

Module: Introduction**Page: Introduction****CC0.1****Introduction**

Please give a general description and introduction to your organization.

AECI IS AN EXPLOSIVES AND SPECIALTY CHEMICALS GROUP DOMICILED IN SOUTH AFRICA AND LISTED ON THE JOHANNESBURG STOCK EXCHANGE (JSE). GROUP BUSINESSES SERVICE THE MINING AND MANUFACTURING SECTORS BOTH LOCALLY AND INTERNATIONALLY.

THE FOCUS FOR GROWTH IS ON AFRICA, SOUTH EAST ASIA AND SOUTH AMERICA. AECI'S BUSINESSES ARE CHARACTERISED BY APPLICATION KNOW-HOW AND SERVICE DELIVERY.

THEY OFTEN OPERATE IN NICHE MARKETS AND ARE SUPPORTED BY LEADING TECHNOLOGIES WHICH ARE DEVELOPED IN-HOUSE OR ARE SOURCED FROM INTERNATIONAL PARTNERS.

AECI's vision is to be the supplier of choice for customers in its chosen markets. The Group aims to be Africa's leading supplier of explosives and mining services and specialty chemicals, mainly to the mining and manufacturing sectors and in key emerging markets around the world.

The Company's vision is underpinned by four strategic pillars pertaining to a globally competitive cost base, world-class technology, value-adding customer-centric service, and excellence and professionalism in all areas of activity. Growth is achieved organically and via acquisitions. These pillars in turn reflect AECI's foundational principles of being Bold and Innovative in the creation of value, of Going Green and of being Engaged and Responsible.

The model in place for AECI is summarised as "Freedom supported by a Framework", with the framework established by the parent company complementing the businesses' pursuit of their own innovative product and service excellence.

Regional expansion will leverage the Group's already extensive footprint in Africa and other selected markets in developing countries will also be targeted for growth. South East Asia and Brazil are of particular interest.

AEL will commission three new plants in Africa in 2013. In addition, the investment in a nitric acid plant and an ammonium nitrate solution plant in Bontang, Indonesia, will provide in-country access to a secure source of ammonium nitrate. This will assist in sustaining AEL's growth trend in the region.

In the specialty chemicals cluster, regional growth is being pursued in Africa in key markets that include mining; the water oil, gas and energy sector; agriculture; food production and preservation; and the personal and home care sectors.

Businesses will expand their areas of influence by partnering with their customers as they grow and by maximising the benefits of leading technology. In this regard ImproChem's position subsequent to the acquisition of General Electric's ("GE") Chemical and Monitoring Solutions business in Africa was a noteworthy development in 2012.

Potential acquisitions in Brazil are being identified and they will be pursued in line with the Group's risk/reward appetite, as will opportunities in other geographies.

AEL is the leading developer, producer and supplier of commercial explosives, initiating systems and blasting services for the mining, quarrying and construction markets in Africa. In Indonesia, the company is the second largest supplier of explosives and services to the local mining industry. With its Head Office at Modderfontein in Johannesburg, South Africa, AEL has production facilities and offices throughout Africa and in selected international regions in South East Asia, South America and Europe.

In the specialty chemicals cluster, 15 business units supply specialty chemical raw materials and related services for industrial use across a broad spectrum of customers in the manufacturing and mining sectors, mainly in Southern Africa. Sales, distribution, production and laboratory facilities are extensive. The cluster has major sites in Johannesburg and Durban, with a number of smaller operations country-wide. AECI's mining chemicals thrust is anchored in Senmin, which operates in Sasolburg.

SANS Technical Fibers is based in USA. It manufactures and markets a range of high performance, specialty nylon industrial yarns for niche market applications in the USA, Asia and Europe. Previously a stand-alone segment, this business was included in the specialty chemicals cluster from January 2013.

In addition to its core businesses the Group has a valuable land asset, the release of which is managed carefully. The property activities are overseen by Heartland. 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 rental properties.

The land holdings are significant and are located in prime locations near Johannesburg and Cape Town. More than 3 000 hectares of land are available for redevelopment or sale over the longer term for residential, commercial and industrial end uses and for leasing purposes.

CC0.2

Reporting Year

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Tue 01 Jan 2013 - Tue 31 Dec 2013

CC0.3

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

CC0.4

Currency selection

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

ZAR (R)

CC0.6**Modules**

As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sectors, companies in the oil and gas industry, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco sectors 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 not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see <https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx>.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

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

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

CC1.1a

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

The Social and Ethics committee is mandated to consider, recommend and monitor AECI's activities with regards to the following and report accordingly to the Board:

- Good corporate citizenship specifically in relation to the promotion of equality, the prevention of unfair discrimination and the reduction of corruption; and AECI's record of sponsorship, donations and charitable giving
- Labour and employment matters
- Safety, health and environment (of which climate change is a component) specifically in relation to the AECI's Group's activities and those of its products and

services

- Social and economic development of defined communities
- Consumer relations (advertising, public relations and compliance with consumer protection laws)

The Social and Ethics Committee is comprised of three Independent Non-executive Directors, the Chief Executive, the Human Capital Executive and the Group Technical and Safety, Health and Environment Manager. The Chief Financial Officer attends by invitation. In 2013 the Committee maintained its focus on ensuring that AECI has a robust management process for issues pertaining to workplace transformation, Employment Equity, safety, health, the environment, and ethics-related matters. The Committee met three times in the year.

