CDP 2011 Investor CDP 2011 Information Request

AECI Ltd Ord

Module: Introduction

Page: Introduction

0.1

Introduction

Please give a general description and introduction to your organization

AECI is a specialty product and services Group of companies which provides value-adding solutions to customers through science, technology and industry knowledge. The focus is on serving the mining and manufacturing sectors and in 2009 the Group invested a further R1 billion of the R2 billion strategic capital programme in capital projects to enhance its future growth in these areas.

By the end of 2009, all significant projects were mechanically complete. Commissioning had been concluded or was in progress. Although the projects relate mainly to the mining sector, capital was also invested to augment the Group's ability to service consumer-driven markets.

AECI's core businesses serve global and regional markets. They are characterised by application know-how and service delivery, operate in niche markets, and are supported by leading international technology alliances.

Principal manufacturing sites are located in South Africa, near Johannesburg (explosives and mining services, provided by AEL Mining Services, and specialty chemicals provided by Chemical Services). Chemical Services, which comprises 20 separate operations, also has a major site near Durban as well as a number of smaller sites country-wide. Its mining chemicals thrust is anchored in Senmin, which operates at Sasolburg in the Free State.

AEL Mining Services and Chemical Services have expanded their presence beyond South Africa. Both businesses continue to explore opportunities to take their products and service packages to niche markets in countries beyond their traditional areas of activity.

AEL Mining Services has a presence in 23 countries. It is well established across the African continent and, in line with the company's international strategy. Business in its South East Asian hub made pleasing progress in 2009, particularly in Indonesia. In the year, the company's excellent technology and product position in initiating systems and bulk explosives enabled it to enter into mutually beneficial channel partnerships with leading regional explosives players in Europe and in South America.

Chemical Services has established a stable presence in Brazil and more acquisitions continue to be sought using the existing investment as a platform for growth. To an increasing degree, opportunities in other territories in Southern Africa and beyond are being explored.

In addition to its core businesses, the Group has valuable land assets, the release of which it manages carefully. The property activities are managed by Heartland and this company seeks to optimise the value of the property holdings surplus to AECI's operational requirements by selling land and by selectively investing in revenue-producing buildings in order to grow an existing portfolio of properties.

The land holdings are significant and are located in prime locations near Johannesburg and Cape Town. More than 2 000 hectares of excess land are available for redevelopment over the next 15 to 20 years for residential, commercial and industrial end uses and for leasing purposes.
SANS Technical Fibers, in the USA, is the Group's fourth business.

AECI has a total employee complement of about 6 450, many of whom are engaged in the Group's extensive sales, technical service and distribution networks.

The Company is domiciled in South Africa and is listed on the JSE Limited.

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
Fri 01 Jan 2010 - Fri 31 Dec 2010

0.3

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
South Africa
United States of America

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.

ZAR (R)

0.5

Please select if you wish to complete a shorter information request

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.
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

The Risk Committee has overarching responsibility for climate change within AECI and currently comprises three Independent Non-Executive Directors, one Non-Executive Director, two Executive Directors, and five Executive Committee members. Current members of the Committee are:

RMW Dunne
JAA Diepenbroek
MA Dytor
GN Edwards
S Engelbrecht
KM Kathan
TJ Louw
EE Ludick
AJ Morgan
R Ramashia
SM Venter

The Group Manager Technology Safety Health Environment and Quality, Gary Cundill, has day-to-day responsibility for climate change. He is responsible for the overall management of and co-ordination of Health, Safety and Environmental aspects for AECI.

He is supported by the Group Environmental Specialist, Kavita Pema, who provides environmental support and advice to the business units within the AECI Group. She is also responsible for environmental reporting, environmental targets and development of a Climate Change Strategy for AECI.

1.2
Do you provide incentives for the management of climate change issues, including the attainment of targets?

No

Further Information

Environmental Targets for the Group are in the process of being developed and an action and implementation plan still needs to be formulated for the achievement of targets.

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)

(i) The types of risks that AECI have considered are safety, health and environment (SHE). These are risks which remain inherent in AECI's businesses. The wellbeing of the employees and contractors, customers and the community at large is of paramount importance. It is also essential that the AECI protects the environment in which it operates so as to continue being an acceptable corporate citizen in the territories in which it has a presence. The Board also takes into account material changes and trends in the risk profile and considers whether the control systems adequately support the board in achieving the risk management objectives.

