

## 0.1

**Introduction**

Please give a general description and introduction to your organization

AngloGold Ashanti, one of the world's leading gold producers, has a portfolio of long-life, relatively low-cost assets with a variety of orebody types in key gold-producing regions around the world.

AngloGold Ashanti produced 4.33 million ounces of gold in 2011 - an estimated of 4.8% of global production - making it the third largest gold producer in the world. AngloGold Ashanti has 21 operations located in 10 countries on four continents, together with a substantial project pipeline and a focused, global exploration programme. AngloGold Ashanti currently operates in South Africa, Argentina, Australia, Brazil, Ghana, the Republic of Guinea, Mali, Namibia, Tanzania and the United States. The bulk of its production came from deep level underground operations (37%) and surface operations (4%) in South Africa. Contributions from other countries were Ghana (12%), Australia (6%), Brazil (10%), Mali (6%), Guinea (6%), Tanzania (11%), USA (6%), Argentina (4%) and Namibia (2%).

Headquartered in Johannesburg, South Africa, AngloGold Ashanti's primary listing is on the Johannesburg Stock Exchange (ANG). It is also listed on the following securities exchanges: New York (AU), London (AGD), Australia (AGG) and Ghana (AGA), as well as Euronext Paris (VA) and Euronext Brussels (ANG).

## 0.2

**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**

Sat 01 Jan 2011 - Sat 31 Dec 2011

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3

**Country list configuration**

Please select the countries for which you will be supplying data. This selection will be carried forward to assist you in completing your response

Select country
Argentina
Australia
Brazil
Ghana
Guinea
Mali
Namibia
South Africa
Tanzania
United States of America

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0.4

**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(\$)

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0.5

**Please select if you wish to complete a shorter information request**

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0.6

**Modules**

As part of the Investor CDP information request, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors and companies in the oil and gas industry should complete supplementary questions in addition to the main questionnaire.

If you are in these sectors (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will be marked as default options to your information request. If you want to query your classification, please email [respond@cdproject.net](mailto:respond@cdproject.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.cdproject.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

## Module: Management [Investor]

### Page: 1. Governance

#### 1.1

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

Individual/Sub-set of the Board or other committee appointed by the Board

#### 1.1a

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

A Board Committee on Safety, Health and Sustainable Development has overview of environmental policy and strategy, including climate change.

The Board Audit and Corporate Governance Committee oversees risk control and disclosure.

The Executive Vice President Business Sustainability, who reports to the CEO, has primary responsibility for climate change. He, along with the CEO and other members of the leadership team, play an integral role in championing and developing the company's strategy on climate change.

Progress is reviewed on a regular basis at management meetings and at the quarterly meetings of the Board Committee on Safety, Health and Sustainable Development.

#### 1.2

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

Yes

1.2a

Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivised performance indicator
Corporate executive team	Recognition (non-monetary)	Meeting emission reduction targets. The executive team is responsible for focusing strategic attention of all business units on improving climate change performance.
Energy managers	Monetary reward	Meeting emission reduction targets. Focuses attention on emissions mitigation.
Business unit managers	Monetary reward	Meeting emission reduction targets. Focuses attention on emissions mitigation.
Executive officer	Monetary reward	Performance bonus linked to company alignment with the climate change strategy.

Page: 2. Strategy

2.1

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

2.1a

Please provide further details (see guidance)

AngloGold Ashanti has in place the systems necessary to assist management and the board to effectively manage the wide range of risks faced by the group's operations so as to promote the creation and preservation of shareholder wealth. The risk management system applies to all levels of the corporation, from operating and exploration sites to regions and the corporation as a whole. Any risk that can impact the business is included, from regulatory to financial, reputational, community implications, business interruption including weather events, environmental impacts and security of supply, including energy and water.

In conducting its annual review of the effectiveness of risk management, the board at AGA considers the key findings from the ongoing monitoring and reporting process, management assertions and independent assurance reports. All key risks (threats and opportunities), including those of climate change, that have the potential to impact the objectives of the AngloGold Ashanti group, are covered by the policy and are identified and communicated. Regions, operations, projects and functions that are not yet compliant with the Policy Statement and Standard have six months from the date of issue of the Standard to conform. Recently acquired businesses have twelve months from the date of acquisition in which to adopt and conform.

The board reviews and approves the risk strategy and policies formulated by executive directors and senior management. Management is accountable to the board and has established a system of internal controls to manage significant group risk. This system assists the board in discharging its responsibility to ensure that the wide range of risks associated with the group's global operations are effectively managed in support of the goal to create and preserve shareholder wealth. Full reviews of risk controls and disclosure processes are undertaken at least annually.

The risk management and reporting systems have been developed in line with the Turnbull Guidelines that apply to companies listed on the London Stock Exchange. This system also complies with the requirements of the King III code on corporate governance, International Standard ISO/DIS 31000 for risk management, and the Sarbanes-Oxley Act of 2002 (USA); the latter focuses on financial risk and misstatement. The risk management system is central to the group's strategic management processes and is the system whereby risks associated with group activities are methodically mitigated.

The Board Risk and Information Integrity Committee was constituted in accordance with the South African Company's Act in 2008. The Chief Financial Officer the CEO are both required by SOX to certify on Form 20-F that the group financial statements present a true and fair view of the group financial position, cash flows and operational results, in accordance with the US GAAP. All key components of the 'Enterprise Risk Management –Integrated Framework' issued by the Committee of Sponsoring Organisations of the Treadway Commission (COSO) are incorporated into the group's process to comply with SOX section 404. The risk management commitments are approved by the Risk and Information Integrity Committee and a full review of the risk, control and disclosure processes is undertaken annually to ensure that all additional requirements are incorporated into the system in the future.

Risk exposure at operational level are consolidated at company level using the processes outlined above using a customised electronic information management system called AuRisk, which is monitored and audited. At an asset level, risk exposure is monitored at least monthly. Company-level risks are reviewed quarterly and reported to the Board Risk and Information Integrity Committee.

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## 2.2

### **Is climate change integrated into your business strategy?**

Yes

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## 2.2a

### **Please describe the process and outcomes (see guidance)**

Integration is at an early stage and is developing over time. The numbering below reflects the points listed in the guidance notes.

1. The strategy has been influenced by the international climate change negotiations and government responses to these. Exposure to these international processes through the International Council on Mining and Metals has also been important. Specific regulatory processes to introduce carbon prices and other activities to address climate change in the jurisdictions in which we operate have had a great impact on the business strategy. Awareness of the company's role in society and our vision of being "the leading mining company" must necessarily include this challenge. A better informed understanding of our climate change related risks has played an important role.

2. The risk of increased costs from carbon taxes and/or cap-and-trade schemes is the biggest current risk. A better understanding of the available global and national carbon budgets has focused our attention on the scale of emissions reductions likely to be required. We want to be both a good corporate citizen and to comply with all legislation where we operate. Observation of climatic changes and the need to safeguard infrastructure are demonstrating the importance of adaptation. Adaptation is likely to be a challenge for our operations and our host communities. Our climate change strategy is evolving to address these changing national and international circumstances.