Current members of the Committee are:

- › Z Fuphe (Chairman)
- › GJ Cundill
- › MA Dytor
- › MJ Leeming
- › MVK Matshitse
- › R Ramashia
- › Group Technical and Safety, Health and Environment Manager.

The Group Technical and Safety, Health and Environment Manager, 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, Tredeshnee Naidu, 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.

CC1.2

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

Yes

CC1.2a

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

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Director on board	Recognition (non-monetary)	The Green Gauge award is awarded to the Managing Director of the company that performs the best in terms of achieving targets on waste, water and energy initiatives. This is an annual award accepted by the Managing Director on behalf of the company.

Further Information

Page: CC2. Strategy

CC2.1

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

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

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

Frequency of monitoring	To whom are results reported	Geographical areas considered	How far into the future are risks considered?	Comment
Six-monthly or more frequently	Individual/Sub-set of the Board or committee appointed by the Board	South Africa Africa Indonesia	1 to 3 years	

CC2.1b

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

The Group follows the risk management methodology comprising both bottom-up and top-down elements as well as a holistic approach in identifying, analysing, evaluating, treating, monitoring and reviewing risks. The bottom-up identification and prioritisation process is supported by workshops with the management teams of the Group's businesses. The top-down element involves management at Corporate Head Office level. This ensures that potential risks are discussed at the top management level and are included in subsequent reports, if found to be relevant. Through this process, complemented by with the Cura software, AECI ensures that the management of risks is an integral part of its corporate governance system and that risk management is integrated into its day-to-day business activities.

CC2.1c

How do you prioritize the risks and opportunities identified?

The risk analysis is depicted on a 5 x 5 risk rating scale that sets out potential impacts and estimated probabilities. The potential impacts are classified as minor, moderate, serious, major or severe and are in turn linked to a qualitative and quantitative residual risk value. The estimated probability is based on:

- › almost certain = monthly basis;
- › likely = once in one year;
- › possible = once in three years;
- › unlikely = once in five years;
- › rare = once in more than five years.

There has historically been a focus on risks. A decision has now been taken to focus on opportunities.

CC2.1d

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

Main reason for not having a process	Do you plan to introduce a process?	Comment
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CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

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

AECI is committed to maintain ongoing efforts to minimize our environmental impacts in order to continue to be accepted as a responsible citizen by the communities in which we operate and other stakeholders. AECI's values of Going Green and Responsible as well as our strategy of Going above and beyond informs our climate change strategy. In addition our environmental vision based on three critical environmental footprint reduction goals; namely, resource conservation, energy conservation and pollution prevention are also pivotal drivers for our climate change strategy. Our Climate Change strategy is supported by the following three key pillars:

- A. Achieve targets through progressive efforts to increase efficiency. AECI has made a concerted effort to minimise our impact by improving the efficiency of production processes, efficient logistics management, offerings to customers and office activities etc.
- B. Place a high priority on Green Chemistry to encourage the design of products and processes that minimise the use and generation of hazardous substances. AECI aims to provide products that are not only superior in terms of functionality and quality, but also exert minimal impact on the environment.
- C. Communicate and establish partnerships with stakeholders within and outside the Company. In addition to innovation, the move to renewable energy and other new elements of environmental infrastructure, developing technologies and creating mechanisms for reducing environmental impacts require collaboration with other companies, regulatory authorities, NGOs, universities and research organisations. To ensure Group-wide participation and ownership of this pillar, AECI promotes environmental education and training.
 - (i) The AECI Group is comprised of subsidiaries each of which is required to report on sustainability parameters on a monthly basis. The reported data is collated on a central Group Information Management System and a consolidated as well as individual assessment in terms of environmental performance is conducted. The environmental performance assessment is reported to the AECI EXCO on a quarterly basis indicating key parameters (water, waste, energy, GHG emissions etc.) together with performance trends.
 - (ii) AECI's climate change strategy has been largely influenced by the realisation that failure to adapt business practices in the current environmental and climate change sphere will have major cost implications and that many opportunities exist for the incorporation of Green Chemistry within the Group's business strategy. Some examples of Green Chemistry in the AECI group include the Eco-Emulsions range at the AEL operations, Green Blowing Agents being developed by a refrigerant manufacturing subsidiary, the Ecologika range of sustainable agriculture products etc. The inherent risks associated with impending climate change related regulations such as the Carbon Tax have also shaped AECI's strategic approach. In addition AECI is cognisant of the fact that failing to take strategic action

in the climate change arena could result in severe reputational damage. AECI has also recognised that the opportunities linked to efficiency projects provided by the Energy Efficiency regulations provide a good business case for upgrading and improving production equipment and infrastructure.

