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 located in Australia, Ghana, Peru and South Africa. In February 2013, Gold Fields unbundled its mature underground Beatrix and KDC mines in South Africa into an independent and separately listed company, Sibanye Gold Limited. It also expanded its presence in Australia, acquiring the Darlot, Granny Smith and Lawlers mines (known as the 'Yilgarn South Assets') from Barrick Gold in October 2013.

Gold Fields has attributable annual gold production of approximately 2.2 million ounces, as well as attributable Mineral Reserves of around 48 million ounces and Mineral Resources of around 1million ounces. Attributable copper Mineral Reserves total 620 million pounds and Mineral Resources 1001 million pounds. Gold Fields has a primary listing on the JSE Limited, with secondary listings on the New York Stock Exchange ('NYSE'), NASDAQ Dubai Limited ('NYX') and the Swiss Exchange ('SWX').

All 2014 nonfinancial data are inclusive of the Yilgarn South Assets.

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
Wed 01 Jan 2014 - Wed 31 Dec 2014

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) Safety, Health and Sustainable Development Committee (SHSD Committee)

(ii) The SHSD Committee is a subcommittee of the Gold Fields Limited Board and reports it findings and recommendations to the board for consideration with regards to climate change. This committee is a standing committee established by the Board with delegated authority from the Board. It is the responsibility of this committee to assist the Board in its oversight of the Group's environmental - including climate change – policies and responsibilities, health and safety programmes, as well as its socio-economic performance. In particular, this includes the monitoring of the Group's efforts to minimise health, safety and environment related

incidents and accidents, and to ensure its compliance with relevant regulations. Of specific relevance is the committee's commitment to understanding and addressing climate change through dedicated initiatives with regards to resource management. All members of the committee have been selected on the basis of their considerable experience in the field of sustainable development. The committee members are all independent non-executive directors and the CEO is a permanent invitee to each committee meeting. Each Board committee is chaired by an independent non-executive director. At a group level this committee is ultimately responsible for overseeing strategy and providing guidance on implementation.

The Executive Committee is primarily responsible for the implementation of group strategy, as well as carrying out the Board's mandates and directives. This includes overseeing and managing Gold Fields' commitment to addressing climate change in a pro-active manner. Gold Fields implements a decentralised governance structure. This implies that the regional Executive Vice-Presidents also carry responsibility for the implementation of the group sustainability strategy which includes climate change. Regular sessions (i.e. strategy meetings, working groups, balanced scorecard reviews etc.) are conducted to ensure alignment on inter alia sustainability and climate change, across the group and within the different regions. In addition the Board receives quarterly reports to assess implementation progress in terms of sustainable development guidelines and strategies as well as the Integrated Energy and Carbon Management Plan (IECMP).

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
Other: Executive Vice Presidents of the Regions (who form part of the Group Executive team)	Monetary reward	Emissions reduction target Energy reduction target Efficiency project	New group energy and carbon management guidelines provided the basis for Regional Energy and Carbon Management Strategies. These strategies had to include energy and carbon baselines as well as targets for reducing energy consumption and carbon emissions until 2016. Energy efficiency initiatives or renewable energy projects (to reduce carbon emissions) which have been developed in the regions are considered key performance indicators. These indicators are part of the Executive Vice Presidents

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
			‘business as usual’ activities on which their regions are required to deliver. In 2015 Group & regional scorecards were developed that detail the specific objectives that need to be met by relevant members of the group Executive and the Regional Executive teams. For 2015 the climate change related objective is reducing energy and carbon emissions (which includes the evaluation of renewable energy as part of the regional energy security plans that each region is required to deliver on during 2015). The scorecard rating is used as a direct input in salary increases, performance bonuses and the allocation for the long term incentive scheme.
Other: Executive vice president and vice president group sustainability	Monetary reward	Other: The following performance indicators are included in the ‘Executive Vice President’s’ and ‘Vice President’ Group Sustainability scorecards: - Overseeing the development of fit for purpose 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, reporting on and 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 incentivised 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: Each region was required to: - Establish energy and carbon baselines. - Set targets for reducing energy consumption and carbon emissions until 2016 and develop strategies to achieve those targets. - Integrate performance indicators based on energy and carbon performance into the balanced scorecards of management.	Energy and carbon performance was integrated into the balanced scorecards of senior and line management in 2014. The regions finalised new energy and carbon emission baselines in 2014 and associated energy and carbon reduction targets. Each region has been tasked with submitting a five-year energy security plan during 2015. The potential for renewable energy generation at each operation will again be reviewed as part of these plans. This is due to renewable energy becoming more cost-effective

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
			and an increasingly competitive alternative to conventional power sources.
Other: Energy and Carbon Specialist	Monetary reward	Other: Every region has appointed a responsible and accountable Energy and Carbon Manager. The following performance indicators have been included in the Energy and Carbon Manager's scorecard or are required as part of their 'business as usual' activities: - Support and managing regional energy and emission reduction target, as well as the baseline against which this target will be measured. Both the target and baseline have to be verified by a third party; - Support and implement regional energy and carbon management strategy and action plan. - Actual energy and emission reductions achieved and costs saved against the baseline.	This position is at corporate level and further emphasises Gold Fields' commitment to implementing operational change, across all the regions, in light of climate change. The Energy and Carbon specialist drives progress with regards to energy and carbon management, reduction and efficiency initiatives.

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 Business planning is influenced by typically the following risks: risks include water scarcity, changing legislative landscapes pertaining to carbon management and the increasing need to find alternatives to traditional energy provision. Reporting 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 & the Board are responsible for keeping oversight of the overall system of risk assessment at a group and operational level. The Audit Committee is responsible for the identification & mitigation of new & existing risks, including climate change related risks. The Vice-President & Group Head of Internal Audit provides quarterly-feedback to the Audit Committee, a sub-set of the Board, & has a functional reporting line to the Audit Committee Chair. The Group Risk Manager is responsible for the process of risk management at a company level. Gold Fields' Enterprise Risk Management process is aligned with the ISO 31000 international risk management standard. All risks identified have control measures & mitigating strategies in place. Gold Fields uses the following processes to assess climate change risks, opportunities & material issues on a company & asset level: 1. Key risks – & mitigating actions – are identified using an Enterprise-wide Risk Management (ERM). 2. Views & concerns of a wide group of stakeholders are identified & collected through direct & indirect stakeholder engagement processes. 3. Interviews with key management & analysis of the short-, medium- & long-term strategic trends affecting the business provide critical data & form part of the Integrated Reporting process. 4. Material sustainability issues are assessed & prioritised according to the GRI G4 Guidelines, as well as internal & external stakeholder interviews.Gold Fields assets' exposure to climate change related risks & opportunities are assessed as follows: 1. A physical risk management programme monitors risks, including climate change related risks, on an ongoing basis. 2. Assets exposure to climate change related risks are investigated annually by Gold Fields' insurance company. 3. The group energy & carbon management guideline, requires risk assessments to be an integral component of all operational energy & carbon management plans & energy security plans.

CC2.1c

How do you prioritize the risks and opportunities identified?

Gold Fields' mature ERM process is aligned with the ISO 31000 international risk management standard, as well as the risk management requirements of South Africa's King III Code. The ERM process – which prioritises risks on the basis of probability and severity – is based on the following process:
1. Workplace risk assessments: Managers carry out ongoing workplace risk assessments in accordance with international standards (for example, ISO 31000).
2. Mine/region reviews: Each regional and mine Executive Committee conducts a review of the top risks and mitigating strategies on a quarterly basis.
3. Presentation to the Group Executive Committee (Exco): Each Mine Manager presents the top 10 risks and mitigation actions to Exco during quarterly business reviews – and mitigating actions are assessed for relevance and effectiveness.
4. Compilation of Group Risk Register: The Group Risk Manager extracts the top risks from the regional and operational registers in line with the tolerance levels set by the Board, and compiles the Group Risk Register.
5. Assessment and moderation: The risks are assessed and moderated at a Group-level by relevant risk owners and Exco members.
6. Exco risk meeting: Exco reviews the top risks and sets/ monitors Group-wide mitigation strategies. This takes place every six months.
7. Audit Committee review: The Audit Committee reviews the top risks and mitigation strategies twice a year.
8. Internal audit review: The Internal Audit function assesses progress against – and adherence to – mitigation strategies on a regular basis.

When determining the probability of physical risks related to climate change, information such as climate change projections and past experience is taken into account. The probability of regulatory risks related to climate change is determined in accordance with draft policies and Government response papers. The materiality of a risk is used to prioritize the management of the risk.

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' short term business strategy has been influenced by the following pertaining to climate change:
• Integrating energy and carbon management across business operations;
• Measuring and reporting on carbon and energy reduction performance;
• Investigating viable sources of alternative energy;
• Acknowledging the physical impacts of climate change pertaining to the workforce and operations; and
• Recognising water as a key factor influencing operations.

In this regard the Integrated Energy and Carbon Management Strategy (IECMS) seeks to ensure energy security; decrease carbon emissions; explore immediate and long-term energy efficiency opportunities; and investigate renewable energy alternatives. In terms of water, the company implemented the Group water management guideline.

During 2014, each region was required to:
• Develop energy supply chain maps and stress test each of the links in their respective energy supply chains. This was consolidated into an energy supply risk register with assigned risk mitigation energy initiatives.
• Establish energy and carbon baselines.
• Set targets for reducing energy consumption and carbon emissions until 2016 and develop strategies to achieve those targets.
• Integrate performance indicators based on energy and carbon performance into the balanced scorecards of management.

In line with these requirements, the regions finalised new energy and carbon emission baselines as well as associated energy and carbon reduction targets.

ii. Key aspects related to climate change that have influenced Gold Fields' strategy include water stewardship; the reduction of carbon emissions and energy consumption as well as recognising the strategic role of renewable energy within the context of Gold Fields energy portfolio.
Climate change and related carbon emissions represent a material issue for Gold Fields and risks related thereto are integrated into the group's business strategy. This is due to:
• The long-term risks posed by climate change both to operations and wider society.
• Increased operational costs and production disruptions due to changed weather patterns.
• Growing efforts to regulate carbon emissions in a range of jurisdictions and uncertain climate change regulatory requirements.
• Reputational risk pertaining to the actions Gold Fields take in response to climate change. Building and acknowledging community resilience impact on the group's social license to operate.

