Fortum Oyj - Water 2018

W0. Introduction

W0.1

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

Fortum’s business activities cover the production and sales of electricity and heat, waste-to-energy and circular economy solutions as well as energy-sector expert services and various

consumer solutions. Fortum is the third largest power generator and the largest electricity retailer in the Nordic countries. Globally, the company is one of the leading heat producers. As two thirds of

Fortum’s power production is hydro and nuclear, it is also among the lowest-emitting generators in Europe.

Fortum’s ambition is to increase its CO2-free power generation. The company also has generation capacity based on fossil fuels, located mainly in Russia, and it has worked to increase its efficiency

and reduce its specific emissions. Fortum is focusing on increasing its solar and wind power capacity heavily over the coming years. With core operations in 10 countries, Fortum employs a diverse

team of close to 9,000 energy-sector professionals. Fortum’s key markets are the Nordic and Baltic countries, Russia, Poland and India.

Global megatrends as well as low energy prices and the low overall economic development have created a need for energy sector transformation. Fortum aims to meet these global challenges with its strategy that targets growth and continued profitability with strong focus on clean energy, customers and shareholder value creation.

Fortum's vision “For a cleaner world” reflects our ambition to drive the transformation towards a low-emissions energy system and optimal resource efficiency. Fortum's mission is to engage customers and society to drive the change towards a cleaner world. Fortum's role is to accelerate this change by reshaping the energy system, improving resource efficiency and providing smart solutions. This way we deliver excellent shareholder value. Fortum's strategy towards its vision has four cornerstones:(1) drive productivity and industry transformation(2) create solutions for sustainable cities(3) grow in solar and wind, and (4) build new energy ventures.

Sustainability is an integral part of Fortum's strategy. The tight link between business operations and corporate responsibility underscores the importance of sustainability as a competitive advantage. In its operations, Fortum gives balanced consideration to economic, social and environmental responsibility.

Fortum emphasises a circular economy, resource and energy efficiency, the use of waste and biomass, and climate change mitigation in environmental responsibility. Fortum's know-how in CO2-free hydro and nuclear power production and in energy-efficient combined heat and power production, investments in solar and wind power, as well as solutions for sustainable cities play a key role in environmental responsibility.

Fortum uses large volumes of water at various types of power plants and in district heating networks. Risks related to Fortum’s water availability are relatively small, according to our assessments. The majority of our water withdrawal volume is seawater for the cooling of power plants. In most cases we don’t consume water; it is returned into the same water system from which it was taken. The majority of Fortum’s power and heat production capacity is located in the Nordic countries, Russia and Poland. The Baltic Sea and local fresh water systems are the most important water sources for our plants. Water availability is naturally a prerequisite to Fortum's hydropower production in Sweden and Finland. Hydropower production does not consume water and we do not operate hydropower in water-stressed areas. We manage our environmental impacts with environmental management systems. 99.8% of our electricity and heat production is ISO 14001 certified.

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.

Denmark
Estonia
Finland
India
Latvia
Lithuania
Norway
Poland
Russian Federation
Sweden

W0.4

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

EUR

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 operational control is exercised

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
Hydropower water flow in water accounting	Water used in hydropower production directly for power production (water flowing through turbines) as well as spillage is not included in water accounting as water withdrawal or discharge (questions W1.2-1.2j and W5.1). This type of water use is substantially different from water withdrawal for cooling water and process water e.g. water use and instantly returned to the water environment. However, other water use connected with hydropower production, such as water used in fish farming for environmental compensation is included in water accounting. If the river flows connected to Fortum's hydropower production would be included in water accounting, the Nordic hydrological situation would totally overrun the trends in Fortum's water use for cooling, process water and other uses, which we do not find as useful information for our stakeholders. Additionally, our water-related risks in hydropower are not directly connected with the amounts we use water. However, we report the most relevant figures for hydropower separately as comments.
Offices	Water use of our offices is extremely low in comparison with production facilities and therefore excluded.