(iii) Within the AECI environmental target setting process – known as Green Gauge, short term targets have been set up to 2015. Recognising the need to reduce emissions and thereby reduce the Group’s overall carbon footprint, the Green Gauge process under Key Focus Area 2 (KFA): Energy Conservation focuses on conducting energy efficiency assessments at prioritised sites. Pursuant to confirmation based on the assessments, AECI has set a target to reduce scope 1 emissions by 10% and scope 2 emissions by 15% by 2015 from a 2011 baseline. Water, waste and energy audits have been completed at 15 sites in support of this target and site specific activities and interventions have been identified for implementation.

(iv) As part of the AECI Green Gauge process long term objectives have been stated up to 2020. A key component for the achievement of long terms objectives is the focus on Green Chemistry on an ongoing basis in order to ensure that manufacturing and production processes consider the application of cleaner technology as well as innovative solutions in product development. It is anticipated that this focus will drive the Group’s long term vision based on the fact that “Going Green” is not only part of our “Good Chemistry” brand descriptor and one of our Company values; it is also a business opportunity. AECI believes that in the long term as environmental considerations become more entrenched in society, opportunities to supply products that sustain this trend become more apparent and viable. A good example of this is the water treatment products and processes that assist customers in maximising their use of this scarce resource in Africa. Another subsidiary supplies products for insulating materials that assist in reducing energy consumption.

(v) AECI’s drive towards Green Chemistry and the development of products which are not only environmentally friendly but which will also assist customers in reducing their carbon footprints will give AECI a competitive advantage. This is clearly evident in projects such as Eco-emulsions and “Green Blasting” options provided by AEL, the development and use of Green Blowing agents produced by Industrial Urethanes (now incorporated into Lake International), Ecologika products for sustainable agriculture etc.

(vi) AECI has invested considerable resources – both human and financial – in conducting a baseline assessment of current operational aspects which have a bearing on resource efficiency with the aim of developing a long term business strategy for operational sites. AECI approached ERM, a leading international sustainability consultancy, to assist in conducting the assessments using their QUEST methodology (Quick Energy Savings Technique). The site assessments carried out were characterised by the estimations of energy, water and waste saving potentials based on available data and the ERM team’s professional considerations. A detailed opportunities database as well as business case, inclusive of Net Present Value (NPV), opportunity cost, payback periods etc., was developed for the sites assessed. Opportunities have also been prioritised as follows in order to enable the sites to develop management plans for implementation: Priority 1: Payback < 1 year and < R 100K investment; Priority 2: Payback < 3 years and < R 1M investment; Priority 3: All others. 15 companies have implemented opportunities during the course of 2012 and 2013 and are continuously looking at the feasibility of opportunities identified with respect of energy, waste and water.

CC2.2b

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

CC2.3

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

Trade associations

CC2.3a

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

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
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CC2.3b

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

Yes

CC2.3c

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

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Chemical and Allied Industries Association (CAIA)	Consistent	The transition to a low carbon, resource efficient economy is a global environmental and economic imperative. There is no high carbon future. The transition represents both challenges and opportunities for the South African chemical industry. Success will depend on companies' ability to position	As a CAIA member AECI is well aware that a business as usual scenario is not feasible and is committed to playing an active role in implementing the national climate change response policy that places South Africa on a low carbon growth path while at the same time addressing developmental

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
		themselves as providing technological and commercial leadership in the new markets which will emerge.	imperatives. To this end AECI engages actively with CAIA in terms of engagement with policy makers through formal meetings, dialogues, written submissions and comments on proposed policies, participation in sector specific workshops etc.

CC2.3d

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

CC2.3e

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

CC2.3f

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

CC2.3g

Please provide details of the other engagement activities that you undertake

CC2.3h

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

AECI has developed a set of Key Focus Areas (KFAs) as part of its Green Gauge programme which focuses on environmental targets and production efficiencies to reduce impacts relating to energy, GHG emissions, waste and water. The six KFAs are characterised by specific interventions linked to actions and roles and responsibilities. All Green Gauge processes and KFA's are directly linked to AECI's vision and values and are reviewed on a regular basis to ensure relevancy and consistency not only with the AECI strategy but also with the constantly evolving regulatory and business regime.

CC2.3i

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

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

Absolute target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions (metric tonnes CO2e)	Target year	Comment
Abs1	Scope 1+2	100%	15%	2011	577478	2015	The bulk of reductions in emissions have been observed over the past year due to a concerted effort being made in terms of increasing efficiency and reducing resource consumption. It is anticipated that as more projects are approved and implemented, more significant savings will be realised.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions	Target year	Comment
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CC3.1c

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

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
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CC3.1d

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

ID	% complete (time)	% complete (emissions)	Comment
Abs1	50%	44%	The decrease occurred primarily in the specialty chemicals cluster as a result of lower production volumes, the sale of Resitec at the end of 2012 and a range of energy-saving initiatives that were put in place as part of Green Gauge.

CC3.1e

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

CC3.2

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

Yes

CC3.2a

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

Although many of the AECI subsidiaries are engaged in the manufacture of products which will reduce environmental impacts, the most significant at this stage is the provision of improved blasting services initiative at AEL to minimise carbon footprint.

(i) The mine to mill concept is a well-known method for increasing profitability of mining operations. By tailoring the explosives and initiating systems to suit the mine's process requirements the improved blast results add value to mine operations by reducing shovel cycle times, increasing haul truck fill factors and improving the processing efficiency of the crushing and milling operations. By creating the best fragmentation distribution for a specific mill and by inducing internal micro-fractures within the rocks the mill power consumption can be reduced dramatically.

(ii) The replacement of conventional shock tube initiation with an electronic detonating system can result in significant savings. By using this approach at a quarry,

even though the total mining cost was increased by 2% the productivity of earth moving equipment increased by 24.7% and the crusher throughput went up 14.7%. The operation would have realised carbon footprint savings of 4500 tons carbon dioxide equivalent per annum (which is a 33% reduction and the monetary value associated with the equivalent electrical and fuel reductions is estimated to be \$428 472 per annum).

(iii) AEL has developed a simple model to relate the change in blasting parameters to the savings in energy consumption, electricity demand and greenhouse gas emissions. At this stage a number of simplifying assumptions are made to grapple with the concepts and to identify the main drivers and trends. The mass of gases with global warming potential are calculated per kg of explosive. The GWP factors for 100 years are used to calculate the equivalent carbon emission resulting in a higher value of the carbon emission due to the high weighting of the methane. The higher value of 0.25 kgCO₂-e per kg of explosives was used for the surface bulk product in this assessment.

(iv) At this stage AEL has not considered generating CERs for this specific initiative.

CC3.3

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

Yes

CC3.3a

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

Stage of development	Number of projects	Total estimated annual CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation	41	97647
To be implemented*	21	11630
Implementation commenced*		
Implemented*	73	16950
Not to be implemented	9	1214

CC3.3b

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

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
Energy efficiency: Processes	AEL: Many manufacturing process at the Group plants are characterised by heating and cooling processes and requirements. During the energy assessments conducted at various sites it was apparent that there are numerous opportunities in terms of optimisation of heating and cooling process and infrastructure such as insulations of pipes and storage vessels, reducing pressure head across chillers, replacement of aged cooling towers, optimisation of thermal fluid temperatures at night, optimisation of reactor heating/cooling processes etc.	1719	387235	40000	<1 year	Greater than 5 years	
Energy efficiency: Processes	Akulu: Reduce boiler and plants steam pressure, repair compressed air system leaks, Reduce heat recovery steam generation system pressure	1850	622566	65000	<1 year	Greater than 5 years	
Energy efficiency: Processes	CI: VSD installation on cooling tower and acid pump motors, Use internal steam rather than imported steam for sulphate plant and other internal users	5680	1690000	800000	1-3 years	Greater than 5 years	
Energy efficiency: Processes	IOP: Higher efficiency motor replacement programme, Continue compressed air leak reduction programme, Continue steam trap and distribution system repair, Improvements to metering and targeting of energy use (engagement), Use demin water for JT3 boiler to reduce blow down, Control office air conditioning to match occupation hours, Improve thermal insulation of heat distribution system, Install VSD on boiler FD fans, Replace large air compressor with small unit to match load and reduce off load losses, Continue replacement of steam distribution system with stainless steel and change	3300	2998300	3282000	1-3 years	Greater than 5 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative, years	Comment
	steam to hot water heating, Continue with control system upgrade for process						
Energy efficiency: Processes	Lake: Reduce steam pressure, warehouse lighting control, agitator motor replacement, cooling tower replacement, compressed air pressure reduction, thermal fluid optimization, reactor heating/cooling optimisation	3410	1858983	848000	<1 year	Greater than 5 years	

CC3.3c

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

Method	Comment
Compliance with regulatory requirements/standards	AECI is committed to ensuring that required environmental authorisations are applied for and obtained from the relevant regulatory authorities. Annual environmental authorisation compliance is conducted in June with a brief update at the end of the year. These reports are submitted to the EXCO.
Employee engagement	As part of the Green Gauge process, Safety Health and Environmental Practitioners within the various businesses in the Group are regularly involved in initiatives aimed at achieving the Green Gauge Targets. Employees at a less technical level will be engaged by means of awareness training sessions. The approach followed is the train-the-trainer concept entailing training of SHE practitioners on Green Gauge aspects to ensure awareness training sessions are held at all businesses in the Group.
Financial optimization calculations	The Green Gauge process has been initiated with the roll out of resource efficiency assessments at 15 selected sites within the Group. As part of the assessments possible projects for achieving savings are being identified and the identified projects are characterised by a detailed opportunities database as well as business case, inclusive of Net Present Value (NPV), Return on Investment (ROI), opportunity cost, payback periods etc. These calculations are used to identify priority projects which will

Method	Comment
	yield energy as well as cost savings and will therefore be considered as viable projects for implementation in the business environment.

CC3.3d

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

Further Information

Page: CC4. Communication

CC4.1

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

Publication	Page/Section reference	Attach the document
In mainstream financial reports (complete)	Page 70	https://www.cdp.net/sites/2014/48/248/Investor CDP 2014/Shared Documents/Attachments/CC4.1/2013_annual_report.pdf

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

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

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

CC5.1a

Please describe your risks driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	The South African (SA) government is looking to introduce a carbon tax on 1 January 2016 to support SA's commitment of reducing greenhouse gas emissions by 34% by 2020 and 42% by 2025 against a	Increased operational cost	1 to 3 years	Direct	Virtually certain	Medium-high	If implemented, the carbon tax will have a significant impact on the operational costs of businesses within the Group. The carbon tax proposed in the latest draft policy document is R120/tonne CO ₂ e.	AECI has placed great emphasis in the past three years on reduction of emissions and increasing efficiency. AECI believes that the reduction and efficiency opportunities which have been	The cost of implementing Green Gauge and the associated energy efficiency projects which have been identified has cost more than R 4 Million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>business as usual scenario. It is anticipated that 80% of emissions will be tax-exempt for chemical industry sector until 2020 to allow for a smooth transition for business. Government has proposed a carbon tax of R120 per tonne of CO₂e on scope 1 emissions. The tax will come into effect on 1 January 2016, and may increase by 10% a year. Thresholds may apply in the first 5 year phase. The carbon tax will likely be designed to create incentives for companies, businesses and individuals to change their behaviors and consumption patterns to reduce the reliance on fossil fuels. Not only will AECI be</p>						<p>For AECI which falls within the Chemical Sector a basic tax-free threshold of 80% may apply. Therefore based on the assumption that only scope 1 emissions is taxed, a 20% tax will cost AECI approximately R8m. Based on the draft policy this amount will likely increase by 10% annually.</p>	<p>identified for specific sites through the Green Gauge process will achieve energy savings by improved industrial processes and behavioral changes. A significant drive to improve plant performances, enhance pump capacities, use of efficient lighting systems, etc. will greatly aid in the reduction of AECI's total carbon footprint and the applicable carbon tax.</p>	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	paying directly for their carbon emissions through the carbon tax, there may also be indirect cost implications through increased prices of electricity and fossil fuels.								
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. Government notice 172 of the	Increased operational cost	1 to 3 years	Direct	Virtually certain	High	It is currently unclear what the financial implications of the uncertainty surrounding new regulation will be. If the new regulation is promulgated, the financial implication may be significant and would be related to pollution abatement equipment. In addition costs relating to mitigation will also be significant thereby placing financial strain on individual businesses in the	As a risk mitigation measure AECI engages with the regulators through CAIA and BUSA on a regular basis in order to ensure that the concerns related to new legislation and the associated uncertainties are raised with the relevant government departments.	The annual CAIA membership costs amount to approximately R1.3 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>National Environmental Management: Air Quality Act of 2004 released in March 2014 states that pollution prevention plans are required to be submitted by significant greenhouse gas emitters. This legislation is currently up for comment. Therefore at this stage there is certain level of uncertainty in terms of the impact on the businesses within the AECI Group as the regulation has not been finalised .</p>						Group.		

CC5.1b

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in precipitation extremes and droughts	Changes in precipitation patterns are relevant where water is a critical 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. Our Agriculture business may be significantly impacted by changes in precipitation patterns having a direct impact on our Agriculture customers buying our products.	Reduced demand for goods/services	>6 years	Indirect (Supply chain)	Unlikely	Medium	The financial implication cannot be determined	Monitoring climate related issues affecting the agriculture business and engaging with our Agriculture customers to understand their risks relating to water and how AECl can support them in terms of, for example, providing agricultural chemicals specifically for water strained areas.	Not determined
Change in	The AECl	Reduction/disruption	>6 years	Indirect	Likely	Medium-	Floods will	AECl has taken	A risk

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
precipitation extremes and droughts	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	in production capacity		(Supply chain)		high	affect the supply chain and disrupt business continuity which 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 cannot continue to function. There is currently no quantification of the loss of revenue if these products were not available, although it would be significant.	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 is 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	assessment of the implications of flood events on AECI businesses will most likely cost approximately R 2 Million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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.							identify risks associated with climate change and the strategies that could be implemented to address these risks.	

CC5.1c

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

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
Changing	Shifts in consumer	Reduced	>6 years	Direct	Unlikely	Medium	The financial	AECI has	The cost of

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
consumer behaviour	behavior to purchase products with a lower carbon footprint may affect companies within the Group. There may be competitive risks from suppliers who can offer products with lower carbon footprints and which are more environmentally friendly.	demand for goods/services					implication could not be determined.	introduced the Green Gauge programme as part of its values of Going Green and being Responsible. The Green Gauge programme focuses on achieving savings related to energy, water and waste with associated benefits of greenhouse gas emissions savings.	implementing Green Gauge and the associated energy efficiency projects which have been identified has cost more than R 4 Million thus far. It is expected that further significant capital expenditure is required to achieve savings.
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	Reduced demand for goods/services	3 to 6 years	Direct	Unlikely	Medium	By not taking carbon liability into consideration when carrying out long-term planning, there is a potential risk that the financial viability of projects will not be as attractive as thought. This will also affect the sustainability of projects. The same is true if	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	The costs of carbon assessments, efficiency assessments and implementation of projects amount to approximately R 6 million.