Gold Fields anticipates that addressing the climate change risks could realise potential opportunities, such operational efficiencies and increased resilience of the surrounding communities. Therefor Gold Fields' business strategy integrates both the emissions and energy reduction targets as part of operational efficiency initiatives. The group's revised emission reduction targets are expected to reduce the potential exposure of the company to carbon taxation and other climate change related regulatory initiatives.

iii. In 2014, the most important short term components, influenced by climate change, were the following:
• The importance of developing regional emission reduction targets.
• Identifying renewable energy alternatives. Energy security is a key risk which led to the development of five-year energy security plans for each region. Renewable energy options will be investigated for all new projects.

• Water management is a critical issue. In this regard the 2015 Group Scorecard includes Enhanced Water Management which focusses on reuse, recycling and conservation initiatives.
• Climate change related extreme weather events have been identified as a short term risk. Extreme weather events during 2014 highlighted the importance of implementing emission reduction projects. This pertained to a number of heat waves which greatly impact on productivity in Peru.

iv. The most important component in Gold Fields' long term strategy, influenced by climate change has been the incorporation of climate change considerations into life of mine planning such as operational efficiencies applicable to energy, carbon and water management. These efforts were supported by clear guidelines related to applicable mitigation and adaptation actions which were then integrated into design and operations.

Gold Fields has set a target that all new mining projects must at least have 20% of energy sourced from alternative sources of energy. Gold Fields Salares Norte project in Chile has already identified around 20% of its future energy supply from renewable sources. For operating mines, the following long term strategic commitments are in place:
• Review replacement of carbon-intense sources of energy with renewable energy or switching to less intense energy sources;
• 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.

v. Gold Fields is gaining strategic advantage over its competitors by:
• Introducing a substantial focus on renewable energy to its asset portfolio enables Gold Fields to effectively manage reducing the electricity- and emissions-intensity of its operations. This results in cost savings, energy security as well as preparing the group for potential legislative changes.
• Identifying and optimising opportunities to re-use and conserve water at all Gold Fields operations.
• Acknowledging and preparing for strategic legislative changes. Through innovative operational focus on efficiency and environmental stewardship, Gold Fields is positioning itself to meet the requirements of pending and changing legislation.
• Building on its position as a climate leader Gold Fields strengthens its 'social license to operate' through acknowledging community resilience which gives them a competitive advantage in the investment market.

Focussing on streamlining operational costs and recognising the impact of climate change, ensures Gold Fields a leadership position in pro-actively tackling sustainability challenges.

vi. The most important business decisions during 2014 influenced by climate change driven aspects of the strategy have been:
• Regionalization of energy and carbon management, resulting in the requirement that all regions establish energy and carbon baselines. Regional targets for reducing energy consumption and carbon emissions until 2016 were set. Strategies to achieve these targets had to be developed and implemented.
• Regionalization of water management, resulting in the requirement that all regions develop a water management strategy and plan.
• Requiring all new mine developments to provide for 20% of all energy requirements by using renewable energy, amidst difficult economic environment conditions.
• Contributing a total of $1.7 Million to the implementation of energy efficiency projects.

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

An internal price of carbon is considered in the planning and forecasting for Gold Fields' South African and Australian operations. During 2012 an envisioned price of carbon for these regions was developed.

In Australia the Carbon Pricing Mechanism was replaced under the new coalition government with the Emission Reduction Fund (ERF) as part of the Government's Direct Action Policy. The financial liability linked to the Direct Action Plan is not yet clear. In addition the Australian Government has proposed an Emission Reduction Fund. In this regard the Government has put forward 2.25 billion AUS dollar to purchase any carbon abatement that can be demonstrated through registered projects. Through this fund companies can enter into reverse auctions to sell carbon abatement to the government. The price of abatement is yet to be determined for the 3, 5 and 7 year periods during which time a project will still be recognised. Gold Fields' Australian operation Granny Smith is currently in discussions regarding a power station project that would align with the ERF requirements.

The South African government continues to pursue plans to impose a carbon tax on mining and other carbon-intensive industries, but has not provided a detailed plan to date. Under the government's draft Carbon Tax paper, the tax will be implemented in early 2016 at a starting price of US$11 per tonne, but offers as yet unspecified relief measures. Based on an internal analysis of the draft bill, if South Deep is liable to pay carbon tax, this is expected to be done over 40% of the mine's Scope 1 emissions (direct emissions that are the result of its operations). On this basis the potential tax liability in 2016 is estimated at US$30,000.

There is currently no indication of carbon tax in Ghana and Peru.

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 continues to engage with the relevant authorities across the various regions on the proposed carbon tax implementation. They are cognisant of the potential cost implications of the differing forms of carbon tax enforcement. Engagement with national governments typically takes place on a collective basis through local chambers of mines. Gold Fields believes that a better understanding between Government and industry is facilitated through regular engagement. This generates benefits for both parties and optimizes cooperation.	The various regions continue to engage with their respective governments on alternative ways to address carbon emissions. Gold Fields supports efforts to reduce global carbon emissions and are engaging on various options to positively address emission reductions. In Australia Gold Fields believe that a more economically sustainable approaches to carbon management are appropriate. In South Africa Gold Fields continues to engage government on alternative ways to address carbon emissions.

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	Gold Fields has representatives on the 'Communications', 'Materials Stewardship' ,'Water' and the 'Mine Closure & Land Management' working groups, as well as the CEO representing the company at the CEO Council of the ICMM. The ICMM's long-term objective remains the eventual establishment of an integrated and globally effective carbon regime. To this end, and recognizing current global circumstances, the ICMM advocates integrated principles to achieve effective and efficient national and sub-national specific climate change policies and measures. The IMCC supports a measured transition to a low carbon economy which is aimed at achieving intended results while minimizing the potentially damaging and unintended consequences of climate change related decision-making. The ICMM and its members acknowledge that policies and measures taken to reduce greenhouse gas emissions will, by and large, continue to focus on where emissions are directly produced, while also noting that consumers will ultimately bear the cost. The Water Working Group is part of the 'Environment and Climate Change' work programme. This programme aims at improving ICMM members' environmental and climate change performance, as well as to facilitate engagement with the international, national and sub-national levels of policy. This working group is currently developing a water strategy to be used as input by its members in developing its strategy and for engagement with policy makers. Though all committees and working groups meet twice a year in London, regular contact during the year ensures progress on deliverables.	Through engagement with policy makers (on international, national and sub-national levels), via the ICMM, Gold Fields aims at achieving an understanding of the actions that need to be taken by industry and the support to be provided by policy makers to allow for industry to take effective action.
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 Australia). Depending on the topic, an industry opinion is voiced and presented to Government. The CME's climate position has been	N.A.

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?
		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.	
South African Chamber of Mines	Consistent	The South African Chamber of Mines is an industry organisation established to examine policy issues in the mining sector. The most significant climate policy affecting Gold Fields' business is the impending South African carbon tax. The implementation of this tax has been delayed to 2016 allowing adequate time to: • Align the tax with the country's proposed desired emission reduction outcomes; and • Allow for further consultation on draft legislation. The Chamber of Mines understands the need to implement a carbon tax to reduce the country's carbon footprint. However, it has said that the method of taxation should balance the country's tax needs with industry's need to remain competitive. In a statement released after the 2015 budget speech, the Chamber raised concerns with regards to the carbon tax in light of the mining industry's reduced revenue outlook. However the Chamber did commit to continuing engagement with stakeholders on this matter. The chamber also acknowledges the role of the mining sector in the implementation of South Africa's 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

Do you fund any research organizations to produce or disseminate public work on climate change?

Yes

CC2.3f

Please describe the work and how it aligns with your own strategy on climate change

Gold Fields was a founding member of South Africa's National Business Initiative (NBI) which is a voluntary coalition of companies that are committed to working towards sustainable growth. Gold Fields has been a member of the NBI for over a decade, and supports the view that collective action by business can improve the economic and social environment within which the company operates. The NBI is leading an active Road to Paris campaign, through the dissemination of climate-related case studies and the hosting of business interactions on climate change, water, waste and green economy space.

In this reporting year, Gold Fields supported the NBI's Road to Paris campaign by participating in a case study that examines how South African companies are addressing climate change risks through adaptation planning. Gold Fields responded to questions covering a range of themes such as:
• How climate change is affecting Gold Fields' business;
• What mechanisms Gold Fields uses to identify and communicate climate change risks and adaptation initiatives;
• The barriers to adaptation planning; and
• Gold Fields' key learning from its own adaptation planning.

Gold Fields' response to this case study will be collated with the responses from other prominent companies to form an Adaptation Case Study Report, which will highlight South African adaptation challenges, best practices and organisational insights.

The output of this case study will reinforce Gold Field's strategy and view that a changing climate is a key business agenda item, and that an effective response will require both climate change mitigation and adaptation.

In addition, Gold Fields has been working with the Carbon War Room. The Carbon War Room is an international non-governmental organisation and think-tank. This NGO works on issues regarding market-based solutions that reduce carbon emissions at gigaton scale. The Carbon War Room assists Gold Fields with an independent review of their energy security plans. This collaboration, pulling expertise from a wide range of technical specialists and strategic networks, assists the Gold Fields team with overcoming barriers to renewable energy implementation.

Gold Fields believes that their pro-active and committed approach to address climate change throughout their operations are enriched by the learnings of organisations such as the NBI and the Carbon War Room. In addition Gold Fields has the opportunity through these interactions to share their findings and innovation on inter alia operational efficiency with a wider stakeholder audience. This interaction strengthens and enriches the body of knowledge on climate change adaptation and mitigation. This symbiosis of information aligns to Gold Fields' Integrated Energy and Carbon Management Strategy. The group believes that developing and utilising informed, current and relevant research is vital to developing practical and implementable strategies on climate change.

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

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 amongst the different operations and geographical regions, while allowing for different focus areas and specific circumstances.

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 would have a good understanding of the company's strategy.

CC2.3i

Please explain why you do not engage with policy makers

CC2.4

Would your organization's board of directors support an international agreement between governments on climate change, which seeks to limit global temperature rise to under two degree Celsius from pre-industrial levels in line with IPCC scenarios such as RCP2.6?

No opinion

CC2.4a

Please describe your board's position on what an effective agreement would mean for your organization and activities that you are undertaking to help deliver this agreement at the 2015 United Nations Climate Change Conference in Paris (COP 21)

N/A

Further Information

Page: CC3. Targets and Initiatives

CC3.1

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

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1+2	5%	15.5%	2013	70407	2014	As reported in the Gold Fields IAR 2014 (page 62), the Cerro Corona operation in Peru maintains a 15.5% emissions reduction target relative to a 2013 base year.
Abs2	Scope 1+2	15%	7%	2012	175021	2016	As reported in the Gold Fields IAR 2014 (page 63), the St Ives operation in Australia has a 7% emissions reduction target relative to a 2012 base year.
Abs3	Scope 1+2	15%	7%	2013	194946	2016	The Yilgarn South assets (Darlot, Granny Smith and Lawlers mines) were acquired by Gold Fields' in October 2013. The Australian operation Agnew has been expanded to include Lawlers. As a result Gold Fields' currently has four operations based in Australia: St Ives, Agnew, Darlot and Granny Smith. The targets set for the Australian operations were split, so as to incorporate a different base year for the Agnew, Darlot and Granny Smith operations. As per the IAR 2014 (page 63), Agnew, Darlot and Granny Smith have a 7% emissions reduction target relative to a 2013 base year.

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	Target year	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

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

ID	% complete (time)	% complete (emissions)	Comment
Abs1	100%	89%	Gold Fields' Cerro Corona operation set an ambitious target of reducing scope 1 and 2 emissions by 15.5% relative to a 2013 base year, with a target year of 2014. This target was not achieved during the reporting year. However Cerro Corona's scope 1 and 2 emissions did reduce by 13.6% which is still considered as an exceptional achievement. Further

ID	% complete (time)	% complete (emissions)	Comment
			to this Gold Fields' has appointed an energy specialist to assist with reviewing the target setting process and developing intensity based forecasts for each region.
Abs2	50%	0%	Emissions at the Gold Fields' St Ives operation increased during the 2014 reporting period, due to a 16% increase in production (tonne ore mined). However owing to a lower ore grade, the gold produced decreased by 10%. As a result this lead to an overall increase in energy and emissions for the St Ives mine. However the St Ives processing plant reduced energy consumption and emissions due to the implementation of more efficient dilution processes.
Abs3	33%	36%	Ahead of schedule.

CC3.1e

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

Does the use of your goods and/or services directly enable GHG emissions to be avoided by a third party?

No

CC3.2a

Please provide details of how the use of your goods and/or services directly enable GHG emissions to be avoided by a third party

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	2	
To be implemented*	0	0
Implementation commenced*	11	14227
Implemented*	10	54732
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
Other	Scheduling change designed to reduce energy and save GHG emissions: Gold Fields voluntarily introduced Campaign Milling at its Granny Smith processing plant which was implemented in 2014. The aim of this project is to reduce the operation time of the Granny Smith mill processing plant. Granny Smith runs nine diesel generators to provide power for the processing plant and underground mine. For 16 days of the month Granny Smith runs the processing plant at full capacity and for the remainder of the month are able to turn off four of the generators, as the processing plant is switched off. Campaign milling ensures that the Granny Smith processing plant runs for 60% of the year at full capacity and is switched off for the remaining 40%. This is beneficial as it reduces diesel consumption and in turn scope 1 emissions. The project has already had a significant impact on the emissions for Granny Smith's operation, with the project contributing 62% towards the total estimated annual tCO2e savings from all implemented projects across all operations. The Campaign Milling	33926	Scope 1	Voluntary	3968361	0	<1 year	3-5 years	The lifetime of the initiative is the same as the life of mine.

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
	strategy was implemented as the processing plant has a far greater throughput than the underground operation can currently support. In the past Granny Smith had an additional open cast mine to provide the throughput.								
Energy efficiency: Processes	During 2014 Damang voluntarily implemented a variety of electricity initiatives aimed at reducing the operation's scope 2 emissions. These initiatives included: 1. The commissioning of a tailings booster station, to increase the efficiency of the tailings pumping and deposition system. 2. Variable Speed Drives (VSD) installed on pumps, clarifiers and conveyer belts, used to control the speed of the machinery. 3. Energy efficient electrical motors.	1942	Scope 2	Voluntary	1513282	429000	1-3 years	3-5 years	
Energy efficiency: Processes	Damang voluntarily implemented the following diesel savings projects during 2014: 1. Improved dump truck tyre pressure management; 2. Haul road management, by sheeting the haul roads to increase the tyre life of trucks and increase fuel efficiency; 3. Load optimization, analysis and correction; 4. Drill & Blast optimization (fragmentation); 5. Diesel management system. These	947	Scope 1	Voluntary	447479	5000	1-3 years	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	savings projects were implemented with the aim of optimising diesel consumption and reducing the operations scope 1 emissions.								
Energy efficiency: Processes	During 2014 Tarkwa voluntarily implemented a variety of electricity initiatives aimed at reducing the operation's scope 2 emissions. These initiatives included: 1. Mill Optimization: reduction in grind size, reducing energy requirement per tonne of ore milled; 2. Variable Speed Drives (VSD) installed on pumps, clarifiers and conveyer belts, used to control the speed of the machinery; 3. Energy efficient electrical motors.	4444	Scope 2	Voluntary	3360203	451000	1-3 years	3-5 years	
Energy efficiency: Processes	Tarkwa voluntarily implemented the following diesel savings projects during 2014: 1. Improved dump truck tyre management; 2. Haul road management, by sheeting the haul roads to increase the tyre life of trucks and increase fuel efficiency; 3. Load factor analysis and correction; 4. Drill & Blast optimization (fragmentation); 5. Daily tracking of fuel burn rates, to ensure efficient use of diesel; 6. Capping of fuel consumption on all large vehicles. These savings projects were	2879	Scope 1	Voluntary	1359797	246000	1-3 years	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	implemented with the aim of optimising diesel consumption and reducing the operations scope 1 emissions.								
Energy efficiency: Processes	A truck fleet change project was voluntarily implemented at the Cerro Corona operation in Peru during 2014. The project involved the demobilization of nine off road trucks and two loaders, which were replaced by 21 Volvo trucks and two excavators. The truck fleet change project was initiated due to the mine projection of less ore movement over the coming years. In addition to this the larger trucks were unable to access specific areas of the mine due to their size. Therefore the new fleet of smaller trucks are be able to access these areas and due to the relatively short hauling distances, the smaller trucks are more fuel efficient. This project reduced the diesel consumption of the truck fleet by about 10% which contributed to reduced scope 1 emissions for the operation.	7876	Scope 1	Voluntary	3837495	400000	1-3 years	3-5 years	
Energy efficiency: Processes	The Cerro Corona operation voluntarily implemented a poly-met liner within their Semi-Autogenous Grinding (SAG) mill of the operation.	1645	Scope 2	Voluntary	460433	550000	1-3 years	3-5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
	Poly-met lining is more energy efficient than conventional mill lining, as it uses the same amount of electricity to break down a greater amount of rock. Cerro Corona originally used steel lining in the SAG mill which is heavier than poly met lining which is a combination of rubber and steel. The lighter weight of the poly-met liners in the SAG Mill resulted in lower energy consumption for ore grinding per tonne of ore crushed compared to the steel liners. This project resulted in a saving of 4% in the specific energy consumption of the SAG Mill at the Cerro Corona mine. This reduces the mine's electricity consumption as well as scope 2 emissions. Furthermore, Cerro Corona has implemented a magnetic trammel located off the ball mill, which has a greater capacity for grinding ore, thus reducing energy consumption per ton produced. The energy savings from this initiative have not yet been quantified but are in the process of calculation.								
Energy efficiency: Processes	In 2014, Gold Fields' South Deep mine voluntarily implemented clipping of ventilation fans during	520	Scope 2	Voluntary	49100	0	<1 year	3-5 years	No investment was required for this initiative as the

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
	peak periods. The load clipping improved process optimization and reduced electricity consumption while also reducing scope 2 emissions.								savings were implemented by Gold Fields' site personnel.
Energy efficiency: Processes	During the reporting year, Gold Fields' South Deep mine in South Africa improved the efficiency of the main fan by re-installing the top section of the vertical duct. The vertical duct improves the energy efficiency of the fan as it recovers fan velocity pressure that would otherwise be lost. This voluntary energy efficiency initiative reduces the mine's electricity consumption and in turn scope 2 emissions.	151	Scope 2	Voluntary	8900	9220	<1 year	3-5 years	
Process emissions reductions	Changes in operation: Gold Fields South Deep mine implemented load clipping on the bulk air cooler during peak periods. Savings were achieved by reducing the flow of water through the surface bulk air coolers during two evening peak hours. The initiative was voluntarily implemented by the mine as it reduces electricity consumption and in turn scope 2 emissions.	402	Scope 2	Voluntary	37956	0	<1 year	3-5 years	No investment was required for this initiative as it was funded by the Eskom Demand Side Management (DSM) programme.

CC3.3c

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

Method	Comment
Dedicated budget for energy efficiency	
Dedicated budget for other emissions reduction activities	
Other	A combination of cost abatement through replacement of electricity together with dedicated budgets for energy efficiency and carbon emissions reduction.

CC3.3d

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

Further Information

CC3.1a. Gold Fields' has set a 5% emission reduction target for both the Tarkwa and Damang operations in Ghana, relative to a 2014 base year, with a target year of 2016 (IAR 2014 page 63). This target will be reported on in Gold Fields' 2016 CDP submission. Gold Fields' South Deep operation in South Africa is currently still in the development stage. Gold Fields' is focusing on ramping up the current gold production at South Deep. Due to these reasons emission reduction targets have not yet been set at the operation. However during the 2014 reporting period, South Deep's scope 2 emissions decreased due to a 13% decrease in electricity consumption as a result of lower production at the mine. Targets will be developed as soon as it reaches stable operation.

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
In mainstream financial reports but have not used the CDSB Framework	Complete	Page 65, Section 4.1 Ensuring our mines deliver, Carbon emissions and climate Change. Gold Fields' Integrated Annual Review 2014. Page 65, Section 4.1 Ensuring our mines deliver, Carbon disclosure and renewable energy. Gold Fields' Integrated Annual Review 2014. Page 72, Section 4.3 Promoting Environmental Stewardship. Gold Fields' Integrated Annual Review 2014.	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC4.1/Gold Fields IAR 2014.pdf
In other regulatory filings	Complete	SEC Form 20 F. Pages 24, 63, 88 – 89, 99 – 100, 106, 109 – 111, 134, 223.	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC4.1/GF Form 20F 14 April 2015.pdf
In voluntary communications	Complete	COP Annual Communication on progress to the United Nations Global Compact. Pages 2, 3 and 4.	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC4.1/United Nations Global Compact.pdf
In voluntary communications	Complete	Dow Jones Sustainability Index. This document is not in the public domain. It is submitted directly to Robeco Sam. The Gold Fields' media release on the DJSI is attached.	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC4.1/01 - 20 January 2015 Gold Fields top SA mining company on the Dow Jones Sustainability Index.pdf
In voluntary communications	Complete	A presentation on "Evaluating Renewables for Gold Fields' Global Operations" was made at the Annual Renewable Energy summit. Gold Fields will be participating in this event again during 2015.	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC4.1/06 23 June 2014 Renewable Energy Summit Presentation FW edited.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	As an energy intensive company, Gold Fields only South African operation (South Deep) will be exposed to risk of the proposed South African carbon tax. In lieu of the carbon tax, the electricity levy already contains a non-renewable energy component and serves to promote energy efficiency and encourage lower emissions. A draft of the carbon tax bill will be available for a further round of	Increased operational cost	Up to 1 year	Direct	Likely	Low-medium	There is currently no limit on the direct (scope 1) carbon emissions above which a company would be liable to pay carbon tax. South Deep emits 6,987 tCO2e, which would equate to +/- US$ 30, 000/year. Furthermore if Eskom passes through their carbon tax costs in full then South Deep's	1. Gold Fields engages with Government on carbon tax related issues & advocates that relief mechanisms should be allowed for electricity related indirect emissions. Gold Fields engages indirectly with Government through their Chamber of Mines membership & is currently re-registering with the Energy Intensive Users Group. 2. During	Management Method 1: Gold Fields' membership fee with the Chamber of Mines in 2014 was US$ 71,572. Re-registering with the Energy Intensive Users Group will cost Gold Fields' US$ 13,324 per annum. Management Method 2: The independent review conducted by the Carbon War Room does not

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	public consultation, towards the end of 2015. After which the carbon tax is said to be introduced in 2016. The risk related to carbon tax can be reduced as more information becomes available. Clarity surrounding the carbon tax will enable Gold Fields' to implement management and adaptation plans in response to the regulation. Gold Fields' faces three significant risks due to the South African carbon tax: 1. There is currently no lower limit on the direct carbon emission emitted by a company that will be liable to pay carbon tax. Therefore, South Deep may have to pay carbon tax on the operations direct (scope 1) emissions. 2. If Eskom's tax liability is not effectively reduced						electricity costs would increase by US$ 1.9 million/year as a result of their indirect (scope 2) emissions of 491,472 tCO2e. Gold Fields currently pays a non-renewable energy levy of US$ 2 Million/year for the South Deep operation. The details on relief mechanisms for carbon tax, are still unclear. Therefore the financial figures above are subject to change depending on the relief mechanisms made available.	2014 Gold Fields' started developing five year energy security plans for each region, which will be externally reviewed by the Carbon War Room. Each region is responsible for setting five year mine plans which include energy efficiency. These are then reviewed quarterly by the Group EXCO. By September 2015, Gold Fields' plans to have regional energy security plans integrated & implemented into the mine plans. The energy security plans aim to encourage renewable energy use within Gold Fields' operations, in order to reduce their reliance on the fossil fuel intensive national	carry a financial cost. In terms of the management activity 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. The extracting, verifying and reporting on carbon emission performance is about US$ 100,000/yr. Further to this, Gold Fields' aims to spend roughly US$ 25,000 on energy management and energy security plans.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	then it is likely that Eskom will pass on the carbon tax to consumers, through increased electricity prices. 3. There is currently uncertainty surrounding the carbon tax relief mechanisms. The regulation includes several relief measures to protect vulnerable business sectors. In addition the relief mechanisms aim to protect the competitive position of local industry. Gold Field's most significant tax exposure lies in electricity emissions (scope 2). However relief mechanisms are not currently available for these emissions. Gold Fields will be significantly impacted by the carbon tax if National Treasury does not introduce a relief mechanism for electricity emissions							grid & to manage the carbon tax 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 & through the implementation of renewable and alternative energy projects. Through the development of carbon offset projects, Gold Fields might further reduce its own carbon tax expenditure & could create additional income. Gold Fields' hired an energy specialist to assist with energy & carbon	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	(scope 2).							management.	
Uncertainty surrounding new regulation	The Australian Carbon Pricing Mechanism (CPM) was initially implemented in July 2012 under the Clean Energy Act of 2011. Since then the Clean Energy Legislation Act of 2014 has repealed the Clean Energy Act of 2011. This resulted in the removal of the CPM with effect from 1 July 2014. The Liberal/National coalition government proposed that the CPM be replaced by the Direct Action Plan, under which the Emissions Reduction Fund will be implemented. The objective of the Emissions Reduction Fund is to assist with meeting Australia's emission reduction target of 5% below 2000 levels by 2020. In a response to climate change, the	Increased operational cost	3 to 6 years	Direct	Very likely	Low-medium	Gold Fields' Australian operations did not exceed 100 000 tCO2e during 2014. It is therefore expected that Gold Fields' will not be exposed to a penalty. However the legislative rulings are still being finalised and currently no indication of the cost of the penalty has been disclosed.	Gold Fields' manages the risk of uncertainty related to the Direct Action Plan, in two ways: 1. Through Government engagement; & 2. By strategically focusing on reducing emissions. Gold Fields' engages directly with Government through the Chamber of Minerals & Energy of Western Australia. In addition Gold Fields attends the Carbon Policy and Energy Efficiency Reference Group (CPEERG) hosted by the Chamber, in which carbon policy and energy efficiency matters are discussed. A reduced carbon footprint &	Membership fee with the Chamber of Minerals and Energy of Western Australia was approximately US$ 165,478 in 2014. About US$ 25,000 will be spent on an energy specialist who will assist Gold Fields' with the development of the energy security plans, this figure also covers the cost of a third party review.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Emission Reduction Fund encourages businesses to adopt new practices and technologies that reduce emissions. As part of these new regulations, a 'Safeguard mechanism" is being developed in consultation with industry. The mechanism states that if an operations direct (scope 1) emissions exceed 100 000 tCO2e then they will have to pay a penalty. In addition the mechanism will also take into account a baseline set according to the highest point over the previous five years for the specific business operation. The size of the penalty will be set on a sliding scale proportionate with the size of the business and the extent to which they exceed their baseline levels.							reduced emissions intensity will minimise the risk posed by the penalty aspect of the Emission Reduction Fund. Gold Field's carbon footprint is reduced through behavioural changes, energy efficiency projects & through the implementation of renewable energy projects. During 2014 Gold Fields' started developing five year energy security plans for each region, which will be externally reviewed. In addition each region is responsible for setting five year mine plans which include energy efficiency forecasts set over a 3 year rolling period. These are	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	It has been suggested that the baseline will be set on an intensity basis. The legislative rulings are set to be finalised by October 2015, with implementation expected by July 2016. Therefore Gold Fields' is exposed to the risk of uncertainty surrounding the final legislation and implications of the Direct Action Plan.							then reviewed quarterly by the Group EXCO. By September 2015, Gold Fields' plans to have regional energy security plans integrated and implemented into the mine plans. The energy security plans aim to encourage renewable energy use within Gold Fields' operations, which will in turn support reducing carbon emissions. Gold Fields' has appointed an energy specialist to assist with developing intensity based forecasts for each region.	
Other regulatory drivers	Renewable Energy Obligation: The Renewable Energy Act 832 for Ghana was passed in December 2011. The object of the Act is to "provide for the	Increased operational cost	1 to 3 years	Direct	Very likely	Low-medium	Renewable energy will cost 44% more than the current agreed tariff of US$c 0.10/KWh that Gold Fields is paying as part	During 2014, Renewable energy investigations at Ghana were put on hold due to low margins and cost constraints.	About US$ 25,000 will be spent on an energy specialist who will assist Gold Fields' with the development of the energy

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	development, management, utilisation, sustainability and adequate supply of renewable energy for generation of heat and power." The Renewable Energy Act specifies that bulk electricity consumers, would be obliged to purchase a certain percentage of their energy required from electricity generated from renewable energy sources. If these consumers fail to comply with the above then they will have to "pay the Commission a premium as determined by the Commission." -Article 26, Renewable Energy Act. As Gold Fields is a large electricity consuming company, it is expected that it will be impacted by the legislation. It is however unclear						of the Power Purchase Agreement with Genser Energy for the next five years.	However as part of Gold Fields' Energy and Carbon Management Strategy, each region is required to submit a five-year energy security plan during 2015. The potential for renewable energy generation at each operation will again be reviewed as part of these plans.	security plans, this figure also covers the cost of a third party review.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	what percentages or premiums can be expected. Additionally, the Ghanaian Renewable Energy Act 2011 (Act 832) has been promulgated, but its framework and application are still being established. No regulations have been passed, neither has any guidance been released. However in 2014, feed in tariffs for renewable energy in Ghana were published and ranged from US$c 16.01/KWh for wind project to US$c 20.01/KWh for solar projects. The introduction of feed-in tariffs (FITs) is expected to provide an incentive for businesses to invest in renewable energy projects. This would comply with the country's goal of achieving 10% renewable energy of								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the total energy production for Ghana by 2020. The risk for Gold Fields' is in the uncertainty of the regulations which may impact long term planning.								
Uncertainty surrounding new regulation	In line with South Africa's vision of moving towards a low carbon economy, there are several South African Government regulations drafted on reporting and emission reduction requirements: • National Energy Act (2008): As per the Government Notice on 27 March 2015 - If energy consumption is above 180 TJ, companies may be required to measure and collect energy consumption data to be submitted to the Government. In addition if energy consumption is above 400 TJ, companies may be	Increased operational cost	1 to 3 years	Direct	About as likely as not	Low	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. Exact quantification is dependent on the final requirements of the regulations and is therefore difficult to quantify.	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 National Planning Commission and the Chamber of Mines. This management method could potentially decrease the magnitude of the risk over the next year.	These costs are best expressed via the company's membership fee associated with the Chamber of Mines engagement: US$ 71,572 (2014). Re-registering with the Energy Intensive Users Group will cost Gold Fields' US$ 13,324 per annum.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	required to submit an energy management plan. • National Air Quality Act (2004) Greenhouse Gases as Priority Pollutants (draft regulation released March 2014): Outlines the specific greenhouse gases that have been identified as priority air pollutants namely, CO2, CH4, N2O, HFCs, PFCs, SF6. In this Government Gazette it is stated that if a legal entity emits 100 000 tonnes of any of these priority pollutants then they are required to submit a pollution prevention plan under the National Air Quality Act (2004) National Pollution Prevention Plan (draft regulation released March 2014). • Desired Emission Reduction Outcomes (DEROs) are a set of emissions reduction goals for the short,								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	medium and long term for key sectors and/or subsectors of the economy. DEROs were first published in the National Climate Change Response White Paper (October 2011). • National Greenhouse Gas Emission Reporting Regulations (draft released 11 May 2015): States that data on total greenhouse gas emissions arising from energy activities, industrial processes/product use and waste must be submitted to the National Atmospheric Emission Inventory System by 31 March each year. • Intended Nationally Determined Contributions (INDCs): Are pledges that countries will put forward stating how the country aims to reduce emissions.								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	The risks associated with the above mentioned regulations are multiple: • Costly and time consuming reporting of data is probable, as per the Air Quality Act and National Energy Act. • Much uncertainty remains as to how the DEROs and GHG emissions reporting regulation will influence Gold Fields' business. More specifically, two types of risks can be identified. (1.) The risk of being allocated an emission allowance which could limit Gold Fields' growth potential and (2.) the risk of increased operational costs due to the management of emission reduction targets.								

CC5.1b

Please describe your inherent risks that are driven by change 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 IPCC Fifth Assessment Report (2014) confirms the physical risk of "precipitation extremes and droughts" for Gold Fields operations, as per the following projections: • In currently dry regions, climate change will likely result in decreased rainfall and increased frequency of droughts by the end of the century. Which is likely to result in decreased surface and ground water; • Variations in flood frequencies will increase across tropical Africa and South America, due to climate change.	Reduction/disruption in production capacity	Up to 1 year	Direct	Likely	Medium	The financial implication estimated for the potential precipitation extreme and drought impacts is based on operational disruptions. Operational disruptions may cause mine shifts to be missed, resulting in a loss in revenue. During 2014 Gold Fields' operations did not experience operational disruptions due to precipitation extremes and droughts. In the event that one of Gold Fields' operation experiences a disruption due	To manage & monitor risks, all Gold Fields' operations are subject to risk analyses at regular 6 month intervals. The risks identified above were managed as follows: 1. In 2014 the Australian region implemented a new water management strategy to support the integration of the Yilgarn South Assets. This strategy assisted Australian operations to manage wet road conditions on site & reduce supply chain disruptions. 2. Gold Fields Australian operations actively monitor weather data & cyclone	The cost of the Water Management Strategies implemented at the Australian operations is managed in house by Gold Fields. During 2014, South Deep spent in the region of US$ 2 million on water-related initiatives to manage the above mentioned risks. The group-wide TSF audit during 2014 cost US$ 100,000.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Furthermore, South America will experience an increase in flooding and landslides in urban and rural areas due to extreme precipitation; During January 2014, Gold Fields operations in Western Australia experienced heavy rain and thunderstorms, which exceeded daily rainfall records. The following impacts of “precipitation extremes and droughts” have been identified at Gold Fields’ operations: 1. Disruption of supply chain: during heavy rain Gold Fields’ operations in Western Australia can						to increased rainfall or flooding, then the financial or production losses would need to be quantified for the specific event.	developments through the Australian Government Bureau of Meteorology. Each operation has flood management plans in place, especially at St Ives (partly a surface mine) where flood bunds are installed on new pits to prevent future delays. St Ives also has spare mill capacity, which allows for quicker production catch up after delayed production. To manage flooding at the Ghanaian operations rainfall is being diverted away from the decommissioned heap leaching facilities & is then passed through the RO plant before being discharged. 3.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	become isolated due to wet road conditions; 2. Flooding of mine pits: Gold Fields' operations in Australia and Ghana are exposed to high rainfall and the risk of flooding. During 2014, flooding of the St Ives' Neptune Pit was experienced at the Australian operation. St Ives is situated within Western Australia, where heavy rainfall is often associated with cyclone events. No financial or production delays were experienced in 2014 due to increased rainfall or flooding. In addition increased rainfall can increase the							Tailing dams are specifically designed, managed & monitored with the aim of withstanding extreme weather events. For example Tailing dams at the Peru operations are regularly reviewed by an independent tailing dam review board. A group-wide TSF audit was also undertaken during 2014, with a key component of the review being TSF stability. 4. At Cerro Corona rainwater storage and reuse is used to enhance the mine's own water supply.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	level of Acid Mine Drainage (AMD), due to a higher amount of water percolating through to the ground water, which is a risk for Gold Fields' operations in Ghana and Australia. 3. Compromised tailing dam stability: Increased rainfall across all Gold Fields' operations may affect the stability of the tailing dams; 4. Decreased operational capacity: Water security at Cerro Corona poses a significant long-term challenge for the mine due to its remote, high-altitude location. Reduced water availability would disrupt								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the mine's operations and reduce the operational capacity of Cerro Corona. According to the World Business Council on Sustainable Development Water Tool, Gold Fields' operations in South Africa and Australia are situated in water stressed areas, and are most likely to experience water shortages.								
Other physical climate drivers	Higher Temperatures: The IPCC Fifth Assessment Report (2014) confirms the physical risk of higher temperatures for Gold Fields operations, as per the following projections: • Predicted a	Reduction/disruption in production capacity	Up to 1 year	Direct	Likely	Low	The potential financial implications related to the risks mentioned above are: 1. Work disruptions costs can be expressed as revenue that would normally be	Management of higher temperatures, heat fatigue and dehydration are critical aspects to maintaining a healthy workforce. All Gold Fields' operations have stringent heat stress and dehydration strategies in place	The cost of the heat stress and dehydration strategies is managed in house by Gold Fields 'Australian operations. The cost of the energy specialist and third part

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	mean annual temperature rise of 2 ºC for Africa, as a result Africa is one of the most vulnerable continents; • Likely increase in heatwaves across Australia; Higher temperatures are expected to have an impact on both open cast and underground operations, which can result in occupational health hazards. Increased surface temperatures have been found to directly impact underground wet-bulb temperature. Wet-bulb temperature is defined as the air's capacity to absorb moisture and thus aid in						generated during a shift, which ranges between US$ 0.34 Million at the Peru operation and US$ 1.19 Million at the Australian operations. 2. Energy costs currently make up about 21% of Gold Fields' operational costs. An increase in cooling demand will increase this fraction.	to ensure the health and safety of employees. During 2014 Gold Fields developed energy security plans for each region which will undergo a third party review. In addition an energy specialist has been contracted by Gold Fields to manage all energy related costs. These management methods would potentially decrease the magnitude of the risk over the next year.	review was roughly US$ 25,000.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	cooling. An increase in the underground wet-bulb temperature has the potential to impact Gold Fields' operations in two ways. When the wet-bulb temperature in underground mines reaches a certain threshold, companies are legally obliged to stop operations. The wet-bulb temperature is then reduced below the threshold through fridge plant cooling. For underground mines such as South Deep, in South Africa, the effectiveness of the fridge plants decrease and the energy								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	consumption to produce the required quality and quantity of cold air increases. However even when the wet-bulb temperature is dropped below the threshold, temperatures can still be relatively high which decreases employee productivity. This has been supported by historical studies which have shown significant correlation between work place temperatures and productivity on Gold Fields operations. In open cast operations, an increase in temperature can increase the								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	occurrence of chronic heat fatigue amongst employees and is expected to increase the use of electrical air conditioning units, thereby increasing operational costs. According to the US Environmental Protection Agency, a 1 ºC temperature increase could result in increased energy usage used for cooling by roughly 5-20%. During 2014, the western Australian region exceeded the temperature maximum record set in 2013, and experienced its warmest year since comparable								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	records in 1910. The hottest day had a temperature of 49.2 ºC, and the warmest days averaged 36.6 ºC.								

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 license to operate: The nature of the extractive sector means the industry must pay particular attention to its social licence to operate. Unlike other companies, mining companies are	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 their social license to operate could also result in delays to projects and	As a result Gold Fields aims to pursue mine level water strategies in Peru that generate shared value. Responsible water management remains a vital component of Gold Fields social licence to operate across all	Gold Fields invested US$ 1.2 million during 2014 related to improving the water system for the Hualgayoc region in Peru.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	physically ‘tied’ to their mineral deposits – and cannot simply relocate their investments and activities to new locations when facing deteriorating local and/or national operating environments. Furthermore, “life of mines” can span decades – making it essential for mining 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						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 Newton were required to pay a fine of US$550,000 to the Peruvian government. In addition losing social license to operate can have a reputational risk for Gold Fields’, as it would make the company less palatable to investors, which could influence the share price.	operations and projects, including Peru. Shared Value was adopted by Gold Fields’ in 2012. Through this approach, Gold Fields is: improving water quality and access in Hualgayoc City through the construction of a water pipeline from a well at Cerro Corona; Developing a programme to identify and repair water leaks in the existing water infrastructure; and Remediating legacy mining activities (not associated with Gold Fields) that are contaminating a local stream. Furthermore, local community members are invited to accompany Gold Fields employees	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	operational disruption, project delays and community dissatisfaction which impacts on productivity. As a result Gold Fields' strives to build strong relationships and trust with host communities and other key stakeholders in the regions in which it operates. Substantial resources have been invested by Gold Fields to establish and uphold a sustainable social license to operate under among others the shared value strategy. Buy-in on all levels is vital to ensuring continued operational functionality							when conducting water testing at the Cerro Corona operation.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	and the optimisation of productivity. Local communities surrounding mines are vulnerable due to their peripheral location and they often have limited access to social amenities and associated infrastructure. Such communities look to mines for livelihood support (schooling, healthcare, employment) as well as maintaining resources such as water. Vulnerable communities are often more susceptible to the impacts of climate change due to subsistence								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	based livelihoods. Mines have an opportunity to strengthen the resilience of local communities while managing their social license to operate. It has been predicted that climate change will increase water scarcity. For this reason mines need to be aware of their social responsibility to safeguard water and natural resources for surrounding local communities. An example of this can be found in Gold Fields operations in Peru, where water quality and availability are a key								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	concern. The risk of losing a social licence to operate remains high as other mining companies in Peru have faced fierce opposition from local citizens and government which has in the past caused some operations to close.								
Reputation	Gold Fields' faces the risk of reputation, not only in terms of their social license to operate, but also in terms of investor's perception. Negative investor perception can influence Gold Fields' share price, and may result in a loss of potential new	Other: declining interest from investors in your goods/services.	Up to 1 year	Direct	Unlikely	Medium	According to Goldman Sachs, "Companies that are considered leaders in ESG policies are also leading the pack in stock performance by an average of 25%." It is therefore expected that if investors perceive Gold	Gold Fields' maintains their reputation as a leader in carbon performance, through setting and achieving strategic energy and carbon reduction targets, as well as promoting continuous implementation of the energy and carbon management strategies. Gold	Gold Fields' contribution to the development and implementation of new energy and carbon reduction targets, in 2014 was US$ 25,000. While US$ 1.7 million was spent on implementing energy efficiency projects during 2014.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	investors. Increasing importance is being placed on environmental, social and governance (ESG) indicators to evaluate investment decision. Gold Fields has been tracking ESG investor interest since 2010 and found that some of its largest investors are focused on ESG issues.						Fields' to have a good reputation, it may lead to an increase in share price over the long term.	Fields aims to maintain its carbon and climate change leadership position through public reporting to the CDP, GRI and the Dow Jones Sustainability index. Gold Fields' received the following recognition in 2013: • Gold Fields' sustainability report is in accordance with the GRI G4 Core Reporting Guidelines; • Achieved 96% in the 2014 CDP; • In the Top 5 of globally listed mining companies in the Dow Jones Sustainability Index, with a 81% rating achieved in 2014.	Communication and reporting are managed in-house and are part of the company's fixed expenditure.
Other drivers	Supply Chain Risk: Gold	Other: Disruption of operations	3 to 6 years	Indirect (Supply	About as likely as	Low-medium	Disruption of the supply	It is important for Gold Fields to	The cost of supplier

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Fields' operations are dependent on the materials received from suppliers. There are multiple ways in which climate change could impact Gold Fields' supply chain: • Extreme weather events may disrupt the supply chain; • Increased operational costs due to the management of physical climate change impacts that affect supply chain, therefore adapting to the conditions; • Climate change has initiated numerous mitigation response measures, such as carbon taxes or regulatory compliance, that may result			chain)	not		chain, causing a disruption of the operations, may result in revenue losses ranging from US$ 0.34 Million at the Peru operation to US$ 1.19 Million at the Australian operations per shift missed. To ensure a reliable source of power, Gold Fields' can produce electricity with diesel generators which is approximately R2/kWh more expensive than conventional grid electricity.	know whether their suppliers have insight into potential climate change related risks that may impact their operations and whether they are managing these risks actively. Furthermore, Gold 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. Gold Fields' first round of supplier engagement took place between the South Deep mine in South Africa and their top 40 suppliers. The engagement was conducted via email which asked the suppliers the following three	engagement is managed in-house.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	in increased operational costs passed on via the supply chain; Referring to the first example, Gold Fields may experience disruption of its operations due a disrupted supply chain. In the second and third example, it is possible that increased operational costs within the supply chain will be passed through to Gold Fields, who will therefore experience increased operational costs. Specific supply chain products are more at risk due to different climate change related aspects. For example, purchased water is a							questions pertaining to carbon reporting: 1. Do you have a calculated carbon footprint for your company and/or the products supplied to Gold Fields' South Deep mine? 2. If, so would it be possible to share it with Gold Fields? 3. If not, do you anticipate completing one in the near future? Suppliers are currently in the process of responding to these questions. Responses will be assessed in order to prioritise suppliers according to current carbon reporting. Suppliers that do not have a carbon footprint will be offered support to calculate a baseline carbon	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	commodity where access and security could be impacted due to changed rainfall patterns, increased temperatures and increased drought frequency related to climate change. Furthermore, Cyanide is a product which is water intensive to produce. Therefore the supply of cyanide could be at risk due to drought impacts. If cyanide production is impacted at one of the suppliers, it is expected that some of Gold Fields' operations would need obtain cyanide from an alternative							footprint. Gold Fields' believes that the journey towards a lower carbon economy should include discussions with suppliers that may be unaware of the benefits of carbon reporting. In the long term, Gold Fields would like to ask their suppliers also to disclose their risks and opportunities related to climate change.	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	supplier at a premium. In addition the cement industry is an energy intensive sector and is therefore expected to be liable to pay carbon tax in South Africa. Assuming that half the carbon tax paid by the cement company will be passed through to customers, this may increase Gold Fields' operational costs. Gold Fields makes use of cement for underground and surface construction, as well as for stabilizer for back fill support. Over the past few years, electricity supply has been disrupted at both the								

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Ghanaian as well as the South African operations, which resulted in production disruptions. A portion of Ghana's electricity is generated from hydropower, therefore decreased rainfall or drought can disrupt hydro-electric power generation.								
Other drivers	Local communities and workforce impacted by climate change: Climate change has the potential to impact local communities and Gold Fields workforce in two ways: 1. Increased occurrence of diseases such as malaria. An	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.	The risk of climate change impacts on local communities and workforces is managed as follows: 1. Gold Fields Ghanaian operations have a comprehensive malaria management programme that incorporates education, prevention, prophylaxis and	Malaria treatment in Ghana costs approximately US$ 150 per person. In addition Gold Fields' invested US$ 1.2 million during 2014 related to improving the water system for the Hualgayoc region in Peru.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	increase in temperature due to climate change may affect the distribution and incidence of malaria (IPCC Fifth Assessment Report). This risk is likely to increase Gold Fields' operational costs due to increased medical costs and sick leave of its employees. In 2014, there were 690 cases of malaria at the Damang, Tarkwa and South Deep operations. 2. Increased global food prices, due to unpredictable farming conditions, can lead to social unrest. Gold Fields believes							treatment. This includes spraying accommodation (both on-mine and within the community), fitting anti-mosquito screens in mine accommodation, support for community health facilities and rapid diagnosis and treatment. 2. In 2013 Gold Fields committed to a different strategy for community-level value creation, namely the creation of Shared Value. This means pursuing mine-level business strategies that generate positive socio-economic impacts for the local communities and workforce while still enhancing the value of our business. During	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	that increased international food prices may contribute to social unrest, as is supported by scientific literature (The Food Crisis and Political Instability in North Africa and the Middle East, Lagi et al., 2011). Social unrest has the potential to disrupt mine production across all operations, resulting in reduced gold production and revenue.							2014, a project was implemented that benefited the Hualgauoc City of Peru, by improving water quality and access of water for the city's households. The project involved the construction of a water pipeline from a well at Cerro Corona to the Hualgauoc City, with the aim of securing the communities water supply. By securing water supply, Gold Fields' enables local communities and their workforce to be better equipped to withstand the impacts of increased food prices.	

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 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 Tax Benchmarking: The proposed South African carbon tax makes provision in the policy paper for benchmarking. This can benefit companies that perform better than their peers. Gold Fields' South Deep mine in South Africa has an emissions intensity of 0.225 tCO2/tonne ore milled, which is much lower when compared to other mines in the region with an average emission intensity of 0.35 tCO2/tonne ore milled. The carbon tax bases its benchmarking on the Z Factor which	Other: Reduced exposure to the potential South African carbon tax.	Up to 1 year	Direct	Likely	Low-medium	At a 60% tax free threshold Gold Fields' South Deep mine could be liable to pay +/- US$ 30, 000/year in carbon tax. However at a 65% tax free threshold South Deep would pay +/- US$ 24,000/year. This would save Gold Fields' South Deep mine US$ 3,000 in potential carbon tax.	The development of the potential carbon tax policy and the related benchmarking and Z factor calculations, are closely followed by Gold Fields.	Management of this opportunity is handled in house by Gold Fields.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	can be calculated for a company, and may improve their tax free threshold. The formula is as follows: Z = Y / X Where: • X is the average measured and verified carbon intensity (including both scope 1 and 2 emissions) of a company's output; • Y is the agreed benchmark carbon emissions intensity (including both scope 1 and 2 emissions) for the sector. The adjustment to the tax-free threshold is determined by multiplying the original percentage threshold by Z. Therefore, if this calculation is done for Gold Fields, a Z factor of 1.37 is achieved, which increases the tax free threshold to the maximum of 65%. Gold Fields' therefore has the opportunity to								

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	increase their tax free threshold through sector benchmarking and decrease their carbon tax liability.								

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

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' reputation benefits from the increased positive	Increased stock price (market valuation)	Up to 1 year	Indirect (Client)	Likely	Medium	The financial implication of increased investor	Gold Fields maintains their reputation as a leader in carbon	Gold Fields' contribution to the development and

