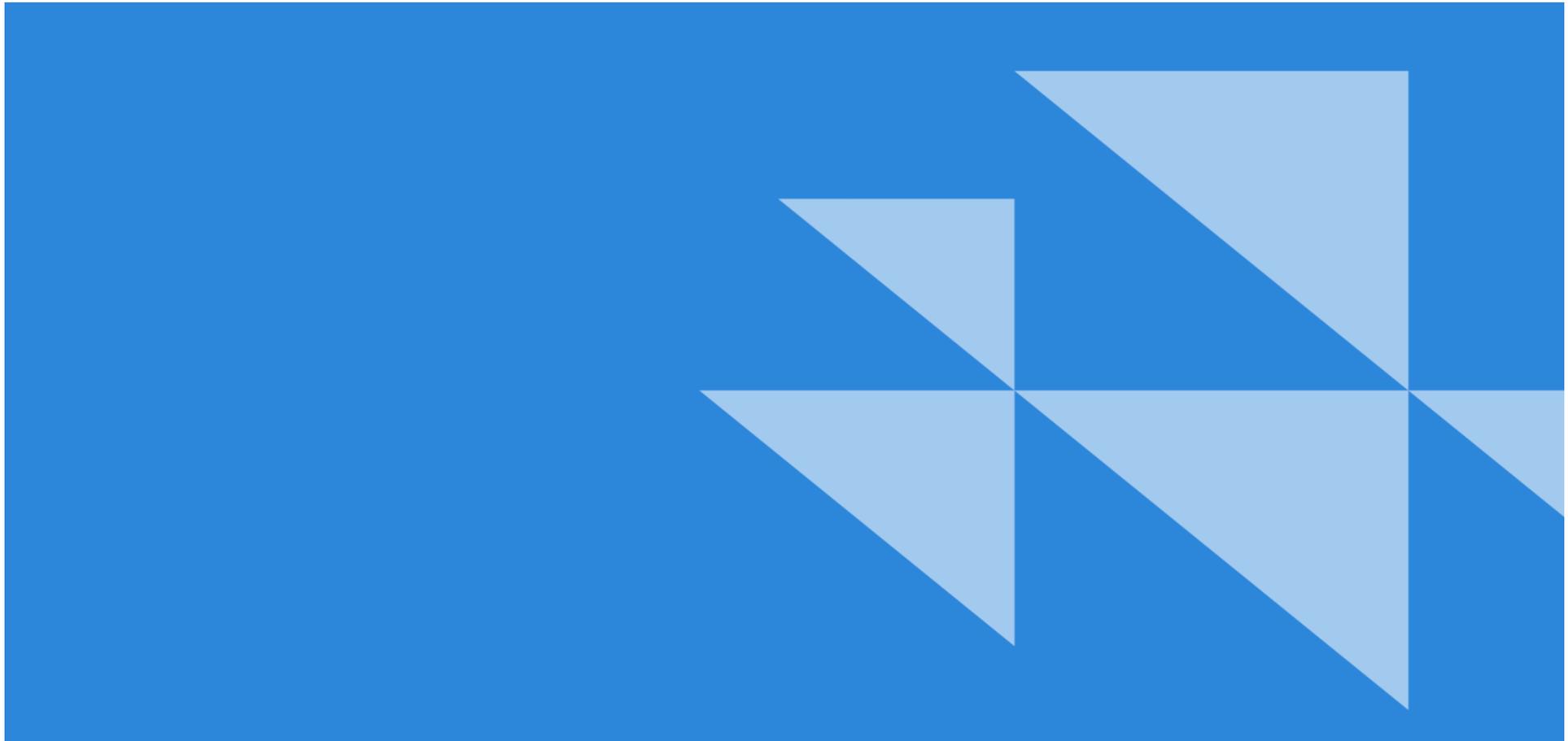

CDP Water Security Questionnaire 2018



Centrica – Water 2018

W0 Introduction

W0.1

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

About us

Centrica is an international energy and services company. Everything we do is focused on satisfying the changing needs of our customers. Our areas of focus for growth are Energy Supply, Services, Connected Home, Distributed Energy & Power and Energy Marketing & Trading. We supply energy and services to over 25m customer accounts mainly in the UK, Ireland and North America through strong brands such as British Gas, Direct Energy and Bord Gáis Energy, supported by around 15,000 engineers and technicians.

Following our strategic review in 2015 and the fundamental transformation of our business to focus on our customers, we have divested or decommissioned the majority of our central power generation assets, placed our Exploration & Production assets into a non-operated joint venture and ceased gas storage at our Rough storage facility. As a result, we will continue to focus our CDP response and be scored under the Electric Utilities module.

Our impact on water

We recognise that water availability is an increasingly significant issue for global stakeholders and we are committed to increasing the visibility of our water footprint as well as reducing our water impact through robust environmental management.

Water however remains a non-material risk for our business; for a company our size and within our sector, we consume a relatively small amount of water and do not operate water-intensive activities in water-stressed areas. Moreover, using the World Resources Institute definitions, the vast majority of water we withdraw is used, rather than consumed, as it is returned to the same water catchment area within the same cycle period while ensuring minimal changes to the water's characteristics.

Most of our water-related risks and opportunities lie within our centralised power generation and Exploration and Production businesses, where cooling and process water represent more than 99% of the total water we withdraw. Due to the nature of these withdrawals the risk and opportunities relating to water are not considered to have a substantial impact on our business, operations or revenue.

As worldwide sources of clean water become increasingly under threat, we remain committed to ensuring water is used both efficiently and responsibly not only in our business, but across our supply chain too.

W-EU0.1a

(W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?

