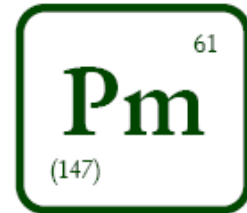


PROMETHIUM

C A R B O N



Gold Fields
and the
Carbon Disclosure Project

May 2008

1. BACKGROUND

As global understanding of climate change, its associated risks and opportunities continue to develop; investors are increasingly demanding more advanced corporate disclosure on carbon performance.

The Carbon Disclosure Project provides a coordinating secretariat for institutional investors with a combined \$57 trillion of assets under management. On their behalf, it seeks information on the business risks and opportunities presented by climate change and greenhouse gas emissions data from the world's largest companies. The Carbon Disclosure Project is an international initiative in its sixth year (hence CDP6). However companies listed on the Johannesburg Stock Exchange only participated since last year.

These investors want to understand the potential impact on their investment due to:

- Taxation and regulation;
- Changes in the climate system;
- Technological innovations; and
- Shifts in consumer attitude and demand

The information requested focuses on the following four primary areas:

- **Climate change risks and opportunities** with the objective to identify strategic risks and opportunities and their implications;
- **Greenhouse Gas (GHG) emissions accounting** with the objective to determine the actual absolute GHG emissions;
- **Performance** with the objective to determine performance against targets and plans to reduce GHG emissions; and
- **Governance** with the objective to determine responsibility and management approach to climate change.

In 2007 a total of 1300 companies participated worldwide. This total included 77% of FT500.

The top 100 companies listed on the JSE received the CDP6 questionnaire on the 1st of February 2008. The completed questionnaire is due on the 31st of May 2008.

For ease of readability the questions and the options are repeated in *italics* followed by the answer.

2. SECTION 1: RISK AND OPPORTUNITIES

The objective of this section is to identify strategic risks and opportunities and their implications.

a. **Risks** (CDP5 Question 1a)

- i. **Regulatory Risks:** *How is your company exposed to regulatory risks related to climate change?*

Gold Fields is a gold mining company with mining operations in South Africa, Ghana, and Australia. Gold Fields also has shares in Choco 10, in Venezuela and is currently developing Cerro Corona in Peru, which is expected to be in production in 2008.

St. Ives and Agnew are located Australia, an annex I country, and the rest of the operations are located in non-annex I countries which have ratified the Kyoto Protocol. Annex I countries are developed countries who have accepted greenhouse gas emission reduction obligations and must submit an annual greenhouse gas inventory. Gold Fields Australian operations are participating in the Australian Greenhouse Challenge Plus.

Non-annex I countries are developing countries which may participate in the Clean Development Mechanism (CDM) and, therefore, receive income by implementing emission reduction projects. Non-annex I countries, require a Designated National Authority (DNA) in order to be able to participate in the CDM. Therefore, as shown in the table below, Venezuela is currently unable to participate in the CDM.

Non-annex I Countries	DNA
Ghana	Present
South Africa	Present
Peru	Present
Venezuela	Not Present

No African or South American country has implemented climate change related regulations and there is significant uncertainty about the nature of such regulations, should it ever be implemented. The biggest regulatory risk in these countries is therefore the uncertainty about future regulatory requirements and constraints.

South Africa is in the process of developing air quality regulations that include greenhouse gas (GHG) targets. The Minister of Environmental Affairs and Tourism has announced that South Africa will commit to emission reduction in one form or

another. Parliament is also considering South Africa's response to climate change in the form of the Long-Term Mitigation Strategy (LTMS). It is therefore possible that by 2012, there could be legislation in South Africa governing the GHG emissions of companies.

By 2050, South Africa want to significantly increase tariffs on carbon use, as it strives to reduce greenhouse gas emissions. South Africa relies primarily on coal-fired power stations with high carbon intensities for the supply to its national grid. is the country is the continent's leading producer of carbon emissions, accounting for more than 50 percent of the total greenhouse gas emissions for Africa.

The Finance Minister, Trevor Manuel, introduced a 2 cents per kilowatt-hour levy (2c/kWh) on non-renewable sources of electricity in February 2008, essentially a carbon tax, in a bid to spur greater investment in low-carbon technologies.

The Minister of Environmental Affairs and Tourism, Mr Marthinus van Schalkwyk stated that "*In future there will be a price on carbon. We don't yet know what form that will take.*"

An official report from the Department of Environmental Affairs and Tourism stated that carbon prices could rise from R100/tonCO₂e in 2008 to R750/tonCO₂e by 2050. The report stated that "*The rising tax level is designed to approximate a phase of slowing emissions growth, stabilising emissions, and ultimately reducing absolute emissions through a high carbon tax of R750 in the last decade.*"

ii. **Physical Risks:** *How is your company exposed to physical risks from climate change?*

Gold Fields' business operations have already experienced some physical risks due to weather conditions, these include:

- In Ghana, drought has resulted in low levels in the Akosombo Dam, Ghana's principal source of hydro power which is fed onto the grid. Therefore, the power expected from the national grid did not materialize, resulting in a power curtailment of 25% from July 2006 to October 2007.

The operations are exposed to immediate risks that include:

- Deep underground mines require significant cooling of the workplace. Higher ambient temperatures would require increased energy for cooling of underground mining activities.
- Drought would also affect existing mining and processing operations, which are water intensive.
- Excessive rainfall would impact open cast mines in Ghana and especially St Ives where some of the open pits are situated within a large salt lake namely Lake Lefroy. This area could also be adversely affected during cyclone occurrences which may be a one of the consequences of climate change.
- In other locations heavy rainfall presents a challenge to storm water management for mining facilities.

Other physical risks as identified by the International Panel for Climate Change that could impact Goldfields operations in the subtropics:

- Increased health risks associated with malaria and yellow fever affecting employees, their families and consultants, which will increase the costs of doing business in these regions.

iii. **General Risks:** *How is your company exposed to general risk as a result of climate change?*

Apart from the physical and regulatory risk, Gold Fields may require behavioural change and technical innovation to be able to operate processing facilities in drought stricken areas, especially where electricity is supplied by hydro power.

Energy in underground mines is essential, where the safety of miners is at high risk if ventilation and cooling water cannot be supplied to the mine. Therefore, the need for research into and implementation of technical innovations is required and will result in increased costs.

Gold Fields could be exposed to a decrease in gold demand. This would occur when climate change adversely affects daily living, increasing living expenses (energy, fuel, and food prices). Gold, considered a luxury item, would then become less and less within the means of the market. Purchases made by India, the primary gold consumer, decreased by approximately 50% in the first quarter of 2008 owing to the increase in gold price. Consumer demand is expected to remain a risk with further price increases anticipated.

Fuel price increases could have a direct impact on the company supply chain resulting in increased costs.

iv. ***Risk Management:*** *Has your company taken or planned action to manage the general and regulatory risks and/or adapt to the physical risks you have identified?*

The Group's Risk Policy guides the consistent and systematic assessment of risk and the procedures for risk reporting and risk mitigation measures across the Group. The Board, via the Audit Committee, is ultimately responsible for the overall system of risk management and they monitor measures, which are in place to mitigate existing risks and identify new risks, on an ongoing basis.

The current power crisis and strategic financial and mineral resources issues dominate the top positions on the Gold Fields' Risk Register. The group risk register consists of 30 to 35 of the most strategic risks facing Gold Fields. Climate change has been identified as one of these strategic risks and assessed in terms of its severity and likelihood. The environmental and safety impacts are perceived to be extremely high on the Gold Fields rating scale (8 out of 10).

A risk champion has been allocated as the responsible manager for ensuring that control measures are put in place. A reporting structure is in place in Gold Fields for the management of risk. Each operation conducts legal baseline and issues-based risk assessments in terms of the Mine Health and Safety Act. Strategic risks are then extracted on a quarterly basis for the formulation of strategic risk registers and action plans to deal with risk.

Operation's risk registers are reviewed bi-annually at the corporate office where summary registers are drawn up for South African and International operations. After moderation and inclusion of risks from the external environment, a group risk register is presented to Gold Fields' Executive Committee and the Board.

Gold Fields' strategy is to ensure sustainable growth of the business and its board has established a Safety, Health, Environment, and Community (SHEC) Committee. Climate change risks and issues are the responsibility of this committee.

In addition, Gold Fields has become a member of the International Council on Mining and Metals (ICMM), which has well-tested Sustainable Development Principles, which Gold Fields will implement in a structured manner, including reports and audits. Since joining the ICMM, Gold Fields has committed itself to the ICMM position on climate change, which recognises the significance of climate change as a global issue requiring sustained reduction in GHG emissions. This commitment entails meeting or exceeding government emission standards, monitoring and reducing of GHG emissions and reporting in a manner consistent with the Global Reporting Initiative.

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- v. ***Financial and Business Implications:*** *How do you assess the current and/or future financial effects of the risks you have identified and how those risks might affect your business?*

Some of the costs associated with meeting more stringent regulation can be offset by increased energy efficiency and technological innovation. However, if the current regulatory trend continues, meeting more stringent regulations will result in increased costs.

Gold Fields have purchased an 80 MW power plant in Ghana, along with three other companies, to supplement the hydro power from the Akosombo Dam. Levels in the dam can become critically low during periods of low rainfall, placing the consistent supply of electricity at risk. The cost of the plant was US\$40m, which was shared by three companies. The investment of US\$40m was needed to purchase gas turbine generators which will run on diesel initially, and later on natural gas, to supplement the power available to the three mining companies under curtailment conditions.

b. Opportunities (CDP5 Question 1b)

- i. ***Regulatory Opportunities:*** *How do current or anticipated regulatory requirements on climate change offer opportunities for you company?*

St. Ives and Agnew are located Australia, which is an annex I country, and the rest of the operations are located in non-annex I countries which have ratified the Kyoto Protocol. Annex I countries are developed countries who have accepted greenhouse gas emission reduction obligations and must submit an annual greenhouse gas inventory. Gold Fields Australian operations, being part of the Australian Greenhouse Challenge Plus, provides a good platform for learning for operations in other regions.

Non-annex I countries are developing countries which may participate in the Clean Development Mechanism (CDM). Gold Fields is actively pursuing CDM projects and is committed in developing new methodologies for the CDM initiative. Gold Fields already has one approved new methodology, AM0064 “Methodology for mine methane capture and utilisation or destruction in underground, hard rock, precious and base metal mines.” In addition, another small-scale methodology, which has recently been recommended to the Methodology Panel for approval, namely “Fugitive methane recovery from mining operations” has been submitted.

Gold Fields has signed the Energy Efficiency Accord in South Africa, in which signatories pledge to investigate the reduction of their energy usage by 15% by 2015, using 2000 as a base year.

- ii. ***Physical Opportunities:*** *How do current or anticipated physical changes resulting from climate change present opportunities for your company?*

In the areas where Gold Fields facilities are located, the projected physical changes due to climate change are not favourable for either the communities or the business.

- iii. ***General Opportunities:*** *How does climate change present general opportunities for your company?*

Clean energy generation for their own operations, energy savings, and improved efficiencies reduce costs related to energy consumption. Gold Fields generate their own hydro electricity at some of the operations. The opportunity is created for larger scale energy savings.

Energy efficiency is associated with both emission reduction and cost savings. Gold Fields has a project portfolio encompassing a range of potential emission reduction projects.

In periods of uncertainty; for example, war, risk of recession; the gold price increases as investors turn to this commodity rather than investing in currencies, stocks and bonds. The unknown impact of climate change may result in similar behaviour. Climate change may result in increased investment in gold as some investors see gold as a safe investment, which if all else fails, could still be used as a currency to purchase food or transport.

- iv. **Maximizing Opportunities:** *Do you invest in, or have plans to invest in products and services that are designed to minimize or adapt to the effects of climate change?*

Energy efficiency is associated with both emission reduction and cost savings. Gold Fields has a project portfolio encompassing a range of potential emission reduction projects. A summary of emission reduction project opportunities are given in the table below:

Table 1: Summary of emission reduction project opportunities

Project site	Planned intervention	Notes
Beatrix	Monitoring Compressed Air 1,2, 3 Shaft	The system optimizes the compressed air plant schedule of the mine
Driefontein	Control of Main Fans	Controls ventilation flow or volume of air
Beatrix	Control of Main Fans	Controls ventilation flow or volume of air
Driefontein	3CPF System 1 Shaft	Utilises the U-tube effect of column design to pump water up the mine
Driefontein	3CPF System 5 Shaft	Utilises the U-tube effect of column design to pump water up the mine
Driefontein	Energy Efficient Lighting (Surface)	Installation of energy efficient light bulbs
Driefontein	Stope Shut-off Valves	Under investigation
Kloof	Control of Main Fans	Controls ventilation flow or volume of air
Kloof	3CPF System 4 Shaft	Utilises the U-tube effect of column design to pump water up the mine
Kloof	Energy Efficient Lighting (Surface)	Installation of energy efficient lights
South Deep	Energy Efficient Lighting (Surface)	Installation of energy efficient lights
Kloof	Hard Ice Technology	Ice technology for Kloof 3 Shaft and 4 Shaft

Gold Fields are also actively pursuing CDM projects. Methane, a potent greenhouse gas, has been venting from the Free State since mining started in the area decades ago. The CDM projects provide a number of options to destroy the methane as it can be burnt for fuel and generate power for the Beatrix mine.

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- v. ***Financial and Business Implications:*** *How do you assess the current and/or future financial effects of the opportunities you have identified and how those opportunities might affect your business?*

Any projects identified are approved based on normal cost / return calculations, with an internal IRR hurdle which needs to be met. Carbon credits under the Clean Development Mechanism provide an additional income stream to assist projects in meeting the set IRR hurdle rate.

3. SECTION 2: GREENHOUSE GAS EMISSIONS ACCOUNTING

This section provides the results of this carbon footprint study in the format required for reporting under CDP 6.

c. Accounting Parameters (CDP5 Question 2a)

- i. **Reporting Boundary:** Please indicate the category that best describes the company, entities or group for which your response is prepared:
- Companies over which financial control is exercised – per consolidated audited Financial Statements.
 - Companies over which operational control is exercised.
 - Companies in which an equity share is held.
 - Other (please provide details).

Please use the same approach for all answers.

- Companies over which financial control is exercised – per consolidated audited Financial Statements. This response covers the companies under financial control which includes the following:

Table 2: Gold Fields Operations

Local

Driefontein	North West Province
Kloof	Gauteng
Beatrix	Free State
South Deep	Gauteng

International

Tarkwa	Ghana
Damang	Ghana
St Ives	Australia
Agnew	Australia

The mining site, Choco 10, located in Venezuela was excluded from this study as Gold Fields does not have financial control over it. The Cerro Corona project in Peru, was also excluded from this study as this site is still under construction and will only be in production in 2008.

- i. **Reporting Year:** Please explicitly state the dates of the accounting year or period for which GHG emissions are reported.

The reporting year is not based on the financial year July 2006 to June 2007, but the actual year January to December 2007. The next carbon reporting cycle will correspond to the last financial year.

- ii. **Methodology:** Please specify the methodology used by your company to calculate GHG emissions.

The International Standards Organization (ISO) 14064-1 – “Specification with Guidance at the Organization Level for Quantification and Reporting of Greenhouse Gas Emissions and Removals” and the GHG reporting protocol.

d. Direct and Indirect Emissions – Scope 1 and 2 of the GHG Protocol (CDP5 Question 2b)

- i. Are you able to provide a breakdown of your direct and indirect emissions under Scopes 1 and 2 of the GHG Protocol and to analyse your electricity consumption? If so, please provide the following information together with a breakdown of the emissions reported under each category by country where possible. If not, please proceed to question 2b ii:

Scope 1 Direct GHG Emissions

- a. Total global Scope 1 activity in metric tonnes CO₂-e emitted.
 b. Total Scope 1 activity in metric tonnes CO₂-e emitted for Annex B countries.

a. On-site Fuel Consumption:	336,038 tons CO ₂ e
Fugitive Emissions*:	214,568 tons CO ₂ e
Explosives:	10,204 tons CO ₂ e
LPG Gas used:	8,108 tons CO ₂ e
Total:	<u>568,918 tons CO₂e</u>

*This excludes fugitive methane from exploration boreholes. These boreholes methane flow rates are intermittent, which is difficult to quantify.

** An emission factor for diesel of 2.69 kg CO₂/liter was used, and an emission factor of 2.61 kg CO₂/liter was used for petrol. The emission factor used for the LPG was 56,100 kg/TJ.

- b. Gold Fields has two operations in Australia, namely St. Ives and Agnew. The total scope 1 emissions for these divisions are 88,810 tons CO₂-e.

Scope 2 Indirect GHG Emissions

- c. Total global Scope 2 activity in metric tonnes CO₂-e emitted.
- d. Total Scope 2 activity in metric tonnes CO₂-e emitted for Annex B countries.

- c. 5,389,941 tonnes CO₂-e
- d. 205,463 tonnes CO₂-e

* For South Africa, an emission factor of 1.02 tons CO₂/MWh was used, and for Australia, an emission factor of 0.84 tons CO₂/MWh was used.

Electricity consumption

- e. Total global MWh of purchased electricity.
- f. Total MWh of purchased electricity for Annex B countries.
- g. Total global MWh of purchased electricity from renewable sources.
- h. Total MWh of purchased electricity from renewable sources for Annex B countries.

- e. 5,636,480 MWh of electricity was purchased
- f. 244,599 MWh of electricity was purchased
- g. 70% of electricity in Ghana is from renewable sources, which is estimated to be around 210,000 MWh.
- h. The total MWh of purchased electricity from renewable sources for St. Ives and Agnew are not yet known.

- ii. If you are unable to detail your Scope 1 and Scope 2 GHG emissions and/or electricity consumption, please report the GHG emissions you are able to identify together with a description of those emissions.

e. Other Emissions – Scope 3 of GHG Protocol: (CDP5 Question 2c)

How do you identify and/or measure Scope 3 emissions? Please provide where possible:

- a. Details of the most significant Scope 3 sources for your company.
- b. Details in metric tonnes CO₂-e of GHG emissions in the following categories:
 - i. Employee business travel.
 - ii. External distribution/logistics.
 - iii. Use/disposal of company's products and services.
 - iv. Company supply chain.
- c. Details of the methodology you use to quantify or estimate Scope 3 emissions.

- a. The most significant Scope 3 sources are employee business travel which includes business air travel, business kilometres claimed and business travel in rented vehicles. The company supply chain emissions include the transport of raw

materials and intermediaries. This includes fuel deliveries to the respective Gold Fields business operations.

External distribution/logistics and use/disposal of company's products and services are not under the control of Gold Fields and has not been quantified in the baseline year.

- b. The total emissions for the categories above are as follows:
- i. 3,142 tons CO₂-e
 - ii. Not applicable
 - iii. Not applicable
 - iv. 2,018 tons CO₂-e
- c. (i) Actual fuel consumption recorded with a default factor of 2.69 kg CO₂/litres for diesel and 2.61 kg CO₂/litre for petrol was used. (iv) This was estimated in order to establish the significance of logistics on the overall footprint. The carbon emissions associated with diesel consumption within the company supply chain was calculated using an emission factor of 2.69 kg CO₂/ℓ. This includes an estimated 100 km distance of deliveries of raw materials and/or intermediaries. In addition a 100 km average distance was used to estimate the emissions associated with the deliveries of products. These trucks travelling these distances are assumed to carry 30 tons and have a fuel efficiency of 42ℓ/100km.

f External Verification (CDP5 Question 2a iii)

- i. Has the information reported in response to Questions 2b – c been externally verified or audited or do you plan to have the information verified or audited? If so:*
- ii. Please provide a copy of the audit or verification statement or state your plans for verification.*
- iii. Please specify the Standard or Protocol against which the information has been or will be.*

The data used in the carbon footprint calculations has either been internally verified or externally, as part of the financial performance report. The carbon footprint was developed by an independent entity, Promethium Carbon. No external verification of the calculations has been performed. The CDM projects will be validated in accordance with the requirements of the Kyoto Protocol. Gold Fields externally verifies the financial statements.

g. Data Accuracy (New to CDP6)

Does your company have a system in place to assess the accuracy of GHG emissions inventory calculation methods, data processes and other systems relating to GHG measurement? If so, please provide details. If not, please explain how data accuracy is managed.

The information received is used for production management purposes and is typically audited, published in the annual reports and associated with higher accuracy. The fugitive emission estimates are based on a range of assumptions. Actual measurements will be undertaken to quantify the emissions resulting from fugitive mine methane.

Where possible actual emission factors were used, otherwise emission factors from the IPCC 2006 database were used.

Road transportation emissions associated with private vehicles, used for business purposes, can be very hard to measure. The emissions depend on the large number of variables e.g. average distance of the trip, fuel efficiencies of the engines, the number of passengers per vehicle, and the type of vehicle. Estimates were based on business kilometres claimed, average fuel consumption of a medium-sized car driving long distances. The contribution of emissions due to business travel by road was less than 5% of the total emissions.

h. Emissions History (CDP5 Question 2a iv)

Do the emissions reported for your last accounting year vary significantly compared to previous years? If so, please explain the reasons for the variations.

This is the first year that a carbon footprint across all Gold Fields operations was calculated (baseline is the 2007 calendar year). This baseline carbon footprint will enable comparisons in the future.

i. Emissions Trading (CDP5 Question 4b)

- i. *Does your company have facilities covered by the EU Emissions Trading Scheme? If so:*
 - a. *Please provide details of the annual allowances awarded to your company in Phase I for each of the years from 1 January 2005 to 31 December 2007 and details of allowances allocated for Phase II commencing on 1 January 2008.*
 - b. *Please provide details of actual annual emissions from facilities covered by the EU ETS with effect from 1 January 2005.*
 - c. *What has been the impact on your company's profitability of the EU ETS?*

ii. *What is your company's strategy for trading or participating in regional and/or international trading schemes (e.g.: EU ETS, RGGI, CCX) and Kyoto mechanisms such as CDM and JI projects?*

- i. No, for this reporting period no business operations were located in the EU.
- ii. With business operations located in Africa and South America, Gold Fields has the potential to develop emission reduction projects under the Kyoto Protocol. Gold Fields is actively pursuing CDM, Voluntary emission reductions and cogeneration projects.

j. Energy Costs (CDP5 Question 4d)

i. *Please identify the total costs in US \$ of your energy consumption e.g. from fossil fuels and electric power.*

ii. *What percentage of your total operating costs does this represent?*

iii. *What percentage of energy costs are incurred on energy from renewable sources?*

- i. The cost of the energy consumption has not been quantified here.
- ii. This represents approximately 10% of the operating costs.
- iii. 210,000 MWh of electricity from hydro power. The percentage that this constitutes has not been quantified.

4. SECTION 3: PERFORMANCE

a. Reduction Plans (CDP5 Questions 1d and 4a)

- i. *Does your company have a GHG emissions reduction plan in place? If so, please provide details along with the information requested below. If there is currently no plan in place, please explain why.*

Yes, Gold Fields has a project portfolio encompassing a range of potential emission reduction projects. A summary of emission reduction project opportunities are given in the table below:

Table 3: Summary of emission reduction project opportunities

Project site	Planned intervention	Notes	Target
Beatrix	Monitoring Compressed Air 1,2, 3Shaft	The system optimizes the compressed air plant schedule of the mine	2009
Driefontein	Control of Main Fans	Controls ventilation flow or volume of air	July 2008
Beatrix	Control of Main Fans	Controls ventilation flow or volume of air	September 2008
Driefontein	3CPF System 1Shaft	Utilises the U-tube effect of column design to pump water up the mine	March 2008
Driefontein	3CPF System 5Shaft	Utilises the U-tube effect of column design to pump water up the mine	December 2008
Driefontein	Energy Efficient Lighting (Surface)	Installation of energy efficient light bulbs	Already been implemented
Driefontein	Stope Shut-off Valves	Under investigation	2009
Kloof	Control of Main Fans	Controls ventilation flow or volume of air	July 2008
Kloof	3CPF System 4Shaft	Utilises the U-tube effect of column design to pump water up the mine	September 2008
Kloof	Energy Efficient Lighting (Surface)	Installation of energy efficient lights	Already been implemented
South Deep	Lighting	Installation of energy efficient lights	December 2008
Kloof	Hard Ice	Ice technology for Kloof 3 Shaft and 4 Shaft	December 2008

ii. *What is the baseline year for the emissions reduction plan?*

By the first quarter of 2008, Gold Fields would have assessed and quantified the total carbon footprint for Gold Fields. The baseline is the reporting year, January to December 2007.

iii. *What are the emissions reduction targets and over what period do those targets extend?*

Targets are set to reduce emissions by 2% pa over the next 5 years.

iv. *What activities are you undertaking to reduce your emissions e.g.: renewable energy, energy efficiency, process modifications, offsets, sequestration etc? What targets have you set for each and over what timescales do they extend?*

Apart from the 12 energy efficiency projects listed in question 4 (a), and the CDM projects, Gold Fields engages in a Living Gold project in South Africa. Living Gold produces flowers under greenhouse conditions on land owned by Gold Fields and continues to operate despite fierce competition from growers in north-east Africa.

