stimulate investment in the company.								
Changing consumer behaviour	Historically gold has been considered to be a commodity that holds its value throughout times of unstable economic or political conditions. Investors have been known to	Increased demand for existing products/services	1 to 3 years	Indirect (Client)	About as likely as not	Unknown	In FY2015 Gold Fields produced 2.16 Moz of gold and the average gold price for the reporting year was $1 140 per oz. Thus, assuming 2015 yields, a 1%	Gold Fields cannot actively manage this opportunity as it is a price taker in the gold market.	No budget is allocated to opportunity as it cannot be actively managed.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	purchase gold in times of global crisis in order to hedge against unforeseen circumstances. Gold is seen as the safest investment in these periods. Climate change is recognised as one of the biggest global risks that humanity will face in the near future. Climate change has the potential to cause widespread instability to economies, societies and political systems. Thus the socio-economic conditions resulting from the impacts of climate change may stimulate demand in the gold market and this presents an opportunity for Gold Fields.						increase in the group average gold price would translate to $24.6 million increase in revenue. However, it is uncertain how much the gold price is likely to increase in a time of crisis.		
Other drivers	New Market	Increased	>6 years	Indirect	About as	Medium	In FY2015	New market	Gold Fields’

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Opportunities: Low carbon technologies are becoming more sought after in the global transition towards a green economy as an attempt to mitigate climate change. Gold is a critical component for many of these low carbon and renewable technologies for its conductive properties and high electrode potentials (corrosion resistance). Gold is therefore used in fuel cells, catalytic converters, solar cells and lithium air batteries. There is currently a large amount of research being done into the use of gold in energy generation. The University of California Santa Barbara has found	demand for existing products/services		(Client)	likely as not		Gold Fields produced 2.16 Moz of gold and the average gold price for the reporting year was $1 140 per oz. Thus, assuming 2015, yields a 1% increase in the group average gold price would translate to $24.6 million increase in revenue.	opportunities are identified and managed through Gold Fields' exploration and expansion division. Gold Fields is exploring the Far Southeast project in the Philippines, which is a 900 million tonne copper-gold porphyry ore body. The project is held by Far Southeast Gold Resources (FSGRI) in which Gold Fields has a 40% interest, with an option to increase its stake to 60%, and is adjacent to an existing mining operation with established infrastructure.	exploration and expansion division costs are managed in house.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	a way to incorporate gold nanoparticles into solar energy technologies as a semiconductor. The University of Pennsylvania is conducting similar research which may have potential for the powering of nano-circuits. If such technology becomes commercially viable and diffuses into the market there may be an increase in the demand and price of gold. These favourable market conditions would present an opportunity for Gold Fields. In addition, Gold Fields produces copper (28 700 tonnes in 2015) at the Cerro Corona mine in Peru. Copper is a highly efficient conduit which is used in								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	renewable energy systems to generate power from solar, hydro, thermal and wind energy. The use of copper assists in reducing emissions and lowers the amount of energy needed to produce electricity. Gold Fields therefore has the opportunity to explore potential business from copper production.								
Other drivers	Credits from emissions reductions: The Direct Action Plan, including the Emissions Reduction Fund and the Safeguard Mechanism were introduced by Australia's Liberal/National coalition government and serves as the nation's primary climate change	Other: income from emissions credits	Up to 1 year	Direct	Likely	Medium	In the second round of auctions for the Emission Reduction Fund, the average price of carbon credits was around A$12.00 per tonne of CO2e.	Gold Fields manages the emissions credit opportunity related to the Direct Action Plan through engagement with government and through emissions reduction strategies. Gold Fields integrates energy and carbon management	The costs of managing this opportunity are best expressed in terms of the company's membership fee of the Chamber of Minerals and Energy of Western Australia, which was approximately US$ 125 286 in 2015.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	policy. The Emissions Reduction Fund assists with meeting Australia's emission reduction targets by incentivising businesses to adopt emissions reduction initiatives through purchasing these emissions reduction credits. The Clean Energy Regulator will issue Australian Carbon Credit Units for emissions reductions from registered projects. Once credits have been issued they can be purchased by the Government through the Emissions Reduction Fund or sold to organisations that wish to offset their emissions. Gold Fields' Granny							into all aspects of its business through its Integrated Energy and Carbon Management Strategy. Gold Fields engages with government through the Chamber of Minerals & Energy of Western Australia. Gold Fields also takes part in carbon policy and energy efficiency discussions at the Carbon Policy and Energy Efficiency Reference Group (CPEERG), hosted by the Chamber.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Smith operation converted a power plant from diesel to gas in 2016. This initiative is expected to save an estimated 13 000 tonnes of CO2e per year. These savings generated carbon credits, which were successfully sold in a blind auction through the Emissions Reductions Fund (ERF) over a 7 year period. Any additional credits that are generated through other emissions saving opportunities may also be auctioned under the ERF.								

CC6.1d

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

CC6.1e

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

CC6.1f

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

Further Information

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

Page: CC7. Emissions Methodology

CC7.1

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

Scope	Base year	Base year emissions (metric tonnes CO2e)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Mon 01 Jan 2007 - Mon 31 Dec 2007	461565
Scope 2 (location-based)	Mon 01 Jan 2007 - Mon 31 Dec 2007	716325
Scope 2 (market-based)		

CC7.2

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

Please select the published methodologies that you use
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

CC7.2a

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

CC7.3

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

Gas	Reference
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)

CC7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Diesel/Gas oil	2.67614	kg CO2e per liter	DEFRA 2015 version 2.0
Motor gasoline	2.29968	kg CO2e per liter	DEFRA 2015 version 2.0
Liquefied petroleum gas (LPG)	2.94261	metric tonnes CO2e per metric tonne	DEFRA 2015 version 2.0
Bituminous coal	2.46627	metric tonnes CO2e per metric tonne	DEFRA 2014 version 1.2
Other: Blasting Agents (ANFO)	0.167	metric tonnes CO2e per metric tonne	Australian Greenhouse Office (AGO) Factors and Methods Workbook, Dec 2006.
Other: Oxyacetylene	0.00372	kg CO2e per liter	The Climate Registry 2015 - (corrected from feet to m3) - http://www.theclimateregistry.org/wp-content/uploads/2015/04/2015-TCR-Default-EF-April-2015-FINAL.pdf.
Electricity	0.596	metric tonnes CO2e per	This electricity emission factor is for Australia North – Granny Smith, Agnew and Darlot operations. The factor was sourced from Transalta Leinster/Mount Keith Scope Two Grid Factor for FY 2014-15.

Fuel/Material/Energy	Emission Factor	Unit	Reference
		MWh	
Electricity	0.643	metric tonnes CO2e per MWh	This electricity emission factor is for Australia south – St Ives operation. The factor was sourced from Transalta Kalgoorlie/Kambalda Scope Two Grid Factor for FY 2014-15.
Electricity	1.01	metric tonnes CO2e per MWh	This electricity emission factor is for South Africa. It was sourced from the Eskom Fact Sheet 2015 - http://www.eskom.co.za/IR2015/Documents/Eskom_fact_sheets_2015.pdf
Electricity	0.21477	metric tonnes CO2e per MWh	This electricity emission factor is for Ghana. It was sourced from Ecometrica (2011) - http://ecometrica.com/assets/Electricity-specific-emission-factors-for-grid-electricity.pdf
Electricity	0.286	metric tonnes CO2e per MWh	This electricity emission factor is for Peru. It was sourced from The Climate Registry 2015 - http://www.theclimateregistry.org/wp-content/uploads/2015/04/2015-TCR-Default-EF-April-2015-FINAL.pdf

Further Information

Gold Fields' base year emissions are location-based, and should be used as a proxy since a market based result cannot be calculated.

Page: CC8. Emissions Data - (1 Jan 2015 - 31 Dec 2015)

CC8.1

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

Operational control

CC8.2

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

529588

CC8.3

Does your company have any operations in markets providing product or supplier specific data in the form of contractual instruments?

No

CC8.3a

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

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
620359	172667	Three of Gold Fields' Australian operations make use of electricity that is sourced from a market-based source. The three operations are St Ives, Agnew and Darlot. Gold Fields' Perth offices also make use of electricity for this source. The electricity is sourced from an Independent Power Producer (IPP) called Transalta.

CC8.4

Are there are 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

CC8.4a

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

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded

CC8.5

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

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Metering/ Measurement Constraints Data Management	Diesel, LPG and petrol use is metered in Gold Fields' operations; therefore the uncertainty of these sources is based on metering/measurement constraints. Uncertainty of metering / measurement equipment is typically less than 2%. Oxyacetylene and blasting agents are purchased from the supplier, after which the invoices are used as data input in the carbon footprint. Uncertainty of these sources is therefore based on data management. Gold Fields has high quality management and accounting practices in place, and the data management uncertainty is estimated to be below 2%.
Scope 2 (location-based)	Less than or equal to 2%	Metering/ Measurement Constraints	Based on a review of the reliability of electricity meters, it was found that high quality meters (as used at Gold Fields) are typically below a 2% uncertainty range.
Scope 2 (market-	Less than or equal to 2%	Metering/ Measurement	Based on a review of the reliability of electricity meters, it was found that high quality meters (as used at Gold Fields) are typically below a 2% uncertainty range.

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
based)		Constraints	

CC8.6

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

Third party verification or assurance process in place

CC8.6a

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC8.6a/Verification Statement for upload.zip	Dedicated verification section	ISAE3000	100

CC8.6b

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

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

CC8.7

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

Third party verification or assurance process in place

CC8.7a

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

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Location-based	Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC8.7a/Verification Statement for upload.zip	Dedicated verification section	ISAE3000	100
Market-based	Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared	Dedicated verification	ISAE3000	100

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
				Documents/Attachments/CC8.7a/Verification Statement for upload.zip	section		

CC8.8

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

Additional data points verified	Comment
No additional data verified	Not applicable

CC8.9

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

No

CC8.9a

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

Further Information

CC8.7a Gold Fields' assurance statement details total scope 2 emissions. The total scope 2 emissions are the sum of location-based and market-based emissions.

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC9.1

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

Yes

CC9.1a

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

Country/Region	Scope 1 metric tonnes CO2e
South Africa	7102
Ghana	275662
Australia	209691
South America	37133

CC9.2

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

By business division
By facility
By GHG type

CC9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)
Head Offices	353
Ghana	275354
Peru	37089
South Africa	7101
Australia	209691

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
South Deep	7101	-26.39802	27.695503
Sandton Main	1	-26.099784	28.067068
Tarkwa	192587	5.249448	-2.004898
Damang	82767	5.226349	-2.024918

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Accra Main	308	5.605238	-0.183069
St Ives	73843	-31.208691	121.663284
Agnew	30292	-27.905845	120.704727
Darlot	8215	27.8833	121.2667
Granny Smith	97341	28.9833	122.6833
Perth Main	0	-31.949629	115.841709
Cerro Corona	37089	-6.776103	-78.660736
Lima Main	45	-12.097962	-76.973228

CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	529588

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC10.1

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

Yes

CC10.1a

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

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
South Africa	489525		484679	0
Ghana	89225		415447	0
Australia	0	172667	277749	0
South America	41609		145486	0

CC10.2

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

By business division
By facility

CC10.2a

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

Business division	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Head Offices	512	147
Ghana	89175	
Peru	41573	
South Africa	489099	
Australia	0	172520

CC10.2b

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

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
South Deep	489099	
Sandton Main	427	
Tarkwa	69049	

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Damang	20126	
Accra Main	50	
St Ives	0	97374
Agnew	0	49737
Darlot	0	25409
Granny Smith	0	
Perth Main	0	147
Cerro Corona	41573	
Lima Main	36	

CC10.2c

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

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

Further Information

Page: CC11. Energy

CC11.1

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

More than 20% but less than or equal to 25%

CC11.2

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

Energy type	Energy purchased and consumed (MWh)
Heat	0
Steam	0
Cooling	0

CC11.3

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

1956170

CC11.3a

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

Fuels	MWh
Diesel/Gas oil	1925907
Motor gasoline	1326

Fuels	MWh
Liquefied petroleum gas (LPG)	27957
Other: Oxyactetylene	980

CC11.4

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

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor	0	Three of Gold Fields' Australian operations (St Ives, Agnew, Darlot) and the head office in Perth make use of electricity that is sourced from an IPP, Transalta. The IPP generates electricity from natural gas, which has a much lower emission factor associated with its generation when compared to fossil fuels such as coal or diesel. However as per the CDP guidance natural gas is not considered as low carbon energy. For this reason Gold Fields does not purchase or generate low carbon electricity, heat, steam or cooling. It is also worth noting that the electricity Gold Fields' uses at its Cerro Corona operation is also generated from natural gas.

CC11.5

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

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
1433595	1323361	110234	0	0	Gold Fields' operations Granny Smith and Darlot produce their own electricity. The calculations take into account the power plant efficiency factors. This figure is updated every 6 months. For 2015 the figure for January to June was 0.4308 and for July to December was 0.3999. Darlot only generates a portion of electricity for own use. The majority is sourced from Transalta, a low carbon source electricity generator.

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Increased

CC12.1a

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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	1.04	Decrease	Due to the implementation of emission reduction activities, 1.04% of the overall emissions were reduced. Emissions change due to emission reduction activities was calculated as follows: total emissions reduced due to emission reduction activities (13 031 tCO2e) were divided by total scope 1 and 2 emissions from 2014 (1 258 367 tCO2e).
Divestment	0	No change	No divestments occurred during the 2015 calendar year.
Acquisitions	0	No change	Though Gold Fields acquired the Yilgarn assets (Granny Smith, Darlot and Agnew) during October 2013, no change in emission is reported due to the restatement of the 2013 emissions. The restatement calculation was done in accordance with the ISO 14064-1 and Greenhouse Gas Protocol guidance on restatement in the case of a structural change to the company, such as acquisitions.
Mergers	0	No change	No mergers were undertaken by Gold Fields during the reporting year.
Change in output	15	Increase	Gold Fields ore milled increased from 33 513 000 tonnes in 2014 to 38 605 000 tonnes in 2015, which resulted in a 15% increase in emissions.
Change in methodology	0	No change	Not applicable
Change in boundary	0	No change	Not applicable
Change in physical operating conditions	5.14	Increase	Gold Fields' Ghanaian operation's emissions increased by 15% from 2014 to 2015. This was due to a 23% increase in scope 1 emissions related to a change in the physical operating conditions. Tarkwa and Damang source electricity from the Volta River Authority and the Electricity Company of Ghana. Hydropower schemes contribute some 47% of Ghana's power, but with dam levels dropping rapidly, security of electricity supply is under threat. As a consequence Tarkwa and Damang experienced daily load-shedding initiated in Q4 of 2014 and continued through 2015. To address the load-curtailment requirements Damang and Tarkwa made extensive use of diesel generators during 2015, which resulted in an increase in diesel consumption. In addition Tarkwa experienced a worsening stripping ratio and increased pit travel distances. The remainder of the increase was due to changes in activity rates (increased intensity of mining and construction activities), Agnew (diesel consumption by generator running chilling plant), Granny Smith (increased fleet distances) and St Ives (completion of major works). The emissions change due to diesel consumption was calculated as follows: increase in diesel emissions (64 673 tCO2e) were divided by total scope 1 and 2 emissions from 2014 (1 258 367 tCO2e).
Unidentified	0	No change	Not applicable
Other	14.19	Decrease	Emissions change due to other reasons was calculated as follows: Change in output (15%) + change in physical operating conditions (5.4%) - emission reduction activities (1.04%) - absolute difference between

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
			2014 and 2015 (5.11%). This decrease in emissions is due to increased awareness and focus on energy efficiency, relating specifically to projects and programmes of a non-capital nature, as the projects for which capital investment is required was reported under CC3.3.

CC12.1b

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

Location-based

CC12.2

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

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.0005197	metric tonnes CO2e	2545000000	Location-based	18.49	Increase	Gold Fields' emissions increased but revenue decreased in 2015 compared to 2014. The emissions increased predominantly due to increased diesel consumption at the Ghanaian operations and lower grades.

CC12.3

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

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.03426018	metric tonnes CO2e	Other: Tonnes of ore milled	38605000	Location-based	8.76	Decrease	Both emissions and tonnes ore milled increased from 2014 to 2015. However the emissions increased less than the tonnes ore milled, this is as a result of emission reduction activities and an energy management awareness campaign.
0.59162505	metric tonnes CO2e	ounce of gold	2235561	Location-based	7.88	Increase	Gold Fields' emissions increased but ounces of gold mined decreased in 2015 compared to 2014. The emissions increased predominantly due to increased diesel consumption at the Ghanaian operations and lower grades.

Further Information

Gold Fields has been in contact with the CDP, and understands that both location-based and market-based cannot be selected in CC12.1b. However the CDP confirmed that emissions performance calculations in CC12.1a can be carried out on either location-based or market-based emissions or both. Gold Fields has calculated emissions performance calculations in CC12.1 and CC12.1a on both location-based and market-based emissions. The same explanation is understood for CC12.2 and CC12.3. Both the calculations in CC12.2 and CC12.3 are based on Gold Fields' scope 1 and 2 emissions, which include both location-based and market-based scope 2 emissions.

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

No, but we anticipate doing so in the next 2 years

CC13.1a

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

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

CC13.1b

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

Gold Fields' participated in the Australian Emission Reduction Fund (ERF), when it sold its credits generated at its Granny Smith mine, at the beginning of 2016. Gold Fields integrates energy and carbon management into all aspects of its business through its Integrated Energy and Carbon Management Strategy. This strategy seeks to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities, and investigate and implement viable sources of renewable energy. During 2015, all regions were tasked with developing and implementing five-year energy security plans.

CC13.2

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

No

CC13.2a

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

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

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

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

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	168337	Activity data: The following major cost and volume purchased goods and services for Gold Fields have been included in the carbon footprint: lime, cement, caustic soda, purchased water and cyanide. Activity data for the purchased goods is gathered from invoices and receipts provided by the relevant suppliers and then uploaded onto the GRI portal (a non-financial data capture and	100.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			management system). Emission factors: Lime and Cement emission factors were obtained from the Inventory of Carbon and Energy (University of Bath, 2011), and the caustic soda emission factor was obtained from the CCalc Tool Manual (V1.1) (2010). The emission factor for purchased water was obtained from the Rand Water Board of South Africa (2012). The cyanide emission factor was obtained from an unregistered CDM project, titled: "Increase in hydrogen cyanide production by the Andrussow process instead of by the Acrylonitrile sub route process in Candeias, Brazil". Care is taken to obtain internationally recognized emission factors, unless the emission factor is country specific, such as the water emission factor. GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The methodology used as per this ISO standard was the multiplication of activity data (obtained from the GRI portal) with emission factors. Assumptions and allocation methods: In this specific scope 3 category, no assumptions were made or allocation methods applied. Data quality: The quality of the consumption data reported on the GRI Portal, and the emission factors used both influence the data quality. The data reported in the GRI Portal are subject to strict		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			internal review procedures and the total scope 1, 2 and 3 emissions form part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		
Capital goods	Relevant, calculated	152	Activity data: The top three capital spends during 2015 were for the purchased capital goods category. Gold Fields' purchased two Atlas Copco trucks and a Komatsu ROM Loader. Activity data for the capital goods was gathered from invoices and receipts provided by the relevant suppliers. Emission factors: The emission factor associated with the Atlas Copco trucks was calculated by dividing the price of the trucks by the total revenue of Atlas Copco (as stated in the Atlas Copco 2013 Annual Report, converted from Swedish Kroner to ZAR by a factor of 9.1). GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The financial spend per truck (activity data) was multiplied by the calculated emission factor to estimate the emissions from the production of the truck. Assumptions and allocation methods: The total emissions for Komatsu were not available in their annual report, and therefore the emission factor associated with the production of one	0.00%	The emission factor used in this category was not calculated using data obtained from suppliers or value chain partners. The data used in the emission factor calculation was obtained from the annual report communications.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Komatsu ROM Loader could not be calculated. Therefore the assumption was made that the emissions for from the production of a Komatsu ROM Loader would be the average of the emissions from the two Atlas Copco trucks. Data quality: The financial spend per capital good is reported on Gold Fields' financial system. The data reported on in the financial system is subject to strict internal review procedures and an annual audit conducted by an independent third party. The exact figures used for this calculation are captured on the financial system and form part of the total spend on capital goods during 2015. The calculation of the emission factor is based on the quality of the Atlas Copco Annual Report, which was subject to a financial audit and limited assurance was achieved for emissions.		
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	232354	Activity data: Gold Fields has life cycle emissions associated with fuel-and-energy related activities (not reported in scope 1 or 2) from: diesel, petrol, contractor fuel, LPG and blasting agents. In addition to these life cycle emissions, transmission and distribution losses were also included for South African operations but have not been included for Australia, Peru and Ghana operations. This consumption data is recorded by the Gold Fields operations and uploaded onto the GRI portal. The transmission and distribution losses data is a percentage of the electricity used and is	100.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			obtained from Eskom for the South African operation, South Deep as well as the Gold Fields' Head Office in Johannesburg. Emission factors: The emission factor for the transmission and distribution losses for the South African operation was obtained directly from the Eskom Fact Sheet 2015. The emission factors for diesel, petrol and LPG were obtained from the DEFRA Emission Factors for 2015 version 2.0, while the emission factor for blasting agents was obtained from the CCalc Tool Manual (V1.1) (2010). GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The methodology used as per this ISO standard was the multiplication of activity data (obtained from the GRI portal) with emission factors. Assumptions and allocation methods: In this specific scope 3 category, no assumptions were made or allocation methods applied, as activity data (obtained from the GRI portal) was multiplied with emission factors. Data quality: The quality of the consumption data reported on in the GRI Portal, and the emission factors used both influence the data quality. The data reported on in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			party (please refer to attached verification statement for procedures performed).		
Upstream transportation and distribution	Relevant, calculated	6322	Activity data: In this category Gold Fields includes the transportation of the goods and services, as well as fuel and energy related products. The tonnes of goods transported from the supplier are collated from receipts and invoices provided by the supplier. This data is then uploaded onto the GRI portal. Emission factors: The road freight emission factor used for this category is obtained from the DEFRA Emission Factors for 2015 V2.0. The DEFRA emission factors were used as an international representative for the four geographic regions in which Gold Fields operates. GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The methodology used as per this ISO standard was the multiplication of activity data (obtained from the GRI portal) with emission factors. Assumptions and allocation methods: In this category it was assumed that all products were transported 100 kilometres. The assumed average transportation distances were internally reviewed and are expected to give a fair representation of the actual emissions. Data quality: The quality of the consumption data reported on in the GRI	0.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Portal, and the emission factors used both influence the data quality. The data reported on in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		
Waste generated in operations	Relevant, calculated	1898	Activity data: The landfilled waste generated in each of the Gold Fields operations was recorded. The consumption data was then uploaded onto the GRI portal. Emission factors: A generic emission factor for waste was used, and obtained from the USA Environmental Protection Agency and is expected to be reliable and applicable as an international average for Gold Field's operations. GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The waste data (obtained from the GRI portal) was multiplied with the applicable emission factor. 100% of the data used was classified as primary data. The primary data used included company-specific metric tons of waste generated. Assumptions and allocation methods: In this specific category, no assumptions were made or allocation methods	100.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			applied. Data quality: The quality of the consumption data reported on the GRI Portal, and the emission factors used, both influence the data quality. The data reported in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		
Business travel	Relevant, calculated	7747	Activity data: The business travel category for Gold Fields includes air travel and road travel emissions. The primary activity data for air travel and car hire is obtained from Gold Fields' travel agents. Employee business travel using privately owned cars and distances travelled is obtained from the internal SAP system. Gold Fields engages with the travel agent, regarding the template that must be used to collate the flight and car rental data. The activity data is then uploaded onto the GRI portal. Emission factors: The emission factors for air travel, were used according to km travelled, classifying each flight as either domestic, short-haul (<3700 km) or long-haul (>3700 km). The factors were obtained from the DEFRA Emission Factors 2015 version 2.0. GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain	100.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			(scope 3) Accounting and Reporting Standard. The business travel data (obtained from the GRI portal) was multiplied with the applicable emission factor. 100% of the data used was classified as primary data. Assumptions and allocation methods: Assumptions were made with respect to the efficiency of fuel consumption, required in order to convert kilometres claimed to litres, for car hire. Data quality: The quality of the consumption data reported on in the GRI Portal, and the emission factors used both influence the data quality. The data reported on in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		
Employee commuting	Relevant, calculated	4333	Activity data: Gold Fields employee commuting covers the transportation of employees between their homes and work sites in vehicles not owned or operated by Gold Fields (excluding contractors). The total number of employees is captured by the internal SAP system. Emission factors: The emission factors associated with employee commuting are linked to the fuel use, and uses the scope 1 petrol and diesel emission factors obtained from the DEFRA Emission Factors 2015 version 2.0. GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3	0.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The total km travelled (activity data) were multiplied by the petrol or diesel emission factor. Assumptions and allocation methods: The following assumptions were used to calculate the total distance driven by employees in one year: 1) 20% of the companies' employees use private transport, 2) 80% of this transport is petrol based, 20% of this transport is diesel based, 3) the average distance travelled per day per employee is 40 km. 4) an average petrol consumption was assumed for employee commuting, of 11km/litre; and average diesel consumption of 14km/litre. It was assumed that each employee works 230 days a year. The emissions reported for this category are mainly based on assumptions and therefore expected to be less precise than the emissions reported for the other categories. Data quality: The quality of the consumption data reported on in the GRI Portal, and the emission factors used both influence the data quality. The data reported on in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Upstream leased assets	Not relevant, explanation provided		Not applicable		The emissions associated with upstream leased assets are estimated to be insignificant and therefore not included in the carbon footprint. Gold Fields mainly makes use of contractors and their equipment for activities not performed in-house. Contractor fuel use is collected and reported on as scope 3 (Fuel and Energy Related Activities) emissions.
Downstream transportation and distribution	Relevant, calculated	8338	Activity data: Downstream transportation and distribution for Gold Fields covers the emissions related to the transportation of produced gold to the refineries. The activity data for the South African operation South Deep was recorded in time (hours) taken for aviation transportation. The activity data for the South American, West African and Australian operations was recorded by each operation in amount of tonnes transported and the distance travelled for the freight transportation. This activity data was then uploaded onto the GRI portal. Emission factors: The emission factor for aviation turbine fuel is obtained from the DEFRA Emission Factors 2015 version 2.0 The average aviation fuel efficiency was obtained from Universal Helicopters. The emission factors for domestic and international flights for the international operations are obtained from the DEFRA Emission Factors 2015 version 2.0 GWP values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in	100.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The methodology used as per this ISO standard was the multiplication of activity data (obtained from the GRI portal) with emission factors. Assumptions and allocation methods: In this specific category, no assumptions were made or allocation methods applied. Data quality: The quality of the consumption data reported on in the GRI Portal, and the emission factors used, both influence the data quality. The data reported on in the GRI Portal is subject to strict internal review procedures and the total scope 1, 2 and 3 emissions forms part of an annual audit conducted by an independent third party (please refer to attached verification statement for procedures performed).		
Processing of sold products	Relevant, calculated	355	Activity data: Processing of sold products for Gold Fields covers the emissions associated with the refining and smelting of gold. The gold production, in ounces, is reported per operation as primary data and uploaded onto the GRI portal. Emission factors: The amount of energy required to refine and smelt a tonne of gold was obtained from literature (National Resources Canada: www.nrcan.gc.ca, 2013). Multiplying this by the relevant national grid emission factors the emission factor (tCO2/tonne of gold) for each country was calculated. GWP values: A GWP value of 1 was	0.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. The methodology used as per this ISO standard was the multiplication of activity data (obtained from the GRI portal) with emission factors. Assumptions and allocation methods: In this specific category, no assumptions were made or allocation methods applied. Data quality: The primary data (gold produced) is typically of high quality, as this is an intensively monitored performance determinant. The data forms part of an annual audit on total scope 1, 2 and 3 emissions performed by an independent third party (please refer to attached verification statement for procedures performed).		
Use of sold products	Not relevant, explanation provided		Not applicable		The emissions associated with the use of sold gold products are estimated to be insignificant.
End of life treatment of sold products	Relevant, calculated	711	Activity data: End of life treatment of sold products for Gold Fields relates to the gold produced, which is assumed to be recycled twice. The amount of gold produced (primary data) was obtained from the GRI portal. Emission factors: This emission factors (tCO2/tonne of gold) are calculated by multiplying the energy required to refine and smelt gold (National Resources Canada) with the relevant national grid emission factors. GWP	0.00%	Not applicable

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			values: A GWP value of 1 was used for carbon dioxide. Methodologies: Scope 3 emissions calculations were completed in accordance with ISO 14064-1 and the GHG Protocol: Corporate Value Chain (scope 3) Accounting and Reporting Standard. Refining and smelting of gold does not typically occur in the country that it was mined. For this reason electricity emission factors of the countries in which the gold was refined were used to calculate emissions. These countries include South Africa, Australia and USA. Assumptions and allocation methods: It was assumed that all gold product is recycled twice and when recycled it is subject to full refining and smelting. Data quality: The amount of gold produced by Gold Fields in 2015 is expected to be highly reliable due to the importance of this data. This data forms part of an annual audit on total scope 1, 2 and 3 emissions performed by an independent third party (please refer to attached verification statement for procedures performed).		
Downstream leased assets	Not relevant, explanation provided		Not applicable		Gold Fields does not make use of downstream leased assets and therefore this category is found not to be applicable to the company.
Franchises	Not relevant, explanation provided		Not applicable		Gold Fields does not have any franchises; this category is therefore not applicable to the company.
Investments	Not relevant,		Not applicable		Investments in which Gold Fields has a

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	explanation provided				minority share are not included in the carbon footprint as Gold Fields does not have an influence on the operational aspects of these companies and therefore does not have control over the emissions. Gold Fields is the majority owner of all its operations.
Other (upstream)	Not relevant, explanation provided		Not applicable		Gold Fields has no other upstream emissions relevant to operations.
Other (downstream)	Not relevant, explanation provided		Not applicable		Gold Fields has no other downstream emissions relevant to operations.

CC14.2

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

Third party verification or assurance process in place

CC14.2a

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

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Reasonable assurance	https://www.cdp.net/sites/2016/77/7577/Climate Change 2016/Shared Documents/Attachments/CC14.2a/Verification Statement for upload.zip	Dedicated verification statement	ISAE3000	100

CC14.3

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

Yes

CC14.3a

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

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Other: Purchased Goods and Services decreased due to streamlining and optimization.	17	Decrease	The decrease in emissions from purchased goods and services mostly results from a decrease in the use of cyanide at Tarkwa mine. Cyanide consumption decreased because of a business improvement initiative which was implemented during the reporting year.
Capital goods	Other: Capital	32	Increase	The expenditure on new vehicles purchased in this reporting year was greater

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
	procurement			than in the previous year. This resulted in an increase in emissions from the purchasing of capital goods.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Change in physical operating conditions	7	Increase	The emissions from fuel and energy related activities (not included in Scope 1 or Scope 2) increased as a result of an increased consumption of diesel. Tarkwa and Damang source t electricity from the Volta River Authority and the Electricity Company of Ghana. Hydro-power schemes contribute some 47% of Ghana's power, but with dam levels dropping rapidly, security of electricity supply is under threat. As a consequence Tarkwa and Damang experienced daily load-shedding initiated in Q4 of 2014 and continued through 2015. To address the current load-shedding requirements Damang and Tarkwa made more extensive use of diesel generators during 2015, which resulted in an increase in diesel consumption, and thus in an increase in fuel consumption by the mines' diesel suppliers, which truck diesel to the mines. In addition Tarkwa experienced a worsening stripping ratio and increased pit travel distances.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Unidentified	18	Increase	Not applicable
Upstream transportation & distribution	Other: Increased transportation and distribution	9	Increase	The emissions associated with upstream transportation and distribution increased as a result of increased use of transport and distribution services in the reporting year.
Waste generated in operations	Other: Change in amount of waste produced	16	Decrease	The emissions associated with waste decreased due to a decrease in the amount of waste generated from 13 346 tonnes in 2014 to 11 166 tonnes in 2015.
Business travel	Other: Increase in number of flights	11	Increase	Emissions from business travel increased due to an increase in the number of domestic and short haul flights.
Employee commuting	Other: Increased amount of employees, contributed to increased employee commuting.	28	Increase	The employee commuting emissions increased in this reporting year due to an increase in the number of employees employed by Gold Fields.
Downstream transportation and distribution	Change in output	9	Decrease	Downstream transportation and distribution emissions decreased due to a decrease in the tons of processed sold product.

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Processing of sold products	Change in output	3	Decrease	Emissions from processing of sold products decreased due to a decrease in the tons of gold produced.
End-of-life treatment of sold products	Change in output	3	Decrease	Emissions from End-of-life treatment of sold products decreased due to a decrease in the tons of gold produced.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	1	Decrease	1% of Gold Fields fuel-and-energy related emissions (not included in scope 1 or 2) decreased due to emission reduction projects implemented during 2015. Emissions reduction projects implemented during the target period include Campaign Milling at the St Ives operation, and the Tarkwa and Agnew capacitor bank installations. The emissions value percentage was calculated as follows: (1 094 tCO2e / 208 423 tCO2e) * 100 = 1%.

CC14.4

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

Yes, other partners in the value chain

CC14.4a

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

Gold Fields defines other partners in the value chain as the local mining communities surrounding its mining operations. Vulnerable communities are particularly susceptible to the impacts of climate change. Gold Fields' engagements with communities are aimed at increasing the resilience of the communities. If community resilience is increased then communities will be better equipped to adapt to the impacts of climate change.
i.) Method of engagement: The communities in which Gold Fields operates are directly and often exclusively dependent on the sustainability and growth of the mines. One of the biggest challenges facing mining companies is building long lasting relationships and trust with these host communities over more than one generation. Without ongoing trust there is potential for operational disruption, project delays and cancellations throughout the life of mine which could be 30 years. It takes substantial time, effort and resources to establish and maintain a strong social license to operate. Increasingly, Gold Fields ability to grow through the expansion of existing mines and the development of new projects is determined by their ability to build strong relationships and trust with communities in our

operating areas. An example of community engagement is at Gold Fields' Cerro Corona mine. The mine works closely with community-elected representatives to monitor water quality and quantity at the Las Tomas spring and authorized discharge points around the operation.
ii.) Strategy for prioritization: Gold Fields prioritizes community engagement through including development and implementation of community engagement strategies in each region as a group score card objective for 2015.
iii.) Measure of success: Gold Fields' invested US$ 14 million in local communities during 2015. The number of host community workforce employed by Gold Fields is 10 009 people. To date, Gold Fields' regions have implemented five Shared Value projects ranging from the promotion of mathematics and science education among South Deep's host communities to multilateral water management projects at Cerro Corona and increased sourcing from community suppliers at all our mines.

CC14.4b

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

Number of suppliers	% of total spend (direct and indirect)	Comment

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details

CC14.4d

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

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

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

Name	Job title	Corresponding job category
Nick Holland	Chief Executive Officer	Chief Executive Officer (CEO)

Further Information

CDP 2016 Climate Change 2016 Information Request