Electricity generation

W-EU0.1b

(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each power source.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross generation (MWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	0	0	0
Gas	3289	62	6346
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	1784	33	12732
Geothermal	0	0	0
Hydroelectric	0	0	0
Wind	270	5	138
Solar	0	0	0
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	5343	100	19216

W-OG0.1a

(W-OG0.1a) Which business divisions in the oil & gas sector apply to your organization?

Upstream
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.

Canada
Denmark
Germany
Hungary
Israel
Italy
Netherlands
Norway

Sweden
United Kingdom of Great Britain and Northern Ireland
Ireland
Romania
United States of America

W0.4

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

GBP

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 in which an equity share is held

W0.6

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

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Assets that we have equity in but do not have operational control, subsidiary offices and other small sites where the volumes are immaterial to our totals. This includes our 20% interest in Nuclear and our non-operated offshore platforms.	Our ability to manage water is limited, at assets where we do not have operational control. Additionally, there are practical challenges on obtaining detailed water information at non-operated sites and subsidiary offices.

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	Important	Important	Freshwater is important in direct and indirect operations as it is critical to the processes at many assets. Freshwater is used in our direct operations for steam generation at power stations, cooling water at our Canadian gas platforms and our offices. Our demand for freshwater is declining significantly after divestments of Langage and South Humber Power Stations and Canadian upstream assets in 2017 and reduction of water in steam cycles at retained power stations. With this decline, the risk of insufficient quality freshwater is unlikely to significantly impact our business financially and will continually reduce. Reliable freshwater sources are critical for most power generation of our energy suppliers. Consumption varies on technology employed and regional location; we mitigate risk by maintaining diversity of supply. With reduction in direct energy supplies, we are increasingly dependent on indirect power generation hence availability of freshwater sources.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	Direct access to saline or brackish water is important to the success of our business as it is used for cooling water at several of our power stations and upstream oil/gas operations. We abstract saline/brackish water from estuaries or open sea which are associated with very low risks regarding quantity and quality. Risks are to reduce further following the sale of South Humber Power Station and the placement of our oil & gas operations into a non-operated JV in 2017. Recycled, produced and brackish water is critical to some of our indirect operations, whose energy we purchase for resale to our customers. With reduction in direct energy supplies, we become more dependent on indirect power generation so availability of these water sources for indirect operations will remain important in future; importance varies depending on technology employed and regional location so we mitigate risk by diversification of our supply chain.

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%	We measure and monitor water input volumes across all our sites which use or consume water and have operational control. Office and upstream asset's water withdrawals are measured quarterly but upstream assets are monitored more regularly.
Water withdrawals – volumes from water stressed areas	100%	Assessed using different overlays across the WRI Water Risk Atlas tool, Oil & Gas and Electric Power, several of our oil and gas platforms in Canada are located in highly water stressed (40-80%) areas. King's Lynn and Peterborough power stations are also located in highly stressed areas, however the total water withdrawals of these sites contribute less than 1% Centrica's water withdrawals. Withdrawals from stressed areas are monitored regularly but are only measured and reported annually.

	% of sites/facilities/operations	Please explain
Water withdrawals – volumes by source	100%	Centrica measures and monitors water input volumes by source category at all our sites which use or consume water and have operational control. Office and upstream asset's water withdrawals are measured quarterly but upstream assets are monitored more regularly.
Produced water associated with your oil & gas sector activities - total volumes	100%	Produced water is monitored across all operating Oil and Gas assets regularly and reported internally on a bi-annual basis.
Water withdrawals quality	Not monitored	At our power stations, we measure water discharge quality in line with relevant specifications. If these were not to be met, then the withdrawal quality would be investigated.
Water discharges – total volumes	100%	We routinely measure water discharge volumes from all of our sites which discharge water and we have operational control. We estimate single pass cooling water using pump rate and total pump hours and the discharge volume from our low water consumption sites. Office and upstream asset's water discharges are measured quarterly but upstream assets are monitored more regularly.
Water discharges – volumes by destination	100%	Where we measure discharge volumes, we do so by destination. As such, discharge volumes are measured at all of our sites which discharge water and have operational control. Office and upstream asset's water discharges are measured quarterly but upstream assets are monitored more regularly.
Water discharges – volumes by treatment method	100%	By recording our discharge volumes by destination and by knowing the asset type, we know how our discharges are being treated. For example, offices are assumed to only discharge to the municipal water system, hence treated at municipal wastewater treatment plants. We measure discharges at all our sites where we have operational control. Office and upstream asset's water discharges are measured quarterly but upstream assets are monitored more regularly.
Water discharge quality – by standard effluent parameters	1-25	Centrica routinely measures the quality of our water discharge at power assets, oil and gas platforms and gas terminals, where we have a legal or contractual requirement to monitor and/or report pursuant to consented quality limits quarterly. It is important to note that this requirement covers the majority of our discharges by volume; however it is not a legal requirement at more than 75% of our sites.
Water discharge quality – temperature	1-25	We routinely monitor the temperature of all the power stations' discharged water to ensure it does not fall outside of any prescribed limits. Temperature measurement is not relevant at more than 75% of our sites. Our large upstream asset's water discharge quality is measured and reported quarterly but are monitored more regularly.
Water consumption – total volume	100%	We are able to calculate the total volume of water consumption across our business because we measure or accurately estimate our water consumption input from all our sites where we have operational control. Office and upstream assets are measured quarterly but upstream assets are monitored more regularly. Our consumption values are calculated as the volume we withdraw and use, but do not return to its original source, or return within a different cycle period after treatment or further use.
Water recycled/reused	Less than 1%	Volumes of industrial (non-potable) water supply are monitored at South Humber Bank power station, where this is used regularly as cooling water. We measure this quarterly but it is monitored more regularly. The input of water that is used in closed loop cycle for cooling water at some power stations can be monitored.