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated Financial Implications	Management method	Cost of management
	climate change.						weather projections are not considered for particular areas. This could affect the financial viability of a project and whether it should be implemented. The financial effects of a lack of long term planning have not been quantified.	incorporate carbon liability into future planning.	

CC5.1d

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

CC5.1e

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

CC5.1f

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

Further Information

Page: **CC6. Climate Change Opportunities**

CC6.1

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

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

CC6.1a

Please describe your opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
General environmental	Increasing and changing	New products/business	1 to 3 years	Direct	Very likely	Medium-high	The focus on 'Green	AECI has placed a high	Development costs are

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
regulations, including planning	environmental regulation has resulted in customers looking at ways to minimise their environmental impacts. This has led to the following initiatives within AECI companies: 1. Ecologika™ focuses on specialty products and services for sustainable agriculture; 2. Development of blowing agents which have zero ozone depleting potential, zero volatile organic content and zero global warming potential; 3. Development of environmentally friendly fertilizer coatings; 4. Development and sale of ECO Series of	services					Products' will result in increased sales and is likely to contribute more than 5% of the Group's profits, estimated at R70m based on 2013 profit numbers.	priority on Green Chemistry to encourage the design of products and processes that minimise the use and generation of hazardous substances. This focus is supported by ongoing research and development at individual business level	reviewed on an ongoing basis and are capitalised if they can be measured reliably, the product or process is technically and commercially feasible, it is probable that the asset will generate future economic benefits and the Group intends to and has sufficient resources to complete development. In 2013 AECI spent R 62 million on research and development.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	emulsions								

CC6.1b

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Change in mean (average) temperature	The rising cost and tighter regulation of water, coupled with concerns about adequate long-term availability in many regions, is prompting many companies to view water conservation as an imperative in terms of business sustainability. AECI believe that this is an immediate opportunity in the short to medium term especially as the regions we operate in are considered water scarce areas. AECI	Investment opportunities	1 to 3 years	Direct	Virtually certain	Medium-high	The potentially increased demand for water treatment technologies and chemicals is likely to increase the demand for the services offered by AECI companies, in particular ImproChem. This increased demand will most likely result in financial benefits for the Group.	AECI's ImproChem's business acquired Clariant Southern Africa Proprietary Limited's ("Clariant") water treatment business in Africa and its South African assets during early 2014. Also included in the acquisition is a 50% shareholding in Blendtech, Clariant's B-BBEE partner in South Africa.	The total cash consideration for the Clariant acquisition was in the order of R400 million.

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	has identified the fact that based on lack of availability of water resources, water treatment is an attractive option for activities which use water as a raw material and generate significant quantities of effluent.								

CC6.1c

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

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other drivers	The rising costs of energy, especially electricity is driving businesses to consider energy reduction initiatives in their business activities. AECI has identified various opportunities across energy,	Reduced operational costs	1 to 3 years	Direct	Very likely	Medium-high	The roll out of Green Gauge programmes across businesses within the Group is likely to realise significant cost savings. For energy	AECI has invested considerable resources – both human and financial – in conducting a baseline assessment of current operational aspects which have a bearing on resource efficiency with the aim of developing a	The cost to conduct assessments, identify opportunities and track performance as part of the Green Gauge Programme is greater than R4

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>water and waste, as part of AECI's Green Gauge programme, to not only reduce its environmental impact but which would also enable reduction in costs throughout the business.</p>						<p>initiatives the cost saving is estimated to be R7.5m</p>	<p>long term business strategy for operational sites. AECI approached ERM, a leading international sustainability consultancy, to assist in conducting the assessments using their QUEST methodology (Quick Energy Savings Technique). The site assessments carried out were characterised by the estimations of energy, water and waste saving potentials based on available data and the ERM team's professional considerations. A detailed opportunities database as well as business case, inclusive of Net Present Value (NPV), opportunity cost, payback periods etc., was developed for the sites assessed. Opportunities have also been prioritised in order to enable the</p>	<p>million.</p>

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								sites to develop management plans for implementation.	

CC6.1d

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

CC6.1e

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

CC6.1f

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

Further Information

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

Page: CC7. Emissions Methodology

CC7.1

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

Base year	Scope 1 Base year emissions (metric tonnes CO2e)	Scope 2 Base year emissions (metric tonnes CO2e)
Sat 01 Jan 2011 - Sat 31 Dec 2011	329909	247569

CC7.2

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

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

CC7.2a

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

CC7.3

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

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

CC7.4

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

Fuel/Material/Energy	Emission Factor	Unit	Reference
Bituminous coal	0.026	metric tonnes CO2e per GJ	GHG Protocol/2006 IPCC Guideline
Diesel/Gas oil	0.074	metric tonnes CO2e per GJ	GHG Protocol/2006 IPCC Guideline
Electricity	1.00	metric tonnes CO2 per MWh	Eskom Annual Report 2013
Electricity	0.49	metric tonnes CO2 per MWh	Duke Energy Annual Report 2013

Fuel/Material/Energy	Emission Factor	Unit	Reference
Liquefied petroleum gas (LPG)	0.001	Other:	GHG Protocol/2006 IPCC Guideline
Motor gasoline	0.07	metric tonnes CO2 per GJ	GHG Protocol/2006 IPCC Guideline

Further Information

Page: CC8. Emissions Data - (1 Jan 2013 - 31 Dec 2013)

CC8.1

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

Financial control

CC8.2

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

329822

CC8.3

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

209557

CC8.4

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

Yes

CC8.4a

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

Source	Relevance of Scope 1 emissions from this source	Relevance of Scope 2 emissions excluded from this source	Explain why the source is excluded
AECI Head Office	No emissions from this source	Emissions are relevant but not yet calculated	The Head Office component is not considered material to the overall scope 2 CO2 emissions

CC8.5

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

Scope 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
Less than or equal to 2%	Other: Human error	KPMG has provided a limited assurance expression for relevant sustainability parameters across the Group. Uncertainty if any in terms of gaps or errors in data would be the result of human error where data is captured manually and transferred to the data management system.	Less than or equal to 2%	Other: Human Error	KPMG has provided a limited assurance expression for relevant sustainability parameters across the Group. An uncertainty if any in terms of gaps or errors in data would be the result of human error where data is captured manually and transferred to the data management system.

CC8.6

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

Third party verification or assurance complete

CC8.6a

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

Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/48/248/Investor_CDP_2014/Shared_Documents/Attachments/CC8.6a/2013_annual_report.pdf	Page 80	ISAE3000	95

CC8.6b

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

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

CC8.7

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

Third party verification or assurance complete

CC8.7a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 2 emissions verified (%)
Limited assurance	https://www.cdp.net/sites/2014/48/248/Investor_CDP_2014/Shared Documents/Attachments/CC8.7a/2013_annual_report.pdf	Page 80	ISAE3000	95

CC8.8

Please identify if any data points other than emissions figures have been verified as part of the third party verification work undertaken

Additional data points verified	Comment
No additional data verified	

CC8.9

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

No

CC8.9a

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

Further Information

CC9.1

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

Yes

CC9.1a

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

Country/Region	Scope 1 metric tonnes CO2e
United States of America	341
South Africa	320402
Africa	9079

CC9.2

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

By business division

CC9.2a

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

Business division	Scope 1 emissions (metric tonnes CO2e)
Explosives	226946
Specialty Chemicals	26861
Property	76015

CC9.2b

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

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
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CC9.2c

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

GHG type	Scope 1 emissions (metric tonnes CO2e)
----------	--

CC9.2d

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

Activity	Scope 1 emissions (metric tonnes CO2e)
----------	--

CC9.2e

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

Legal structure	Scope 1 emissions (metric tonnes CO2e)
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Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2013 - 31 Dec 2013)

CC10.1

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

Yes

CC10.1a

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

Country/Region	Scope 2 metric tonnes CO2e	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted for CC8.3 (MWh)
United States of America	16785	16785	0
South Africa	182692	211183	0
Africa	10079	10079	0

CC10.2

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

By business division

CC10.2a

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

Business division	Scope 2 emissions (metric tonnes CO2e)
Explosives	78170
Specialty Chemicals	124009
Property	7378

CC10.2b

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

Facility	Scope 2 emissions (metric tonnes CO2e)
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CC10.2c

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

Activity	Scope 2 emissions (metric tonnes CO2e)
----------	--

CC10.2d

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

Legal structure	Scope 2 emissions (metric tonnes CO2e)
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Further Information

Page: CC11. Energy

CC11.1

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

More than 0% but less than or equal to 5%

CC11.2

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

Energy type	MWh
Fuel	406853.94
Electricity	202365.2
Heat	0
Steam	53161.5
Cooling	0

CC11.3

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

Fuels	MWh
Bituminous coal	255424.9
Diesel/Gas oil	57358.6
Liquefied petroleum gas (LPG)	306.6
Motor gasoline	1664.5
Pitch	18588.6
Natural gas	69982.6
Other:	3528.2

CC11.4

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

Basis for applying a low carbon emission factor	MWh associated with low carbon electricity, heat, steam or cooling	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor	0	

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Increased

CC12.1a

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

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	0.4	Decrease	Green Gauge programme initiatives in terms of energy, waste and water. The energy related projects contributed towards the reduction in CO2 emissions.
Divestment	3	Decrease	Sale of one of AECI's businesses in Brazil (Resitek) at the end of 2012
Acquisitions			
Mergers			
Change in output	2.7	Increase	Heartland (AECI property business) provides steam to customers in Umbogintwini and Modderfontein.