3. The company's short-term climate change strategy focuses on energy efficiency and reducing our absolute energy consumption, which has a direct impact on GHG emissions (99% of our emissions are energy-related), adoption of low-emission energy sources and on responding to national climate change response processes. Significant resources have been given to collaboration with like-minded companies and engagement with government agencies in climate change policy processes. In South Africa and Ghana particularly, there has been increased focus on integrated water management in response to varying rainfall patterns.

4. AGA has initiated a long-term research programme into more efficient underground mining practices which incorporates a significant reduction in energy consumption as a primary requirement. AGA is assessing long-term energy and water security risks and building the necessary response plans. These include assessing low-emissions energy options, including natural gas, biomass, biofuels, solar, wind and hydropower. We are also assessing local climate change adaptation risks. In addition, we are moving to benchmark our energy and water performance for all aspects of our operations against international best practice.

5. Our focus is not on strategic competitive advantage but rather on being well prepared and being a good corporate citizen. We are not yet seeing strategic advantages over our competitors. We anticipate that moving early will enable the company to be able to adapt faster to increased carbon prices and to climatic changes.

6. The most significant change has been the amount of management time given to determining the potential impact of a carbon price on our South African and Australian operations, and working this into our business planning process where our energy efficiency targets and associated operating plans are set for each operation. Mine expansion and M&A decisions have been subjected to stringent energy and water reviews. The scope and focus of our Technology Innovation Programme includes energy and water considerations.

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## 2.3

### **Do you engage with policy makers to encourage further action on mitigation and/or adaptation?**

Yes

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## 2.3a

### **Please explain (i) the engagement process and (ii) actions you are advocating**

Participation of AngloGold Ashanti (AGA) with policy makers to encourage further action on mitigation and/or adaptation is at the relevant levels directly and through industry associations, to understand government policies as they develop, and to communicate to regulators the company's views on climate change policy, including carbon pricing and emissions mitigation.

### **(i) Engagement process**

AngloGold Ashanti engages with government authorities at the relevant levels directly and through industry associations, to understand government policies as they develop, and to communicate to regulators the company's views on climate change policy. The company works through peak industry associations at the international and national levels to advance a proactive industry approach. AngloGold Ashanti is a member of the International Council on Mining and Metals and subscribes to its public statements. For example, in South Africa, AGA is a member of the Chamber of Mines, Business Leadership South Africa (BLSA), Industry Task Team on Climate Change (ITTCC), Energy Intensive Users Group (EIUG), Corporate Leaders Group (CLG) and participates directly in Business Unity South Africa (BUSA). Topics of engagement include proposed legislation and regulation and other regulatory issues, policy developments such as carbon pricing, marginal abatement cost curves, emissions mitigation, adaptation, water, community development and influencing the initiation of low-carbon growth paths. Our engagement comprises a strategic approach to initiate policy positions that will lead to win-win solutions for the environment, business and nations. We fund, support and participate in specific policy research across the climate change landscape and are actively involved in advocacy at all levels of government.

### **(ii) Actions advocated**

AGA strongly supports action on climate change, including mitigation and adaptation. In the jurisdictions in which we operate we seek to work proactively and closely with all levels of government to develop a strong and mutually beneficial climate change strategy and associated legislative and regulatory frameworks. The nature of our engagement varies depending on the circumstances; sometimes we support government initiatives and at others we have strongly motivated alternative positions but endeavour to be consistent in the positions we advocate by co-ordinating activities through the corporate office. For example, in South Africa ... However in Australia, ...

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### **Further Information**

See the following attachments of industry positions to which AngloGold Ashanti subscribes and advocates:

- ICMM Climate Change Principles (2011)
- Cancun Communiqué
- ITTCC Response to the South African Green Paper on a Response to Climate Change

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### **Attachments**

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/2.Strategy/ICMM Principles for Climate Change-2011.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/2.Strategy/ICMM%20Principles%20for%20Climate%20Change-2011.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/2.Strategy/Cancun Communiqué.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/2.Strategy/Cancun%20Communique.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/2.Strategy/ITTCC response to S A Climate Change Response White Paper.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/2.Strategy/ITTCC%20response%20to%20S%20A%20Climate%20Change%20Response%20White%20Paper.pdf)

3.1

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

Intensity target

3.1b

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
AGA	Scope 1+2	100.00%	30%	metric tonnes CO2e per ounce of gold	2007	0.77	2022	Because gold yield is reducing over time, an intensity target has the effect of reducing absolute emissions over time.

3.1c

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	Comments
AGA	Decrease	33			The variation in emissions is calculated using publicly available production forecasts. The target set is only for Scope 1 & 2 emissions.

**3.1d**

Please provide details on your progress against this target made in the reporting year

ID	% complete (time)	% complete (emissions)	Comment
AGA	27	0	Emissions intensity has deteriorated, largely as a consequence of worsening mine conditions over time, including increasingly complex geology and deepening and more remote ore bodies. However, a significant turnaround can be achieved through a step change in mining technology. AGA initiated in 2010 an extensive technology innovation project for our deep underground mines. Substantial improvements are anticipated as a result, but are not yet quantifiable as the technologies are not yet proven.

**3.2**

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

No

**3.3**

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

**3.3a**

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

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)
Under investigation	4	
To be implemented*	5	54050

Stage of development	Number of projects	Total estimated annual CO2e savings (only for rows marked *)
Implementation commenced*	1	19100
Implemented*	7	240350
Not to be implemented	0	

### 3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Low carbon energy installation	Industrial Heat Pumps: AngloGold Ashanti has installed heat pumps at one of its South Africa Region high density residences to improve the energy efficiency of its compressed systems. Heat Pump technology uses a vapour compression cycle to heat a refrigerant that is then used to reject heat on the condenser coil. Water from a storage facility is circulated in the coil and heated to the required level of the user. The process reduces the electrical power requirement by 2/3 of the conventional direct heating of an electrical element (Electrical Energy) with (Thermal Energy).	11300	922000	1650000	1-3 years
Behavioral change	Employee and community awareness campaigns have been conducted at AGA's operations, especially in Ghana, Brazil and South Africa.	3000	300000	30000	<1 year
Transportation: fleet	All upgrades to more energy efficient models; Worldwide application of super-clean diesel to the HME fleet	200000	500000	50000000	>3 years
Energy efficiency: processes	Thermal ice storage: To assist with the peak demand periods that the local electricity supplier Eskom experiences AngloGold Ashanti implemented a thermal ice storage unit at Moab Khotsong mine in South Africa. The unit uses glycol to freeze water inside the unit, this is then used to switch off fridge plants during the evening peaks of 18:00 to 20:00.	3250	265000	34000000	>3 years
Energy efficiency: processes	Optimisation of compressed air networks: Most of the underground rock braking within the South Africa Region is done using pneumatic drills that required 4.5 bar pressure for drilling. The total Vaal River ring is approximately 37 km of 750 NB piping to circulate on average between 80 - 100 kg/s. The goal of the project was to install a high/low pressure split for consumers like Metallurgical plants that require constant pressure and shafts that can fluctuate between morning and evening	17500	419000	1515000	>3 years