In addition Gold Fields owns 70,000 ha of undeveloped land, with natural vegetation, and an aloe farm. Natural vegetation absorbs CO₂ and via soil carbon, roots systems and above ground biomass will store the carbon over the long term. The carbon sequestration potential of the agricultural and natural undeveloped land, owned by Gold Fields, has not been quantified in the baseline.

Golden Oils (Pty) Ltd is a wholly owned subsidiary of Gold Fields. The company focuses on all matters pertaining to bioprospecting of South Africa's rich indigenous flora, resulting in successful global commercialisation of natural, organic consumer products. These include

- the coconut value chain in Mozambique, commercial production of coarse coco products (used as the substrate for hydroponic growing of vegetables and flowers), edible oils, biodiesel, activated carbon and soaps ,
- Aloe value chain as aloe extracts have important positive properties, including antioxidant and healing properties, as well as ultraviolet protection in skin cream applications. Golden Oils is currently finalising a feasibility study for investment into the aloe industry, along various points of the value chain.

Golden Oils' first focus area is identifying indigenous plants with high value growth potential, especially in sectors where Southern Africa has low market share but natural or latent strategic resources/advantages. As the focus of these projects is to ensure

true socio-economic sustainability, the carbon sequestration potential thereof has not been quantified.

In the deep mines of Gold Fields, timber is used as a structural support below ground. Gold Fields purchase all trees from sustainable forest companies. The wood stored below ground is a form of carbon capture and storage, as the decomposition rate underground is minimal and the carbon stored will not be released in the close foreseeable future. Although this carbon capture and storage is not a CDM methodology it does reduce GHG emissions. The carbon capture and storage for 2007 has been quantified and is estimated to be 240,000 tons CO₂e.

Gold Fields generates their own hydro electricity at some of their operations in Africa. In South Africa, the possibility of generating electricity on site, from underground mine methane, is being developed as a CDM project with validation due in September 2008. The Voluntary Emission Reduction energy efficiency projects will be implemented over the next three years.

Gold Fields is also investigating a variety of passive solar heating technologies for both residential and industrial use, particularly with respect to the supply of hot water for new change houses. In the 2007 base year, 50,000 employees showered daily utilising on average 1.25 million litres of warm water per day.

All of Gold Fields' producing operations have implemented Environmental Management Systems that are certified to the ISO 14001 standard. Fundamental to these systems is the assessment of energy use and efficiency. The environmental management plans actively deal with energy use and dictate numerous actions required in terms of monitoring through to efficiency targets. Performance, measured against these plans, is audited externally on a six-monthly basis and internally reviewed on an annual basis.

v. *What investment has been or will be required to achieve the targets and over what time period?*

Gold Fields have invested US \$40 million in the hydro plant in Ghana, and will also be investing approximately R100 million in the various energy efficiency and CDM projects over the next three years.

vi. *What emissions reductions and associated costs or savings have been achieved to date as a result of the plan?*

Since January 2008, Gold Fields has reduced the electricity consumption at their South African operations by 10%.

b. Emissions Intensity (CDP 5 Question 4c)

- i. *What is the most appropriate measurement of emissions intensity for your company?*

Ton CO₂-e per ounce of gold sold.

- ii. *Please state your GHG emissions intensity in terms of total tonnes of CO₂-e reported under Scope 1 and Scope 2 per US \$m turnover and EBITDA for the reporting year.*

Emission intensity in terms of turnover: 2,286 tons CO₂-e / US \$m

Emission intensity in terms of EBITDA: 6,404 tons CO₂-e / US \$m

- iii. *Has your company developed emissions intensity targets? If so:*
- a. *Please state your emissions intensity targets.*
 - b. *Please state what reductions in emissions intensity have been achieved against targets and over what time period. If not, please explain why.*

The total emissions per ounce of gold produced amounted to an average of 1.27 tons CO₂ / ounce of gold.

With the baseline carbon footprint of all the business units completed in 2008, the emission intensity targets will be integrated in the key performance indicators for the next reporting cycle.

c. Planning (CDP5 Question 4e)

Do you forecast your company's future emissions and/or energy use? If so:

- i. Please provide details of those forecasts, summarize the methodology used and the assumptions made.*

Gold Fields plans to expand with the current development of the Cerro Corona Mine in Peru, and spend between US\$60 m - US\$65 m in 2008 on Greenfields and Brownfields exploration. These expansions will increase the carbon footprint of Gold Fields. The methodology for estimating the increase of GHG emissions is based on historical gold mining records in other regions, and the Tool for Estimating the Emission Factor for a Regional Grid (CDM methodological tool). The key assumption in estimating GHG emissions with any new development is the emissions factor associated with the available electricity.

As part of the company strategy to identify emission reduction projects, GHG emissions were quantified, and the emissions are forecasted according to the life of mine plans and long term energy planning. Gold Fields is committed to reducing the emissions at each business operation unit, and with ongoing CDM projects in place is committed in reducing these emissions. Both CDM projects and Voluntary Emission Reduction projects will use the CDM methodology and procedures.

- ii. How do you factor the cost of future emissions into capital expenditure planning?*

Gold Fields includes energy efficiency technology in all future expansion projects. The costs of projects aimed at reducing future emissions are based on Gold Fields' assumptions regarding energy prices.

- iii. How have these considerations made an impact on your investment decisions?*

Gold Fields has and aims to continue to increase its investment in, and focus on climate change. Gold Fields are discontinuing the development of Number 9 Shaft at Driefontein, a R5.4 billion contract, as this poses too many risks regarding safety of miners and the high demand for electricity of this operation.

5. SECTION 4: GOVERNANCE

a. Responsibility (CDP5 Question 5a)

Does a Board Committee or other executive body have overall responsibility for climate change? If not, please state how overall responsibility for climate change is managed. If so:

i. Which Board Committee or executive body has overall responsibility for climate change?

Gold Field's strategy is to ensure sustainable growth of the business and its board has established a Safety, Health, Environment, and Community (SHEC) Committee. The committee, as reconstituted, comprises Dr PJ Ryan (Chairman), Mr K Ansah, Dr A Grigorian and Ms G Marcus.

Gold Fields has also become a member of the International Council on Mining and Metals (ICMM), which has well-tested Sustainable Development Principles, which Gold Fields will implement in a structured manner, including reports and audits. Since joining ICMM Gold Fields has committed itself to the ICMM position on climate change, which recognises the significance of climate change as a global issue requiring sustained reduction in GHG emissions. This commitment entails meeting or exceeding government emission standards, monitoring and reducing of GHG emissions and reporting such in a manner consistent with the Global Reporting Initiative forum.

ii. What is the mechanism by which the Board or other executive body reviews the company's progress and status regarding climate change?

The Board and Executive committees are kept informed of the progress and status of the energy efficiency and CDM projects through updates at committee meetings held quarterly, if not more often.

The baseline will be taken as early 2008. Identified projects, which could reduce GHG emissions, need approval firstly, from the technical committee; then the operational committee and finally, the executive committee. Large scale projects would also require board approval.

b. Individual Performance (CDP5 Question 5b)

Do you assess or provide incentive mechanisms for individual management of climate change issues including attainment of GHG targets? If so, please provide details.

Gold Fields is in the process of assessing all data and trends and is investigating normalization factors that could facilitate performance management. A fundamental component of this process includes the electricity consumption and GHG emissions. As a result of Gold Fields Australian operations being part of the Australian Greenhouse Challenge Plus, their initiatives provide a good platform for extrapolation to all other operations.

c. Communications (New to CDP6)

Please indicate whether you publish information about the risks and opportunities presented to your company by climate change, details of your GHG emissions and plans to reduce emissions through any of the following communications:

- i. the company's Annual Report or other statutory filings, and/or*
- ii. formal communications with shareholders or external parties, and/or*
- iii. Voluntary communications such as Corporate Social Responsibility reporting.*

If so, please provide details and a link to the document(s) or a copy of the relevant excerpt.

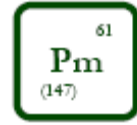
Gold Fields includes its climate change reporting in the Sustainable Development section of its Annual Report at www.goldfields.co.za. In the case of larger CDM projects, these are reported directly to shareholders and on the UNFCCC website.

d. Public Policy (New to CDP6)

Do you engage with policymakers on possible responses to climate change including taxation, regulation, and carbon trading? If so, please provide details.

Gold Fields is engaging with policymakers through:

- The International Council on Mining and Metals (ICMM).
- Membership of the Chamber of Mines
- Energy Intensive User Group
- Centre of Sustainability and Mining Industry at The University of the Witwatersrand
- Signatory to the Energy Efficiency Accord



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- Wonderfontein Action Group (WAG), which investigate water quality and quantity issues in the Wonderfontein catchment area