(ii) AECI has established an Enterprise Risk Management Framework, with supporting standards, that provides a consistent framework for the assessment and management of risks. Risks are ranked using a common methodology and where the risk is assessed as material it is reported and reviewed by the Executive Committee and Senior Management as part of the risk management escalation process. All relevant risks that are identified and evaluated will be ranked based on their potential impact and probability of occurrence. Appropriate management information and monitoring processes are in place to manage the exposure to each of the key risks to ensure that, where required, necessary corrective action can be taken.

(iii) Managing the process of sustainability reporting included considering the findings and recommendations of the Risk and Corporate Citizenship committees; and meetings with KPMG Inc. and Company Senior Management to consider the KPMG Inc. findings on assurance, as well as to make appropriate enquiries from management. This process, received the necessary assurances that material disclosures are feasible and do not conflict with the financial information.

The risk management system meets regulatory requirements. In conducting its annual review of the effectiveness of risk management, the Board considers key findings from its monitoring and reporting process, management assertions and independent assurance reports. The Board receives assurance, from regular auditing reports and, from other reports on risk and internal control throughout the Group.

During 2011, AECI intends to formulate and implement a set of new mid-term environmental targets which will constitute the AECI Green Gauge. The Green Gauge will serve as a yardstick for the environmental activities of the AECI Group internationally until 2015 for the mid-term targets, with long-term targets being realised in 2020. It is intended that Green Gauge will be approved at mid-year to take effect in 2011 and AECI will disclose its progress periodically.

2.2
Is climate change integrated into your business strategy?

No

2.2b
Please explain why not

AECI is in the process of formulating environmental targets that will be applicable across Group Operations. These targets will feed in to an over-arching climate change strategy that will be completed by the end of 2011 through three phases. Phase one will be completed by July 2011 when the environmental targets will be finalised and ratified. By the end of August 2011 these targets would have been work-shopped with the various business units in the Group and this will be followed by their integration into a final climate change strategy by November 2011. This climate change strategy will also identify the key risks that AECI faces from climate change and the opportunities that may also arise in the coming years.

2.3
Do you engage with policy makers to encourage further action on mitigation and/or adaptation?

Yes

2.3a
Please explain (i) the engagement process and (ii) actions you are advocating

AECI is represented by the Chemical and Allied Industries' Association (CAIA) on all issues related to climate change mitigation and adaptation. CAIA regularly interacts with government and distributes findings and best-practise guidelines through various workshops. In the past these workshops have focused on issues pertaining to GHG emissions in the chemical industry and the resultant carbon footprint studies that would need to be carried out.

The South African government released a discussion paper on a carbon tax as well as a Green Paper on Climate Change in 2010, both of which CAIA responded to on behalf of its members.

Page: 3. Targets and Initiatives

3.1

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

No

3.1e

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

(i) AECI is in the process of formulating environmental targets that will be applicable across Group Operations. These targets will feed into an over-arching climate change strategy that is intended to be completed by the end of 2011. It is foreseen that to obtain this goal, the climate change strategy will need to identify those operations that are highest in emissions and through a series of energy audits, will look to increase efficiency where possible. These audits will also provide AECI with an idea on exactly what year-on-year reductions will need to be obtained in order to reach their target.

(ii) AECI has proposed a target of 15% reduction of total emissions below 2005 levels by 2015. This target will, however, have to be ratified once all energy audits have been conducted and the climate change strategy is in place. Below is an anticipated forecast of how emissions will change over the next five years for AECI in line with current tentative targets:
2012: Increase in line with inflation (5%)
2013: Increase in line with inflation (5%)/stabilisation
2014: Stabilisation/decrease of 5%
2015: 15% reduction on 2005 levels
2016: Reduction (5%) on 2015 levels/stabilisation

It should be noted that these targets are only proposed and are subject to change pending the energy audits which will be conducted as part of the AECI Environmental Targets formulation and the development of a Climate Change Strategy.

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 provide details in the table below