Activity type	Description of activity	Estimated annual CO2e savings	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
	peaks. Also included in the project was the installation of underground control valves at Moab Khotsonq.				
Energy efficiency: processes	Refinement of underground cooling system controls: Due to the depth of the South Africa Region mines, our operations have high underground temperatures coming from the rock also known as Virgin Rock Temperatures (VRT). Based on this refrigeration plants have been designed to sustain the required cooling for employees underground on the peak thermal energy load (Peak Production). If a mine is still in ramping up or closing down stage the potential exists to optimize the cooling system to the specific load requirements. This is done by controlling auxiliaries like circulating pumps and cooling tower fans with Variable Speed Drives (VSD's).	2250	160000	1377000	>3 years
Energy efficiency: processes	Optimisation of compressed aire networks: The Mponeng compressors supply air to both the Mine and the Metallurgy plant. Although the shaft pressure can be varied during peak and off-peak periods the plant requires a constant supply pressure. Consequently a small instrument air compressor was installed at the plant to separate instrument air from the main circuit that allowed the shaft to further lower its surface pressure and make full use of auto compression.	3050	230000	140000	1-3 years

### 3.3c

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

Method	Comment
Compliance with regulatory requirements/standards	In both Australia and South Africa, energy efficiency standards are specitied for specific activities. In Australia our operations are required to report improvements in energy efficiency performance. In South Africa, these regulaitons are currently under discussion.
Dedicated budget for energy efficiency	Especially at our South African mines, which consumed 66% of our total global electricity consumption in 2011, annual absolute and energy efficinecy performance improvements are set and a dedicated budget provided.
Dedicated budget for other emission reduction activities	AGA is implementing low carbon power sources wherever feasible, eg for community applications in remote locations (Mali, Guinea, Sunrise Dam, etc). Specific budget provision is made on the basis of need.

Method	Comment
Employee engagement	At our South African and our Ghanaian operations considerable attention is given to engaging employees throughout our organisation in energy efficiency and footprint reduction activities, eg toolbox talks to employees, specific functions for wives and families, community radio segments.
Internal incentives/recognition programs	A number of employees at our operations globally are focussed on energy performance and incentivised through KPIs and associated bonus payments, eg Brazil, Continental Africa Region, South Africa.
Marginal abatement cost curve	in both Australia and South Africa, where carbon pricing is a reality or forthcoming, we have constructed marginal abatement cost curves for each affected mine and use these curves to prioritise emissions reduction activities.
Other	The Technology Innovation Consortium for our deep underground mines in South Africa is investigating opportunities for significantly improved energy efficiency, with a concomitant impact on GHG emissions.

#### Further Information

Note that the answer to 3.1c does not constitute a forecast of the company's likely gold production.

#### Page: 4. Communication

#### 4.1

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

Publication	Page/Section Reference	Identify the attachment
In annual reports (complete)	pp a, 7, 14, 18, 49-51, 54, 60	AGA-Sustainability-Report-2011.pdf
In annual reports (complete)	pp a, 7, 17, 39, 44, 47, 50-52	AGA-Annual-Integrated-Report- 2011.pdf
In annual reports (complete)	pp a, 7, 36, 117, 121, 125-126	AGA-Annual-Financial-Statements-2011.pdf
In voluntary communications (complete)	Greyling article in the South African Energy Efficiency Convention (SAEE 2011)	SAEE-AngloGold Ashanti-92363937-COP-17-Paper.pdf
In other regulatory filings (complete)	pp 16, 20, 23-24, 62-63	Form 20-F

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## Further Information

The following note appears on the AngloGold Ashanti website. Readers are required to acknowledge it before being granted access to the company's 20-F filing. In compliance with United States federal securities laws, AngloGold Ashanti files an Annual Report on Form 20-F (Form 20-F) with the United States Securities and Exchange Commission (SEC).

Please note that the financial statements included in the Form 20-F are prepared in accordance with Generally Accepted Accounting Principles in the United States (US GAAP). AngloGold Ashanti's primary financial statements included in the Annual and Quarterly Reports that are mailed to shareholders and provided on AngloGold Ashanti's internet site are prepared in accordance with International Financial Reporting Standards (IFRS). US GAAP differs in certain material respects from IFRS. Accordingly, the US GAAP financial information provided in the Form 20-F may differ in certain material respects from the IFRS financial information provided in AngloGold Ashanti's Annual and Quarterly Reports and on AngloGold Ashanti's internet site.

Should you require further information, have any questions or require a hard copy of the annual report on Form 20-F, a copy will be forwarded to you, free of cost. Please send an e-mail to: The Company Secretary, AngloGold Ashanti Limited at [companysecretary@anglogoldashanti.com](mailto:companysecretary@anglogoldashanti.com) or fax your request to +27 11 637 6677, providing full name and delivery details.

The annual report on Form 20-F may also be accessed electronically from the SEC website.

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## Attachments

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/4.Communication/AGA Form 20F 230412 Full version.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/4.Communication/AGA%20Form%2020F%20230412%20Full%20version.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Sustainability-Report-2011.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Sustainability-Report-2011.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Annual-Integrated-Report-2011.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Annual-Integrated-Report-2011.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/4.Communication/SAEE -AngloGold Ashanti-92363937-COP-17-Paper.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/4.Communication/SAEE-AngloGold%20Ashanti-92363937-COP-17-Paper.pdf)

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Annual-Financial-Statements-2011.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/4.Communication/AGA-Annual-Financial-Statements-2011.pdf)

5.1

Have you identified any climate change risks (current or future) that have 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

5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
Int	International agreements	AngloGold Ashanti (AGA) emits greenhouse gases (GHGs) directly by its operations, and indirectly via the external utilities from which it purchases power. Currently, a number of international and national measures to address or limit GHG emissions, including the Kyoto Protocol, the Copenhagen Accord and the Durban Platform, are in various phases of discussion or implementation in the countries in which the company operates. In particular, the Durban Platform commits all parties to develop a global mitigation regime which could take effect in 2020, with the specific terms of that legally binding accord, including individual targets, to be finalized by 2015. These, or future, measures could require AngloGold Ashanti to reduce its direct GHG emissions or energy use or to incur significant costs for GHG emissions permits or taxes or have these costs or taxes	Increased operational cost	1-5 years	Direct	Very likely	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		passed on by electricity utilities which supply the company.					
Aus	Cap and trade schemes	Australia has a regulatory framework that consists of a reporting mechanism (National Greenhouse and Energy Reporting Act 2007 (NGER) and a cap and trade system (Clean Energy Future legislation). The country has passed legislation that will implement a carbon tax on 1 July 2012 and will then change to a cap and trade scheme in 2015. This scheme could pose the risk to AGA of increased operational costs.	Increased operational cost	1-5 years	Direct	Very likely	Medium
SA	Carbon taxes	In 2011 the South African government continued to express support for a carbon tax. Within the Minister of Finance's annual budget speech in February 2012, the government provided the proposed design for a carbon emissions tax. There would be a phased implementation of the tax, which will apply to carbon dioxide equivalent (CO2e) emissions, calculated using the agreed methods. If enacted, the tax would go into effect in 2013/2014, and impose a fee of ZAR 120 for all emissions above the 60% threshold and an annual increase of 10% until 2019/2020. This might cause AGA's costs to increase substantially, although the precise impact on the company's operations cannot yet be determined.	Increased operational cost	1-5 years	Indirect (Supply chain)	Very likely	Medium-high
Amcas	Cap and trade schemes	Jurisdictions including Brazil and Colorado (United States of America) are considering GHG trading schemes and/or other regulation of GHG emissions, though the precise impact on AGA's operations cannot yet be determined.	Increased operational cost	Unknown	Direct	Likely	Medium-high
Rpt	Emission reporting obligations	In Australia, USA, Brazil and South Africa, legislation has already been introduced or is under consideration for emissions reporting. AGA has good records of emissions that are being refined progressively. There is some risk associated with the quality of emissions data where there are significant technological challenges in measurement , eg low concentration methane from underground operations.	Increased operational cost	Current	Direct	Virtually certain	Low
Tax	Fuel/energy taxes and regulations	In all jurisdictions where we operate, fuel taxes apply. Other energy taxes and regulations apply in Australia, USA, Brazil and South Africa. The possibility of increased regulation poses the risk of the unknown cost and economic impact on	Increased capital cost	Current	Direct	Virtually certain	High

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		our business and on individual national economies. Government tax regimes could also impact on fuel and energy availability and supply chains.					
Env	General environmental regulations, including planning	The company must comply with a host of environmental regulations in each of the countries in which it operates. These regulations are constantly changing, especially in South Africa, Australia and Brazil, usually imposing every more stringent requirements. Requirements for environmental impact assessments, biodiversity protection and mine closure, in particular, increase adaptation risks, amongst others.	Increased operational cost	Current	Direct	Virtually certain	Low-medium
Reg	Uncertainty surrounding new regulation	Uncertainty surrounding expected legislation and regulations on emissions mitigation and carbon pricing especially in South Africa, Brazil, USA and Australia causes delay to investment decisions and variations to operational focus as alternative measures are floated for discussion. We also need to devote significant time to government influencing activities to ensure practical outcomes for business and the environment.	Increased capital cost	1-5 years	Direct	Virtually certain	High
Reg2	Lack of regulation	In South Africa particularly, deregulation of the electricity market is proceeding slowly with many of the requisite regulations on for example, transmission costs, access for Independent Power Producers to the national grid, etc. not yet finalised.	Increased operational cost	Current	Direct	Virtually certain	Medium-high
Reg3	Other regulatory drivers	To fully address climate change, a full policy suite is required. where national governments choose to implement only some aspects of the policy suite, government intervention can potentially introduce bias and unintended consequences for business, including incentivising perverse actions.	Increased operational cost	Current	Direct	Very likely	Medium-high

## 5.1b

**Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions**

### **(i) Potential financial implications of the risk before taking action**

#### **ID: Int**

The Durban Platform commits all parties to the conference to develop a global mitigation regime which could take effect in 2020 and their specific terms, including individual targets. This could have the effect of forcing stringent emissions caps on AGA, which could lead to early closure or even shutdown of our emissions intensive operations in South Africa in particular and cause significant capital investment to meet requirements at our other operations, including significant expansion of R&D spend.

#### **ID: Aus**

Australia has passed legislation that will implement a carbon trading scheme, to commence in July 2012. The legislation could have higher energy costs resulting from carbon prices imposed by local, state/provincial or national agencies. Costs broadly across the Australian economy are expected to escalate by 0.75% with the introduction of the carbon tax. Our Australian operations will be required to pay directly for carbon emissions from diesel and LNG consumption.

#### **ID: SA**

During 2009, South Africa introduced a carbon tax of R0.02/kWh on electricity generated from fossil fuels (more than 90% of grid supply) This was increased to R0.025 in 2011 and R0.035 in 2012. AGA's electricity consumption from the national grid in South Africa was 3066 GWh in 2011. Within budget papers issued in October 2011, the South African Government proposed an additional carbon tax of R120/tonne CO<sub>2</sub>-e escalated at 10% per year until 2020, for emissions above a 60% threshold. this could cost AGA initially as much as US\$25M annually.

#### **ID: Rpt**

Except in the case of having to report diffuse, low-concentration emissions, the financial implications of additional reporting requirements are low. In most cases, the regulations are likely to require data that is already captured for management purposes, so there is only a small administrative cost involved. In some cases, a requirement for additional data may actually spur better management.

#### **ID: Amcas, Tax, Env, Reg, Reg2, Reg3**

The risks in each of these instances relate to uncertainty in regard to potential legislation or regulation and to changes to current legislation and regulation. By its very nature the financial implications of these uncertainties cannot be determined. As noted under **ID: Reg**, uncertainty itself imposes a cost as a result of delays, exploration of alternatives and government advocacy activities.

### **(ii) Methods used to manage the risks**

#### **ID: ALL**

In all countries in which it operates, AGA is focussed on reducing its greenhouse gas emissions footprint as quickly as possible. Because more than 95% of the company's emissions are derived from fossil fuel use, reducing energy costs has an immediate and direct impact both on our bottom line and on our GHG emissions profile. The energy efficiency focus was initially in South Africa, but has in recent years spread to all jurisdictions in which we operate.

AngloGold Ashanti engages with government agencies directly and through industry associations (e.g. International Council for Mining and Metals, Minerals Council of Australia, Western Australia Chamber of Minerals and Energy, Instituto Brasileiro de Mineração, Chamber of Mines of South Africa, National Business Initiative (South Africa), Business Unity South Africa, Colorado Association of Commerce and Industry) to advocate regulatory provisions that are not detrimental to business and the

mining industry in particular. These associations also keep the company updated on policy and regulatory trends.

**(iii) The costs associated with these actions**

**ID: ALL**

Our government influencing budget spend on the above activities in 2011 exceeded US\$3M. Our mitigation spend on these activities exceeded US\$30M.

**5.1c**

**Please describe your risks that are driven by change in physical climate parameters**

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
A	Change in mean (average) temperature	Increased temperatures can cause adverse operating impacts on major plant and equipment. Higher temperatures can also hinder rehabilitation efforts and result in a number of health and safety risks (such as increased temperatures requiring additional cooling).	Increased operational cost	Unknown	Direct	Virtually certain	Medium-high
B	Change in precipitation extremes and droughts	In the recent past, floods have disrupted the operations at some of AngloGold Ashanti's mines. For example, unprecedented heavy rains in February and March 2011 in Australia flooded the Sunrise Dam Gold Mine and forced a temporary shutdown of operations. The floods event reduced underground production for four months and the open-pit production for six months, and full costs were incurred despite the shutdown and slow-down. Operations at our Cripple Creek & Victor Gold Mine in Colorado, USA continued to be affected by a severe drought in the Colorado River Basin. The lack of water reduced percolation through the heap leach pad, curtailing production and productivity.	Reduction/disruption in production capacity	Current	Direct	Very likely	Medium-high
C	Induced changes in natural resources	The adverse impacts of climate change on communities in close proximity to AngloGold Ashanti's operations could cause significant distress, especially in developing countries and particularly the poorest countries in which AngloGold Ashanti operates. In particular, competition for scarce water resources could mean further emphasis on providing water to communities and even on the company's ability to access sufficient water. Food and energy security are likely to be	Wider social disadvantages	Unknown	Direct	Very likely	Low-medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		increasing challenges as well. Risk exposure due to increased disease prevalence in communities is not necessarily limited to a specific population, and has the potential to have a direct bearing on the wellbeing of company workforce, site staff and their families.					

#### 5.1d

Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; and (iii) the costs associated with these actions

**(i) The potential financial implications of the risk before taking action:**

**A. Change in temperature extremes**

Changes in temperature extremes have the potential to affect the operating envelopes of critical equipment items, eg increased temperatures will lead to higher cooling and refrigeration costs and potentially require increased refrigeration capacity in some of the world's largest refrigeration plants at our South African underground operations. If their capacity becomes insufficient, owing to higher ambient temperatures, the cost of upgrading them would be significant. We are still investigating the likely impacts on operational infrastructure, performance and associated costs.

Higher temperatures may affect the effectiveness of rehabilitation programmes, many of which have been developed over many years at great cost to the company. Additional research will impose a direct financial cost.

Providing air conditioning for longer hot seasons and providing additional cooling equipment for health and safety purposes as well as allowing more comfortable working conditions will impose an additional cost to the company.

**B. Change in precipitation extremes and droughts**

Events such as increased rainfall can lead to flooding and disruption of mining and transport operations, amongst other consequences. The impact of flooding on our Australian mine are described in 5.1c ID: B.

Rainfall is also important for supply of electricity from hydropower in Brazil and Ghana, so changed rainfall patterns can affect electricity supply in those countries, thus increasing costs, eg in 2006, drought interrupted operations in Ghana. The impact of drought on our US mine is described in 5.1c ID: B.

Altered rainfall patterns would potentially affect the company's operations as water containment measures have generally been built in line with historic climatic patterns. Alteration of structures to accommodate such changes is potentially costly.

Extreme weather events, and related events such as wild fires, have the potential to cause significant damage to livelihoods and property, and thus be costly to the company.

We are still investigating the likely impacts on operational infrastructure, performance and costs.

**C. Induced changes in natural resources**

Adverse climate change impacts are likely to impact severely on adjacent communities especially in developing countries. In particular, competition for scarce water resources could require extensive investment in infrastructure. We are still investigating likely impacts on specific communities and expected costs of adaptation and remediation activities.

**(ii) The methods used to manage this risk**

**ID: A, B and C**

Mines are long-term investments, with the result that mine planning, operation, and closure processes already incorporate management of extreme climate events. We plan to assess the climate exposure risks for all of our operations on a site by site basis and implement the necessary adaptation plans. This project is still being scoped and is due for commencement later this year. This project will also be extended to address likely impacts on communities adjacent to the mines and possible adaptation strategies, where needed.

**iii) The costs associated with these actions**

**ID: A, B and C**

The scoping study is expected to cost ~ZAR5M and is then to be followed with further detailed assessments on a site by site basis leading to adaptation and remediation interventions. These are yet to be costed.

**5.1e**

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

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
1	Other drivers	Supply chain risks: Mining operations and projects are vulnerable to supply chain disruption. AngloGold Ashanti's supply chain will potentially be directly impacted by climate change. The company's operations and development projects could be adversely affected by both shortages and long lead times to deliver strategic spares, critical consumables, mining equipment and metallurgical plant. Such goods include cement, oil, refrigerants and chemical reagents. These are supplied by	Increased operational cost	1-5 years	Indirect (Supply chain)	About as likely as not	Medium

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
		industries that are vulnerable to climate change. Suppliers are expected to increase their prices to offset carbon taxes and other carbon pricing mechanisms and to pass on other costs associated with mitigating risks associated with climate change.					
2	Increasing humanitarian demands	Increased pressure from neighbouring communities struggling with disease, crop failure and the depletion of natural resources.	Wider social disadvantages	Unknown	Indirect (Supply chain)	Very likely	Low-medium
3	Other drivers	There may be pressure from investors and lenders to reduce the company's exposure to regulatory measures and to reduce its direct and indirect carbon emissions. It is possible that the company's market valuation could be impacted based on its perceived exposure to climate change-related risks.	Reduced stock price (market valuation)	Unknown	Direct	More likely than not	High
4	Reputation	If the company is perceived to be ignoring climate change risks this is likely to impact its reputation. If the mining industry as a whole is perceived to be a poor performer, the company's reputation will be also be affected, though to a lesser extent. However, AGA has taken a strong position within the mining industry and in public, promoting the need for urgent action on climate change and sometimes leading national debates on mitigation and adaptation priorities and policy mechanisms, especially in South Africa.	Inability to do business	6-10 years	Direct	Unlikely	Low-medium

### 5.1f

**Please describe (i) the potential financial implications of the risk before taking action; (ii) the methods you are using to manage this risk; (iii) the costs associated with these actions**

**(i) The potential financial implications of the risk before taking action**

**ID 1:**

Fuel, energy and consumables including diesel, heavy fuel oil, chemical reagents, explosives, tyres, steel and mining equipment consumed in mining operations form a relatively large part of the operating costs and/or capital expenditures of any mining company. AngloGold Ashanti has no influence over the cost of these consumables, many of which are linked to some degree to the price of oil and steel. Fluctuations in oil and steel prices have a significant impact on operating costs and capital

expenditure estimates and, in the absence of other economic fluctuations, could result in significant changes in the total expenditure estimates for new mining projects or render certain projects non-viable at AngloGold Ashanti.