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	Not very important	Fortum withdraws freshwater mainly for cooling water for power production and to a lesser extent for process and auxiliary water in heat and power production, waste processing and make-up water for district heating networks. In addition freshwater is used to produce hydropower. Importance rating "important" was selected, as large amounts of water are needed, but water quality is in most cases not important for the usability of water. Dependency of water in direct use is expected to remain at approximately same level in the future as water use per production unit probably does not decrease much due to technological constraints. In indirect operations freshwater is used mainly in the supply chain in the production of fuels. Biofuels represent 3% of Fortum's fuel use and are partly dependent of water availability. Water is, however, not one of the most important sustainability issues in the value chain. The dependency of water in indirect use is expected to remain as not very important.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Not very important	The majority of Fortum's water withdrawal volume is brackish water for the cooling of power plants. Fortum withdraws also large amounts of freshwater, which does not need to be of good quality, for cooling water for power production and to a lesser extent for process and auxiliary water in heat and power production and make-up water for district heating networks. In addition, freshwater of no quality requirements, is used to produce hydropower. Importance rating "vital" was selected, because future production could be compromised, and output and finances affected at the corporate level, if the water supply was insufficient. Dependency of water is expected to remain at approximately the same level in the future as water use per production unit probably does not decrease much due to technological constraints. In indirect operations non-freshwater use is very limited and therefore not very important for Fortum. Dependency of water is expected to remain at same level in indirect use.

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%	Fortum operates electricity and heat generating power plants (CHP, condensing power, hydropower, nuclear, solar, wind) and waste treatment facilities. We monitor water withdrawals at the facility level and compile this information once a year into our central environmental data system. At hydropower plants the water flow through turbines is automatically calculated from the continuously monitored output. Hydropower plants use in production planning hydrological models including all water balance factors such as precipitation, inflow, runoff and evaporation. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants. Water withdrawal volumes measuring methods include e.g. measuring of pumped volumes, filling volumes of water storages and purchased tap water amounts.

	% of sites/facilities/operations	Please explain
Water withdrawals – volumes from water stressed areas	100%	Fortum monitors water withdrawals at the facility level and compiles this information once a year into our central environmental data system. The Corporate Sustainability unit analyzes facility locations to evaluate water stress levels. Water withdrawal volumes measuring methods include e.g. measuring of pumped volumes, filling volumes of water storages and purchased tap water amounts. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water withdrawals – volumes by source	100%	Fortum monitors water withdrawals at the facility level from known sources and compiles this information once a year into our central environmental data system, by source. Water withdrawal volumes monitoring methods include e.g. measuring of pumped volumes, filling volumes of water storages and purchased tap water amounts. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
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	76-99	Fortum monitors water withdrawals at the facility level when the quality of withdrawn water is relevant. In many cases the water is anyhow processed at the plant and thus water quality monitoring is not relevant. In some cases water withdrawal is tap water, with known high quality. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water discharges – total volumes	100%	Fortum monitors water discharges at the facility level and compiles this information once a year into our central environmental data system. At hydropower plants the water flow through turbines is automatically calculated from the continuously monitored output. Hydropower plants use in production planning hydrological models including all water balance factors such as precipitation, inflow, runoff and evaporation. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water discharges – volumes by destination	100%	Fortum monitors water discharges at the facility level, the destinations are known. We compile this information once a year into our central environmental data system, by destination. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water discharges – volumes by treatment method	100%	Fortum does not specifically monitor water discharge volumes by treatment method at corporate level, but we monitor water quality at facility level, when necessary, and use the appropriate treatment method. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water discharge quality – by standard effluent parameters	76-99	Fortum measures and monitors water discharge quality by standard methods at our power plants to ensure that we comply with licence conditions set out by environmental authorities. The frequency and monitoring method depend on licence requirements of each power plant. In some cases, especially for cooling water, water discharge quality is not monitored if quality is not affected in Fortum's processes and not requested in licence conditions. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
Water discharge quality – temperature	51-75	Fortum monitores water discharge temperature in cases, where it is relevant, mainly when water is used for cooling and therefore water temperature is increased in the cooling process. Measuring of temperature is not relevant if Fortum's operations do not affect water temperature. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants
Water consumption – total volume	76-99	Fortum consumes water in water and steam processes at power and heat plants, at solar power plants in India, as make-up water of district heating networks, make-up water for cooling towers in Russia and Poland, and in waste treatment processes. Most of the fractions of water consumption are monitored at facility level and compiled once a year into Fortum's company-wide central data system. Parts of water evaporated in water and steam processes at power and heat plants and consumed in waste treatment are not measured as a volume, but these amounts can be estimated by the difference between water withdrawal and discharge. At hydropower plants evaporation at reservoirs and variation of storage is included in hydrological models used in production planning at all plants. For Fortum, % of facilities refers here to individual power plants and waste plants and other facilities, excluding hydropower plants.
Water recycled/reused	100%	Fortum monitors water withdrawals at the facility level and compiles this information once a year into our central environmental data system. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Provision of fully-functioning, safely managed WASH services is a basic requirement for all Fortum's work places and also for Fortum's supplier, as stated in Fortum's supplier Code of Conduct. The provision of WASH services are audited regularly. As an example, provision of good housing conditions including WASH services has been appreciated by the governmental health officials in our solar power plant construction sites in India as a good industry benchmark. For Fortum, % of facilities refers here to individual power plants and waste plants, excluding hydropower plants.