Activity type	Description of activity	Annual monetary savings (unit currency)	Investment required (unit currency)	Payback period
Energy efficiency: building fabric	Gabion columns are packed with recycled materials and filter heat sun light coming into the building from the East.			1-3 years
Energy efficiency: building fabric	Self sustainable green roof, by means of water wise planting of indigenous plants. The roof reduces sunlight coming from the East and provides shelter. This provides a reduction in urban heat, air born pollutants, and a potential to act as a sound barrier by the 'growing' medium and vegetation on the roof. The structure of the roof is lightweight and does not require reinforcement. Because the plants are low maintenance indigenous no irrigation or specialised drainage systems are required.			1-3 years
Energy efficiency: building fabric	South Facing skylight to capture maximum natural light without the build up of heat to reduce the need for lighting in the building. The openings in sections allows for hot air within the building to escape.			1-3 years
Energy efficiency: building fabric	Adjustable solar fins to block out West heat.			1-3 years
Low carbon energy installation	Wall Mounted Water Heated Panels provides heat for the building from solar power.			1-3 years
Low carbon energy installation	These North facing hot water solar panels heat water required in the kitchenette and lavatory facilities.			1-3 years
Energy efficiency: building fabric	All light fittings within the atrium space are fitted with LED energy efficient bulbs. This type of fitting uses 80% less energy required for a standard bulb.			1-3 years
Energy efficiency: building fabric	Motion sensors have been fitted in the building to reduce wasting of electricity when the building is unoccupied			1-3 years
Low carbon energy installation	North facing Solar Panels are integrated into the skylight to capture maximum solar energy. This infrastructure acts as an energy source as well as part of the building fabric. This energy is stored and monitored in the Out Back system monitors. The monitor can direct the energy to a required location within the building, eg LED lights in reception. Energy that cannot be stored is redirected into the main grid reducing energy required from other sources.			1-3 years
Other	CDM for two Nitric Acid plants in Modderfontein. The CDM project application was aimed at implementing state of the art N20 abatement technology for the two Nitric Acid plants, specialised monitoring equipment and training of staff for installation, operation and management of the equipment. There have been significant savings of CO2e emissions of 265, 460tons (site no. 11) and 116, 779tons (site no.9) CO2e per year from implementing this technology to the sites. These savings will greatly reduce potential carbon tax for AECI.		26730000	

3.3b

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

Method	Comment

Method	Comment
Internal finance mechanisms	All investment decisions are calculated by looking at overall budgetary capabilities and constraints. Investment in emission reduction activities is taken at a high level and must meet overall budgetary criteria.

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 (underway) – previous year attached	Climate Change Issues under SHE section of Annual Report	AECI Annual Report 2010

Attachments

https://www.cdproject.net/Sites/2011/48/248/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/4.Communication/AECI Annual Report 2010.pdf

Module: Risks and Opportunities [Investor]

Page: 5. Climate Change Risks

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
1	Uncertainty surrounding new regulation	The key short term risk is uncertainty surrounding the timing and nature of fiscal, regulatory and legislative packages which are currently under development. The Government recognises the country's responsibility to undertake action to reduce emissions and has announced emissions reductions by 34% below projected business as usual baseline by 2020 and by 42% by 2025. The Department of Environmental Affairs (DEA) published its Long Term Mitigation Scenarios (LTMS) in July 2008 outlining a number of themes under which South African climate change and energy policy will be developed. The LTMS is the basis for the emission reduction pledge discussed above and is the foundation of the 'National Climate Change Response Policy Green Paper' which was released in 2010. This paper outlines broad policy objectives including reducing business as usual greenhouse gas (GHG) emissions.	Increased operational cost	1-5 years	Direct	More likely than not	Medium-high
2	Fuel/energy taxes and regulations	Eskom grid electricity price hike. The National Energy Regulator of South Africa (Nersa) has approved an Eskom power tariff increase of 25,8% for 2011/12 and 25,9% for 2012/13. This regulation will have an effect on running costs for all sites.	Increased operational cost	Current	Direct	Virtually certain	Medium-high
3	Fuel/energy taxes and regulations	The finance minister announced a 10c per litre increase in the levy on petrol and diesel with effect from April 2011. There will also be an 18c per litre increase in the Road Accident Fund levy on petrol and diesel, included in an increase of 40c per litre of petrol that occurred on the 6th of April 2011. There have also been subsequent increases in all prices since this date due to uncertainty of supply. These increases result in increases in operational cost.	Increased operational cost	Current	Direct	Virtually certain	Medium-high
4	Carbon taxes	With respect to Carbon Taxes and Cap and Trade Schemes risks, South Africa has already implemented a 2c/kWh carbon tax on the cost of electricity. Government has indicated that additional carbon tax may be used as a means to reduce emissions. Towards the end of 2010, the South African National Treasury published a Carbon Tax Discussion Paper to aid the regulatory efforts of the South African government in addressing environmental challenges. An initial tax of R75 per ton of CO2 was proposed with an increase to around R200 per ton CO2 (at 2005 prices) seen as feasible and appropriate to achieve the desired behavioural changes and emission reduction targets. The anticipated risk includes the fact that a carbon tax or even an emission trading system, will result in an increase to the cost of fossil fuel based energy, and in particular coal based electricity in South Africa.	Reduction in capital availability	1-5 years	Direct	More likely than not	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

1.) (i) It is currently unclear what the financial implications of the uncertainty surrounding new regulation will be. However, if government decides to impose emission reduction targets on specific industries then the financial implication will increase significantly for all concerned. AECI believe that the first step in any emission legislation will be the mandatory reporting of greenhouse gas emissions by the major carbon emitting industries. This is currently being undertaken in the annual carbon footprint development process but if this becomes regulatory there will likely be an increase in reporting costs.

(ii) As a risk mitigation measure and in the interest of good disclosure, AECI has calculated its carbon footprint. The intention is that this process will be done annually and will become embedded in the organisation. Once there is certainty around the proposed greenhouse gas regulation, AECI will quantify the risk in detail.

(iii)The costs of this exercise are not significant.

2.)(i)The Eskom grid electricity price hikes will increase the cost of electricity for AECI. However, electricity only accounts for a small percentage of operational cost, and thus an increase in electricity costs will not result in a significant impact on the business.

(ii) Various energy efficiency measures are being implemented to decrease the reliance on grid electricity thereby decreasing the exposure to price increases.

(iii) The cost associated with these actions have yet to be quantified

3.) (i) The increased fuel levy will not result in a significant increase to operating costs to the business either as fuel costs account for approximately 6.5% of operating costs.

(ii) Apart from the carbon footprint study carried out annually, no direct measures are in place to manage this risk.

(iii) The cost of the carbon footprint study are not significant.

4.) (i) The carbon tax discussion paper looked at three options of where the carbon tax could be applied. These include a direct tax on total emissions, an upstream carbon tax on emissions from fuels used to generate electricity (Scope 1) and a downstream carbon tax on emissions from purchased electricity (Scope 2). If one looks at the initial tax of R75/per tonne of CO2e increasing to R200 per tonne of CO2e, the financial exposure from a direct tax will start at R40 million and rise to R106 million. The financial risk from an upstream tax will start at R23 million and rise to R62 million while the risk from a downstream tax will start at R16 million and rise to R43 million at current carbon emission figures. An upstream carbon tax will almost certainly result in an increase in electricity costs as Eskom will pass this additional cost onto their consumers. This cost is estimated to be an increase of R0.06/kWh if a tax of R75/tonne of CO2e is implemented and R0.20/kWh if a tax of R200/tonne of CO2e is implemented.

(ii) AECI believe that the first step in any emission legislation will be the mandatory reporting of greenhouse gas emissions by the major carbon emitting industries. This is currently being undertaken in the annual carbon footprint development process but if this becomes regulatory there will likely be an increase in reporting costs due to verification and assurance for example.
The nature and scope of any greenhouse gas regulation in South Africa is still unknown, but is likely to take the form of a carbon tax. Furthermore, the increase in both the electricity and liquid fuel costs in South Africa will mean in an increase in operating costs to the business.

(iii) The annual costs of the carbon footprint development process is not significant.

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
1	Change in precipitation extremes and droughts	Changes in precipitation patterns are relevant where water is a critical resource for operations. In locations where AECI currently operates water is seen as a scarce resource. Impacts to changes in precipitation patterns vary regionally but significant effects are anticipated where reduced precipitation coincides with increased temperatures, causing exacerbated water stresses.	Reduction/disruption in production capacity	1-5 years	Direct	About as likely as not	Medium-high
2	Change in precipitation extremes and droughts	The AECI supply chain (as well as labour force) could well be affected by physical climate change risks such as floods, or extreme weather events. Flash floods could have a knock-on effect on food supply and disease on the workforce as well as negative effects on road infrastructure in the area which may affect the supply chain. Disrupted access to site due to flooding or extreme weather events can result in supply chain disruption and non-delivery of resources, a loss of production time and a loss of revenue. Disruption at suppliers' sites due to flooding or extreme weather events can also result in supply chain disruption and non-delivery of resources, the inability to operate due to lack of resources and a loss of revenue. Flooding may also disrupt AECI's ability to supply key chemicals to clients, thereby disrupting clients operations.	Reduction/disruption in production capacity	1-5 years	Indirect (Supply chain)	About as likely as not	Medium-high

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

1(i) Water availability
South Africa is generally regarded as a water-stressed country. With water resources already under pressure in South Africa, Climate Change could lead to a further decline in the availability of water resources and the chemical processing and services industry could be more vulnerable to fluctuating water availability, precipitation patterns, altered groundwater levels and changing stream flow patterns. This can potentially affect water balances which could result in a shortage of the water supply available from rivers and boreholes. Moreover, this is set to happen at the same time as socio-economic development will increase the demand for water.