Reason	Emissions value (percentage)	Direction of change	Comment
			Heartland produced significantly more steam in 2013 due to a major shutdown of one of the businesses that provides steam to Heartland from their process.
Change in methodology	7.5	Increase	The increase in total CO2e is primarily attributable to a significant increase in Scope 1 emissions from the explosives business. Process-related CO2e emissions at AEL increased by 20% due to increased nitrous oxide ("N2O") emissions from the No. 9 Nitric Acid Plant at Modderfontein subsequent to the suspension of the Clean Development Mechanism project and the removal of the secondary catalyst used to abate N2O. The suspension of the project was due to the low price of Certified Emission Reductions (more commonly known as carbon credits) and the high cost of leasing catalysts.
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other			

CC12.2

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.00003383	metric tonnes CO2e	unit total revenue	0.31	Decrease	No significant difference from 2012. Revenue increased by about 7% while total CO2 emissions increased by about 6.5% from 2012 to 2013 mainly due to the suspension of the CDM project in our Explosives Business.

CC12.3

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
85.9	metric tonnes CO2e	FTE employee	17	Increase	Increase due to a significant decrease (9%) in the number of full time employees between 2012 and 2013 due to the sale of the Resitek business in Brasil as well as a significant increase in process CO2 (scope 1) emissions from the Explosives business due to the suspension of the CDM project due to the low price of Certified Emission Reductions (more commonly known as carbon credits) and the high cost of leasing catalysts.

CC12.4

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
0.17	metric tonnes CO2e	metric tonne of product	25.6	Increase	Significant increase due to significant increase in process CO2 (scope 1) emissions from the explosives business due to the suspension of the Clean Development Mechanism project and the removal of the secondary catalyst used to abate N2O. The suspension of the project was due to the low price of Certified Emission Reductions (more commonly known as carbon credits) and the high cost of leasing catalysts. In

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
					addition total production decreased by approximately 18% due to sale of the Resitek business at the end of 2012.

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

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

CC13.1a

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

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

CC13.1b

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

CC13.2

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

No

CC13.2a

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

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

Page: CC14. Scope 3 Emissions

CC14.1

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

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Not evaluated				
Capital goods	Not evaluated				
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided	0	N/A	0.00%	All fuel and energy related activities have been included in scope 1 and 2 emissions. There are no other activities which should be included under scope 3.
Upstream transportation and distribution	Relevant, calculated	3262.5	2013 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting	100.00%	This is applicable to Well to tank (WTT) fuels associated with extraction, refining and transportation of the raw fuel sources (petrol & diesel) to AECI companies prior to their combustion
Waste generated in operations	Relevant, calculated	1925	2013 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting	100.00%	This refers to effluent or wastewater from our operations being treated by the municipality
Business travel	Relevant, calculated	4017.81	2010 Guidelines to DEFRA/DECC's GHG Conversion Factors for Company Reporting	75.00%	AECI's Heartland, Explosives and ImproChem from the Specialty Chemicals cluster reported business travel. It is estimated that reporting is 75% complete.
Employee commuting	Not evaluated				
Upstream leased assets	Relevant, not yet calculated		N/A	0.00%	This refers to property leased out within the Group
Downstream transportation and distribution	Relevant, not yet calculated		N/A	0.00%	This refers to transportation of our products to customers, warehouses, distribution centres etc.
Processing of sold products	Relevant, calculated	6015.89	Australian AGO Factors and Methods Workbook, Department of the Environment and Heritage, December 2006 on page 20.	70.00%	This only represents explosives used for rock blasting for Rock on Ground contracts at the mines. Processing of sold products from the Specialty Chemicals companies have not been included.
Use of sold products	Relevant, not yet calculated		N/A	0.00%	
End of life treatment of sold products	Not evaluated				

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using primary data	Explanation
Downstream leased assets	Not relevant, explanation provided		N/A		AECI does not have any downstream leased assets
Franchises	Not relevant, explanation provided		N/A		AECI does not own any franchises
Investments	Not relevant, explanation provided		N/A		AECI does not have any investments
Other (upstream)	Not evaluated				
Other (downstream)	Not evaluated				

CC14.2

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

No third party verification or assurance

CC14.2a

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

Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of Scope 3 emissions verified (%)

CC14.3

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

No, this is our first year of estimation

CC14.3a

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

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
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CC14.4

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

No, we do not engage

CC14.4a

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

CC14.4b

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

Number of suppliers	% of total spend	Comment
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CC14.4c

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

How you make use of the data	Please give details
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CC14.4d

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

Since AECI does not report on Scope 3 emissions a strategy for communication with the supply chain components has not been developed. Also, AECI is focusing on reduction initiatives on scope 1 and 2 emissions before expanding any strategy to the value chain.

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

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

Name	Job title	Corresponding job category
Gary Cundill	Group Technical and H&SE Manager	Environment/Sustainability manager

Further Information

[CDP 2014 Investor CDP 2014 Information Request](#)