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	2120000	About the same	Total withdrawal decreased about 1% in production operations. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. The figure is expected to be rather stable in relation to production in the future. Water used in hydropower production directly (flowing through turbines or as spillage) is not included in total water accounting as water withdrawal. However, other water withdrawal connected with hydropower production, such as water used in fish farming for environmental compensation is included in water accounting. The total amount of hydropower water withdrawals would be about 400 000 000 megalitres/year and varies based on Nordic hydrological year.
Total discharges	2066000	About the same	Total discharges decreased about 2% in production operations. We apply a threshold of 5% to indicate lower/higher discharge and 20% to indicate much lower/higher discharge. The figure is expected to be rather stable in relation to production in the future. Water used in hydropower production directly (flowing through turbines) is not included in total water accounting as discharges. However, other water discharge connected with hydropower production, such as water used in fish farming for environmental compensation is included in water accounting.The total amount of hydropower water discharges would be about 400 000 000 megalitres/year and varies based on Nordic hydrological year.
Total consumption	54000	Much higher	Water consumption increased about 30% in production operations, but is still very small compared with the total water use. New energy production in Russia using cooling towers and new acquired waste treatment business have affected in increasing water consumption. We apply a threshold of 5% to indicate lower/higher consumption and 20% to indicate much lower/higher consumption. Fortum's total water consumption is calculated as a difference between withdrawals and discharges and this is why the total withdrawals equals to total discharges + total consumption. Most parts of the total consumption are also directly measured at power and heat plants.

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	13	Lower	WRI Aqueduct	Fortum withdraws water in stressed areas in India at our solar power plants and at Argayash and Chelyabinsk power plants in Russia. WRI Aqueduct tool was used to assess water stress of Fortum's production sites. High and extremely high baseline water stress level (above 40%) was chosen to indicate the water stressed areas as best practice stated by CDP. Water withdrawal was decreased 6% from the year 2016. The decrease is a result of adjustment of power production. If water flow used directly in hydropower production would be included in our water withdrawals, the % of water withdrawn from stressed areas would decrease down to approximately 0, as Fortum does not produce hydropower in water-stressed areas and as the hydropower withdrawal volumes are much higher than the water withdrawal in Russia. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal.

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	598000	About the same	Withdrawal from fresh surface water decreased about 1% in production operations. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. Fortum withraws freshwater mainly for cooling, but also as process and auxilliary water, make-up water for district heat networks and fish farms. The figure is expected to be rather stable in relation to production in the future.
Brackish surface water/seawater	Relevant	1519000	About the same	Withdrawal from brackish surface water decreased by 1% in production operations. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. Fortum withraws large volumes of brackish water from the Baltic sea mainly for cooling. The figure is expected to be rather stable in the future.
Groundwater – renewable	Relevant	100	About the same	Withdrawal from groundwater remained at the same level as in 2016 in production operations. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. Fortum's withraws small amounts of groundwater in Finland, Russia, Estonia and India. The figure is expected to be rather stable in relation to production in the future.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	Fortum does not withdraw non-renewable groundwater; water from more sustainable sources is available at our sites of operation. It is very unlikely that Fortum will use non-renewable groundwater in the future either.
Produced water	Not relevant	<Not Applicable>	<Not Applicable>	Fortum does not withdraw produced water water as water from other sources is available at our sites of operation. We do not expect to need to use produced water in the future either.
Third party sources	Relevant	2300	About the same	Withdrawal from third party sources increased by 4.5% in production operations. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. Fortum's water withrawal from third party sources is mainly municipal tap water and small amounts of water purchased from other companies. The figure is expected to be rather stable in relation to production in the future.