The major overall effect of pressure on water availability is on AECI's integrated water balance which guides AECI's in determining the quantity of water available for planning and operations. In the northern regions of the country where AECI's operations are located, the already dry winter rainfall region is expected to become drier. AECI does rely quite heavily on water availability and a scarcity in water could have a slowing effect on productivity.

If water availability becomes scarcer, this may lead to an increase in operational costs as more supply will be required from municipal suppliers. AECI currently uses 4.87 billion litres of water per annum. If water shortages increase, this cost is likely to rise by 20 – 30%.

(ii) AECI is currently looking at ways to decrease dependency on water supplied from other sources. Through a climate change strategy, water has been identified as a potential climate risk that AECI will need to address going forward.

(iii) The costs of managing water issues within AECI are not accurately consolidated but are regarded as one of the operational business costs.

2. (i) Floods will affect the supply chain and disrupt business continuity. Floods affecting the supply chain could result in a significant loss of income from production inefficiencies. AECI's product sit in various companies supply chains and therefore if critical products cannot be delivered customers operations can not continue to function. There is currently no quantification of the loss of revenue if these products were not available, however it would be significant, especially when one looks at importance of AECI products to various processes in numerous supply chains.

(ii) AECI has taken action, and plans to take further action in relation to physical risks from climate change. AECI has embarked on the process of calculating annual carbon footprints (and hence managing data related to carbon emissions and climate change) of operations and associated with this a greater understanding of the risks and opportunities the company faces from climate change. AECI is currently developing a separate climate change strategy and regards this as part of the optimisation of the business. The climate change strategy will help to identify risks associated with climate change and the strategies that could be implemented to address these risks.

(iii) The costs of managing flooding issues within AECI are not yet accurately consolidated.

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	Reputation	A negative reputational risk could pose a threat to the chemical, textile and explosives production and services sector as a whole due to increased public awareness of climate change and the increased focus on what the sector is doing in response to climate change.	Reduced demand for goods/services	1-5 years	Direct	About as likely as not	Medium-high
2	Other drivers	By not taking into account carbon liability when looking at long-term planning, companies are at risk of choosing projects that do not provide the best return on investment. Those that may seem attractive initially in terms of NPV and ROI may diminish when the liability is considered and are therefore not optimal choices. If this is the case, there is a significant financial implication with regards to delay in project build and subsequent loss of revenue.	Increased capital cost	6-10 years	Direct	Very likely	High

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

(1)(i) A negative reputation could pose a threat to the chemicals, textiles and explosives sector as a whole due to increased public awareness of climate change and the increased focus on what the sector is doing in response to climate change. This sector of industry has the potential to have a large negative impact on the environment thus making AECI's response to climate change essential for improving its reputation.

(ii) Due to the fact that AECI has procedures in place to calculate an annual carbon footprint and identify risks and opportunities of climate change through the climate change strategy the company is in a good position to enhance its reputation with regards to climate change. Reputational risks can also be avoided by the fact that the architectural changes to its office headquarters aid in the reduction of emissions. Among the more promising uses of energy efficient architecture AECI are able to generate power for many of its operations onsite and excess power that cannot be stored onsite can be transferred onto the national grid. If AECI continues on its current path of incorporating the management of climate change and associated risks and opportunities into quarterly and annual management procedures, these risks will most likely be anticipated and be dealt with accordingly.

(iii) The costs of these actions have not yet been quantified.

2. (i) By not taking carbon liability into consideration when carrying out long-term planning, there is the potential risk that the financial viability of projects will not be as attractive as previously thought. This will also affect the sustainability of those projects. The same can be said if weather projections are also not considered for particular areas. Adverse weather conditions could hamper new project builds, commissioning and operations. This could subsequently affect the financial viability of a project and whether it should be implemented or not. The financial affects of a lack of long term planning have not been quantified.

(ii) The climate change strategy is the first step in identifying the risks and opportunities associated with climate change. In doing so, AECI is in a position to better understand the financial effects of climate change thereby enabling them to incorporate carbon liability into future planning.

(iii) The costs of these actions have not yet been quantified.

Page: 6. Climate Change Opportunities

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
1	International agreements	The Clean Development Mechanism (CDM) allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO2, which can be counted towards meeting Kyoto targets. A CDM project activity might involve, for example, a rural electrification project using solar panels or the installation of more energy-efficient boilers. The opportunity for AECI is to continue to develop projects in line with CDM requirements thereby generating carbon credits that can be sold.	Increase in capital availability	Current	Direct	Virtually certain	Medium-high
2	General environmental regulations, including planning	Green Paper on Climate Change – The Green Paper on Climate Change is a well thought out, comprehensive document presented by the Department of Environmental Affairs. The paper states that it is taking the threat of human induced climate change very seriously. There have been implied commitments made in the paper but they are expected to be further fleshed out in the White Paper. The main driver for the Green Paper is to mitigate GHG emissions by 34% by 2020 and 42% by 2025 from the baseline taken in 2005. The mitigation is expected to reach a plateau by 2035 where after the GHG emissions will fall in absolute terms. Steps that have been committed to by 2012 include: • the compilation and publication of a climate change response action plan for the commercial and manufacturing sector; • develop, test and commission a web-based GHG emission monitoring and reporting system for significant emitters; and • to publish a draft Climate Change Response Monitoring, Reporting and Verification (MRV) system aligned with international requirements.	Increased demand for existing products/services	1-5 years	Direct	More likely than not	Unknown

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

1. CDM for two Nitric Acid plants in Modderfontein.
(i) The CDM project application was aimed at implementing state of the art N20 abatement technology for the two Nitric Acid plants, specialised monitoring equipment and training of staff for installation, operation and management of the equipment. There have been significant savings of CO2e emissions of 265, 460tons (site no. 11) and 116, 779tons (site no.9) CO2e per year from implementing this technology to the sites. These savings will greatly reduce potential carbon tax for AECI. Along with the potential savings in carbon tax, there is opportunity to sell the GHG emissions that have been avoided on the carbon market. The combined tons CO2e of the two sites are 382, 239, the current price of one carbon credit (1 ton of CO2e) is approximately EUR 15. Therefore there is the potential to sell R65m worth of carbon credits. There was no public funding made available for the implementation for the project.

Site no. 9 Costs: The total estimated cost of the project is EUR2.73m, of which EUR1.4m are for the N2O abatement catalyst, approximately EUR1.08m for the purchasing of the Automated Measuring System (AMS) and the operation of the project by AEL staff and EUR 0.25m for validations and verifications. Site no.11 Costs: The total estimated cost of the project is EUR2.7m, of which EUR1.4m are for the N2O abatement catalyst, approximately EUR1m for the purchasing of the Automated Measuring System (AMS) and the operation of the project by AEL staff and EUR 0.2m for validations and verifications.

(ii) The management of the abatement technology will be run by staff of AECI that have been trained (by AEL) in the management systems required for the effective running of this technology. Measuring of the N2O data will be run through an N.Serve Data Management System to measure and verification of procedures related to the projects. This enables large amounts of data to be stored and minimal redundancy and maximum flexibility to allow for best practice in data analysis.

(iii) There are currently no cost estimations available for this management process.

2.(i) The Green Paper on Climate Change identified that there will be a need for the manufacturing sector to manage greenhouse gas emissions from all significant industrial sources, implement energy efficiency measures for manufacturing processes and implement climate change response action plans. AECI is currently managing their greenhouse gas emissions and is also developing a climate change strategy to respond to the perceived risks of climate change. The biggest opportunity for AECI is that many of their products and their applications can help to increase efficiency in manufacturing processes. There will be a need for new consumptions methods as many chemical products directly and indirectly affect GHG emissions from consumer choices. Currently, various chemical products that AECI produces help to increase efficiency in certain processes throughout various supply chains. However, AECI can look to innovate many of its products and invest in R&D into new products to become the supplier of choice of products that further enable efficiency and GHG mitigation. The financial implications of this opportunity have not yet been quantified.

(ii) AECI will continue to keep abreast of opportunities related to regulation locally and internationally. The climate change strategy will provide AECI will a structure to effectively manage these going forward.

(iii) The costs associated with these actions have not yet been quantified.

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
1	Change in mean (average) precipitation	The rising cost and tighter regulation of water, coupled with concerns about adequate long-term availability in many regions, is prompting many chemical companies to treat water conservation as an imperative in their sustainability efforts. AECI believe that this opportunity is immediate in terms of a time frame looking into the future. The major areas that AECI have identified for this opportunity would be the nitric plants where processing and manufacturing of AECI's products takes place. Other geographical areas include the office headquarters in Woodlands and operations in USA.	Reduced operational costs	1-5 years	Direct	More likely than not	Medium-high

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

1. (i) AECI experienced a 43% increase in water usage in 2010. This was largely due to the inclusion of operations outside of Modderfontein. Water conservation is a rising sustainability issue, and coincided with companies GHG emissions. Water presents an equally pressing challenge for long-term sustainability of the company. The same process of understanding, measuring, reducing and offsetting applies for a water footprint and to strive to be water neutral in the future. Creating this transparency allows access to information to improve decision making of the business which is as important as any other issue of concern. This process creates an opportunity's for innovation within AECI's operations, specifically for water use efficiency and optimizing conservation.

