

AECI Ltd Ord

CDP 2013 Investor CDP 2013 Information Request

Module: Introduction

Page: Introduction

0.1

Introduction

Please give a general description and introduction to your organization

AECI is an explosives and specialty chemicals company domiciled in South Africa and listed on the Johannesburg Stock Exchange (JSE). Group businesses service the mining and manufacturing sectors both locally and internationally. 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.

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.

EXPLOSIVES

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.

SPECIALTY CHEMICALS

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.

SPECIALTY FIBRES

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.

PROPERTY

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.

AECI has a total employee complement of about 6 895, many of whom are engaged in the Group's extensive sales, technical service and distribution networks.

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

Sun 01 Jan 2012 - Mon 31 Dec 2012

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
Brazil

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)

0.6

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 and companies in the information technology and telecommunications 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@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 AECI Board's charter includes, amongst others, ultimate responsibility for setting the framework for safety, health and environmental matters. AECI's Risk Committee's mandate includes reviewing and assessing risk and compliance management processes, including safety, health and environmental management. In 2012 the committee reviewed the risk register, oversaw the embedding of the Group-wide risk management process, the establishment of IT and Business Continuity Management processes as well as the entrenchment of the integrated compliance management process across the Group.

The Risk Committee comprises four Independent Non-Executive Directors, three Executive Directors and four Executive Committee members. Current members of the Committee are:

RAJ Morgan (Chairman)

JAA Diepenbroek*

RMW Dunne #

MA Dytor*

GN Edwards† (retired on 28 February 2013)

KM Kathan*†

EE Ludick*

MVK Matshitse*

LL Mda

R Ramashia and

SM Venter*

* Member of the Executive Committee. † Executive Director. # Appointed on 1 June 2012.

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, 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?

Yes

1.2a

Please complete the table

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator
Business unit managers	Monetary reward	Individual strategic targets concerning environmental activities
Corporate executive team	Monetary reward	Individual strategic targets concerning environmental activities
Environment/Sustainability managers	Monetary reward	Individual strategic targets concerning environmental activities
Other: Subsidiary (Asset Level)	Recognition (non-monetary)	Annual "Green Gauge" award for best environmental target progress and achievements

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

(i) AECI recognises that the chemical industry can pose significant impact to the environment, while at the same being vulnerable to climate change related risks. In this context AECI has therefore considered the impacts of climate change in terms of (a) the physical environment i.e. resource consumption and availability (water and energy), extreme weather events etc. (b) Regulatory requirements i.e. legal compliance, energy efficiency regulations, carbon tax, CDM, Kyoto Protocol etc. (c) Production and Operation i.e. extreme weather conditions resulting in loss of equipment, damage to infrastructure, vulnerability of transport infrastructure, supply chain risks etc. Bearing these in mind, AECI's climate change strategy is supported by three pillars which focus on:

1. Increased efficiency,
2. Green Chemistry and
3. Stakeholder partnerships and engagement.

(ii) The types of risks that AECI have considered in terms of sustainability related to safety, health and environment (SHE) integrated with the achievement of operational and business objectives. 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 AECI protects the environment in which it operates in order 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. AECI's risk management process comprises both bottom-up and top-down elements and follows a holistic approach in identifying, analysing, evaluating, treating, monitoring and reviewing risks. With this process, together with enhanced application software currently being installed, AECI ensures that 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. The bottom-up identification and prioritization process is supported by workshops with the management teams of the Group's businesses i.e. at asset level. The top-down element involves management at AECI Limited level. This ensures that potential risks are discussed at the top management level and are included in the subsequent reporting process, if found to be relevant.

(iii) As mentioned in (ii) above, the bottom-up component of the risk assessment process involves workshops at asset level in order to identify site and business level risks which may be relevant to the specific subsidiary. Each subsidiary has developed at business specific risk matrix and related aspects register. The Risk Committee approves the risk strategy and the policies that are formulated and implemented by the Executive Committee and Senior Management. This system assists the Board in discharging its responsibility for ensuring that the wide range of risks associated with all of the Group's operations are managed effectively in support of the creation and preservation of stakeholder wealth and well-being. Full reviews of the risk control and disclosure processes are undertaken regularly.