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	Fortum recycles and reuses 0.6% of used water. We apply a threshold of 5% to indicate lower/higher withdrawal and 20% to indicate much lower/higher withdrawal. Water reuse and recycling allows Fortum to reduce freshwater withdrawal to be used as process water in condensing and CHP power plants. However, in some cases water recycling and reuse may increase emissions of detrimental elements, such as copper. In these cases the increase of water recycling is not Fortum's goal. The figure is expected to be rather stable or slightly increase in relation to production in the future. The assessment is based on the technical limitations to water recycling and reuse and on the other hand on studies and projects ongoing on increasing of the water recycling and reuse. As an example, at the Chelyabinsk CHP-2 plant, Fortum has a project to install recycling tanks for collecting flush water and increasing water re-use in a planning phase.

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?

Yes, fines, enforcement orders or other penalties but none that are considered as significant

W3. Procedures

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 other company-wide risk assessment system

Frequency of assessment

Annually

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Tools on the market
International methodologies
Other

Tools and methods used

WRI Aqueduct
Environmental Impact Assessment
IPCC Climate Change Projections
Internal company methods

Comment

In addition the yearly company-wide risk assessment system used to assess risks 6 years ahead, water risks are assessed in environmental risk assessment according to the ISO 14001 environmental management systems, which cover 99.8% of Fortum's power and heat production. Sustainability assessments of investments and EIAs include water related risks. WRI Aqueduct database is used to assess risks in water-stressed areas. IPCC Climate Change projection are used to assess impacts on e.g. hydropower.

Supply chain

Coverage
Partial

Risk assessment procedure
Water risks are assessed as part of other company-wide risk assessment system

Frequency of assessment
Not defined

How far into the future are risks considered?
6 to 10 years

Type of tools and methods used
International methodologies
Other

Tools and methods used
Internal company methods
External consultants
Other, please specify (Bettercoal tools in coal supply chain)

Comment
Fortum's potential water risks in the supply chain are mainly related to fuel procurement. Fortum's key tools in supply chain management are country and counterparty risk assessments, supplier qualification and supplier audits, including water issues. About 57% of the wood-based biofuel used by Fortum in 2017 originated from certified sources. Fortum uses the Bettercoal Code and tools in assessing the sustainability of coal supply chain. Bettercoal audits are conducted by a third party.

Other stages of the value chain

Coverage
None

Risk assessment procedure
<Not Applicable>

Frequency of assessment
<Not Applicable>

How far into the future are risks considered?
<Not Applicable>

Type of tools and methods used
<Not Applicable>

Tools and methods used
<Not Applicable>

Comment
Fortum has assessed the water-risks in other stages of the value chain to be minor compared with risks in own operations and in the supply chain. Therefore we have not established a system to assess water-related risks in e.g. product use.

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, only within our direct operations

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	4	1-25	% of facilities is here understood as % of the total amount of power plants or waste treatment plants. Fortum operates in water-stressed areas in India and Russia; our water use in India is low and water-using business limited. In Russia we have projects in the planning phase to reduce water use by e.g. increasing water recycling. Fortum is also able to impact water use by fuel selection. The majority of Fortum's power and heat production capacity as well as waste treatment facilities are located in the Nordic countries, Russia and Poland with good availability of water. Most of Fortum's water-related risks are general for the type of production, risks such as dam failure and environmental regulation risks for hydropower. These general risks are not related to water stressed areas, water availability or water scarcity. We have here listed the biggest power stations exposed to general risks in rivers which are most exposed to these risks (regulatory risk) or have the biggest production capacity (dam failure risk). The dam failure risk and environmental regulation risks exist on some level on most hydropower plants and are not specific to just Fortum's power plants. In addition to the hydropower plants representing the general risks, a risk of increased cooling water temperature is identified for the Loviisa nuclear power plant in Finland.

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
Sweden

River basin
Dalalven

Number of facilities exposed to water risk
1

% company-wide facilities this represents
Less than 1%

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
Less than 1%

% 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
Less than 1%

Comment
Risk of hydropower dam failure and a risk of stringent adoption of EU environmental regulation in Sweden. Dalälven is one of the three rivers with Fortum's largest hydropower production in Sweden and therefore represents here the dam failure risk. Fortum's biggest hydropower plant in the river Dalälven represents here the risk of stringent adoption of EU environmental regulation in River Dalälven.