(ii) The CDP and Water CDP has allowed AECI to manage what they measure, and focus on the challenges in a way that has enabled them to mitigate risk and identify opportunities. This has ultimately put AECI in a far greater position to navigate water conservation. Unfortunately there is no substitute for water like there is for energy. Therefore the challenge lies in managing what we use water for and what methods AECI are using it.

Opportunities that have been identified for water conservation or overall water availability include better water and wastewater-treatment chemicals, water-efficient fertilizers, and processes and products. The reuse of water through recycling and storage of run off from rainwater are opportunities that could be extremely beneficial for AECI. A water audit is another opportunity for AECI as the information from the audit can show specific areas where water conservation could be implemented.

(iii) The costs of the water conservation and management initiatives have yet yo be quantified

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
1	Other drivers	AECI have identified land remediation as a physical opportunity as these activities assist in protecting human health and the environment. An added opportunity linked to remediation of land is that of re-introduction of indigenous vegetation and biodiversity to previously impacted areas.	Wider social benefits	Current	Direct	Virtually certain	Medium-high

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

1. (i) AECI have identified land remediation as a physical opportunity as these activities assist in protecting human health and the environment.

(ii)The guiding principles underlying AECI's remediation activities are to protect human health, and the environment; to use good science, proven concepts and best available technologies not entailing excessive cost; and to work with regulatory authorities and share information with interested and affected parties.

(iii) AECI spent R 9 million on remediation and related environmental management activities in 2010, compared to R 13 million in 2009. The lower expenditure is attributed to the fact that most of AECI's legacy remediation investment is now complete. In addition the market condition in 2010 were such that little land was required to be released for sale.

In December 2010, the environmental liability for the Group was estimated at R 164 million for remediation and was fully provided for.

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)

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Fri 01 Jan 2010 - Fri 31 Dec 2010	310892	216305

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)
ISO 14064-1

7.2a
If you have selected "Other", please provide details below

7.3
Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Second Assessment Report (SAR - 100 year)
CH4	IPCC Second Assessment Report (SAR - 100 year)
N20	IPCC Second Assessment Report (SAR - 100 year)
HFCs	Other: GHG Protocol

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
Motor gasoline	0.04	Other: GJ/L	GHG Protocol/2006 IPCC Guidelines
Motor gasoline	0.07	metric tonnes CO2 per GJ	GHG Protocol/2006 IPCC Guidelines
Motor gasoline	0.00	Other: Tonnes CH4/GJ	GHG Protocol/2006 IPCC Guidelines
Motor gasoline	0.00	Other: Tonnes N2O/GJ	GHG Protocol/2006 IPCC Guidelines
Diesel/Gas oil	0.04	Other: GJ/L	GHG Protocol/2006 IPCC Guidelines
Diesel/Gas oil	0.07	metric tonnes CO2 per GJ	GHG Protocol/2006 IPCC Guidelines
Diesel/Gas oil	0.00	Other: Tonnes CH4/GJ	GHG Protocol/2006 IPCC Guidelines
Diesel/Gas oil	0.00	Other: Tonnes N2O/GJ	GHG Protocol/2006 IPCC Guidelines
Diesel/Gas oil	43.00	Other: MJ/kg	GHG Protocol/2006 IPCC Guidelines
Liquefied petroleum gas (LPG)	47.30	Other: MJ/kg	GHG Protocol/2006 IPCC Guidelines
Liquefied petroleum gas (LPG)	17.20	Other: C/GJ	GHG Protocol/2006 IPCC Guidelines
Liquefied petroleum gas (LPG)	0.01	Other: CH4/GJ	GHG Protocol/2006 IPCC Guidelines (EF is 0.001)
Liquefied petroleum gas (LPG)	0.01	Other: N2O/GJ	GHG Protocol/2006 IPCC Guidelines (EF is 0.001)
Bituminous coal	25.80	Other: kg C / GJ	GHG Protcol/IPCC 2006 Guidelines
Natural gas	15.30	Other: kg C/GJ	GHG Protcol/IPCC 2006 Guidelines
Electricity	1.03	Other: kg CO2/kWh	Eskom annual report 2009
Electricity	0.65	Other: kg CO2/kWh	Duke Energy Environmental Report 2008

Page: 8. Emissions Data - (1 Jan 2010 - 31 Dec 2010)

8.1
Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Financial control

8.2a
Please provide your gross global Scope 1 emissions figure in metric tonnes CO2e

310892

8.3a
Please provide your gross global Scope 2 emissions figure in metric tonnes CO2e

216305

8.4
Are there are 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

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	Uncertainty Range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 5% but less than or equal to 10%	Data Gaps Assumptions	Uncertainty analysis was not performed. The estimated uncertainty of the data must include uncertainty associated with assumptions in the data. That is, the assumption that all those included in the data collection process have gone about their job in the correct manner. The estimated uncertainty of the data must include uncertainty associated with published emissions factors. These include IPCC Guidelines/GHG Protocol emissions factors and uncertainty thereof. Certain assumptions were made where data was not obtainable. However these assumptions were not significant. Full data sets were not available for some of the smaller business units.
Scope 2	More than 5% but less than or equal to 10%	Data Gaps Assumptions	Uncertainty analysis was not performed. The estimated uncertainty of the data must include uncertainty associated with assumptions in the data. That is, the assumption that all those included in the data collection process have gone about their job in the correct manner. The estimated uncertainty of the data must include uncertainty associated with published emissions factors. These include IPCC Guidelines/GHG Protocol emissions factors and uncertainty thereof. Certain assumptions were made where data was not obtainable. However these assumptions were not significant. Full data sets were not available for some of the smaller business units.

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 90% but less than or equal to 100%

8.6b
Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Type of verification or assurance	Relevant standard	Relevant statement attached
Limited assurance	ISAE 3000	Assurance statement from KPMG

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

Type of verification or assurance	Relevant standard	Relevant statement attached
Limited assurance	ISAE 3000	Assurance statement from KPMG

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

Attachments

https://www.cdproject.net/Sites/2011/48/248/Investor CDP 2011/Shared Documents/Attachments/InvestorCDP2011/8.EmissionsData(1Jan2010-31Dec2010)/Assurance Statement.tif

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

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
South Africa	309916
United States of America	976

9.2
Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By business division

9.2a
Please break down your total gross global Scope 1 emissions by business division

Business Division	Scope 1 metric tonnes CO2e
Chemserve	24665
STF	976
Heartlands	65941
AEL	219310

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2010 - 31 Dec 2010)

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
South Africa	191264
United States of America	25041

10.2
Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By business division

10.2a
Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 metric tonnes CO2e
Chemserve	103446
STF	25041
Heartlands	10050
AEL	77768

Page: 11. Emissions Scope 2 Contractual

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

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

Page: 12. Energy

12.1

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

More than 5% but less than or equal to 10%

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	56569.75
Electricity	669802.26
Heat	
Steam	91695.29
Cooling	

12.3

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

Fuels	MWh
Diesel/Gas oil	54934.12
Motor gasoline	1635.63

Page: 13. Emissions Performance

13.1

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

Increased

13.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Change in boundary	11	Increase	The data collection process for this year's carbon footprint calculation as well as the boundaries of the data collected were more defined and more institutionalised. This led to more data being made available and therefore an increase in Scope 1 and Scope 2 emissions.

13.2

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Explanation
0.000045	metric tonnes CO2e	unit total revenue	6.7	Increase	An increase in revenue combined with an increase in combined Scope 1 & Scope 2 emissions has meant that there has been an increase in this metric.

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	Explanation
78	metric tonnes CO2e	FTE Employee	6.4	Increase	Full time employees have increased by 5.6% from the previous reporting year. This increase, combined with an increase in combined Scope 1 & Scope 2 emissions of 11% has seen this metric rise overall by 6.4%.

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	Explanation
	metric tonnes CO2e				

Page: 14. Emissions Trading

14.1

Do you participate in any emission trading schemes?

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

14.2

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

No

Page: 15. Scope 3 Emissions

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	1835	Scope 3 emissions account for other indirect emissions associated but not controlled by the company. In this case Scope 3 emissions include air travel and business mileage from rented vehicles only. The carbon footprint was calculated using an Excel based carbon footprint calculator. The carbon footprint calculator is based on the calculation tools provided by the GHG Protocol and uses the emissions factors from the GHG Protocol and the 2006 IPCC Guideline documents	

15.2
Please indicate the verification/assurance status that applies to your Scope 3 emissions

15.3
How do your absolute Scope 3 emissions for the reporting year compare to the previous year?

Increased

15.3a
Please complete the table

Reason	Emissions value (percentage)	Direction of Change	Comment
Change in boundary	145	Increase	The data collection process for this year's carbon footprint calculation as well as the boundaries of the data collected were more defined and more institutionalised. This led to more data being made available and therefore an increase in Scope 3 emissions.

Module: Sign Off

Page: Sign Off

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

Kavita Pema

Group Environmental Specialist

CDP