(iv) The AECI Risk Committee meets on a quarterly basis to review and assess risk and compliance management processes. Sustainability aspects are an integral part of the assessment process. 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.

(v) The AECI risk analysis is depicted on a 5X5 risk rating scale consisting of potential impact and estimated probability. The potential impacts are 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 the following:

- Almost certain = monthly basis
- Likely = once in one year
- Possible – once in three years
- Unlikely = once in five years
- Rare = more than five years

The Internal Audit function plays a pivotal role in providing assurance to the Board on the effectiveness of the risk management process. Where shortcomings are identified, these are addressed as part of the continual improvement of the risk management process and assurance framework. Where a 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. This enables the prioritisation of risk management activities within the AECI Group.

(vi) Assessments are conducted by the Risk Committee and reported on a regular basis to the AECI EXCO and the AECI Board.

2.2

Is climate change integrated into your business strategy?

Yes

2.2a**Please describe the process and outcomes**

AECI recognises that the chemical industry is widely regarded as having a high impact on the environment and therefore contributing to the effects of climate change. We are therefore committed to maintain ongoing efforts to minimize these impacts in order to continue to be accepted as a responsible citizen by the communities in which we operate and other stakeholders. Recognising this, AECI aims to ensure that business activities within the Group are conducted in a sustainable manner. This environmental vision is based on three critical environmental footprint reduction goals; namely, resource conservation, energy conservation and pollution prevention. This vision and the associated goals are the 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 on the environment by improving the efficiency of production processes, efficient logistics management, offerings to customers and office activities, amongst others.

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. By ensuring that our activities are environmentally conscious, 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 17 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, 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 cognizant 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 GHG emissions from production activities by 15% by 2015. 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 in order to achieve the target.

(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 term 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

It is anticipated that the business cases which were developed as part of the assessment process will enable AECI to take the efficiency initiatives into the long term development of the individual subsidiaries and therefore the Group.

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

Trade associations

2.3b Are you on the Board of any trade associations or provide funding beyond membership?

Yes

2.3c 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 themselves as providing technological and commercial leadership in the new markets which will emerge.	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 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.

2.3h

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 process which focuses on environmental targets and production efficiencies to reduce impacts. 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.

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?

Absolute target

3.1a

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
	Scope 1+2	100%	15%	2010	527197	2015	The bulk of reductions in emissions have been observed over the past 18 months 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.

3.1d

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

ID	% complete (time)	% complete (emissions)	Comment
	60%	27%	Each of the AECI subsidiaries has been required to set site/business specific targets which are monitored and reported quarterly. The business specific progress largely influences the performance of the Group in the achievement of the absolute reduction target.

3.2

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

Yes

3.2a
Please provide details (see guidance)

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.

3.3
Did you have emissions reduction initiatives that were active within the reporting year (this can include those in the planning and implementation phases)

Yes

3.3a
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	50	
To be implemented*	6	1475
Implementation commenced*	3	319
Implemented*	7	1437
Not to be implemented	0	0

3.3b
For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO ₂ e savings (metric tonnes CO ₂ e)	Annual monetary savings (unit currency - as specified in Q0.4)	Investment required (unit currency - as specified in Q0.4)	Payback period
Energy efficiency: Building services	Although there has been some effort to reduce lighting power usage by installing day / night switches in place of sensors, at many businesses in the Group, there are some opportunities to improve on switching, particularly in workshop, storage and unoccupied office areas where natural light has been noted to be good. Although some good savings will be achieved through control of the air conditioning at night and weekends it was also noted that in a number of places the air conditioning was switched on while doors remained open -- reducing the air conditioning effectiveness and passing energy outside. Also, many of the air conditioning units were set at 20c or less --- a minimum setting of around 24c has been agreed to increase efficiency.	69	83000	0	<1 year
	Many manufacturing process at the Group plants are characterised by heating and				

Energy efficiency: Processes	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.	1779	1144105	240000	4-10 years
Other	Equipment and infrastructure on many plants is very old and during assessments carried out it was noted that many leaks in terms of compressed air and steam have been taking place over a long period of time. This is an aspect that can be addressed at low or no cost and will yield great savings in terms of energy consumption and costs. Therefore a concerted effort is being made to address leaks by repairing and maintaining infrastructure.	552	278585	0	<1 year
Energy efficiency: Processes	The compressed air systems on some sites is large, making maintenance difficult and costly. in some cases compressors were not designed for the small load and low pressure requirements. Replacing the large compressors with smaller local compressors can reduce losses and optimise the system. Compressed air users include numerous pumps as well as valves. Air pressure requirements for these are significantly less than the current circulating pressure. Reducing circulating air pressure reduces losses and motor use.	111	133467	350000	1-3 years
Low carbon energy installation	The use of Variable Speed Drives (VSDs) particularly applies to processes/motors which need to adjust their flow or speed regularly or if there is the use of a throttle valve downstream of the pump/fan to the control flow rate. Additionally sites which have gone through production changes such as having ramped up or down their production rate, would likely be using equipment that are no longer sized optimally. Oversized pumps and fans lead to significant waste of energy in industrial processes. By using VSD on motors, flow rates can be adjusted accurately to match the production demands and also acts as a soft start. For centrifugal pumps and fans, when flow rates are reduced by 50%, the power consumption reduces by 83%, as dictated by physics of pump laws the relationship is not linear but cubed.	721	866378	1585200	4-10 years

3.3c

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

4.1 Have you published information about your company'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)	Pages 88-96	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Investor-4.1-PublishedInformation1/AECI IR 2012.pdf
In voluntary communications (complete)	All	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Investor-4.1-PublishedInformation2/Green_Gauge_A5_Handbook_FA.pdf
In voluntary communications (complete)	All	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Investor-4.1-PublishedInformation3/01-Green Gauge Update.pdf
In voluntary communications (complete)	All	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Investor-4.1-PublishedInformation4/02-Green Gauge Update.pdf
In voluntary communications (complete)	All	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-4.1-C3-IdentifyAttachment/Investor-4.1-PublishedInformation5/GG Target Setting.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 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

5.1a

Please describe your risks driven by changes in regulation

ID	Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact
R-01	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 National Climate Change White Paper mentions several market based economic instruments which will be used to drive South Africa to a low carbon economy. Key amongst these is the carbon budget approach, carbon pricing, emission offsets, emissions reduction trading etc. However, at this stage no guidance has been provided on the implementation of these approaches resulting in a certain level of uncertainty in terms of the impact on the businesses within the AECI Group.	Increased operational cost	1-5 years	Direct	Very likely	Medium-high
		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 an additional carbon tax may be					

R-02	Carbon taxes	used as a means to reduce emissions. The 2012/2013 budget tabled by the Minister of Finance proposes that a carbon tax will be implemented in 2015 at a rate of R120 per ton of carbon dioxide equivalent (CO2e). The tax will increase by 10% per annum until 2020. For AECI which falls within the Chemical Sector a basic tax-free threshold of 80% will apply during the first period of the tax (2015-2020). It is anticipated that the current proposed tax structure will result in an increase in AECI's operational cost. An additional anticipated risk is that carbon taxes applied to Eskom may potentially be passed on to users resulting in further increases of costs.	Increased operational cost	1-5 years	Direct	Very likely	High
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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

R-01) (i) It is currently unclear what the financial implications of the uncertainty surrounding new regulation will be. If the carbon budget approach is implemented, based on limitations being imposed per sector, the financial implication will most likely be significant due to limitations on growth and expansions possibilities. In addition operational costs will also most likely increase thereby placing financial strain on individual businesses in the Group. This will result in overall Group based financial implications.

(ii) As a risk mitigation measure AECI engages with 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. AECI is also a member of the National Business Initiative (NBI) and participates in NBI led interactions with policy makers.

(iii) Currently the cost of membership of the NBI is approximately R 100 000 per annum. The annual CAIA membership costs amount to approximately R 1.3 Million.

R-02) (i) The carbon tax will have a significant impact on the operational costs of individual businesses within the Group. The carbon tax proposed in the latest draft policy document is R120 per ton of CO2e. AECI falls within the Chemical Sector for which an 80% tax exemption has been proposed. Therefore based on the assumption that the total Scope 1 and Scope 2 emissions will be taxed, AECI has calculated that a 20% tax will cost AECI approximately R 12 Million. Based on the draft policy this amount will most likely increase by 10% on an annual basis from 2015 to 2020.

(ii) AECI has placed great emphasis in the past two years on reduction of emissions and increasing efficiency. AECI believes that the reduction and efficiency opportunities which have been identified for specific sites through the Green Gauge process will achieve energy savings by improved industrial processes and behavioural changes. A significant drive to improve plant performances, enhance pump capacities, use of efficient lighting systems, enhanced building efficiencies etc. will greatly aid in the reduction of the Group's total carbon footprint and therefore the applicable carbon tax.

(iii) The cost of implementing Green Gauge and the associated energy efficiency projects which have been identified has cost more than R 3 Million.

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
R-03	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	6-10 years	Direct	About as likely as not	Medium-high

R-04	Change in precipitation extremes and droughts	<p>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.</p>	Reduction/disruption in production capacity	6-10 years	Indirect (Supply chain)	About as likely as not	Medium-high
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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

R-03(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 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. 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's water consumption in 2012 was 5.58 million cubic meters. If water shortages increase, the associated cost is likely to rise by 20 – 30%.

(ii) AECI is currently looking at ways to decrease dependency on water supplied from other sources. Water demand assessments have been carried out at selected sites within the Group to identify possible savings and reduction opportunities. These opportunities have been prioritised on a site basis for implementation in order to reduce water use.

(iii) The costs of conducting a water balance assessment at 15 prioritised sites was included in the Green Gauge resource efficiency assessments at a total cost of R 3 Million.

R-04) (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 the 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 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 identify risks associated with climate change and the strategies that could be implemented to address these risks.

(iii) A risk assessment of the implications of flood events on AECI businesses will most likely cost approximately R 2 Million.

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
R-05	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
R-06	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

R-05)(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 the company is in a good position to enhance its reputation with regards to climate change. Reputational risks can also be avoided by initiatives such as AECI's Green Gauge process focusing on resource efficiency and responsible environmental management based on realistic and achievable targets. 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 for this aspect are included within the Green Gauge communication and awareness KFA at a total cost of R 3 Million.
 R-06. (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 effects 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 carbon assessments, efficiency assessments and implementation of projects amount to approximately R 6 Million.

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

Opportunity	Magnitude

ID	driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	of impact
O-01	General environmental regulations, including planning	customers to reduce their carbon footprints and minimise environmental impacts is a driver for AECI's push towards "Green Chemistry". This has led to the following initiatives: Ecologika™ focuses on specialty products and services for sustainable agriculture. Development of environmentally blowing agents which have zero ozone depleting potential, zero volatile organic content and zero global warming potential. Development of environmentally friendly fertilizer coatings. Development and sale of ECO Series of emulsions	New products/business services	1-5 years	Direct	Very likely	Medium

6.1b

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

O-01 (i) Increased confidence of customers in "green products" will result in enhanced reputation of the Group which although cannot be specifically quantified is considered to be of great value. The focus on "green products will also result in increased sales and is likely to contribute more than 10% to the Group's profits.
 (ii) AECI has placed a high 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 to
 (iii) Development costs are 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 2012 AECI spent R 53 Million for research and development.

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
O-02	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. AECI has identified the fact that based on lack of availability of water resources, water treatment will become a more attractive	Increased production capacity	1-5 years	Direct	More likely than not	Medium-high

	option for activities which use water and generate effluent.						
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6.1d

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

O-02 (i) The leveraging of water treatment agreements and the potential for increased demand for water treatment technologies and chemicals is likely to increase the demand for the services offered by companies such as ImproChem. This demand will most likely result in financial benefits for the Group.
 (ii) ImproChem, a wholly-owned subsidiary of AECI Limited and GE Betz, a leading global supplier to the treatment and process chemical industries and a General Electric company, have signed an agreement that will see ImproChem distribute GE's water and chemical process technologies, monitoring solutions and water and process equipment systems in Africa. The distribution agreement will leverage ImproChem's extensive local expertise and GE's advanced technologies to create greater access to innovative water solutions in the African market. The agreement will cover South Africa, Angola, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Reunion, Tanzania, Uganda, Zambia and Zimbabwe. The agreement will enable ImproChem to deliver GE's latest water technologies to its customers to further improve efficiency, while reducing operating costs.
 (iii) Substantial investment was made by AECI in the acquisition of GE Betz's chemical and monitoring solutions business for a consideration of R 167 Million.

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
O-03	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

O-03 (i) In ensuring that impacted land is remediated and well managed, AECI's property business Heartland is able to release land for sale and development. This only applies to land that is surplus to the Group's operational requirements. During 2012 the annual net income of Heartland was R84 Million based on income from leases on land which is not used by the Group.
 (ii) The guiding principles underlying AECI's remediation activities are to protect human health and the environment; to use good science, proven concepts and the best available technologies without entailing excessive cost; and to work with regulatory authorities as well as sharing information with Interested and Affected Parties. Human health and environmental risk assessments are undertaken at appropriate stages of individual projects. These assessments influence subsequent activities.
 (iii) Spending on remediation and related environmental management activities in 2012 amounted to R8 Million. At 31 December 2012 the environmental liability for the Group was estimated at R155 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
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

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)
Other: N2O	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
Bituminous coal	0.026	metric tonnes CO2e per GJ	GHG Protocol/2006 IPCC Guideline
Diesel/Gas oil	0.07	metric tonnes CO2e per GJ	GHG Protocol/2006 IPCC Guideline
Electricity	0.99	metric tonnes CO2 per MWh	Eskom Annual Report 2012
Electricity	0.65	metric tonnes CO2 per MWh	Duke Energy Annual Report 2012
Liquefied petroleum gas (LPG)	0.001	Other: kg CH4 per GJ	GHG Protocol/2006 IPCC Guideline
Motor gasoline	0.07	metric tonnes CO2 per GJ	GHG Protocol/2006 IPCC Guidelines

Page: 8. Emissions Data - (1 Jan 2012 - 31 Dec 2012)

8.1

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

Financial control

8.2

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

281888

8.3

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

224365

8.4

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

Yes

8.4a

Please complete the table

Source	Scope	Explain why the source is excluded
AECI Head Office	Scope 2	The AECI Head Office in Woodmead also includes corporate offices for some AECI subsidiaries. Emissions from these corporate offices are included in the individual subsidiary calculations before consolidation. The remaining Head Office component is not considered to be material in the overall emissions calculations.

8.5

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:	Scope 1 emissions: Main	Scope 1 emissions: Please expand on the	Scope 2 emissions:	Scope 2 emissions: Main	Scope 2 emissions: Please expand on the

Uncertainty range	sources of uncertainty	uncertainty in your data	Uncertainty range	sources of uncertainty	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. aUncertainty 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.

8.6

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

Third party 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	Attach the document
Limited assurance	ISAE3000	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-8.6b-C3-RelevantStatement/Investor-8.6b-VerificationDetails1/2012 Signed letter of Assurance.pdf

8.7

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

Third party 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	Attach the document
Limited assurance	ISAE3000	https://www.cdproject.net/sites/2013/48/248/Investor CDP 2013/Shared Documents/Attachments/Investor-8.7b-C3-RelevantStatement/Investor-8.7b-VerificationDetailsS21/2012 Signed letter of Assurance.pdf

8.8

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

No

Page: 9. Scope 1 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)

9.1

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

Yes

9.1a

Please complete the table below

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Country/Region	Scope 1 metric tonnes CO2e
South Africa	276809
United States of America	341
Brazil	4738

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 emissions (metric tonnes CO2e)
Explosives	188610
Specialty Chemicals	30252
Property	62685
Specialty Fibres	341

Page: 10. Scope 2 Emissions Breakdown - (1 Jan 2012 - 31 Dec 2012)

10.1

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

Yes

10.1a

Please complete the table below

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 (MWh)
South Africa	194873	194873	
United States of America	25672	25672	
Brazil	3820	3820	

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 emissions (metric tonnes CO2e)
Explosives	76277
Specialty Chemicals	115553
Property	6863
Specialty Fibres	25672

Page: 11. Energy

11.1

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

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

11.2

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	469028.54
Electricity	214821.29
Heat	0
Steam	54790.97

Cooling 0

11.3

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

Fuels	MWh
Bituminous coal	269871.58
Diesel/Gas oil	55658.78
Liquefied petroleum gas (LPG)	269.55
Motor gasoline	1724.26
Pitch	28876.71
Wood or wood waste	26398.75
Other: Paraffin	679.26
Other: Light boiler fuel	3122.72
Natural gas	67876.65
Other: Heavy Fuel Oil	14550.28

11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor

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

Page: 12. Emissions Performance

12.1

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

Decreased

12.1a

Please complete the table

Reason	Emissions value (percentage)	Direction of change	Comment
Emissions reduction activities	12	Decrease	The total CO2 emissions equivalent for the Group decreased to 506 253 tons of CO2e in 2012 from 577 478 in 2011. This decrease is primarily attributable to the reduction in Scope 1 emissions from all business segments in the Group. Significant reductions were also realised due to reduced use of refrigerants at the Specialty Fibres operation.
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology			
Change in boundary		Decrease	
Change in physical operating conditions			
Unidentified			
Other			

12.2

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	Reason for change
0.00003394	metric tonnes	unit total revenue	21	Decrease	More robust reporting assessment resulting in the elimination of double accounting as well as the

	CO2e				implementation of energy efficiency projects.
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12.3

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

Intensity figure	Metric numerator	Metric denominator	% change from previous year	Direction of change from previous year	Reason for change
73.42	metric tonnes CO2e	FTE employee	9	Decrease	Full time employees in the Group decreased by 3.5% compared to the previous year. This, together with efficiency projects has resulted in a decrease in this metric.

12.4

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
2.36	metric tonnes CO2e	megawatt hour (MWh)	14	Decrease	Emission reduction through improved operational practises across the Group.

Page: 13. Emissions Trading

13.1

Do you participate in any emissions trading schemes?

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

13.2

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

Yes

13.2a

Please complete the table

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 retired	Purpose, e.g. compliance
Credit Origination	N20	No. 9 and No. 11 Nitric Acid Plants	CDM (Clean Development Mechanism)	331410	331410	No	Other: improved performance and financial gain

Page: 14. Scope 3 Emissions

14.1

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

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Methodology	Percentage of emissions calculated using primary data	Explanation
Purchased goods and services	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Capital goods	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.

Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Upstream transportation and distribution	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Waste generated in operations	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Business travel	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Employee commuting	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Upstream leased assets	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Investments	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Downstream transportation and distribution	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Processing of sold products	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Use of sold products	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
End of life treatment of sold products	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Downstream leased assets	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Franchises	Not evaluated				Currently data collection for Scope 3 has not been established within the AECI Group.
Other (upstream)					
Other (downstream)					

14.2

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

No emissions data provided

14.3

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

No, we don't have any emissions data

14.4

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

14.4d

Please explain why not 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.

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