	% of sites/facilities/operations	Please explain
The provision of fully-functioning, safely managed WASH services to all workers	100%	As part of our duty of care to our people and through our Health, Safety and Environment assurance activities, we ensure and verify that all employees have access to WASH services at their normal place of work.

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	291228	Much lower	South Humber Bank power station was a key contributor of water withdrawals in both 2016 and 2017 and was divested in August 2017, reducing withdrawals by 52%. This trend is expected to continue over the next year following further divestments, and combination of our E&P business to a non-operated joint venture.
Total discharges	289442	Much lower	South Humber Bank power station was a key contributor of water withdrawals in both 2016 and 2017 and was divested in August 2017 reducing discharge by 52%. This trend is expected to continue over the next year following further divestments, and combination of our E&P business to a non-operated joint venture.
Total consumption	1786	About the same	Consumption is calculated using the above withdrawals and discharge values. Withdrawals and discharge reduced by a similar percentage leaving consumption values flat.

W-OG1.2c

(W-OG1.2c) In your oil & gas sector operations, what are the total volumes of water withdrawn, discharged, and consumed – by business division – and what are the trends compared to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year %	Please explain
Total withdrawals - Upstream	34583	About the same	A slight reduction in withdrawals across oil & gas storage and production facilities due to changes in their operational activity. In future, we are expecting our oil and gas water withdrawals to remain similar following divestment of our Canadian onshore platforms and the combination of E&P with Bayerngas Norge December 2017 to a non-operative JV, Spirit Energy. To balance, CSL Operations are changing from gas storage to production which will increase water withdrawals.
Total discharges – Upstream	32953	About the same	A slight reduction in withdrawals across oil & gas storage and production facilities due to changes in their operational activity. In future, we are expecting our oil and gas water withdrawals to remain similar following divestment of our Canadian onshore platforms and the combination of E&P with Bayerngas Norge December 2017 to a non-operative JV, Spirit Energy. To balance, CSL Operations are changing from gas storage to production which will increase water withdrawals.

	Volume (megaliters /year)	Comparison with previous reporting year %	Please explain
Total consumption – Upstream	1630	Higher	27% increase in consumption due to withdrawals increasing slightly more than discharge (1%). This consumption is mostly due to losses via evaporation of cooling water

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	0	About the same	WRI Aqueduct	We used the current Oil and Gas and Electric Power baseline water stress overlays within the WRI Aqueduct Water Risk Atlas tool which categorises land into 5 water risk areas (Low Risk, Low to Medium Risk, Medium to High Risk, High Risk and Extremely High Risk) to compare to our asset locations. Centrica maintains an updated list of all assets with the ability to plot spatially via address. Our most water-intensive sites were then plotted on top of the WRI Risk atlas to identify locations in areas of high water stress. Several of our oil and gas platforms in Canada are located in highly water stressed (40-80%) areas. King's Lynn and Peterborough power stations are also located in highly stressed areas, however the total water withdrawals of these sites contribute less than 1% Centrica's water withdrawals. This is about the same to previous year's where we had no water intensive activities in water stressed areas.

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	150.8	Lower	Fresh surface water is used as cooling water for some of our power generation assets and our in-land gas production facilities in Canada. Divestment of our E&P assets in Canada in September reduced the use of freshwater for cooling water by 27% compared to 2016.
Brackish surface water/seawater	Relevant	289013.72	Much lower	Brackish surface water/seawater is used for cooling at our coastal power stations and offshore oil and gas assets. The volume of withdrawn brackish water has decreased by 53% due to divestment of South Humber Bank power station.
Groundwater – renewable	Relevant	542.4	Lower	Groundwater used for enhanced gas production by well injection, decreased by 32% due to divestment of our E&P assets in Canada in September.
Groundwater – non-renewable	Not relevant	N/A	N/A	Centrica does not withdraw non-renewable groundwater across its operations.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Produced water	Relevant	657.55	About the same	Formation water is produced as a by-product of extracted oil and gas from offshore hydrocarbon production platforms. The second half of 2017 saw a slight increase in the volume of produced water due to increased oil & gas production by E&P and CSL offshore North Sea assets.
Third party sources	Relevant	864	About the same	Centrica does not use waste water from other organisations, across its operations, however we monitor the use of municipal water across our offices. A minor reduction in municipal water usage was primarily driven by a reduction in office water usage due to efficiency improvements and a reduction in overall headcount.

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	49.11	Much higher	Cooling water withdrawn from fresh surface water sources are monitored, then returned to fresh water sources at our power stations. Gas turbine works taking place in H2 2017 at Brigg Power Station caused total freshwater discharge to double. The one-off project involved additional distribution generation equipment, increase in contractors on site and associated construction activities, which in turn increased water discharge.
Brackish surface water/seawater	Relevant	288626.63	Much lower	Cooling water withdrawn from brackish surface water sources are monitored, then returned to brackish water sources at our power stations. Divestment of our South Humber Bank power station in August 17 caused a decrease in the Brackish surface water discharge. South Humber is accountable for 90% of Brackish water discharged.
Groundwater	Relevant	371.92	Lower	Groundwater includes wastewater disposed via injection wells and water used for enhanced gas recovery in our Canadian gas production operations. Our Canadian assets were divested September 2017, hence a reduction in groundwater discharge from 2016.
Third-party destinations	Relevant	394.67	About the same	Waste water from certain operational assets and all our office locations is sent to municipal water treatment facilities. There was relatively little change to the assets or their associated discharges.

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	Less than 1%	About the same	Industrial (non-potable) water supply was used at our South Humber Bank power station as cooling water. Water is used in a closed loop cycle for use as cooling water at some power stations, however volumes circulating are not monitored. Reusing water in a closed cycle will reduce our withdrawals of surface water used for cooling. Over the next reporting year, the impact of the proportion of this impact will remain the same.