Country/Region
Sweden

River basin

Other, please specify (Klarälven)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
Less than 1%

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
Less than 1%

% 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
Less than 1%

Comment
Risk of hydropower dam failure and a risk of stringent adoption of EU environmental regulation in Sweden. Klarälven is one of the three rivers with Fortum's largest hydropower production in Sweden and therefore represents here the dam failure risk. Fortum's biggest hydropower plant in the river Klarälven represents here the risk of stringent adoption of EU environmental regulation in River Klarälven.

Country/Region
Sweden

River basin
Other, please specify (Ljusnan)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
Less than 1%

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
Less than 1%

% 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
Less than 1%

Comment
Risk of hydropower dam failure and a risk of stringent adoption of EU environmental regulation in Sweden. Ljusnan is one of the three rivers with Fortum's largest hydropower production in Sweden and therefore represents here the dam safety risk. Fortum's biggest hydropower plant in the river Ljusnan represents here the risk of stringent adoption of EU environmental regulation in River Ljusnan.

Country/Region
Finland

River basin
Other, please specify (Baltic Sea, Gulf of Finland)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
Less than 1%

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
1-25

% 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
Unknown

Comment
Loviisa nuclear power plant: Risk of increase in water temperature, Loviisa nuclear power plant. Fortum does not publicly disclose the proportion of Loviisa power plant of Fortum's total global revenue.

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
Sweden

River basin
Dalalven

Type of risk
Physical

Primary risk driver
Other, please specify (Dam failure)

Primary potential impact
Increased capital costs

Company-specific description
Risk of hydropower dam failure As every dam owner, Fortum is exposed to a risk for a dam failure caused by extreme flooding, severe weather events or other hydrologial or technical reasons. Method for identifying the impact: Fortum's dams have been allocated to dam safety classes defined by Swedish regulations. Dam failures of class A dams would have the most severe consequences to the society and society's functions and include strong flooding along the river and loss of lives. Fortum has three dams in safety class A. The given river basin represents the general dam safety risk as the river which has Fortum's largest hydropower production capacity. The next largest capacities are located in the rivers Klarälven and Ljusnan. Impacts on Fortum's operations: For Fortum a major dam break would lead to physical damages causing large capital costs, business interruptions leading to loss of production, and third- party liabilities. Major dam failures are extremelly unlikely to occur.

Timeframe
More than 6 years

Magnitude of potential impact
High

Likelihood
Exceptionally unlikely

Potential financial impact
1000000000

Explanation of financial impact
The financial impact depends totally on the severity of the dam failure. Together with other hydro power producers, Fortum has a shared dam liability insurance program in place that covers Swedish dam failure liabilities up to SEK 10,000 million. The given figure represents the value of this insurance. Possible costs may include evacuation, repair, replaicement and outage costs of power plants, dams, public and private property, culture and nature environment and infrastructure.

Primary response to risk
Water-related capital expenditure

Description of response
In Sweden, dams of dam safety classes A, B and C are subject to specific regulations regarding monitoring, maintenance and hydrological conditions to endure. Fortum has a well-developed Risk Management Process for Dam Safety to ensure an efficient and safe management our Dam Portfolio, with special emphasis on high consequence dams. This process, in its content and core is formed based on the frame-works of ISO 31000 (Risk Management) and ICOLDs (International Commission of Large Dams) Bulletin 154 - Dam Safety Management: Operational phase of the dam life cycle. Our dams have each a Risk Control Program that consists of programs for: • Investment • Maintenance • Condition Control and Monitoring and; • Operation and Emergency Preparedness • Experience Feed-back Fortum has a long-term program in place for improving the surveillance of the condition of dams and for securing the discharge capacity in extreme flood situations. In 2017 Fortum's biggest dam safety investments were the Långströmmen dam investment in Sweden and the Imatra dam safety project in Finland.

Cost of response
18000000

Explanation of cost of response
The given cost of response represents Fortum's two biggest dam safety investments in Sweden (Långströmmen dam) and Finland (Imatra dam) in 2017. The dam safety investment program is continuous with yearly investment costs. