

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

AECI is a South African-based explosives and specialty chemicals company focused on providing products and services to a broad spectrum of customers in the mining, manufacturing and agricultural sectors. It has regional and international businesses in Africa, South East Asia, the USA and Australia. AECI was registered as a company in South Africa in 1924 and has been listed on the JSE since 1966. The Group has five growth pillars. The focus of four of the growth pillars is on domestic growth as well as ongoing expansion outside South Africa in the Group's chosen strategic areas of Mining Solutions, Water Solutions, Agrochemicals and Food Additives and Ingredients. The fifth growth pillar focuses on the proactive management of a portfolio of specialty chemicals business. Mining Solutions comprises AEL Mining Services ("AEL"), Senmin and Experse, Water Solutions is anchored in ImproChem and Agrochemicals in Nulandis. Lake Foods ("Lake") and Southern Canned Products ("SCP") constitute the Food Additives and Ingredients pillar. AECI understands the importance of effectively managing water use and providing customers with products and services that allow them to do likewise. With this in mind, AECI has focused on reducing its water usage and realised a 6.2% reduction in the 2017 financial year. Within AECI, ImproChem is a company that offers water, wastewater and process water solutions for customers across the spectrum of industries. ImproChem has an established footprint in Africa, where water remains a scarce resource. There have been no changes to its reporting year. AECI continues to report in line with its financial year.

W-CH0.1a

(W-CH0.1a) Which activities in the chemical sector does your organization engage in?

Specialty organic chemicals
Specialty inorganic chemicals

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

| | Start date | End date |
|----------------|----------------|------------------|
| Reporting year | January 1 2017 | December 31 2017 |

W0.3

(W0.3) Select the countries/regions for which you will be supplying data.

- Australia
- Botswana
- Burkina Faso
- Congo
- Ghana
- Guinea
- Indonesia
- Malawi
- Namibia
- South Africa
- United States of America
- Zambia
- Zimbabwe
- Other, please specify (Tanzania)

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

ZAR

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which financial control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

No

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

| | Direct use importance rating | Indirect use importance rating | Please explain |
|--|------------------------------|--------------------------------|---|
| Sufficient amounts of good quality freshwater available for use | Vital | Important | Direct use - Good quality freshwater is used at all manufacturing facilities within the Group. As such, we have selected 'vital.' AEL Modderfontein, for example, is the most significant water user within the Group. It uses water in the manufacture of Nitric Acid and Ammonium Nitrate Solution. An absence of sufficient amounts of freshwater could impact on production. It is expected that freshwater will always be critical to our operations. However, we may see a reduced dependency on freshwater as we continue to look for areas of efficiency. Indirect use – For some of our suppliers and customers, having sufficient amounts of good quality freshwater is vital. Freshwater is used in the manufacturing processes for some of our suppliers and customers. We have selected 'important' as the rating as our suppliers and customers are not all equally reliant on freshwater. It is expected that freshwater will always be critical to some of our suppliers and customers. |
| Sufficient amounts of recycled, brackish and/or produced water available for use | Neutral | Neutral | Group operations do not use significant volumes of recycled, brackish and/or produced water. As such, the direct use importance rating has been selected as 'neutral.' This may change based on future water dependency especially in areas that are water scarce, such as the Western Cape. Our dependency on recycled water may increase. Indirect use – Many of our suppliers and customers do not necessarily use recycled or brackish water at this stage. As such, we have selected 'neutral' as the rating. Going forward, we expect the dependency of our suppliers and customers on recycled and brackish water to increase as they look for alternatives to freshwater supply. In the 2017 financial year, for example, ImproChem has secured contracts for four desalination plants. |

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

| | % of sites/facilities/operations | Please explain |
|---|----------------------------------|---|
| Water withdrawals – total volumes | 100% | Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%). Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also checked against municipal invoices on a monthly-basis and are independently verified. Information is reported internally and to the regulating authorities on a monthly and annual-basis where required. |
| Water withdrawals – volumes from water stressed areas | 100% | Water stressed areas are identified through the use of WRI Aqueduct and also internal company knowledge. Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%). This is done for all withdrawals, including those withdrawn from water stressed areas. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also checked against municipal invoices on a monthly-basis and are independently verified. Information is reported internally and to the regulating authorities on a monthly and annual-basis where required. |
| Water withdrawals – volumes by source | 100% | Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%). This is done for all sources of water. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also checked against municipal invoices on a monthly-basis and are independently verified. Information is reported internally and to the regulating authorities on a monthly and annual-basis where required. |
| Produced water associated with your metals & mining sector activities - total volumes | <Not Applicable> | <Not Applicable> |
| Produced water associated with your oil & gas sector activities - total volumes | <Not Applicable> | <Not Applicable> |
| Water withdrawals quality | 100% | This is measured and monitored for all facilities (100%) that withdraw water from freshwater resources. It is not measured and monitored for withdrawals from the municipalities. This applies to the Property Business that withdraws water from a river. The water quality is monitored by an accredited laboratory on a daily-basis. It is monitored on a daily-basis. Adjustments are made to water treatment if required. |
| Water discharges – total volumes | 100% | Discharges are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%) that have discharges. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also compared against municipal invoices on a monthly-basis. Information is reported internally and to authorities on a monthly and annual-basis where required. |
| Water discharges – volumes by destination | 100% | Discharges are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%) that have discharges. The destination of the discharges is known and discharges are measured and monitored by destination. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also compared against municipal invoices on a monthly-basis. Information is reported internally and to authorities on a monthly and annual-basis where required. |
| Water discharges – volumes by treatment method | 100% | Discharges are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%) that have discharges. The treatment method of the discharges is known by destination and discharges are measured and monitored by destination. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also compared against municipal invoices on a monthly-basis. Information is reported internally and to authorities on a monthly and annual-basis where required. |
| Water discharge quality – by standard effluent parameters | 100% | This is measured and monitored for all facilities (100%) that have discharges. Water discharge quality is analysed by accredited laboratories on a daily or weekly-basis and reported to the regulating authorities on a monthly and annual-basis where required. Analyses conducted internally are compared to analyses conducted by the regulating authorities. |
| Water discharge quality – temperature | 1-25 | This is not relevant to most businesses. |
| Water consumption – total volume | 1-25 | Water consumption is not measured directly. It is determined using a water balance which is based on our water withdrawals and discharges. All our water withdrawals (100%) and discharges (100%) are measured regularly, monitored and reported on a monthly basis to AECI Head Office by each facility. As such, consumption is regularly measured and monitored as a result. |
| Water recycled/reused | 51-75 | This is monitored at some businesses where water is reused or recycled. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. |
| The provision of fully-functioning, safely managed WASH services to all workers | Less than 1% | The importance of providing potable water, adequate sanitation and hygiene for all employees is recognised. All facilities ensure the availability of fully-functioning WASH services for employees. Although not metered by any specific equipment, it is monitored regularly by all of our facilities (100%) to ensure that there are no interruptions to the provision of potable water and adequate sanitation. |

W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

| | Volume (megaliters/year) | Comparison with previous reporting year | Please explain |
|-------------------|--------------------------|---|--|
| Total withdrawals | 2945.91 | Lower | Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities. Monitoring is conducted at a facility level on a daily-basis using equipment that is calibrated and checked on a regular-basis. There was a reduced amount of municipal water withdrawn by the AEL Modderfontein due to water optimisation projects at this site. It is expected that future volumes will reduce further given that water optimisation projects are being implemented at certain facilities in the next 5 to 10 years. Note that withdrawals minus discharges equals consumption. For all responses, we have used the following rating scale – • “Much lower” pertains to data of decreasing trend which has a difference of 20% or more from the preceding financial years’ data. • “Lower” pertains to data of decreasing trend which has a difference of more than 1% and less than 20% from the preceding financial years’ data. • “About the same” pertains to data which has no difference or a difference of less than 1% from the preceding financial years’ data. • “Higher” pertains to data of increasing trend which has a difference of more than 1% and less than 20% from the preceding financial years’ data. • “Much higher” pertains to data of increasing trend which has a difference of 20% or more from the preceding financial years’ data. |
| Total discharges | 2874.08 | Higher | Discharges are monitored by all facilities that have discharges. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. The amount reported for 2016 financial year was misstated for the Modderfontein facility. The number was corrected in the 2017 financial year and, as such, discharges increased between the two years. Going forward, we anticipate further reductions in discharges given that water optimisation and effluent reduction projects are being implemented at certain facilities in the next 5 to 10 years. Note that withdrawals minus discharges equals consumption. |
| Total consumption | 71.82 | Lower | Consumption is calculated using a water balance as it is difficult to directly measure consumption. It is assumed that the difference between total water withdrawals and total discharges equals total water consumption. The number reduced due to a reduction in discharges from an error in reporting in the 2016 financial year. Going forward, we anticipate further reductions in consumption given that water optimisation projects are being implemented at certain facilities in the next 5 to 10 years. |

W1.2d

(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.

| | % withdrawn from stressed areas | Comparison with previous reporting year | Identification tool | Please explain |
|-------|---------------------------------|---|---------------------|---|
| Row 1 | 2 | About the same | WRI Aqueduct | We use WRI Aqueduct and internal company knowledge to identify water stressed areas from which we source water. In terms of WRI Aqueduct, we use various indicators to classify areas as water stressed. This includes inter-annual variability, flood occurrence, drought severity and regulatory risks. We also use internal company knowledge which is informed by the assessment and monitoring of the broader context in which the Group operates in terms of the political and economic landscape, industry, labour and financial market trends. Work includes the analysis of research materials and industry benchmarking studies by institutions such as the World Economic Forum, the World Bank and Control Risk. We also look at how water-intensive operations located in these areas are and what mitigation measures are in place to protect against water-related risks. There has been no change to our withdrawals sourced from water stressed areas between the 2016 and 2017 financial years. |

W1.2h

(W1.2h) Provide total water withdrawal data by source.

| | Relevance | Volume (megaliters/year) | Comparison with previous reporting year | Please explain |
|--|--------------|--------------------------|---|--|
| Fresh surface water, including rainwater, water from wetlands, rivers, and lakes | Relevant | 406.4 | Higher | Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. The source of fresh surface water is a river for the Property Pillar. The volume withdrawn is 18% higher than in the previous year due to one of the businesses requiring more water in their production process. It is anticipated that water withdrawals from fresh surface water will reduce going forward as we look for alternative water sources and also focus on optimising our water usage. |
| Brackish surface water/seawater | Not relevant | <Not Applicable> | <Not Applicable> | Not applicable as none of our businesses withdraw any brackish surface water or seawater for use in operations. This is not anticipated to change going forward. |
| Groundwater – renewable | Relevant | 38.2 | Higher | Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Renewable groundwater is used by AEL companies in locations outside of South Africa (Ghana and Australia). There was an increased amount used in 2017. Going forward, there may be an increase in water withdrawn from groundwater (renewable) sources as we look at ways to alleviate pressure on the municipal water networks. |
| Groundwater – non-renewable | Not relevant | <Not Applicable> | <Not Applicable> | Not applicable as none of our businesses withdraw water from non-renewable. |
| Produced water | Relevant | 0.33 | Higher | Not applicable as none of our businesses make use of produced water. This is not anticipated to change going forward. |
| Third party sources | Relevant | 2501.31 | Lower | This refers to water obtained from the municipality and from another organisation. Water withdrawals are measured regularly, monitored and reported monthly to AECI Head Office by all facilities. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. There was an 11% decrease due to water optimisation projects that have been initiated at AEL Modderfontein. We anticipate that this will reduce further going forward as we continue to implement water efficiency projects. |

W1.2i

(W1.2i) Provide total water discharge data by destination.

| | Relevance | Volume (megaliters/year) | Comparison with previous reporting year | Please explain |
|---------------------------------|--------------|--------------------------|---|---|
| Fresh surface water | Relevant | 971.89 | Higher | Discharges are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%) that have discharges. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also compared against municipal invoices on a monthly-basis. Information is reported internally and to authorities on a monthly and annual-basis where required. Water discharged to fresh surface water refers to effluent discharged to a river course under a Water Use Licence for the AEL Modderfontein facility. The increase can be attributed to an error in reporting of the discharges in 2016 financial year. The discharges were understated. This was corrected for the 2017 financial year. Going forward, we anticipate that our discharges will reduce as we continue to implement effluent treatment projects. |
| Brackish surface water/seawater | Relevant | 22.8 | Higher | This refers to discharge to sea from our property business. Monitoring is conducted at on a daily-basis using equipment that is calibrated and checked on a regular-basis. The increased amount is due to increased effluent from tenants operating within the complex that discharge to the water treatment plant on-site. Going forward, our discharges are dependent on the discharges from tenants. However, we are focused on reducing our discharges so we should see a reduction going forward. |
| Groundwater | Not relevant | <Not Applicable> | <Not Applicable> | There is no discharge to groundwater. This is not anticipated to change going forward. |
| Third-party destinations | Relevant | 1879.4 | Lower | This refers to effluent discharged to a municipal sewer. Discharges are measured regularly, monitored and reported monthly to AECI Head Office by all facilities (100%) that have discharges. Monitoring is conducted at a facility-level on a daily-basis using equipment that is calibrated and checked on a regular-basis. Readings are also compared against municipal invoices on a monthly-basis. Information is reported internally and to authorities on a monthly and annual-basis where required. In 2016 financial year, the volume discharged by AEL Modderfontein was overstated. This has now been corrected which has resulted in a reduction in discharges to third-party destinations between the 2016 and 2017 financial years. We anticipate a reduction in discharges going forward as we continue to implement effluent treatment projects and look at ways to reuse and recycle water. |

W1.2j

(W1.2j) What proportion of your total water use do you recycle or reuse?

| | % recycled and reused | Comparison with previous reporting year | Please explain |
|-------|-----------------------|---|--|
| Row 1 | 2-10 | Lower | Recycling and reusing water allows us to reduce our water withdrawals, which in turn improves our efficiency and lowers cost. This indicator is not accurately reported by all our businesses. Efforts will be made to improve the accuracy of reporting in the future. We anticipate that water reused and recycled will increase going forward as efforts are put in place to optimise our water usage. The percentage was estimated by the number of facilities who recycle water and report on it. Currently only 1 facility reports its recycled water. This facility's recycled water decreased due to lower production volumes. |

W-CH1.3

(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?

Yes

W-CH1.3a

(W-CH1.3a) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.

Product type

Specialty inorganic chemicals

Product name

Sulphuric acid

Water intensity value

2.6

Numerator: water aspect

Total water withdrawals

Denominator: unit of production

Other, please specify (100 tonnes)

Comparison with previous reporting year

This is our first year of measurement

Please explain

Sulphuric acid is manufactured by Chemical Initiatives (part of the Chemicals Pillar) and supplied to a diverse range of customers. Water intensity is calculated by dividing the total amount of water withdrawal by the tons of sulphuric acid produced. Water intensity is monitored at a business level to track costs; i.e. to identify areas of poor efficiencies and put in place measures to achieve optimal efficiencies.

Product type

Specialty inorganic chemicals

Product name

Nitric Acid

Water intensity value

6

Numerator: water aspect

Total water withdrawals

Denominator: unit of production

Other, please specify (1000 tonnes)

Comparison with previous reporting year

This is our first year of measurement

Please explain

Nitric acid is manufactured by AEL (part of the Mining & Solutions Pillar) and is used to then manufacture explosives for the mining sector. Water intensity is calculated by dividing the total amount of water withdrawal for AEL by the tons of nitric acid produced. Water intensity is monitored at a the AEL Modderfontein facility level to identify areas of poor efficiencies and put in place measures to achieve optimal efficiencies.

Product type

Specialty inorganic chemicals

Product name

Flocculants, frothers, collectors, depressors

Water intensity value

1.5

Numerator: water aspect

Total water withdrawals

Denominator: unit of production

Other, please specify (1000 tonnes)

Comparison with previous reporting year

This is our first year of measurement

Please explain

Senmin is a manufacturer and supplier of mining chemicals used in the beneficiation of a wide range of ores such as platinum, copper, zinc, coal etc as well as polyacrylamides used for tailings treatment. The intensity is calculated by dividing the total amount

of water withdrawals by the total amount of product produced. Water intensity is monitored at the Senmin Sasolburg and Waitloo facilities to identify areas of poor efficiencies and put in place measures to achieve optimal efficiencies.

Product type

Specialty inorganic chemicals

Product name

Ammonium Nitrate Solution

Water intensity value

11

Numerator: water aspect

Total water withdrawals

Denominator: unit of production

Other, please specify (1000 tonnes)

Comparison with previous reporting year

This is our first year of measurement

Please explain

Ammonium nitrate solution is manufactured by AEL (part of the Mining & Solutions Pillar) and supplied to the mining sector. Water intensity is calculated by dividing the total amount of water withdrawal for AEL by the tons of ammonium nitrate solution produced. Water intensity is monitored at a the AEL Moderfontein facility level to identify areas of poor efficiencies and put in place measures to achieve optimal efficiencies.

Product type

Please select

Product name

Steam generated

Water intensity value

0

Numerator: water aspect

Total water withdrawals

Denominator: unit of production

Other, please specify (1000 tonnes)

Comparison with previous reporting year

This is our first year of measurement

Please explain

AECI's property business Acacia manufactures steam for use at AECI companies as well as tenants. The water intensity is calculated by dividing the total water withdrawal by Acacia by the tons of steam generated. Water intensity is monitored at a the Acacia Operating Services facility (part of the Property Pillar) to identify areas of poor efficiencies and put in place measures to achieve optimal efficiencies.

W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our customers or other value chain partners

W1.4c

(W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

AECI engages with a broad spectrum of stakeholders on water-related issues. These include employees, customers, shareholders, government and the local communities, amongst others. Our engagement with government and communities is further discussed below – Government: Legal compliance is of utmost importance to AECI and, as such, engaging with relevant authorities is prioritised. Such engagement may range from advocacy initiatives to cooperative work with those regulators who have the responsibility of governing the Group's activities through the application of these regulations. At other times, we work with government to develop solutions. An example is our Water and Process Pillar which engaged with municipalities to look at water treatment options in drought conditions. To facilitate engagement, AECI's businesses may choose to develop relationships with relevant government entities in a proactive manner. This engagement typically takes place in meetings or through the provision of written commentary on various regulations. The success of our engagement is measured through our understanding of the regulations, our preparedness to comply and our compliance.

Communities: We prioritise engagement with our communities on water-related issues as we understand that our communities are impacted by our operations. This engagement is typically done through organised projects and programmes. In the 2017 financial year, for example, ImproChem supplied containerised water plants to communities living in areas where access to potable water is a challenge. In one instance, a community in eThekweni, KwaZulu-Natal, was provided with access to potable water just 10 days after the plant had been installed. Success is measured on the difference we make to the lives of those living in these communities. All engagement by AECI employees is subject to the Group's Code of Ethics and Business Conduct. This Code is designed to provide clear guidelines for engaging with all stakeholders.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

Yes

W2.1a

(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and total financial impact.

Country/Region

South Africa

River basin

Berg-Olifants

Type of impact driver

Physical

Primary impact driver

Drought

Primary impact

Reduced revenues from lower sales/output

Description of impact

In the reporting year, the drought in the Western Cape impacted on several of our businesses. Nulandis, for example, reports that revenue was flat and profit declined primarily due to the drought in the Western Cape which resulted in reduced demand for products. Nulandis supplies products into the agricultural sector which was negatively impacted by the drought. ImproChem reports that growth in the South African core market was curtailed by drought effects in the Western Cape in the 2017 financial year. The magnitude of the impact is high, with profit from Nulandis down by 22.9% from R172 million to R133 million in the 2017 financial year.

Primary response

Develop new products and/or markets

Total financial impact

39000000

Description of response

Our response is to continue to engage with customers to understand their water-related risks and to identify how best AECI can support them. We also invest in research and development which allows our businesses to diversify their product mix. Our businesses have developed several products and services that assist customers to reduce water usage and manage water-related risks. The intention is that the demand for these products and services will increase in drought conditions, offsetting the reduced demand for other existing products and services in the same conditions. The financial impact is reported as the reduced profit from Nulandis, primarily as a consequence of the drought in the Western Cape.

Country/Region

South Africa

River basin

Berg-Olifants

Type of impact driver

Physical

Primary impact driver

Drought

Primary impact

Reduction in capital availability

Description of impact

Water-related risks have impacted on our supply chain. One clear example of this is in the juice business where SCP was required to purchase strategic consignments of raw materials owing to extreme weather events such as the drought in the Western Cape and severe flooding in Argentina. This had a negative impact on trade working capital, but a correction should be evident by the middle of 2018. The magnitude of this impact is high.

Primary response

Engage with suppliers

Total financial impact

40000000

Description of response

We handle risks in our supply chain by engaging with our suppliers to identify these risks and ensure that they are being effectively managed. This engagement also allows us to identify and plan for disruptions. Our response in the case of SCP was to purchase strategic consignments of raw materials. The financial impact is reported as the impact of the purchase of the strategic consignments on trade working capital for SCP.

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

No

W3. Procedures

W-CH3.1

(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?

AECI is a diverse company providing products to a broad spectrum of customers in the mining, water treatment, plant and animal health, food and beverage, infrastructure and general industrial sectors. Most manufacturing sites are ISO14001 certified and subscribe to the Responsible Care Principles. Water pollution is managed differently across the business depending on the risks posed to water ecosystems or human health. We classify products according to the Globally Harmonised System and we classify waste according to the SANS 10234 standard. All products have a safety data sheet which categorises substances according to severe toxic and ecotoxic effects, high persistence in the natural environment and have the potential to bioaccumulate. It is from these safety data sheets that potential water pollutants are identified. Water-related impacts on ecosystems and human health were considered where our operations discharge effluent into the sea and river:

- For operations that discharge into the ocean, annual independent Ecological and Physico-chemical Marine Monitoring surveys are conducted to assess the status of the seabed communities and the extent of any detectable effects arising from the effluent discharges to the offshore receiving environment. The impact was not significant. For operations that discharge into river courses, the operations are bound by a Water Use Licence with several conditions which need to be adhered to. The effluent arising from the process is largely nitrogen based. The increased nitrogen load is of concern due to the increased risk of eutrophication to the Jukskei River catchment. Eutrophication is characterized by excessive plant and algal growth due to the increased availability of one or more limiting growth factors needed for photosynthesis. This can have dramatic consequences for drinking water sources, fisheries and recreational water bodies. The compliance is monitored and enforced by the National Department of Water and Sanitation. In addition, the Water Use Licence requires the operation to conduct: 1. Biomonitoring assessments annually 2. Groundwater monitoring quarterly and biannually where there is a risk (risk determined based on historical activities) 3. Surface water monitoring where effluent is discharged to a fresh water resource

Where effluent is discharged to a municipal sewer operating companies are bound by local municipal requirements imposing various limits on effluent discharged in terms of quantity and quality of effluent.

Water related impacts in our value chain, particularly those to which our customers are exposed are considered. AECI offers water treatment solutions in the public and private sector where customer's processes result in water pollutants released to stressed water resources. The impacts vary across private and private sector .

W-CH3.1a

(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.

| Potential water pollutant | Value chain stage | Description of water pollutant and potential impacts | Management procedures | Please explain |
|---------------------------|----------------------|--|--|--|
| Nitrogen | Direct operations | AEL manufactures explosives for the mining sector. The effluent arising from the process is largely nitrogen based. The increased nitrogen load is of concern due to the increased risk of eutrophication to the Jukskei River catchment. | Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Other, please specify (Implementation projects) | The operation monitors compliance with effluent quality standards on a daily, weekly and monthly basis. Immediate action is taken to rectify any non-compliances by for example containing spillages, identifying process safety risks and mitigating them, ensuring fail safe equipment is functioning. Measures to prevent spillage, leaching, and leakages are ongoing. High risk operations are ISO 14001 certified and have incident management systems in place to continuously prevent and manage environmental incidents. Success of management interventions is measured by monitoring the surface water and borheholes around the site on a daily, weekly, quarterly and annual basis and conducting independent assessments of the surface and groundwater. One such assessment is the Biomonitoring study conducted on the receiving environment to assess the biotic integrity of the Modderfontein Spruit and Jukskei River. Various projects have been initiated and are being implemented to reduce loss of containment from the process and consequently reduce spillages which ends up as effluent. One such project is implementation of the PETN effluent reduction project in February 2017. This resulted in a decreasing trend being observed over 2017 at the monitoring point on the Jukskei and the improvement in water quality noted at the Klondike stream (within the Modderfontein site). The bio-monitoring data indicate that impacts to the Modderfontein Spruit were assimilated within the Modderfontein Spruit and did not reduce the biotic integrity of the Modderfontein Spruit or Jukskei River, which implies that the impact on load to the Jukskei River is currently low. |
| Anionic surfactants | Direct operations | Chemical Initiatives, a division of AECI, manufactures surfactants for the home care industry. | Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Other, please specify (Environmental and waste water procedures) | High anionic surfactants could find their way into a fresh water stream when there is loss of containment from the process. The following initiatives have been implemented on site to minimise loss of containment: 1. The integrity of equipment is regularly inspected to ensure it is still suitable for use and associated equipment, e.g. pumps are fixed when found to be leaking. 2. All areas contain effluent sumps and trenches which contain and control effluent water to the treatment plant. 3. Effluent treatment plant is in place to treat effluent before discharge to the municipal sewer. 4. All storage areas are bunded and any leaks are contained. |
| Sulphuric acid | Distribution network | Chemical Initiatives, a business in the Chemicals Pillar manufactures sulphuric acid, one of its main products. The product may represent a danger to aquatic organisms at certain concentrations based on ecotoxicological testing performed on fish and fresh-water invertebrates. It is also dangerous to human health: can cause severe skin burns and eye damage. When released into the upper atmosphere, sulfuric acid exists as particles or droplets. The acid particles dissolve in clouds, fog, rain, or snow, resulting in very dilute acid solutions. This may impact the environment as wet acid deposition ('acid rain'). | Other, please specify (Training, monitoring and risk assessment) | AECI is currently developing a strategy to track, manage and mitigate transportation incidents in the Group. Engagement with transporters is key and will focus on aspects such as training, audits, tracking systems, route risk assessments, driver fatigue. Currently AECI companies track all transportation incidents relating to transport of their products. If there is an accident and product spills, the environmental specialist or manager ensures that clean-up is effectively conducted with minimal impact on the receiving environment. During 2017 the transportation incidents that occurred relating to sulphuric acid were of a minor impact on the environment. Clean up procedures were conducted by reputable companies which was checked by environmental specialists. Clean-up in all cases were effectively conducted. Environmental specialists at each business have oversight over the clean-up and remediation activities. |
| Nitrogen | Distribution network | AEL manufactures explosives for the mining sector which is transported by contractors to mining sites. In the event of a transportation incident the spillage of explosive products, if it enters a river course, could result in an increased risk of eutrophication. This can have dramatic consequences for drinking water sources, fisheries and recreational water bodies. | Management procedure under development Other, please specify (Training, monitoring and risk assessment) | AECI is currently developing a strategy to track, manage and mitigate transportation incidents in the Group. Engagement with transporters is key and will focus on aspects such as training, audits, tracking systems, route risk assessments, driver fatigue. Currently AECI companies track all transportation incidents relating to transport of their products. If there is an accident and product spills, the environmental specialist or manager ensures that clean-up is effectively conducted with minimal impact on the receiving environment. During 2017 the transportation incidents that occurred were of a minor impact on the environment. Clean up procedures were conducted by reputable companies which was checked by environmental specialists. Clean-up in all cases were effectively conducted. Environmental specialists at each business have oversight over the clean-up and remediation activities. |

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Six-monthly or more frequently

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Tools on the market

Enterprise Risk Management

International methodologies

Tools and methods used

WRI Aqueduct

ISO 31000 Risk Management Standard

Other, please specify (Analysis of research materials)

Comment

We identify risks to our direct operations. This risk assessment process covers all businesses and all geographies in which our businesses operate. We assess risks on six-monthly basis. Risks are evaluated up to 10 years in the future. We use a combination of tools and methods. Our risk assessment process is underpinned by the Group Risk Management Policy and the Group Enterprise Risk Management Framework which are based on the principles of ISO 31000 and King IV. We also use WRI Aqueduct to ide

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Six-monthly or more frequently

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Tools on the market
Enterprise Risk Management
International methodologies

Tools and methods used

WRI Aqueduct
ISO 31000 Risk Management Standard
Other, please specify (Analysis of Research Material)

Comment

All our businesses are asked to identify risks in their supply chain. We assess risks on six-monthly basis. Risks are evaluated up to 10 years in the future. We use a combination of tools and methods. Our risk assessment process is underpinned by the Group Risk Management Policy and the Group Enterprise Risk Management Framework which are based on the principles of ISO 31000 and King IV. We also use WRI Aqueduct to identify water-stressed areas. The identification of risks at Group-level is also

Other stages of the value chain

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Six-monthly or more frequently

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Tools on the market
Enterprise Risk Management
International methodologies

Tools and methods used

WRI Aqueduct
ISO 31000 Risk Management Standard
Other, please specify (Analysis of research materials)

Comment

All our businesses are asked to identify risks to which their customers are exposed. They are also asked to identify any risks arising from various other stakeholders (local communities, government etc.). We assess risks on six-monthly basis. Risks are evaluated up to 10 years in the future. We use a combination of tools and methods. Our risk assessment process is underpinned by the Group Risk Management Policy and the Group Enterprise Risk Management Framework which are based on the principles

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

| | Relevance & inclusion | Please explain |
|---|---------------------------|--|
| Water availability at a basin/catchment level | Relevant, always included | Water availability at river basin-level is relevant and is always included. Our businesses are asked to identify water-related risks to their operations, suppliers and customers. As part of this, they consider both current and emerging risks presented from water availability. One example is the Acacia Operating Services (AOS) facility, which forms part of the Property Business. This facility in Umbogintwini, withdraws water from the river basin, treats it and provides water to the tenants in the Umbogintwini Complex. AOS has a Water Services Agreement with the Department of Water and Sanitation and regularly assesses water availability. Water availability and the associated risks are assessed in a number of ways. We use WRI Aqueduct and internal company knowledge. Our internal company knowledge includes information gathered from engagement with stakeholders like the Department of Water and Sanitation. |
| Water quality at a basin/catchment level | Relevant, always included | Water quality at river basin-level is relevant and is always included. Our businesses are asked to identify water-related risks to their operations, suppliers and customers. As part of this, they consider both current and emerging risks presented from water quality for both withdrawals and discharges. One example is the AOS facility which has a Water Services Agreement with the Department of Water and Sanitation and regularly assesses water quality. Water quality and the associated risks are assessed in a number of ways. We use WRI Aqueduct and internal company knowledge. Our internal company knowledge includes information gathered from engagement with stakeholders like the Department of Water and Sanitation and local catchment authorities etc. |
| Stakeholder conflicts concerning water resources at a basin/catchment level | Relevant, always included | Stakeholder conflicts are factored into our water-related risk assessments as we understand that they could have an impact on supply of water. To identify and assess these risks we engage with our stakeholders on an ongoing-basis. For example, local communities attend the Community Awareness and Emergency Response Committee Meetings where material water issues are discussed, amongst other things. |
| Implications of water on your key commodities/raw materials | Relevant, always included | The risk posed by lack of water or water-quality issues and its impact on our key commodities and raw materials is relevant and always included in our risk assessments. Our businesses are asked to identify risks to direct operations, suppliers and customers. An example would be the SCP operation which was required to purchase strategic consignments of raw materials owing the drought in the Western Cape and severe flooding in Argentina. These risks are assessed in a number of ways. We use WRI Aqueduct and internal company knowledge. Our internal company knowledge includes information gathered through our businesses engaging with their suppliers and customers. Both existing risks and future of emerging risks are considered. |
| Water-related regulatory frameworks | Relevant, always included | such, is always included in our risk assessments. We consider risks associated with current and pending regulation on our own operations, our suppliers and our customers. In order to identify and assess these risks, we engage with relevant authorities. Such engagement may range from advocacy initiatives associated with the development of legislation and standards, to cooperative work with those regulators who have the responsibility of governing the Group's activities through the application of these laws and standards. For example, AEL Modderfontein has stringent requirements set by Department of Water and Sanitation on water quality (groundwater and surface water). This is factored into the water risk assessment. We engage regularly with this Department to ensure that expectations are communicated and managed. |
| Status of ecosystems and habitats | Relevant, always included | The impact that water withdrawals and discharges have on ecosystems and habitats is always included in our risk assessment. We use internal company knowledge to identify these risks. Risks associated with ecosystems and habitats, if any, are managed by the individual facilities. |
| Access to fully-functioning, safely managed WASH services for all employees | Relevant, always included | AECI accepts the importance of providing potable water, adequate sanitation and hygiene for all employees. All facilities ensure the availability of fully-functioning WASH services for all employees. This is integrated into the day-to-day operations of the facilities and monitored by our operations. |
| Other contextual issues, please specify | Not considered | No other issues are relevant. |

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

| | Relevance & inclusion | Please explain |
|--|------------------------------------|--|
| Customers | Relevant, always included | We have identified our customers as possibly being exposed to water-related risks. These risks have the ability to impact on demand for our goods and services. For example, drought conditions in the Western Cape in the 2017 financial year increased demand for desalination plants which are provided by ImproChem. On the other hand, these same conditions impacted on the agricultural sector, reducing demand for products manufactured and supplied by Nulandis. We consider all current and emerging risks to our customers. Our businesses engage with customers on a regular basis to identify risks and opportunities and how best AECI can support in minimising risks and maximising opportunities. Engagement typically takes place through meetings. |
| Employees | Not relevant, explanation provided | Employees require fully-functioning WASH services. Group facilities ensure that these services are provided to their employees. The provision of potable water and adequate sanitation to our employees is factored into our risk assessment process. AECI and our business engage with employees on an on-going basis. This is done through meetings, electronic communication, events etc. |
| Investors | Relevant, always included | Investors are factored into water risk assessments. Information is made available to investors on related water withdrawals, discharges and risks associated with water. This is done through the Integrated Annual Report and the Water Carbon Disclosure Project. Investors are given the opportunity to engage with AECI on any risks. In terms of the Water and Process Solutions Pillar, investors are provided with key risks and opportunities (e.g. droughts) impacting on this service line. |
| Local communities | Relevant, always included | Where there may be material water issues, local communities are involved in the risk assessment process. For example, local communities attend the Community Awareness and Emergency Response committee meetings where material water issues are discussed. |
| NGOs | Relevant, always included | There are no NGOs linked to the material water issues identified and NGOs have not expressed any concerns with regards water use by Group facilities. However, they are included in our risk assessment. We engage with them primarily through CAIA, the industry association for the chemical industry. |
| Other water users at a basin/catchment level | Not relevant, explanation provided | The current focus by Group on direct water use and the focus on interaction with water users at a local level will commence going forward if a risk is identified. |
| Regulators | Relevant, always included | There is regular engagement with the Department of Water and Sanitation and Department of Environmental Affairs regarding the material issues of compliance with the Water Use Licence or compliance with permit requirements. |
| River basin management authorities | Relevant, always included | The Department of Water and Sanitation is engaged regularly in terms of the material issue of compliance with the Water Use Licence. River basin management authorities are engaged as and when required. |
| Statutory special interest groups at a local level | Not relevant, explanation provided | No statutory special interest groups have expressed concern regarding AECI's water usage and management practices. |
| Suppliers | Relevant, not included | Suppliers are not yet factored into risk assessments as water risks in the value chain are not an immediate business priority. We are currently focusing on direct water use and will start to focus on indirect water use going forward. |
| Water utilities at a local level | Relevant, always included | Water utilities are engaged as and when required. |
| Other stakeholder, please specify | Not relevant, explanation provided | No other stakeholders. |

W3.3d

(W3.3d) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

Level of coverage: Our risk assessment process includes all businesses and all geographies in which we operate. Our businesses are also asked to disclose on risks to suppliers and customers. Risks are considered as far into the future as 10 years. The risk assessment process is underpinned by the Group Risk Management Policy and the Group Enterprise Risk Management Framework which are based on the principles of ISO 31000. The risk terminologies align with this international standard. Site-level risks: These risks are identified and assessed using a bottom-up process. Management teams of the various businesses are asked to identify risks and quantify the potential impact. These teams are also asked to provide information on plans in place to manage these risks. Management teams are supported by Corporate Head Office through workshops. Tools such as WRI Aqueduct are used to identify water-stressed areas. Company-level risks: The top-down process involves management at Corporate Head Office reviewing the risks identified at site-level and also identifying Group-level risks. This is informed by monitoring the broader context in which the Group operates and analysing studies by institutions such as the World Economic Forum, the World Bank and Control Risk. Classification: Risks are prioritised on a 5 x 5 rating scale that sets out potential impacts and estimated probabilities. The potential impacts are classified as minor, moderate, serious, major or severe which are linked to both a qualitative and quantitative residual risk value. The estimated probability is classified as almost certain, likely, possible, unlikely or rare. This is done for all three stages of our value chain. Decision-making: Within AECL, water-related risks are managed at a business-level. Management teams at business-level decide whether to mitigate, transfer, accept or control water-related risks. Support is provided by Corporate Head Office in the form of workshops.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes, both in direct operations and the rest of our value chain

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Substantive financial impact is defined in the consequence scales. A rating ranging from minor to severe is included in the consequence table with an associated financial amount. The table below outlines the ratings and associated financial impact:

Severe: >R120 million (loss or gain)

Major: >R80 – R120 million (loss or gain)

Serious: >R40 – R80 million (loss or gain)

Moderate: >R5 – R40 million (loss or gain)

Minor: R0 – R5 million (loss or gain)

A substantive financial impact is considered as a rating of higher than moderate; i.e. serious, major or severe rating. This is relevant to both our direct operations and our value chain (i.e. suppliers and customers). An example for the 2017 financial year is the reduced demand for and sale of Nulandis products as a result of the drought in the Western Cape. Nulandis manufactures and supplies an extensive range of crop protection products, plant nutrients and services for the agricultural sector in Africa. The drought in the Western Cape had a negative impact on the agricultural sector, resulting in reduced demand for Nulandis projects. Profit reduced by close on R40 million which makes the risk serious.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

| | Total number of facilities exposed to water risk | % company-wide facilities this represents | Comment |
|-------|--|---|---|
| Row 1 | 3 | 1-25 | We have identified that three of our facilities are exposed to water risks. These facilities are our Nulandis operation and AEL Modderfontein in Gauteng and our SCP operation in the Western Cape. Already in the 2017 financial year, we saw two of these facilities being impacted by water-related risks. Nulandis was affected by reduced demand for its products as a result of the impact of the drought on the agricultural sector. SCP was also impacted by the drought through its supply chain. It was required to purchase strategic consignments of raw materials owing the drought in the Western Cape and severe flooding in Argentina. For AEL Modderfontein, we have identified risks associated with regulatory compliance. |

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?

Country/Region

South Africa

River basin

Vaal

Number of facilities exposed to water risk

2

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities

<Not Applicable>

% company's annual electricity generation that could be affected by these facilities

<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities

<Not Applicable>

% company's total global revenue that could be affected

1-25

Comment

We have identified that our Nulandis operation and AEL Modderfontein are exposed to water-related risks.

Country/Region

South Africa

River basin

Berg-Olifants

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities

<Not Applicable>

% company's annual electricity generation that could be affected by these facilities

<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities

<Not Applicable>

% company's total global revenue that could be affected

1-25

Comment

We have identified that our SCP operation is exposed to water-related risk.

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Region

South Africa

River basin

Berg-Olifants

Type of risk

Physical

Primary risk driver

Drought

Primary potential impact

Reduced revenues from lower sales/output

Company-specific description

Water-related issues such as changes in precipitation patterns, droughts and floods may negatively impact on demand for our products and services. Nulandis and ImproChem may experience reduced demand for products and services as a result of changes in precipitation patterns. Our operations that rely on a continuous supply of good quality water may also be at risk. Changes in precipitation patterns may disrupt production, reduce revenue and/or increase operating costs.

Timeframe

Current up to 1 year

Magnitude of potential impact

Medium-high

Likelihood

Virtually certain

Potential financial impact

39000000

Explanation of financial impact

This risk is considered substantive the potential financial impact is close to the threshold of R40 million for risks rated as serious. The potential financial impact is the reduced profit from Nulandis, primarily as a result of the drought in the Western Cape. Nulandis manufactures and supplies an extensive range of crop protection products, plant nutrients and services for the agricultural sector in Africa. Changes in rainfall patterns, droughts and floods may negatively impact on the agricult

Primary response to risk

Develop new products and/or markets

Description of response

This risk is managed through engagement with customers to understand their water-related risks and to identify how best AECI can support them. An example would be the provision of agricultural chemicals specifically for water-strained areas. This risk is also managed through investment in research and development which allows our businesses to diversify their product mix. In terms of the risk associated with water use in our own operations, we implement initiatives to reduce water withdrawals, increase recycling and rainwater harvesting. For example, ImproChem has embarked on an effluent reduction and water re-use programme in the Group.

Cost of response

50000000

Explanation of cost of response

AECI's spend on the research and development of new products was in the region of R50 million for 2017.

Country/Region

South Africa

River basin

Limpopo

Type of risk

Regulatory

Primary risk driver

Regulation of discharge quality/volumes

Primary potential impact

Fines, penalties or enforcement orders

Company-specific description

AEL discharges effluent into a natural water resource. The most critical aspect related to this water use is the WUL that has been issued by the Department of Water and Sanitation. The WUL specifies very stringent compliance conditions which will require capital intensive projects to be implemented.

Timeframe

Current up to 1 year

Magnitude of potential impact

Medium

Likelihood

Likely

Potential financial impact

10000000

Explanation of financial impact

The financial impact is a fine for non-compliance.

Primary response to risk

Water-related capital expenditure

Description of response

This risk is managed through engagement with the Department of Water and Sanitation on the effluent discharge quality, groundwater quality parameters and target levels and through the implementation of projects to ensure compliance with the WUL. Examples of WUL-related projects approved to date are a cooling tower purge water treatment plant, diversion of effluent to the strong effluent system, a neutralisation plant etc.

Cost of response

8000000

Explanation of cost of response

The cost of response is the expenditure on water-related projects at AEL Modderfontein,

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Region

South Africa

River basin

Berg-Olifants

Stage of value chain

Supply chain

Type of risk

Physical

Primary risk driver

Drought

Primary potential impact

Reduction in capital availability

Company-specific description

Water-related risks such as droughts have the potential to impact on our supply chain. We have already experienced this in the juice business in the 2017 financial year. SCP was required to purchase strategic consignments of raw materials owing to extreme weather events such as the drought in the Western Cape and severe flooding in Argentina. This had a negative impact on trade working capital, but a correction should be evident by the middle of 2018.

Timeframe

Current - up to 1 year

Magnitude of potential financial impact

Medium-high

Likelihood

Virtually certain

Potential financial impact

40000000

Explanation of financial impact

The financial impact is reported as the impact of the purchase of the strategic consignments on trade working capital for SCP.

Primary response to risk

Other, please specify (Engage with suppliers)

Description of response

We handle risks in our supply chain by engaging with our suppliers to identify these risks and ensure that they are being effectively managed. This engagement also allows us to identify and plan for disruptions. Our response in the case of SCP was to purchase strategic consignments of raw materials.

Cost of response

0

Explanation of cost of response

There is no cost to this response as our businesses engage with their supply chains as part of the normal course of business.

W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Products and services

Primary water-related opportunity

New R&D opportunities

Company-specific description & strategy to realize opportunity

The rising cost of water coupled with concerns about adequate long-term availability in many geographies is prompting companies to view water conservation as an imperative in terms of business sustainability. This opens up opportunities for AECI to develop new products and services. Examples include – a) Savannah grazing supplements launched by Chemfit, a division of AECI, to farmers in the Karoo. The supplement can be used by farmers to counteract the effects of dry, woody stalks in grass which result from the drought. b) Water use efficiency and preservation of top soil are being pursued by Nulandis through their NuWay® programme. As part of Nulandis' NuWay strategy, the company is evaluating a technology developed by Israeli Company, SupPlant, to better manage the water requirements of irrigated crops using Growth-Based Irrigation and Big-Data Irrigation Technology. The combination of in-field crop growth monitoring, real time weather data and autonomous irrigation scheduling can promote improved crop production and water savings. c) Biocult and Nulandis have developed products to assist clients manage the impacts of water-related risks. Examples include Biocult's mycorrhizae to enhance root mass and supply nutrients and Nulandis' Dekompakt to prevent soil crusting and hence water run-off and Genie Boost which assists with the conversion of crop residues into valuable soil humus.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium-high

Potential financial impact

80000000

Explanation of financial impact

The focus on Green Chemistry will most likely result in increased sales. We have estimated that new products and services are likely to contribute between 2% and 5% of the Group's profits in the next five years which is equivalent to between R32 million and R80 million based on 2017 operating profit numbers.

Type of opportunity

Markets

Primary water-related opportunity

Expansion into new markets

Company-specific description & strategy to realize opportunity

The rising cost of water coupled with concerns about adequate long-term availability in many geographies is prompting companies to view water conservation as an imperative in terms of business sustainability. This opens up new markets into which AECI can sell new and existing products and services. In the 2017 financial year, for example, the drought in the Western Cape resulted in four contracts for the installation of desalination plants, with additional opportunities having been identified. This opportunity is managed by assessing and monitoring the broader context in which the Group operates in terms of the political and economic landscape, industry, labour and financial market trends. Work includes the analysis of research materials and industry benchmarking studies by institutions such as the World Economic Forum, the World Bank and Control Risk. These serve as an early warning system or a mechanism for identifying future risks and opportunities, including markets opening up as a result of water-related risks. AECI also ensures that invests in the necessary skills and products needed to access these new markets.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium-high

Potential financial impact

46000000

Explanation of financial impact

Between the 2016 and 2017 financial years, ImproChem's revenue increased by 3.2% to R1.454 billion. The increase in revenue for ImproChem is reported as the financial impact of this opportunity.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

There are opportunities within AECL to reduce water withdrawals and discharges. The implementation of these opportunities could improve water efficiency and reduce operating cost. In the 2017 financial year, several effluent and water optimisation projects being implemented under the Going Green Programme. The objectives were to reduce water consumption and/or discharge and also to improve the quality of effluent discharged. Key projects included upgrading the stormwater and effluent infrastructure at AECL Chem Park, effluent optimisation solutions at Modderfontein and several effluent quality improvements at Nulandis, Lake Foods and Industrial Oleochemical Products. This opportunity is managed through the Going Green Programme. The Going Green programme, in line with AECL's values, was introduced in 2017. In 2017, the National Cleaner Production Centre (NCPC) has commenced assessment at AECL facilities in identifying further opportunities to reduce water withdrawals and discharges at the Group's facilities in South Africa.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium-high

Potential financial impact

20000000

Explanation of financial impact

The roll out of the new Going Green Programme across businesses within the Group is likely to realise significant cost savings. An estimate of the cost of the Going Green programme in terms of water is greater than R20 million.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.

Facility reference number

Facility 1

Facility name (optional)

AEL Modderfontein

Country/Region

South Africa

River basin

Limpopo

Latitude

-26.091

Longitude

28.1717

Primary power generation source for your electricity generation at this facility

<Not Applicable>

Oil & gas sector business division

<Not Applicable>

Total water withdrawals at this facility (megaliters/year)1352

Comparison of withdrawals with previous reporting year

Lower

Total water discharges at this facility (megaliters/year)

1334.26

Comparison of discharges with previous reporting year

Much lower

Total water consumption at this facility (megaliters/year)

18.33

Comparison of consumption with previous reporting year

Much lower

Please explain

Reduced water withdrawal (5% due to recycling initiatives in place and reduced production. Discharges Much lower discharges (29% decrease) due to inaccurate reporting of discharges in 2016; i.e. all AEL facilities were included in the total discharge figure for 2016, whereas only the Modderfontein facility was included in 2017. Water consumption: As consumption is calculated by subtracting Total discharged from total withdrawal, the inaccurate reporting in 2016 also affects the consumption amt.

Facility reference number

Facility 2

Facility name (optional)

Nulandis Lilianton (Boksburg)

Country/Region

South Africa

River basin

Limpopo

Latitude

-26.1963

Longitude

28.2174

Primary power generation source for your electricity generation at this facility

<Not Applicable>

Oil & gas sector business division

<Not Applicable>

Total water withdrawals at this facility (megaliters/year)

11.92

Comparison of withdrawals with previous reporting year

Higher

Total water discharges at this facility (megaliters/year)

2.39

Comparison of discharges with previous reporting year

Lower

Total water consumption at this facility (megaliters/year)

9.53

Comparison of consumption with previous reporting year

Much higher

Please explain

Withdrawals: Higher (increase of 19.78%) due to increased production. Discharges comparison: Lower (there was a problem with the meter that measures discharge for 2016 therefore the 2016 volumes was misstated) Consumption: Total consumption is calculated by subtracting total discharge from total withdrawal. Due to the problem with the meter in 2016 (discharge), the comparison between 2016 and 2017 is not an accurate reflection.

Facility reference number

Facility 3

Facility name (optional)

Southern Canned Products (SCP)

Country/Region

South Africa

River basin

Berg-Olifants

Latitude

-33.912762

Longitude

18.64396

Primary power generation source for your electricity generation at this facility

<Not Applicable>

Oil & gas sector business division

<Not Applicable>

Total water withdrawals at this facility (megaliters/year)

28.71

Comparison of withdrawals with previous reporting year

Lower

Total water discharges at this facility (megaliters/year)

26.85

Comparison of discharges with previous reporting year

Lower

Total water consumption at this facility (megaliters/year)

1.86

Comparison of consumption with previous reporting year

Lower

Please explain

Withdrawal comparison: Lower (22.3%) due to water restrictions in the Western Cape as a result of the drought. Discharge comparison: Lower (24% decrease) due to water withdrawals being significantly lower. This was due to water restrictions in the Western Cape as a result of the drought. Consumption comparison: Lower (24% decrease) due to water withdrawals being significantly lower. This was due to water restrictions in the Western Cape as a result of the drought.

W5.1a

(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

Facility reference number

Facility 1

Facility name

AEL Modderfontein

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

102.44

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced water

0

Third party sources

1250.15

Comment

Fresh surface water is from the Modderfontein Spruit covered under the Water Use Licence. Third party sources: potable water from the municipality.

Facility reference number

Facility 2

Facility name

Nulandis Lilianton

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced water

0

Third party sources

11.92

Comment

All water withdrawal is potable water obtained from the municipality.

Facility reference number

Facility 3

Facility name

Southern Canned Products (SCP)

Fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Brackish surface water/seawater

0

Groundwater - renewable

0

Groundwater - non-renewable

0

Produced water

0

Third party sources

28.71

Comment

All water withdrawal is potable water obtained from the municipality.

(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

Facility reference number

Facility 1

Facility name

AEL Modderfontein

Fresh surface water

971.89

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

362.38

Comment

The Modderfontein site has a Water Use Licence permitting discharge of effluent into the Modderfontein Spruit under certain conditions. In 2017 some discharge has been diverted to sewer.

Facility reference number

Facility 2

Facility name

Nulandis Lilianton

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

2.39

Comment

The facility's effluent is discharged into the municipal sewer system and treated at the municipal treatment plant.

Facility reference number

Facility 3

Facility name

Southern Canned Products (SCP)

Fresh surface water

0

Brackish surface water/Seawater

0

Groundwater

0

Third party destinations

26.85

Comment

The facility's effluent is discharged into the municipal sewer system and treated at the municipal treatment plant.

W5.1c

(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name

AEL Modderfontein

% recycled or reused

Not monitored

Comparison with previous reporting year

Please select

Please explain

Processes and controls still to be put in place to measure amount of water recycled at this facility. This will commence in 2018.

Facility reference number

Facility 2

Facility name

Nulandis Lilianton

% recycled or reused

Not monitored

Comparison with previous reporting year

Please select

Please explain

Processes and controls still to be put in place to measure amount of water recycled at this facility. This will commence in 2018.

Facility reference number

Facility 3

Facility name

SCP

% recycled or reused

Not monitored

Comparison with previous reporting year

Please select

Please explain

There is very little opportunity to recycle water at this facility as it is used to manufacture food products.

W5.1d

(W5.1d) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?

Water withdrawals – total volumes

% verified

76-100

What standard and methodology was used?

ISAE3000

Water withdrawals – volume by source

% verified

76-100

What standard and methodology was used?

ISAE3000

Water withdrawals – quality

% verified

Not verified

What standard and methodology was used?

Although regularly measured and monitored for water from sources other than the municipality, this data is not verified.

Water discharges – total volumes

% verified

Not verified

What standard and methodology was used?

Although this is regularly measured and monitored, this data is not verified.

Water discharges – volume by destination

% verified

Not verified

What standard and methodology was used?

Although this is regularly measured and monitored, this data is not verified.

Water discharges – volume by treatment method

% verified

Not verified

What standard and methodology was used?

Although this is regularly measured and monitored, this data is not verified.

Water discharge quality – quality by standard effluent parameters

% verified

Not verified

What standard and methodology was used?

Although this is regularly measured and monitored, this data is not verified.

Water discharge quality – temperature

% verified

Not verified

What standard and methodology was used?

This is not relevant to most businesses.

Water consumption – total volume

% verified

Not verified

What standard and methodology was used?

Consumption is determined using a water balance. Although the water balance includes verified data, consumption itself is not verified.

Water recycled/reused

% verified

Not verified

What standard and methodology was used?

This is not verified.

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?

No, but we plan to develop one within the next 2 years

W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.

| Position of individual | Please explain |
|------------------------|---|
| Board Chair | The AECI Board has over-arching responsibility for water-related issues. Responsibility was assigned to the Board in recognition of the potential impact of water-related risks on the organisation. The Board acknowledges that risk management is an integral part of the Group strategy-setting process and is accountable for risk management. This includes risks related to water use and management. The Board has appointed the Social and Ethics Committee to consider, recommend and monitor AECI's activities with regard to safety, health and environment and report accordingly to the Board. This includes water-related issues. |

W6.2b

(W6.2b) Provide further details on the board’s oversight of water-related issues.

| | Frequency that water-related issues are a scheduled agenda item | Governance mechanisms into which water-related issues are integrated | Please explain |
|-------|---|--|---|
| Row 1 | Scheduled - all meetings | Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Providing employee incentives Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing innovation/R&D priorities Other, please specify (compliance aspects) | The Social and Ethics Committee meets quarterly. It reports back to the Board on water-related issues at all meetings of the Board. This includes information on the water footprint, water-related risks and opportunities and the management thereof etc. This information enables the Board to monitor the implementation of water-related initiatives and performance with regards to water efficiency. It also allows them to assess whether water-related risks and opportunities are being effectively managed. It is used in strategy and action plan development. It is also used in budget setting. When considering new projects, products and services, water-related issues are considered. A clear example of this is the development of new products by Nulandis. Nulandis supplies crop protection products, plant nutrients and services into the agricultural sector in Africa. Nulandis identified that its customer base was facing water-related challenges. In response to this, it has been developing water efficient products through its NU-Way® programme to support its customers in addressing the challenges faced. |

W6.3

(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.

Name of the position(s) and/or committee(s)

Chief Executive Officer (CEO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

The Chief Executive Officer has an overall, primary management and leadership role in the organisation. Included in this is responsibility for water-related issues. The Chief Executive Officer is supported by the Group Safety, Health and Environment Manager. This Manager has day-to-day responsibility for water-related issues, with a reporting line to the Chief Executive Officer. This Manager reports back to the Chief Executive Officer and the Social and Ethics Committee on environmental performance and water-related issues. The Group Safety, Health and Environment Manager is supported by the Group Environmental Specialist who provides environmental support and advice to AECI. Along with the Chief Executive Officer, the Social and Ethics Committee is also directly responsible for oversight and guidance on water-related issues. It is a Board-Appointed Committee that sits directly under the Board in the organisational structure and reports back to the full Board.

W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4

(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

Yes

W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a

(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues?

| | Who is entitled to benefit from these incentives? | Indicator for incentivized performance | Please explain |
|----------------------------|---|---|---|
| Monetary reward | Other C-suite Officer (Executive: Technical and Compliance) | Effluent quality improvements | The Executive: Technical and Compliance has key performance indicators included in his performance management plan linked to achieving compliance with the Water Use Licence for the AEL Modderfontein facility. |
| Recognition (non-monetary) | Director on board | Reduction in consumptive volumes Efficiency project or target – direct operations Effluent quality improvements | An environmental award is given to the Managing Director of the company that performs the best in terms of achieving targets on reducing waste (including emissions), water and energy usage. In addition, other environmental performance indicators such as management of environmental incidents and environmental legal compliance is considered. This award is accepted by the Managing Director on behalf of the company. Nulandis was named as the recipient of the award for 2017, owing to the outstanding performance across air emissions, water usage and waste parameters. |
| Other non-monetary reward | Other, please specify (Environmental Manager/Specialist) | Reduction in consumptive volumes Efficiency project or target – direct operations Effluent quality improvements | Awards were given to Safety, Health and Environmental (SHE) practitioners relating to best SHE performance at the 2017 Annual SHE Conference. Water performance is an important component of the environmental aspect of SHE. |

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, direct engagement with policy makers

Yes, trade associations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

AECI ensures that all of its direct and indirect activities that influence policy are consistent in terms of messaging through the following –

- i) AECI engages with its businesses to obtain feedback, consolidates this feedback and relays the message to government and/or industry associations as required. All engagement with government and industry associations such as CAIA takes place at Group-level.
- ii) AECI ensures consistent messages are conveyed to stakeholders through central coordination of stakeholder engagement. This is done in collaboration with the Group Communication and Investor Relations Manager.
- iii) AECI has introduced programmes such as the Going Green Programme to drive consistent messaging. The Going Green Programme focuses on environmental targets and production efficiencies to reduce energy and water usage. All processes related to the Going Green Programme are directly linked to AECI's vision and values and will be 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. Performance on Going Green Programme will be regularly reported to the Executive Committee as well as the Social and Ethics Committee meetings as was the case with the Green Gauge Programme.

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

| | Are water-related issues integrated? | Long-term time horizon (years) | Please explain |
|---|--|--------------------------------|---|
| Long-term business objectives | Yes, water-related issues are integrated | 5-10 | Long-term is defined as five years or longer This is in line with the other business practice time horizons. Water-related issues are integrated into our long-term business objectives. AECI understands that its long-term business objectives can only be fully achieved if environmental risks such as water-related risks are identified and addressed. For this reason, management of water-related risks, water efficiency improvements and partnerships with stakeholders underpin the business objectives. Not only does management of water support the business objectives, but water, in terms of Green Chemistry, has had a significant influence on the business objectives. One of AECI's priorities is Green Chemistry which is focused on encouraging the design of products and processes that are environmentally-friendly. This includes products and processes that are water efficient. AECI aims to provide products that are not only superior in terms of functionality and quality, but also exert minimal impact on the environment. For example, Nulandis has been developing new products that can assist its customers in addressing some of their water-related challenges. ImproChem offers water-related products and services to the market. In the 2017 financial year, for example, the drought in the Western Cape resulted in four contracts for the installation of desalination plants, with additional opportunities having been identified. |
| Strategy for achieving long-term objectives | Yes, water-related issues are integrated | 5-10 | Long-term is defined as five years or longer This is in line with the other business practice time horizons. Water-related issues are integrated into our long-term business objectives and the strategy for achieving these objectives. AECI's business strategy focuses on domestic growth as well as ongoing expansion outside South Africa in the Group's chosen strategic areas of Mining Solutions, Water & Process, Plant & Animal Health, Food & Beverage and Chemicals. It is acknowledged that this growth cannot be achieved if water-related risks and opportunities are not effectively managed. As such, the strategy includes a focus on minimising water-related risks for both ourselves and our customers and capitalising on water-related opportunities. In the 2017 financial year, for example, SCP had to purchase strategic consignments of raw materials due to flooding in Argentina and drought conditions in the Western Cape. This ultimately impacted on the trade working capital of the business, although this could be corrected by the middle of 2018. Our strategy also includes a focus on developing water-related or water efficient products and services. We have already started to implement this strategy with Nulandis developing products to assist its customers to manage water-related risks and ImproChem offering water-related products and services to the market. |
| Financial planning | Yes, water-related issues are integrated | 5-10 | Long-term is defined as five years or longer This is in line with the other business practice time horizons. Water-related issues are integrated into our financial planning process. We understand that water-related issues present both risks and opportunities to our businesses. These risks and opportunities have the potential to impact on our revenue and operating profit. In the 2017 financial year, for example, Nulandis reports that revenue was flat and profits reduced as a result of the impact of the drought on the agricultural sector and the associated reduced demand for products. The magnitude is significant with profits for Nulandis having declined by 22.9% from R172 million in 2016 to R133 million in 2017. We also consider the rising cost associated with water withdrawals and discharges. Examples include the increased price of water as a result of the water restrictions in the Western Cape. The magnitude is significant. In the Western Cape, our operations have seen water prices increase by greater than 100% in the last year. We allocate capital to water efficiency or effluent treatment projects. In the 2017 financial year, for example, capital was allocated to the Going Green Programme for the implementation of several effluent and water optimisation projects. The objectives of these projects were to reduce water consumption and/or discharge and also to improve the quality of effluent discharged. |

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

| | Water-related CAPEX (+/- % change) | Anticipated forward trend for CAPEX (+/- % change) | Water-related OPEX (+/- % change) | Anticipated forward trend for OPEX (+/- % change) | Please explain |
|-------|------------------------------------|--|-----------------------------------|---|--|
| Row 1 | 60 | 20 | -60 | 5 | Significantly higher CAPEX in 2017 due to upgrade of effluent treatment plant at the Nulandis Lilianton facility as well as various projects at AEL Modderfontein facility. There was a significant decrease in OPEX as the 2016 figure incorrectly included sewer charges. It is expected that both OPEX and CAPEX will increase due to the focus on water optimisation projects a key focus area of the Going Green programme. |

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

| | Use of climate-related scenario analysis | Comment |
|-------|--|---|
| Row 1 | No, but we anticipate doing so within the next two years | Although climate-related scenario analysis is not used to inform our business strategy, water-related risks and opportunities are considered in the development of our strategy. We understand the importance of reducing our water withdrawals and discharges and using water efficiently. As such, we have implemented and will continue to implement projects that reduce our water withdrawals, discharges and increase water re-used and recycled. This will be done through our Going Green Programme. It is important to note that our strategy does consider various scenarios that may occur in the future to allow for agility should the environment in which we operate change. We are likely to include water-related scenarios in this going forward, possibly in the next two years. |

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

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

Please explain

Although we do not have a single internal water price, we do consider the costs associated with water, water treatment and managing water-related risks and opportunities when compiling business plans, budgeting and considering new investments. In our business plans, budgeting and when we consider new investments, we consider the actual price associated with water. We do not believe a single internal water price would be accurate given that all our businesses are charged different rates for water and effluent, depending on location and other factors. For this reason, we try to use water prices as close as possible to actual prices to ensure the robustness of our business plants, budgets and investment decisions.

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

| | Levels for targets and/or goals | Monitoring at corporate level | Approach to setting and monitoring targets and/or goals |
|-------|---------------------------------|--|--|
| Row 1 | Company-wide targets and goals | Goals are monitored at the corporate level | Although we do not have targets in place, we do have goals to optimise our water usage and reduce our effluent. We are committed to minimising our impact on the environment. Our goals are set to allow us to do this. Goals are applicable to all businesses and all geographies. Progress towards meeting the goals is measured and monitored at Group-level. We try to keep the measurement of progress relatively simple by using information that is already collected at Group-level as indicators. |

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Other, please specify (Optimise our water usage)

Level

Company-wide

Motivation

Other, please specify (Cost reduction)

Description of goal

We have a goal to reduce our water withdrawals and improve our water efficiency. This goal is applicable to all our businesses and all geographies in which our businesses operate. The motivation behind this goal is cost reduction and reduced exposure to water-related risks. Note that the timelines are indicative as it is an ongoing goal that is measured each year by comparing water withdrawals from the year in question against water withdrawals from the previous year. The goal is being implemented primarily through our Going Green Programme. In the 2017 financial year, The NCPC conducted energy and water assessments at some facilities under this Programme. Selected projects are expected to be implemented from 2018 onwards.

Baseline year

2016

Start year

2016

End year

2017

Progress

The indicator is water withdrawals. Success is measured by a decrease in water withdrawals. We monitor water withdrawals and water efficiency at Group-level to monitor progress towards achieving our goal. Water withdrawals by the Group's operations decreased by 6.2%, although some of this reduction was due to maintenance shutdowns.

Goal

Other, please specify (Reduce our effluent)

Level

Company-wide

Motivation

Other, please specify (Cost reduction and compliance)

Description of goal

We have a goal in place to reduce our effluent. This goal is applicable to all our businesses and all geographies in which our businesses operate. The motivation behind this goal is cost reduction and compliance. Note that the timelines are indicative as it is an ongoing goal that is measured each year by comparing discharges from the year in question against discharges from the previous year. The goal is being implemented primarily through our Going Green Programme. In the 2017 financial year, several effluent and water optimisation projects were being implemented under this Programme. The objectives were to reduce water consumption and/or discharge and also to improve the quality of effluent discharged. Key projects included upgrading the stormwater and effluent infrastructure at AECI Chem Park, effluent optimisation solutions at Modderfontein and several effluent quality improvements at Nulandis, Lake Foods and Industrial Oleochemical Products.

Baseline year

2016

Start year

2016

End year

2017

Progress

The indicator is discharges. Success is measured by a decrease in discharges. We monitor discharges at Group-level to monitor progress towards achieving our goal. There was a reduction in our discharges, although some of this reduction was due to errors in reporting last year that have since been corrected.

W9. Linkages and trade-offs

W9.1

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?

Yes

W9.1a

(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Increased energy efficiency

Description of linkage/tradeoff

AECI is aware of the link between water and energy usage. An initiative focused on treating water could also incorporate an energy efficiency component. This linkage is not new to the reporting year, although there are some new examples for the 2017 financial year. This linkage is apparent in our own operations and our value chain, particularly our customers' operations. This linkage impacts positively on the Group as initiatives implemented to reduce water usage can also have the added benefit of reducing energy consumption. For example, AECI's Water and Solutions Pillar planned, designed, constructed and commissioned a desalination plant for a customer. The site is self-sufficient in terms of its potable water requirements which reduces pressure on the municipal water network, allowing the water to be used where needed. In addition to meeting the customer's freshwater needs, an energy recovery device was installed to reduce electricity consumption per m3.

Policy or action

Our businesses maximise the opportunities presented by this linkage. In our own operations, this is primarily done through our Going Green Programme. Under this Programme, we are looking for projects that allow us to reduce our energy consumption and/or water usage and reduce our discharges. There is a focus on projects that treat, re-use or recycle water at the same time as reducing energy consumption and vice versa. In our value chain, our businesses are engaging with customers to understand their needs. This includes identifying whether products or services offered can assist customers to maximise the opportunities presented by this linkage.

W10. Verification

W10.1

(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?

Yes

W10.1a

(W10.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

| Disclosure module | Data verified | Verification standard | Please explain |
|-------------------|-------------------|-----------------------|---|
| W1. Current state | Total withdrawals | ISAE3000 | We have external verification of our total water withdrawals. We choose to verify this parameter as it is important to the business. It provides an indication of our efficiency and is a measure of our dependence on water. Our independent audit was conducted by KPMG. It was KPMG that selected the verification standard. This verification is conducted on an annual basis. For more information, please see the statement by our independent auditors - http://www.aeci.co.za/reports/ar-2017/independent-assurance-key-perform-report.php , Page 68 |

W11. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

| | Job title | Corresponding job category |
|-------|-----------------------|-------------------------------|
| Row 1 | Chief Executive, AECI | Chief Executive Officer (CEO) |

W11.2

(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

Yes

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

| | Public or Non-Public Submission | I am submitting to |
|-----------------------------|---------------------------------|--------------------|
| I am submitting my response | Non-public | Investors |

Please confirm below

I have read and accept the applicable Terms