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	perceptions, created from its carbon and climate change performance. Over the past decade there has been a growing trend to invest in companies that are socially responsible and sustainable. Consequently investors are increasingly using environmental, social and governance (ESG) indicators to evaluate investment decisions. Thus Gold Fields has been tracking ESG investor interest since 2010 and found that some of its largest investors are ESG investors. A study from 2014 (Northern Trust, Emerging Markets, ESG Investing) found						interest can be illustrated through the Nedbank 'BettaBeta Green Exchange Traded Fund', which by December 2013 bought a total worth of $0.32 Million of Gold Fields shares.	performance, through setting and achieving strategic energy and carbon reduction targets, as well as promoting continuous implementation of the energy and carbon management strategy. Gold Fields effort to maintain its carbon and climate change leadership position has resulted in the following recognition in 2014: • Sustainability report is in accordance with the GRI G4 Core Reporting Guidelines; • Achieved 96% in the 2014 CDP Disclosure; • Top 5 of globally listed mining companies in the Dow Jones	implementation of new energy and carbon reduction targets, in 2014 was US$ 25,000. While US$ 1.7 million was spent on implementing energy efficiency projects during 2014. Communication and reporting are managed in-house and are part of the company's fixed expenditure.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	that: • At least $13.6 Trillion of assets – 22% of the available total – is now invested incorporating ESG principles. • 44% of European institutions include ESG considerations in their investment strategy. • Investors equate good ESG performance with financial success. In addition Gold Fields was included in Nedbank's "BettaBeta Green Exchange Traded Fund" (July 2012) which was developed in response to an increased demand from environmentally-conscious investors. The environmental criteria selection was based on the top CDP performers and							Sustainability Index, with a 81% rating achieved in 2014.	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	the CDM project database. As a result, the fund generated additional exposure and attractiveness to Gold Fields investors thereby supporting their stock price.								
Changing consumer behaviour	Historically Gold Fields has found that in times of political, economic and social crisis investors generally buy gold as it is seen as a safe investment. Sales of gold could increase if climate change were to create economic, political or social unrest.	Increased demand for existing products/services	1 to 3 years	Indirect (Client)	About as likely as not	Unknown	According to Goldman Sachs, “Companies that are considered leaders in ESG policies are also leading the pack in stock performance by an average of 25%.” It is therefore expected that if investors perceive gold as a safe investment then it may lead to an increase in Gold Fields’ share price	This opportunity is not actively managed by Gold Fields as gold mining companies are price takers in the gold market. Therefore there are no costs associated with the management of this opportunity.	As this opportunity is not actively managed, no budget is allocated.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
							over the long term.		
Other drivers	New market opportunities: The development of clean energy technologies, driven by the need to reduce climate change impact, could possibly open up a new market for gold. Research into the potential of gold utilization in new low carbon technologies is being conducted and gold seems to have several applications. Currently, gold is believed to be a critical element for use in the following highly efficient technologies; • Fuel cells • Catalytic converters • Solar cells (stretchable solar panels that can be integrated into clothing); •	Increased demand for existing products/services	>6 years	Indirect (Client)	About as likely as not	Medium	An increase of 1% on the group average gold price in 2013 and assuming the amount of gold mined in 2014 may increase Gold Fields income by $28 Million.	Gold Fields manages this opportunity through continuously identifying new market opportunities within their exploration and expansion division.	The costs associated with exploration and expansion are managed in house.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Lithium air batteries. Apart from these clean energy technologies, research at Rice University in Texas, supported by the World Gold Council, has led to the development of a gold/palladium catalyst which is particularly adept at efficiently removing chlorinated compounds from water in laboratory conditions. This catalyst was tested in a field trial in 2013. In addition the World Gold Council in collaboration with the University of Nantes, have discovered new research that suggests gold nanodots on the surface of indium-tin oxide coated glass may								

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	improve the efficiency of organic solar cells. These products, if commercialized successfully, have the potential to increase gold demand which in turn will increase the gold price. Any increase in the price of gold will directly impact on Gold Fields financial performance.								

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

Gold Fields still believes that the reliability of water access, and change in precipitation extremes and droughts pose significant operational risks. These risks remain even amidst strategic mitigating actions to secure their own water supply. The high levels of uncertainty pertaining to climate change make it difficult to predict actual change and subsequently manage impacts. In this regard Gold Fields' South Deep mine's positive water balance is not regarded as a climate change opportunity. The positive water balance due to the reverse osmosis plants and monthly saving of US$ 25, 000/month from July 2015, came about due to the management of the water uncertainty risk not a climate change opportunity per se. No opportunities for Gold Fields were thus identified from physical climate change impacts during the 2014 reporting period.

CC6.1f

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

Further Information

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

Page: CC7. Emissions Methodology

CC7.1

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

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Mon 01 Jan 2007 - Mon 31 Dec 2007	461565

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 2	Mon 01 Jan 2007 - Mon 31 Dec 2007	716325

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

N/A

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	2.6691	kg CO2e per liter	DEFRA 2014 version 1.2
Motor gasoline	2.2999	kg CO2e per liter	DEFRA 2014 version 1.2
Liquefied petroleum gas (LPG)	2.9403	metric tonnes CO2e per metric tonne	DEFRA 2014 version 1.2
Bituminous coal	2.3566	metric tonnes CO2e per metric tonne	DEFRA 2014 version 1.2
Other: Blasting Agents (ANFO)	0.17	metric tonnes CO2e per metric tonne	National Greenhouse Accounts Factors, Jan 2008, www.climatechange.gov.au
Other: Oxyacetylene	0.00372	kg CO2e per liter	Climate registry - corrected from feet to m3 www.theclimateregistry.org
Electricity	0.589	metric tonnes CO2e per MWh	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 2013-14.
Electricity	0.6	metric tonnes CO2e per MWh	This electricity emission factor is for Australia south – St Ives operation. The factor was sourced from Transalta Leinster/Mount Keith Scope Two Grid Factor for FY 2013-14.
Electricity	1.03	metric tonnes	This electricity emission factor is for South Africa. It is calculated using the Eskom

Fuel/Material/Energy	Emission Factor	Unit	Reference
		CO2e per MWh	Supplementary & Divisional Report 2014.
Electricity	0.22	metric tonnes CO2e per MWh	This electricity emission factor is for Ghana. It was sourced from Ecometrica and DEFRA Guidelines.
Electricity	0.2304	metric tonnes CO2e per MWh	This electricity emission factor is for Peru. It was sourced from the IPCC fourth assessment guidelines.

Further Information

CC7.1: Comment: restated baseline in 2014 due to the acquisition of Agnew, Darlot and Granny Smith. Comment: The Gold Fields' emission figures reported in sections 8 to 13 of the CDP report, include both head offices and operations.

Page: CC8. Emissions Data - (1 Jan 2014 - 31 Dec 2014)

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

464193

CC8.3

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

794174

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 Scope 2 emissions excluded from this source	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	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 around 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. Because Gold Fields has got high quality management and accounting practices in place, the data management uncertainty is estimated to be below 2%.
Scope 2	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.

CC8.6

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

Third party verification or assurance complete

CC8.6a

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

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Reasonable assurance	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC8.6a/GoldFields CDP verification letter 2014_final.pdf	Dedicated verification section	ISAE3000	95

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 your reported Scope 2 emissions

Third party verification or assurance complete

CC8.7a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Reasonable assurance	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC8.7a/GoldFields CDP verification letter 2014_final.pdf	Dedicated verification section	ISAE3000	95

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	No

CC8.9

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

No

CC8.9a

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

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

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	6987
Ghana	224951
Australia	204674
South America	27581

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	262
Ghana	224731
Peru	27540
South Africa	6986
Australia	204674

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	6986	-26.39802	27.695503
Sandton Main	0.68	-26.099784	28.067068
Tarkwa	168366	5.249448	-2.004898
Damang	56365	5.226349	-2.024918
Accra Main	220	5.605238	-0.183069
St Ives	83393	-31.208691	121.663284
Agnew	26640	-27.905845	120.704727

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
Darlot	8245	27.8833	121.2667
Granny Smith	86396	28.9833	122.6833
Perth Main	0	-31.949629	115.841709
Cerro Corona	27540	-6.776103	-78.660736
Lima Main	41	-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	464193

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)

CC9.2e

Please break down your total gross global Scope 1 emissions by legal structure

Legal structure	Scope 1 emissions (metric tonnes CO2e)

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2014 - 31 Dec 2014)

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 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for in CC8.3 (MWh)
South Africa	491472	477157	0
Ghana	92623	421014	0
Australia	176999	297291	0
South America	33080	143574	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 (metric tonnes CO2e)
Head Offices	644
Ghana	92593
Peru	33050
South Africa	491069
Australia	176818

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)
South Deep	491069
Sandton Main	403
Tarkwa	69258

Facility	Scope 2 emissions (metric tonnes CO2e)
Damang	23335
Accra Main	30
St Ives	103167
Agnew	48885
Darlot	24766
Granny Smith	0
Perth Main	181
Cerro Corona	33049
Lima Main	31

CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)

CC10.2d

Please break down your total gross global Scope 2 emissions by legal structure

Legal structure	Scope 2 emissions (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 fuel, electricity, heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Fuel	1717844
Electricity	1339037
Heat	0
Steam	0
Cooling	0

CC11.3

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

Fuels	MWh
Diesel/Gas oil	1685599
Motor gasoline	1546

Fuels	MWh
Liquefied petroleum gas (LPG)	29491
Other: Oxyacetylene	1208

CC11.4

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

Basis for applying a low carbon emission factor	MWh 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	N/A

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Decreased

CC12.1a

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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	3.96	Decrease	Due to the implementation of emission reduction activities, 3.96% 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 (54,703 tCO2e) were divided by total scope 1 and 2 emissions from 2013 (1,382,296 tCO2e).
Divestment	0	No change	No divestments occurred during the 2014 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	4.08	Decrease	Gold Fields experienced lost ounces of gold during 2014 at the South Deep operation due to S54 stoppage[s] order[ed] by the Department of Minerals and Resources (and the closure of a mine section for necessary structural improvements). The stoppage orders were raised due to fatalities.
Change in methodology	0	No change	N/A
Change in boundary	0	No change	N/A
Change in physical operating conditions	0.93	Decrease	Approximately 8% of the total absolute emission reductions in 2014 compared to 2013 at Gold Fields' operations can be attributed to emission reduction projects and change in output. The remaining reductions were achieved due to changes in physical operating conditions. Examples of changes in operating conditions which reduced energy use and therefore emissions are increased ore quality (therefore less ore had to be mined to achieve production targets), reduced capital stripping requirements and hauling distance reductions.
Unidentified	0	No change	N/A
Other	0	No change	N/A

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	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.000438608	metric tonnes CO2e	unit total revenue	7.79	Decrease	Gold Fields' emissions and revenue decreased in 2014 compared to 2013. The emissions decreased due to the following reasons: • Gold Fields experienced lost ounces of gold during 2014 at the South Deep operation due to S54 stoppage[s] order[ed] by the Department of Minerals and Resources (and the closure of a mine section for necessary structural improvements). The stoppage orders were raised due to fatalities; • implementation of emission reduction activities; and • changes in physical operating conditions. Examples of changes in operating conditions which reduced energy use and therefore emissions are increased ore quality (therefore less ore had to be mined to achieve production targets), reduced capital stripping requirements and hauling distance reductions.

CC12.3

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per full time equivalent (FTE) employee

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
140.54	metric tonnes CO2e	FTE employee	6.32	Decrease	Gold Fields' emissions and total number of employees decreased in 2014 compared to 2013. The emissions decreased due to the following reasons: • Gold Fields experienced lost ounces of gold during 2014 at the South Deep operation due to S54 stoppage[s] order[ed] by the Department of Minerals and Resources (and the closure of a mine section for necessary structural improvements). The stoppage orders were raised due to fatalities; • implementation of emission reduction activities; and • changes in physical

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
					operating conditions. Examples of changes in operating conditions which reduced energy use and therefore emissions are increased ore quality (therefore less ore had to be mined to achieve production targets), reduced capital stripping requirements and hauling distance reductions.

CC12.4

Please provide an additional intensity (normalized) metric that is appropriate to your business operations

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.548392817	metric tonnes CO2e	ounce of gold	19.86	Decrease	Gold Fields' overall emissions decreased in 2014 compared to 2013. The emissions decreased due to the following reasons: • Gold Fields experienced lost ounces of gold during 2014 at the South Deep operation due to S54 stoppage[s] order[ed] by the Department of Minerals and Resources (and the closure of a mine section for necessary structural improvements). The stoppage orders were raised due to fatalities; • implementation of emission reduction activities; and • changes in physical operating conditions. Examples of changes in operating conditions which reduced energy use and therefore emissions are increased ore quality (therefore less ore had to be mined to achieve production targets), reduced capital stripping requirements and hauling distance reductions.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

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

CC13.1a

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

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

CC13.1b

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

CC13.2

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

No

CC13.2a

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

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes 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	199888	Activity data: The following major 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	100.00%	N/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
			then uploaded onto the GRI portal (a non-financial data capture and management system). Emission factors: Lime and Cement emission factors were obtained from the Inventory of Carbon and Energy document (University of Bath, 2008), and the caustic soda emission factor was obtained from the C Calc (Carbon Calculations over the Life Cycle of Industrial Activities Organisation) carbon foot printing tool. 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, then effort will be put into obtaining the relevant country specific 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		

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
			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 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).		
Capital goods	Relevant, calculated	115	Activity data: The top three biggest capital spends during 2014 were for the purchased capital goods category. Gold Fields' newly acquired Australian operations purchased two Atlas Copco trucks and a Westrac 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 total emissions for Atlas Copco by the total revenue (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	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
			emissions from the production of the truck. Assumptions and allocation methods: The total emissions for Westrac were not available in their annual report, and therefore the emission factor associated with the production of one Westrac loader could not be calculated. Therefore the assumption was made that the emissions for from the production of an Atlas Copco truck would be similar to the emissions from a Westrac loader. 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 2014. 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	208424	Activity data: Gold Fields has the following life cycle emissions associated with Fuel-and-energy related activities (not reported in scope 1 or 2): Diesel, Petrol, contractor fuel, LPG, Blasting Agents, and Oxyacetylene. In addition to this life cycle emissions of transmission and distribution losses were also included for South African operations but have not been included for	100.00%	N/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
			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 use and is obtained from Eskom for the South African operation, South Deep. Emission factors: The emission factor for the transmission and distribution losses for the South African operation, was obtained directly from the Eskom Supplementary & Divisional Report 2014. The emission factors for Diesel, Petrol, LPG and Blasting Agents were obtained from the DEFRA Emission Factors for 2014 version 1.2. While the emission factor for Oxyacetylene was obtained from the Engineering Toolbox. 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		

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
			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).		
Upstream transportation and distribution	Relevant, calculated	8225	Activity data: In this category Gold Fields includes the transportation of the goods and services, as well as fuel and energy related products as described in categories 3.1 and 3.3. 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 2014 version 1.2. 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 over	0.00%	N/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
			100 kilometres. The assumed average transportation distances were internally reviewed and are expected to be a fair representation of the actual emissions. 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).		
Waste generated in operations	Relevant, calculated	490	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 an internationally recognized organisation, namely 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	100.00%	N/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
			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 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).		
Business travel	Relevant, calculated	8370	Activity data: The business travel category for Gold Fields includes air travel and car hire 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 (1100 km), short-haul (<3700 km) or long-haul (>3700 km). The factors were obtained from the DEFRA	100.00%	N/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
			Emission Factors 2014 version 1.2. The scope 1 emission factor for air travel was added to the scope 3 emission factor, in order to obtain the emissions from fuel combustion and refining and transportation. This approach was chosen as it encompasses all emission sources. The emission factor used for car hire is linked to the fuel use, and uses the scope 1 petrol emission factor obtained from the DEFRA Emission Factors 2014 version 1.2. 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: 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		

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
			(please refer to attached verification statement for procedures performed).		
Employee commuting	Relevant, calculated	4285	Activity data: Gold Fields employee commuting covers the transportation of employees between their homes and worksites during the reporting year (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 2014 version 1.2. 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 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	0.00%	N/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
			consumption of 14km/litre. 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).		
Upstream leased assets	Not relevant, explanation provided		N/A		The emissions associated with upstream leased assets are estimated as 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	4832	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	100.00%	N/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
			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 2014 version 1.2. 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 2014 version 1.2. 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 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).		

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Processing of sold products	Relevant, calculated	349	Activity data: Processing of sold products for Gold Fields covers the emissions associated with the refining and smelting of gold produced. 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) after which the emission factor (tCO2/tonne of gold) for each country was calculated based on the relevant national grid 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 category, no assumptions were made or allocation methods applied. Data quality: The primary data (gold produced) is viewed to be of exceptional high quality, as this is monitored intensively as it determines the company's performance. 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).	0.00%	N/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
Use of sold products	Not relevant, explanation provided		N/A		The emissions associated with the use of sold gold products are estimated to be insignificant.
End of life treatment of sold products	Relevant, calculated	698	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 factor is calculated by Gold Fields using the relevant national grid emission factor and multiplying this by the energy required to refine and smelt gold (National Resources Canada). 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 took the amount of gold produced in 2014 and multiplied it with a factor 2 (due to twice recycling) and multiplied this with the country specific emission factor for the refining and smelting of gold. Assumptions and allocation methods: Assumptions were made on the amount of recycling each gold product goes through (assumed that gold is recycled twice), as well as the type of recycling (full refining and smelting). Data quality: The amount of gold produced by Gold Fields in 2014 is expected to be highly reliable due to the importance of this data.	0.00%	N/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
			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		N/A		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		N/A		Gold Fields' does not have any franchises; this category is therefore not applicable to the company.
Investments	Not relevant, explanation provided		N/A		Investments in which Gold Fields' has a 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		N/A		N/A
Other (downstream)	Not relevant, explanation provided		N/A		N/A

CC14.2

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

Third party verification or assurance complete

CC14.2a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)
Reasonable assurance	https://www.cdp.net/sites/2015/77/7577/Climate Change 2015/Shared Documents/Attachments/CC14.2a/GoldFields CDP verification letter 2014_final.pdf	Dedicated verification section	ISAE3000	95

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 stream lining and optimization.	29	Decrease	N/A
Capital goods	Other: N/A	0	No change	This is the first year that Gold Fields' is reporting on capital goods within scope 3 emissions, therefore there is no change between 2013 and 2014 emissions.
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	15	Decrease	It should be noted that fuel and energy related activities (not included in Scope 1 or 2) decreased due to a combination of emission reduction activities and a change in output.
Upstream transportation & distribution	Other: Purchased Goods and Services decreased due to business stream lining and optimization, therefore transportation and distribution of these goods and services reduced and the associated emissions reduced.	20	Decrease	N/A
Waste generated in operations	Other: Reduced amount of employees, contributed to a decrease in waste generated at the operations.	3	Decrease	N/A
Business travel	Other: Reduced amount of employees, as well as companywide cost savings contributed to a decrease in business travel emissions associated with this category.	9	Decrease	The restatement of FY2013 data obscures the actual significant increase that has occurred in this category, due to fly-in-fly out arrangements with the employees of Granny Smith, Agnew and Darlot operations. Without restatement the increase would have been 57%.
Employee commuting	Other: Reduced amount of employees, contributed to reduced employee commuting.	5	Decrease	N/A
Downstream transportation and distribution	Unidentified	4	Increase	N/A
Processing of sold products	Unidentified	10	Decrease	N/A
End-of-life treatment of sold products	Unidentified	10	Decrease	N/A

CC14.4

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

Yes, our suppliers

CC14.4a

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

Gold Fields realises the importance of supplier engagement, especially in the context of moving towards a long term sustainable and low carbon future. Understanding and recognising opportunities for resource efficiencies in the supply chain are becoming increasingly important. Gold Fields as a leader in sustainable mining want to maximise their commitment to a lower carbon economy by supporting efficiencies across their value chain. In this regard Gold Fields realises the value of pro-active supplier engagement. The first round of engagement took place between the South Deep mine in South Africa and their top 40 suppliers. The engagement was conducted via email which asked the suppliers the following three questions pertaining to carbon reporting:
1. Do you have a calculated carbon footprint for your company and/or the products supplied to Gold Fields' South Deep mine?
2. If, so would it be possible to share it with Gold Fields?
3. If not, do you anticipate completing one in the near future?
Suppliers are currently in the process of responding to these questions. Responses will be assessed in order to prioritise suppliers according to current carbon reporting. Suppliers that do not have a carbon footprint will be offered support to calculate a baseline carbon footprint. Gold Fields' believes that the journey towards a lower carbon economy should include discussions with suppliers that may be unaware of the benefits of carbon reporting.
Engaging with South Deep suppliers will enable Gold Fields to determine supplier specific emission factors for products purchased by South Deep mine and calculate the carbon tax liability in the supply chain. In addition this initiative will continue to improve the mine's carbon footprint.
Gold Fields' South Deep mine will measure the success of supplier engagement based on the following criteria:
- Suppliers that respond to the email and are pro engagement;
- Suppliers that respond positively with a carbon footprint and are willing to share it;
- Suppliers that may not have a carbon footprint but anticipate to do so in the near future.
Depending on the success of the engagement at South Deep, Gold Fields plans to roll out the method to other regions.
In the long term, Gold Fields would like to ask their suppliers to also disclose their risks and opportunities related to climate change. It is however noted that only once suppliers have insight into their company and product carbon footprints can they then actively assess and manage climate change risks.

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	Comment
40	20%	This is the South Deep supplier expenditure as a fraction of Gold Fields' Group wide supplier spend.

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
Other	Gold Fields South Deep would like to obtain its supplier's company and product carbon footprints to: - Be able to calculate its own carbon footprint using the emission factors obtained from its suppliers. - Identify GHG sources to potentially prioritize for reduction actions In the long term, Gold Fields would like its suppliers to disclose its risks related to climate change to be able to - manage physical risks in their supply chain; and - determine the impact of regulations on the supply chain on Gold Fields business.

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
Naseem Cohan	Executive Vice President of Sustainable Development	Other: Executive Vice President

Further Information

CDP