W-OG1.2j

(W-OG1.2j) What proportion of your total water use do you recycle or reuse in your operations associated with the oil & gas sector?

	% recycled and reused	Comparison with previous reporting year	Please explain
Upstream	Less than 1%	About the same	We do not operate using recycled or reused water at our oil and gas assets; produced water is discharged to sea under strict permits. The benefits of reinjecting our produced water do not justify the costs of the operation and increases atmospheric emissions, hence have a negative impact on the company. In the future, we do not expect this to change as we have no plans to start re-injecting produced water over the next year.

W-EU1.3

(W-EU1.3) Do you calculate water intensity for your electricity generation activities?

Yes

W-EU1.3a

(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.

Water intensity value	Numerator: water aspect	Denominator: unit of production	Comparison with previous reporting year	Please explain
13.4	Total water withdrawn	MWh	Much lower	Significant reduction in total water withdrawals due to divestments of water intensive power assets in the second half of 2017. We continue to drive reductions in water consumption at our power generation assets to improve energy efficiency and water resource use. For example, at Brigg Power Station, we have a financial incentive to reduce water usage.

W-OG1.3

(W-OG1.3) Do you calculate water intensity for your activities associated with the oil & gas sector?

No, and we have no plans to do so in the next two years

W1.4

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

Yes, our suppliers

Yes, our customers or other value chain partners

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

1-25%

% of total procurement spend

1-25

Rationale for this coverage

As a responsible company with a responsible procurement programme, we aim to embed sustainable business practice, including social, ethical and environmental standards across our supply chain. As part of this we focus our assessment on water risks in our supply chain for new and existing suppliers whose contracts are either due for renewal or review after two years. Suppliers are incentivised to report as it is a mandatory requirement. We reserve the right to terminate their contracts where they fail to meet required standards.

Impact of the engagement and measures of success

Suppliers are initially assessed using a Verisk Maplecroft tool on their sustainability performance associated with their countries and product category they provide. They then engage in self-assessments of risk management via EcoVadis. This evaluates the adequacy of their current sustainability actions in place; including water management, monitoring of consumption and measures to reduce pollutants discharged into water. Where a supplier is deemed to have inadequate performance (medium/high risk rating), we work collaboratively with them to develop corrective action plans that improve and embed sustainable behaviours. Progress against action plans is monitored through the online platform and supported by EcoVadis guidance. As of 2017, on EcoVadis, we had 138 suppliers assessed on their social, ethical and environmental standards. Average supplier sustainability was 56 (low risk), which was better than the multi-industry average of 44 (medium risk).

Comment

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

Innovation & collaboration

Details of engagement

Encourage/incentivize innovation to reduce water impacts in products and services

Educate suppliers about water stewardship and collaboration

% of suppliers by number

Less than 1%

% of total procurement spend

Less than 1%

Rationale for the coverage of your engagement

The Supply chain school is a voluntary UK based organisation that supports development of sustainability action plans across low performing suppliers, on the back of EcoVadis self-assessment. They engage in multiple indicators of sustainability including water and where suppliers underperform, EcoVadis provides clear guidance on what steps the supplier could take to improve their performances.

Impact of the engagement and measures of success

Beneficial outcomes are workshops, webinars and videos upskilling suppliers in their understanding of sustainable water management. We measure the success of this engagement with our suppliers with improved EcoVadis scores after interaction with the supply chain school and follows the EcoVadis guidelines on how to improve their performances and/or by going through corrective action plan monitoring.

Comment

W1.4c

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

We collaborate with our suppliers to better manage environmental, social and economic impacts which include water management. This includes water withdrawals as well as pollution management.

We do not engage with our customers on water management as its not related to the products or services we provide to them.

We engage with the wider value chain and society based on collective action initiatives:

- In 2017 we were a member of the Supply Chain School which is a collective of suppliers and customers that advances the understanding and progress towards a sustainable supply chain and circular economy. They cover workshops and training material on a wide range of sustainable management topics including water.
- Centrica is a member of the Aldersgate Group, an alliance of leaders from business, politics and civil society that drives action for a sustainable economy. This includes water related activities such as flooding and resource efficiency. They develop independent policy solutions; and engage with key decision makers, holding private roundtables with thought leaders to agree new approaches, member roundtables to come up with new ideas and public events to publicise important topics.

These organisations touch a wide range of organisations and individuals which helps influence policy and enable positive change. The number of attendees of events and views of articles/ information are good indicators in the success of engagement with the programmes

W2. Business impacts

W2.1

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

No

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-EU3.1

(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?

Prior to the building of our electric utility assets, a comprehensive Environmental Impact Assessment is completed, that will identify potential water pollutants that could have a detrimental impact on water ecosystems or human health and how they will be managed. These pollutants will be identified based on the materials used and activities to be undertaken on the proposed sites; these will differ across the value chain, dependent on the site activity. Thermal pollution, hydrocarbons, biocides and boiler chemicals are all examples of typical pollutants that need to be managed. These can adversely affect aquatic life at low levels and impact humans at higher levels.

Where we discharge from these facilities to receiving waters, we operate highly regulated assets, which are subject to water-related permits, licenses or consents. These regulatory control mechanisms identify the pollutants; set limits on discharge levels and specify monitoring and reporting requirements for us to meet.

Water quality monitoring includes automatic monitoring and manually collected samples. The assets have water quality analysis capability and trained staff to undertake monitoring of a wide range of pollutants, where required.