Import restrictions, such as those introduced by the Argentinian government in 2011 (these were not related to climate change, but illustrate the impact that restrictions can have), can also delay the delivery of parts and equipment. In the past, the company and other gold mining companies experienced shortages in critical consumables, particularly as production capacity in the global mining industry expanded in response to increased demand for commodities. AngloGold Ashanti has experienced increased delivery times for these items. Shortages have resulted in unanticipated price increases and production delays and shortfalls, resulting in a rise in both operating costs and in the capital expenditure that is necessary to maintain and develop mining operations. It is becoming abundantly clear that resource availability and pricing are inextricably linked across the resource continuum.

**ID: 2**

A changing climate is likely to impact severely on adjacent communities, especially in developing countries. Our mines are often the major source of income over a very large area. In particular, competition for scarce water resources could require extensive investment in infrastructure. We are still investigating likely impacts on specific communities and expected costs of adaptation and remediation activities.

**ID: 3**

Investor interest in climate change is growing and broadening. If this changes to pressure to make operational changes, the costs are potentially very high.

**ID: 4**

AGA has worked hard to build a reputation as being a proactive, constructive contributor to the climate change response debate, pushing for ambitious yet realistic targets. This is expected to stand its reputation in good stead.

**(ii) The methods you used to manage this risk**

**ID: ALL**

AngloGold Ashanti has developed a new Sustainability Strategy that has a core requirement to work together with host communities to build jointly sustainable futures.

A major project was carried out during 2008/9 to identify and, where possible, quantify, all of the company's climate change-related risks. This has helped the company to understand the risks it faces, as well as the opportunities it has, and these are now being communicated as the opportunity arises. Increasingly detailed footprint data is being published in the interests of transparency and to demonstrate that the company has a good understanding of its contribution to global climate change. The link between company valuations and those aspects of climate change that can affect these valuations are complex and still being investigated.

It is necessary to focus on the increase in operating costs from legal compliance and the potential reduction in revenue through lost production as a result of the physical impacts of climate change. There is also the potential for a competitive edge that can be gained from anticipating regulation, prior to the need being identified.

**iii) The costs associated with these actions**

**ID: ALL**

We have not yet begun to cost management action associated with addressing these risks.

## 6.1

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

Opportunities driven by changes in regulation

Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

## 6.1a

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact
SAR	Cap and trade schemes	Carbon trading presents a particular opportunity to AngloGold Ashanti. During 2010 and early 2011, AngloGold Ashanti undertook a number of energy efficiency projects to improve the control and management of the compressed air and cooling systems for deep underground mines in its South Africa region and the projects are: 1. High density residence heat pumps: AGA completed and implemented a project in 2010 to install heat pumps at high density residences to reduce electricity consumption and use an alternative and renewable energy source. 2. Improvement of control and management of the compressed air and cooling systems for deep underground mines. These are projected to result in a saving of approximately 140 GWh and 15 GWh per year respectively. The vapour compression heating systems being installed will potentially generate carbon credits under the UN Clean Development Mechanism.	Reduced operational costs	Unknown	Direct	Very likely	Medium
SAR1	Fuel/energy taxes and regulations	In 2010 we commenced a large technology innovation project aimed at safer, more productive and energy efficient deep underground mining	Reduced operational costs	>10 years	Direct	Very likely	High

## 6.1b

**Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions**

### **(i) The potential financial implications of the opportunity**

#### **ID: SAR**

About 86% of the company's gold production comes from developing countries. Pending the regulatory requirements for carbon trading in Australia (see 5.1a ID: Aus), existing requirements in Europe present opportunities for carbon trading both internally and externally. In this regard, if the project meets the international criteria, it will likely be cheaper (by avoiding intermediaries and their costs) to trade verified credits within the company. In addition, there are opportunities to sell credits to companies based in Europe and elsewhere.

A study was conducted where carbon trading opportunities were assessed on seven parameters:

- Availability of information opportunity information;
- Capital cost required for the implementation of the project;
- Return on investment;
- Payback periods;
- Energy consumption reductions;
- GHG emission reductions; and
- Ease of implementation.

Several projects have been assessed for their potential to obtain carbon finance and eligibility for carbon credits trading. Based on this assessment, one project is currently undergoing registration with the potential to reduce annual emissions by 17 000 tonnes of CO<sub>2</sub>-e. An eligibility and cost study for a second project with the potential of reducing annual emissions by a further 55000 tonnes of CO<sub>2</sub>-e is ongoing.

#### **ID: SAR1**

The financial benefits are being evaluated progressively, but look likely to lead to much higher returns on our capital investment than previously achieved.

### **(ii) The methods you are using to manage this opportunity;**

#### **ID: SAR**

Every opportunity to generate carbon credits is being investigated. The initial motivation is usually an opportunity to improve energy efficiency. If an identified project has potential to earn carbon credits according to the CDM rules, this is investigated further. Owing to the complexity of the carbon credit landscape, this component is always outsourced.

#### **ID: SAR1**

AGA is partnering with a consortium of worldwide development partners with global reach, who will mutually benefit from project success. The project is staged to ensure that progress can be measured and benefits accrued.

### **(iii) The costs associated with these actions**

#### **ID: SAR**

Total cost to AGA of carbon credit generation has been <ZAR10M to date.

**ID: SAR1**

Costs of the Technology Innovation Consortium project are not yet forecast. Costs are being ramped up progressively as components of the various technologies under investigation demonstrate likely successful outcomes.

**6.1c**

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
ARG	Change in mean (average) temperature	AngloGold Ashanti has operations in the southern part of Argentina, where the average annual temperature at its operations is below 10 degrees Celcius. The predicted increase in temperature in Argentine Patagonia will reduce heating costs at the company's mine operations.	Reduced operational costs	>10 years	Direct	Very likely	Low-medium

**6.1d**

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

**(i) The potential financial implications of the opportunity**

Cerro Vanguardia mine is situated in the southern part of Argentina, where the annual temperature is <10 degrees Celcius. The predicted temperature increase will reduce the energy required for heating and hence operational costs.

**(ii) The methods used to manage this opportunity**

Adapting equipment operating protocols on the basis of prevailing weather conditions.

**(iii) the costs associated with these actions**

No additional costs would be incurred, except for minor control system adjustments.

6.1e

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

ID	Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
A	Changing consumer behaviour	Increased demand for nuclear power as a substitute for carbon-based electricity presents an opportunity. Uranium is a by-product of some of AngloGold Ashanti's operations in South Africa.	Increased demand for existing products/services	6-10 years	Direct	Very likely	Medium-high
B	Increasing humanitarian demands	Enhanced relationships with key stakeholders as grass-roots adaptation projects are developed, and working with host governments and industry to develop wide-ranging adaptive capacities and technology changes.	Wider social benefits	6-10 years	Indirect (Supply chain)	More likely than not	Low-medium

6.1f

Please describe (i) the potential financial implications of the opportunity; (ii) the methods you are using to manage this opportunity; (iii) the costs associated with these actions

**(i) The potential financial implications of the opportunity**

**ID: A**

The Fukushima disaster in Japan has resulted in a slow-down in some locations in the construction of new nuclear power capacity, and in moves away from nuclear power in some countries. However the company considers that nuclear power has a good outlook in the medium- to long-term and that uranium prices will rise. In 2011, AGA invested in a company with significant uranium production potential, and acquired the company completely in 2012.

**ID: B**

Equalising relationships with local communities has reputation and longevity benefits for our mining operations, however these are difficult to quantify financially.

**(ii) The methods you are using to manage this opportunity**

**ID: A**

AngloGold Ashanti is the largest uranium producer in South Africa and because of expected demand for nuclear fuel, AGA will explore opportunities to increase its uranium production, especially in South Africa. this strategy includes acquisition of refining assets and other production opportunities.

**ID: B**

We are approaching these opportunities with respect for our host communities.

**(iii) The costs associated with these actions**

**ID: A**

The 2011 transaction referred to in (i) cost ZAR205M/US\$30M. The 2012 transaction cost US\$335M. In respect of new opportunities, full project assessment methodologies are applied to each acquisition opportunity.

**ID: B**

Costs will vary according to the nature of joint initiative commenced.

**Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading [Investor]**

**Page: 7. Emissions Methodology**

**7.1**

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

<b>Base year</b>	<b>Scope 1 Base year emissions (metric tonnes CO2e)</b>	<b>Scope 2 Base year emissions (metric tonnes CO2e)</b>
Mon 01 Jan 2007 - Mon 31 Dec 2007	1088000	3423000

**7.2**

**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**

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

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**7.2a**

If you have selected "Other", please provide details below

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**7.3**

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

Gas	Reference
HFCs	IPCC Fourth Assessment Report (AR4 - 100 year)
Other: CFC-11	IPCC Third Assessment Report (TAR - 100 year)
CO2	IPCC Fourth Assessment Report (AR4 - 100 year)

---

**7.4**

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Aviation gasoline	2.54	metric tonnes CO2e per m3	NGA Factors 2008
Bituminous coal	2.47	metric tonnes CO2e per metric tonne	IPCC2006
Distillate fuel oil No 6	3.35	metric tonnes CO2e per m3	IPCC2006
Diesel/Gas oil	2.93	metric tonnes CO2e per litre	IPCC2006
Liquefied petroleum gas (LPG)	0.31	metric tonnes CO2e per metric tonne	NGA Factors 2008
Natural gas	2.56	metric tonnes CO2e per litre	IPCC2006
Lubricants	2.81	metric tonnes CO2e per m3	IPCC2006
Motor gasoline	2.50	metric tonnes CO2e per m3	IPCC2006

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8.1

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

Operational control

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8.2a

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

1235000

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8.3a

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

3322000

---

8.4

**Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions which are not included in your disclosure?**

Yes

---

## 8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
Land clearance	Scope 1	Land clearance has been excluded from all operations because of the scientific uncertainty around measurement and non-material contribution of land clearance to AGA's carbon footprint.
Explosives	Scope 1	Explosives are excluded sources because they do contribute materially to the footprint.
Process emissions	Scope 1	AGA does not have material process emissions.

## 8.5

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

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
More than 2% but less than or equal to 5%	Data Gaps Metering/ Measurement Constraints Other: Published Emission Factors	With a number of operations in remote locations, it is difficult to ensure that full disclosure is occurring. However, a rigorous internal audit program is progressively removing shortfalls in approach. There is some uncertainty as to whether the emissions factors used for fuels in the different countries of operation are the most current. To a lesser extent there is some uncertainty about the accuracy and completeness of the data collation processes. AngloGold Ashanti burns coal at its boilers and uses blasting agents. Once purchased, these materials invoices are used as input data in the carbon footprint. Uncertainty in these sources is thus based on data management. Verifying and	Less than or equal to 2%	Data Gaps Metering/ Measurement Constraints Data Management Other: Published Emission Factors	

Scope 1 emissions: Uncertainty range	Scope 1 emissions: Main sources of uncertainty	Scope 1 emissions: Please expand on the uncertainty in your data	Scope 2 emissions: Uncertainty range	Scope 2 emissions: Main sources of uncertainty	Scope 2 emissions: Please expand on the uncertainty in your data
		where necessary addressing these contributing factors of uncertainty are the focus of planned work for 2012. Emissions from land clearance and explosives were determined in a comprehensive GHG emissions study carried out in 2008/9 and were found not to be material as they comprise 3% of the company's emissions. The quantification of direct emissions from land clearance activities is under review.			

**8.6**

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

Verification or assurance complete

**8.6a**

**Please indicate the proportion of your Scope 1 emissions that are verified/assured**

More than 20% but less than or equal to 40%

---

**8.6b**

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Reasonable assurance	ISAE 3000	Yes. Each site's data is verified at least every 3 years on rotation.

---

**8.7**

**Please indicate the verification/assurance status that applies to your Scope 2 emissions**

Verification or assurance complete

---

**8.7a**

**Please indicate the proportion of your Scope 2 emissions that are verified/assured**

More than 90% but less than or equal to 100%

---

**8.7b**

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

Level of verification or assurance	Relevant verification standard	Relevant statement attached
Reasonable assurance	ISAE 3000	Yes.

8.8

Are carbon dioxide emissions from the combustion of biologically sequestered carbon (i.e. carbon dioxide emissions from burning biomass/biofuels) relevant to your company?

No

#### Further Information

Emissions of HCFCs and CFCs were included as they have a significant Global Warming Potential.

#### Attachments

[https://www.cdproject.net/Sites/2012/79/779/Investor CDP 2012/Shared Documents/Attachments/InvestorCDP2012/8.EmissionsData\(1Jan2011-31Dec2011\)/AGA-SI11-assurance-statement.pdf](https://www.cdproject.net/Sites/2012/79/779/Investor%20CDP%202012/Shared%20Documents/Attachments/InvestorCDP2012/8.EmissionsData(1Jan2011-31Dec2011)/AGA-SI11-assurance-statement.pdf)

**Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2011 - 31 Dec 2011)**

9.1

Do you have Scope 1 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

9.1a

Please complete the table below

Country	Scope 1 metric tonnes CO2e
Argentina	103000
Australia	130000
Brazil	31000
Ghana	60000
Guinea	184000

Country	Scope 1 metric tonnes CO2e
Mali	194000
Namibia	30000
South Africa	73000
Tanzania	253000
United States of America	135000

## 9.2

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

By GHG type

## 9.2c

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

GHG type	Scope 1 metric tonnes CO2e
CO2	1168000
HFCs	21000
Other: CFC (R11)	4000

## Further Information

The value reported for metric tonnes of CO2 in question 9.2c (being the same as the reported CO2-e figure) includes CO2-e emissions from CH4 and NO2. Although methane and nitrogen oxide emissions are not significant quantities for AngloGold Ashanti, composite factors which include CO2-e contributions from CO2, N2O and CH4 are used to calculate overall CO2-e per fuel type used.