W-EU3.1a

(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Hydrocarbons	Pollutants from our power generation assets have the potential to pollute local ground water, adjacent water streams or other water bodies. Hydrocarbons could reach these water bodies via on-site spillages to ground outside of bunded areas, discharges to streams or coastal waters via storm water drains. The inherent risk of impact from hydrocarbons is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Assets ensure compliance through strict adherence to the requirements of the licence issued by the regulatory body. Where applicable, we strive to implement guidance documents issued by the regulator and also seeks to follow industry best practice where applicable. We use number of events and water quality discharge as indicators of success.
Contaminated cooling water	Pollutants from our power generation assets have the potential to pollute local ground water, adjacent water streams or other water bodies. Contaminated cooling water could reach these water bodies via discharges to streams or coastal waters via stormwater drains. Impact is likely to be minor with regulatory standards and monitoring of water discharge in place. Glycol used in closed cooling water systems and Chlorine added to saline cooling water in open systems have the potential to be harmful to water ecosystems, if discharged at high concentration. Leakages on land could also be harmful to the environment. The inherent risk of impact	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Assets ensure compliance through strict adherence to the requirements of the licence issued by the regulatory body. Where applicable, we strive to implement guidance documents issued by the regulator and also seeks to follow industry best practice where applicable. We use number of events and water quality discharge as indicators of success. Areas which contain glycol and storage areas are bunded and located inside buildings at our power stations with closed system cooling water to prevent any chance of escape to the environment. This cooling water is not discharged into the water course as only used in closed systems. There is a

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
	from contaminated cooling water is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.		comprehensive monitoring system which reports on the chlorine concentrations in all our saline cooling systems. This ensures that we stay within the permitted concentrations and do not pollute the watercourse. There is a robust maintenance schedule which prevents leaks from occurring, to both water bodies and land. There are also detection systems on the closed cooling systems which notify us of any water loss, this allows for immediate remedy. There are comprehensive emergency response procedures utilising spill kits and isolation valves where appropriate.
Thermal pollution	Potential to pollute adjacent stream water or other water bodies with warmed cooling water from power stations, such as Whitegate. This would be likely to occur via the release of discharge of cooling water into local streams or coastal waters. The inherent risk of impact from thermal pollution is medium because it could impact a sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Assets ensure compliance through strict adherence to the requirements of the licence issued by the regulatory body. Where applicable, we strive to implement guidance documents issued by the regulator and also seeks to follow industry best practice where applicable Regular monitoring of water discharge across all our power stations provides metrics to measure significant differences in temperature of the discharge to the water body, any significant differences are recorded.

W-OG3.1

(W-OG3.1) How does your organization identify and classify potential water pollutants associated with its activities in the oil & gas sector that may have a detrimental impact on water ecosystems or human health?

A comprehensive Environmental Impact Assessment is completed, that will identify potential water pollutants that could have a detrimental impact on water ecosystems or human health and how they will be managed occurs prior to development of at our oil and gas assets. These pollutants will be identified based on the materials used and activities to be undertaken on the sites; these will differ across the value chain, dependent on the site activity. The potential pollutants might include thermal change, drilling muds, hydrocarbons and operational chemicals. These have the potential to can adversely affect aquatic life at low levels and impact humans at higher levels.

Where we discharge from these facilities to receiving waters, we operate highly regulated assets, which are subject to water-related permits, licenses or consents. These regulatory control mechanisms identify the pollutants; set limits on discharge levels and qualities and specify monitoring and reporting requirements for us to meet.

Water quality monitoring includes automatic monitoring and manually collected samples with subsequent chemical analysis. Some of the assets have water quality analysis capability and trained staff to undertake monitoring of a wide range of pollutants at the locations.

W-OG3.1a

(W-OG3.1a) For each business division of your organization, describe how your organization minimizes the adverse impacts on water ecosystems or human health of potential water pollutants associated with your oil & gas sector activities.

Potential water pollutant	Business division	Description of water pollutant and potential impacts	Management procedures	Please explain
Hydrocarbons	Upstream	Discharges of hydrocarbons have the potential to result in contamination of the marine environment either by toxicity, persistence or bioaccumulation. The inherent risk of impact from hydrocarbons is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (Procedures vary between asset & activity)	Our ISO14001 certified, management system, includes risk management and assurance activities that address the effectiveness of our control procedures in place. Regulatory inspections are carried out regularly in addition to the internal audit process. Regular monitoring of discharge for a variety of metrics such as quality and temperature, provide key metrics to measure and evaluate the effectiveness of our systems and prevent pollutants reaching local water bodies.
Chemicals	Upstream	Discharges of chemicals have the potential to result in contamination of the marine environment either by toxicity, persistence or bioaccumulation. With our strict regulations in place at these assets, any events are unlikely to be detrimental to the surrounding environment. The inherent risk of impact from chemicals is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (Procedures vary between asset & activity)	Our ISO14001 certified, management system, includes risk management and assurance activities that address the effectiveness of our control procedures in place. Regulatory inspections are carried out regularly in addition to the internal audit process. Regular monitoring of discharge for a variety of metrics such as quality and temperature, provide key metrics to measure and evaluate the effectiveness of our systems and prevent pollutants reaching local water bodies.
Drilling fluids	Upstream	Discharges of drilling fluids have the potential to result in contamination of the marine environment either by toxicity, persistence or bioaccumulation. With our strict regulations in place at these assets, any events are unlikely to be detrimental to the surrounding environment. The inherent risk of impact from drilling fluids is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (Procedures vary between asset & activity)	Our ISO14001 certified, management system, includes risk management and assurance activities that address the effectiveness of our control procedures in place. Regulatory inspections are carried out regularly in addition to the internal audit process. Regular monitoring of discharge for a variety of metrics such as quality and temperature, provide key metrics to measure and evaluate the effectiveness of our systems and prevent pollutants reaching local water bodies.
Cuttings	Upstream	Discharges of cuttings have the potential to result in contamination of the marine environment either by toxicity, persistence or bioaccumulation. With our strict regulations in place at these assets, any events are unlikely to be detrimental to the surrounding environment. The inherent risk of impact from cuttings is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (Procedures vary between asset & activity)	Our ISO14001 certified, management system, includes risk management and assurance activities that address the effectiveness of our control procedures in place. Regulatory inspections are carried out regularly in addition to the internal audit process. Regular monitoring of discharge for a variety of metrics such as quality and temperature, provide key metrics to measure and evaluate the effectiveness of our systems and prevent pollutants reaching local water bodies.

Potential water pollutant	Business division	Description of water pollutant and potential impacts	Management procedures	Please explain
Other, please specify (Produced Water)	Upstream	Discharges of produced water have the potential to result in contamination of the marine environment either by toxicity, persistence or bioaccumulation. With our strict regulations in place at these assets, any events are unlikely to be detrimental to the surrounding environment. The inherent risk of impact from produced water is medium because it could impact a large area, sensitive ecosystem or require remedial clean-ups however with controls in place and high levels of regulatory scrutiny, we believe the mitigated risk is low.	Compliance with effluent quality standards Measures to prevent spillage, leaching and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (Procedures vary between asset & activity)	Our ISO14001 certified, management system, includes risk management and assurance activities that address the effectiveness of our control procedures in place. Regulatory inspections are carried out regularly in addition to the internal audit process. Regular monitoring of discharge for a variety of metrics such as quality and temperature, provide key metrics to measure and evaluate the effectiveness of our systems and prevent pollutants reaching local water bodies.

W3.3

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

Yes, water-related risks are assessed

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.

Risks are identified and mitigation strategies are developed across the business, from asset to company level. Business unit and functional level risk registers are regularly reviewed by senior management. Each identified risk together with related controls, are constantly assessed and reported according to the Group Risk Management Policy, Standards and Guidelines; classified with defined scoring methodology and 'out-of-appetite' criteria.

Our internal environmental specialists input to risk assessments and management at all levels via methods like quarterly risk reviews and peer review quality checks. Environmental Impact Assessments (EIA) are used to evaluate potential water requirements of a proposed activity or asset, options for meeting those requirements, possible impacts and mitigations of risk. Material water-related risks are integrated into risk assessments to ensure sufficient controls are in place. We generally use EIAs for high hazard, high impact facilities like gas terminals. At Barrow and Easington gas terminals, flood risk assessments are required as part of the Control of Major Accident Hazards (COMAH) compliance regulations to ensure we have effective processes in place to manage water risks.

We used Oil & Gas and Electric Power overlays within the WRI Aqueduct Water Risk Atlas tool to compare to our asset locations. Centrica maintains an updated list of all assets used to monitor water risk at our most water-intensive sites. This is repeated annually.

Suppliers are initially assessed on the country they operate in and their product category using Verisk Maplecroft tool. We then use a self-assessment tool for suppliers, provided by independent sustainability specialist, EcoVadis, to assess water-related risks against sector appropriate criteria every 2 years. Suppliers identified as medium/high risk are required to implement corrective action plans and demonstrate they have corrected risk areas that were highlighted through the assessment.

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?

No

W4.1a

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

Centrica defines a substantive impact as one that will affect the everyday operations of the company in a material way, financially or strategically and applies to both our direct operations and supply chain. Individual risks across our direct operations and our supply chain are ranked by assessing potential financial and non-financial impacts alongside the likelihood of materialisation. A 6 (impact) and 8 (likelihood) scale is used, with the overall rating calculated through multiplying impact by likelihood to produce a maximum risk score of 48. Financial impacts are relative to operating profit targets while non-financial impacts include a range of issues such as safety and environment, brand and reputation, legal and regulatory. The relative score from the 6x8 evaluation will determine if a risk is substantive. Tolerance thresholds and bands are used to determine response, controls and review frequency. These tolerance thresholds and distribution of these risks determine whether a risk is deemed as substantive in relation to others. An example of a substantive risk assessed is the primary loss of containment at our CSL facilities which, without the necessary mitigation processes we have implemented, has the potential to have a substantive impact on our operations.

At least quarterly, Business Units and Group Functions review the internal and external environment for new and emerging risks or changes to existing risks which incorporate water-related risks that could impact the delivery of our strategy. At this point a substantive change to our business from a water-related risk is evaluated through a comparison of previous and new risk registers. Risks are reported to a Risk, Assurance and Control Committee (RACC) or equivalent management meeting to evaluate, challenge and advise on material risks; as well as consider the adequacy of mitigating controls.

The most material risks including High Impact/Low Likelihood risks are reported to the Group Risk, Assurance and Control Committee (GRACC), to ensure it has a clear understanding of our risk profile and the effectiveness of controls which are informed by assurance activity. The GRACC is chaired by the Chief Executive, with membership comprising of the Centrica Executive Committee (CEC). The Audit Committee then receives a risk update which includes a CEC approved assessment of our principal risks and the adequacy of associated controls.

Ultimately, the Board, through the Safety, Health, Environment, Security and Ethics Committee (SHESEC) and the Health, Safety, Environment and Security (HSES) sub-committee of the CEC are responsible for identifying and prioritising risks and opportunities.

W4.2b

(W4.2b) Why does your organization not consider itself exposed to water risks in its direct operations with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Centrica is not currently exposed to substantive water-related risks. This is primarily because we do not operate water-intensive activities in high water-stressed areas, assessed using the WRI Aqueduct Water Risk Atlas tool and Google Earth. The most significant risk we are exposed to is the availability of water for cooling requirements at our upstream assets. The supply of large volumes of water is important to these activities. The vast majority of this water is abstracted from estuaries or the open seas, which are sources associated with low risks regarding quantity and quality. Moreover, the vast majority of water we withdraw is used rather than consumed, as it is returned to the same water catchment area within the same cycle period, further reducing the risks of supply interruption. This can be demonstrated by our climate change adaptation assessments undertaken for our UK power assets, which rate flooding and water availability risks as low, although this and other risks are reviewed at quarterly risk meetings with input from environmental managers. Another inherent risk relates to the cost of water to our business. This is however currently immaterial when compared with other commodity costs such as gas, but we nevertheless

	Primary reason	Please explain
		review the risk annually. Looking ahead, we do not foresee material tightening of relevant regulations and our risk profile is falling as we reduce our involvement in large-scale power generation and oil & gas operations. In 2017 we sold 2 of our 3 remaining large CCGT power stations and placed our oil & gas operations into the non-operated JV, Spirit Energy.

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Gas and power sales are the most important components in our supply chain, both of which are reliant to varying degrees on the availability of water for their operations. As such, an inherent risk of water-related supply interruption exists. This risk is however not substantive as we purposely procure power from multiple generators in the open market, while gas is purchased from various sources including international supply contracts. This flexibility reduces our exposure to water-related risks. Water-related risks also exist in the supply chains of other services and products we procure. Identification of high risk suppliers occur through our comprehensive supply chain risk management programme including the use of EcoVadis and to date, no suppliers have been found to have substantive water-related risks. High risk and tier 0 suppliers are asked to complete an EcoVadis assessment every two years or when a contract is renewed.

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?

No

W4.3b

(W4.3b) Why does your organization not consider itself to have water-related opportunities?

	Primary reason	Please explain
Row 1	Opportunities exist, but none with potential to have a substantive financial or strategic impact on business	Centrica defines substantive opportunities as one that provides a material basis for the corporation to grow or become more efficient. Water is not material to the growth or cost saving opportunities for the business. The cost of water is not currently significant enough to present substantive saving opportunities. We have yet to identify major commercial, competitive or other opportunities related to water. While our approach to water-related biodiversity and habitat protection provides local engagement opportunities, these are not substantive. We hold an annual Board Planning Conference during which opportunities are examined including any related to water in new markets, potential investments and technologies. Due diligence to assess commercial viability, market landscapes and future regulation is then conducted before strategies are presented to the Centrica Executive Committee, who meet bi-annually, for review.

W6. Governance

W6.1

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

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Commitments beyond regulatory compliance Description of water-related performance standards for direct operations	Our Group HSES Policy includes a key commitment to protect the environment and the efficient use and effective management of resources such as water. We do not include performance standards for direct operations as this level of detail is contained within Business Unit standards and procedures.

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
Chief Executive Officer (CEO)	The Chief Executive has responsibility for the Group HSES Policy. The Centrica Executive Committee, of which the Chief Executive is Chair, are briefed monthly by the Group Director of Health, Safety & Environment (HSE) on performance where any material water-related issues would be raised and discussed. The Chief Executive, will also attend the Safety, Health, Environment, Security and Ethics Committee of the Board (SHESEC) which may discuss water-related issues and is Chair of the Centrica Executive HSES Sub-Committee, which tables environmental issues in more detail on a bi-monthly basis. Major water-related incidents are reported within 24 hours to the Chief Executive.

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 - some meetings	Monitoring implementation and performance Reviewing and guiding business plans	The Safety, Health, Environment, Security and Ethics Committee of the Board (SHESEC) sits every 2 months. The committee's duties include reviewing the adequacy and effectiveness of the Company's internal controls and risk management systems in respect of, amongst other things, environmental matters including water. Each meeting will have

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
		Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Setting performance objectives Reviewing and guiding corporate responsibility strategy	a standing agenda item, presented by the Group Director of HSE on significant HSE incidents which will include water related issues as appropriate. A deeper review of environmental performance, which may include water related performance matters, is undertaken annually as presented by the group Head of Environment. Performance data is captured through our global reporting tool 'myHSES' and approved by the relevant Business Unit Director of HSE.

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

More frequently than quarterly

Please explain

The Chief Executive has responsibility for the Group HSES Policy. The Centrica Executive Committee, of which the Chief Executive is Chair, are briefed monthly by the Group Director of Health, Safety and Environment (HSE) on performance whereby any material water-related issues are raised and discussed. The Chief Executive, is Chair of the Centrica Executive HSES Sub-Committee, which tables environmental performance in more detail on a bi-monthly basis. Major water-related incidents are reported within 24 hours to the Chief Executive.

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?

No, and we do not plan to introduce them in the next two years

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?

No

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	No, water-related issues were reviewed but not considered as strategically relevant/significant	16-20	In 2015 our Board undertook a major strategic review resulting in a fundamental transformation of Centrica with new long-term business objectives; moving the company from a centralised asset-based business towards a customer focussed energy services and supply model. We are investing £1.2bn in establishing market-leading business units such as Distributed Energy & Power (DE&P) and Centrica Hive which we believe will play a significant role in de-carbonising the energy sector. Water related issues were considered only insofar as they impact upon our target markets, products and services we aim to offer and capital investment we intend to make. As we transform Centrica, our exposure to water related issues such as freshwater quantity is reducing particularly as we reduce our ownership of water intensive assets so investigating beyond 20 years would be irrelevant to our objectives.
Strategy for achieving long-term objectives	No, water-related issues were reviewed but not considered as strategically relevant/significant	16-20	The Board and the Executive have dedicated meetings each year to review and develop strategy. In line with our business objectives externalities are assessed including market, competitive, technology, regulatory and policy aspects primarily related to energy markets. Water related issues are only considered insofar that they influence energy markets. An example is when we review the individual aspects of energy markets within member EU states. Those with a significant and/or increasing hydroelectric sector are likely to have less attractive markets for low-carbon energy solutions compared with a member state with a largely fossil-fuel based system. Conversely, there may be opportunities for our route to market services for hydroelectric power generators. This will all be assessed through our long term strategic business planning, however beyond 20 years, the degree of uncertainty undermines the quality of the assessment. To date, no strategically significant water related issues have been identified within our target markets.
Financial planning	No, water-related issues were reviewed but not considered as strategically relevant/significant	16-20	Our financial planning and capital allocation is not significantly influenced by water related issues over the long term so investigating beyond 20 years would be irrelevant to our objectives. Water commodity costs are not significant for our business and reducing further as we transform. We plan to invest £1.2bn into growth businesses which are not associated with significant water risks or impacts.

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	-100	-50	48	-50	<p>CAPEX This year’s water-related CAPEX has dropped to 0 as we haven’t had any known water-related project expenditure. CAPEX is anticipated to decrease in the future due to divestments of high consuming assets such as South Humber power station. Our estimated forward trend is representative of our expected business activity.</p> <p>OPEX OPEX reductions have been achieved, in line with Centrica’s reduction in our power generation portfolio, and divestments in 2017 resulting in reduced asset water usage and consequent OPEX spend. Additionally, Centrica’s efforts to drive efficiency across its global business led to reduced headcount and property rationalisation which have in turn reduced water demand and associated OPEX. More specific efforts have been made to reduce UK office water use through locally lead incentives and increased water telemetry monitoring at major sites. This has reduced water-related OPEX. Our forward trend is an estimate representative of our expected business activity</p>

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	Yes	We have completed a detailed analysis of our primary business, located in the UK, against several scenarios including 2 degrees, using National Grid’s Future Energy Scenarios. This analysis has provided valuable insights into the range of risks and impacts associated with the energy transition on Centrica’s core businesses whilst also highlighting the significant opportunities and potential growth areas that Centrica is already engaged in through its new strategy. A key conclusion was that our targeted growth businesses DE&P and Centrica Hive are both advantaged in a two-degree scenario against our central case due to increased demand for Storage, Demand Side Response, Smart technologies and Time of Use Tariffs.

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

No

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

We do not have an internal price on water as we do not operate in any water constrained areas and discharges are well regulated in the jurisdictions in which we work.

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 Business level specific targets and/or goals Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	We have a company wide goal of compliance with all legal and regulatory requirements. This is detailed in our HSE policy, HSE Standard and as a part of our company code. For example, our more water intensive assets are generally subject to site-specific limits on the quality of discharge and quantity of abstraction. In these cases, our goal is to ensure ongoing compliance with those limits rather than setting absolute reduction targets. We set these goals pursuant to our policy commitment to prevent pollution, and a strategic priority to be compliant. We track performance against this goal at a frequency agreed with the regulator and report progress to senior management bi-monthly. We also set quantitative targets to reduce our water use across our main office portfolio in the UK. We monitor usage, track performance and report to senior management on a quarterly basis.

W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Water consumption

Level

Business activity

Primary motivation

Water stewardship

Description of target

Our target was to maintain 2016 office water use in 2017.

Quantitative metric

% reduction in total water consumption

Baseline year

2016

Start year

2016

Target year

2017

% achieved

100

Please explain

We surpassed this target to achieve a 7.4% reduction in our water usage. This target is reviewed year on year to reflect operational plans and remain appropriate and ambitious.

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 (See comment box)

Full compliance with our prescribed limits on water management

Level

Company-wide

Motivation

Other, please specify (See comment box)

Company-wide strategic priority on compliance

Description of goal

Where we have site-specific limits on the quality of discharge and quantity of abstraction, our goal is to ensure ongoing compliance with those limits. We set this goal pursuant to our policy commitment to prevent pollution, and a strategic priority to be compliant. We track performance against this goal at a frequency agreed with the regulator and report progress to senior management bi-monthly. Performance is reported externally as an annual calendar year total.

Baseline year

2016

Start year

2016

End year

2017

Progress

In 2017, no significant incidents arose that resulted in legal action. However, there were 36 reportable incidents that were water-related, involving minor leaks or spills of hydrocarbons to the sea. We measure success against the quality of events and observations reported.

Goal

Other, please specify (Absolute reduction of water withdrawals)

Level

Company-wide

Motivation

Cost savings

Description of goal

Centrica continues to identify reductions in resource usage including water. An example of this is at Brigg power station, which seeks to achieve Maximum Daily Demand (MDD) Reductions for water withdrawal.

Baseline year

2016

Start year

2016

End year

2017

Progress

Centrica continues to strive to reduce its resource usage. The Brigg Power station goal is ongoing and currently under review as part of the optimisation of site processes. If successful this has the potential to drastically reduce the withdrawals by replacing the current cooling water system. MDD reductions are used as an economic incentive.

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

Tradeoff

Type of linkage/tradeoff

Increased wastewater treatment

Description of linkage/tradeoff

Management of site effluent water from gas processing terminal, Easington Terminal.

Policy or action

Currently Centrica Storage Limited do not operate the Sea Outfall Pipe and the Environmental Permit Improvement Condition requires additional water quality analysis to be undertaken before effluent water can be discharged through the sea outlet pipe. This is to understand, assess and quantify any environmental impacts associated with effluent discharge through the Sea Outfall Pipe. Although the non-operation of the Sea Outfall Pipe means there is no direct local environmental impact through effluent release, all effluent is instead bulk transported by tankers offsite on a routine basis for treatment and disposal. The environmental impact of the transport is not independently assessed but holds a significant economic benefit which could not be justified for disposal via the Sea Outfall Pipe.

W10. Verification

W10.1

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

No, we do not currently verify any other water information reported in our CDP disclosure

W11. Sign off

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

	Job title	Corresponding job category
Row 1	Group General Counsel and Company Secretary	Director on board

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)].

No