10.1

Do you have Scope 2 emissions sources in more than one country or region (if covered by emissions regulation at a regional level)?

Yes

10.1a

Please complete the table below

Country	Scope 2 metric tonnes CO2e
Brazil	6000
Ghana	237000
Namibia	1000
South Africa	3006000
United States of America	72000

10.2

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

By business division

By facility

10.2a

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

Business division	Scope 2 metric tonnes CO2e
Continental Africa Region	238000
Americas Region	78000
South Africa Region	3006000

---

**10.2b**

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

Facility	Scope 2 metric tonnes CO2e
Vaal River operations	1519000
West Wits operations	1486000
Iduapriem Gold Mine	46000
Obuasi Gold Mine	191000
Navachab Gold Mine	1000
AGA Mineracao	3000
Mineracao Serra Grande	3000
Cripple Creek & Victor operations	72000

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**Page: 11. Emissions Scope 2 Contractual**

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**11.1**

**Do you consider that the grid average factors used to report Scope 2 emissions in Question 8.3 reflect the contractual arrangements you have with electricity suppliers?**

Yes

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**11.2**

**Has your organization retired any certificates, e.g. Renewable Energy Certificates, associated with zero or low carbon electricity within the reporting year or has this been done on your behalf?**

No

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**Further Information**

AngloGold Ashanti does not operate in any countries that have obligatory emissions reductions.

12.1

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

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

12.2

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

Energy type	MWh
Fuel	4465600
Electricity	4620000
Heat	0.00
Steam	0.00
Cooling	0.00

12.3

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

Fuels	MWh
Aviation gasoline	600
Brown coal	115400
Diesel/Gas oil	3294850
Liquefied petroleum gas (LPG)	3250
Motor gasoline	12850
Natural gas	531400
Waste oils	2550
Distillate fuel oil No 6	504700

**Further Information**

**Note:** Steam and cooling are included in the fuel and electricity figures in Q 12.2.

13.1

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

Decreased

13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in output	4	Decrease	The energy used in the gold production processes drives the generation of GHG emissions. During 2011, our gold production was 4.033 M oz, 4% below the 4.52 M oz recorded in 2010.
Other: Change in generation source mix	4	Decrease	The generation source mix for electricity provided to the company's South African operations from the national grid changed, resulting in a change to the grid emissions factor. The emissions factor declined from 1.03 to 0.99 MWh/t CO <sub>2</sub> e.

13.2

Please describe your gross combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO<sub>2</sub>e per unit currency total revenue

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for Change
0.651	metric tonnes CO <sub>2</sub> e	unit total revenue	25	Decrease	Our GHG emissions decreased by 6%, as described in 13.1a. As a result of a higher gold price and increased efficiencies, our revenue increased by 26%. The combination of these was a 25% decrease in emissions per unit revenue. Our 2010 emissions have been restated, leading to a slight change in the intensity figure.

## 13.3

Please describe your gross 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
74	metric tonnes CO2e	FTE Employee	5	Decrease	Our GHG emissions decreased by 6%, as described in 13.1a. Employee numbers decreased by 1%. The combination led to a 5% reduction in emissions per employee. The 2010 figure reported as 76 has to be restated as the 2010 emissions were also restated. The 'new' 2010 number is: 77.6t per FTE (calculated as 4 817 000t CO2e/62046).

## 13.4

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
0.99	metric tonnes CO2e	ounce of gold	1	Decrease	Our energy consumption remained stable at 30.5 million GJ in 2011, largely as a result of improvements in energy efficiency at our South African operations. Traditional mining methods are typically more energy intensive with mine depth, complexity and haulage distances increasing over time as mining operations mature. Because energy consumption has stayed static, despite reduced production, as a result of the factors described, energy efficiency has reduced. However, our absolute emissions reduced by just over 6% in 2011 to 4.5Mt CO2e, largely a consequence of the changing generation source mix for electricity provided to our South African operations from the national grid. As a result of these opposing changes, we had a slight decline in our emissions intensity.

14.1

**Do you participate in any emission trading schemes?**

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

14.1b

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

During 2010 and early 2011, AngloGold Ashanti undertook a number of energy efficiency projects to improve the control and management of the compressed air and cooling systems for deep underground mines in its South Africa region and the projects are:

1. High density residence heat pumps:

AGA completed and implemented a project in 2010 to install heat pumps at high density residences to reduce electricity consumption and engage in alternative and renewable energy sources.

2. Improvement of control and management of the compressed air and cooling systems for deep underground mines, whereby vapour compression heating systems are being installed.

These are projected to result in a saving of approximately 15GWh and 140GWh per year respectively. Should these projects meet the requirements of the UN Clean Development Mechanism, AGA anticipates generating carbon credits from them.

14.2

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

No

15.1

Please provide data on sources of Scope 3 emissions that are relevant to your organization

Sources of Scope 3 emissions	metric tonnes CO2e	Methodology	If you cannot provide a figure for emissions, please describe them
Business travel	8500	Business travel calculations comprised flights and hotel stays. A detailed external assessment was carried out in 2009 of 2008 business travel across the company. Data on flights and hotel stays was collected from the company's travel agents and analysed to calculate the emissions. Because the emissions (5.6 Kt CO2e) were small relative to the company's GHG footprint, these emissions were deemed to be immaterial and subsequent assessments have not been made. The current number was calculated by taking the 2008 figure and increasing it by 10% per year. As the company has grown since 2008 this rate of increase in business travel is very likely.	Global air travel facilitating management of a global corporation with corporate strategic control
Waste generated in operations	13400	A detailed external assessment was carried out in 2009 of 2008 waste generated across the company. Because the emissions (10.1 Kt CO2e) were small relative to the company's GHG footprint, these emissions were deemed to be immaterial and subsequent assessments have not been made. The current number was calculated by taking the 2008 figure and increasing it by 10% per year. As the company has grown since 2008 this rate of increase in waste generated is very likely.	Some landfill, e.g. tyres. No methane emissions
Fuel- and energy-related activities (not included in Scopes 1 or 2)	9400	These activities comprised motorcycle, petrol and diesel van, heavy goods diesel vehicle and air freight deliveries. A detailed external assessment was carried out in 2009 of 2008 deliveries across the company. Because the emissions (7.0 Kt CO2e) were small relative to the company's GHG footprint, these emissions were deemed to be immaterial and subsequent assessments have not been made. The current number was calculated by taking the 2008 figure and increasing it by 10% per year. As the company has grown since 2008 this rate of increase in deliveries is very likely.	Upstream carbon emissions embedded in purchased goods and services

15.2

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

Not verified or assured

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15.3

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

No, we don't have any emissions data

**Module: Sign Off**

**Page: Sign Off**

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**Please enter the name of the individual that has signed off (approved) the response and their job title**

Andrew Parsons  
Vice President: Environmental Policy and Assurance

**Carbon Disclosure Project**

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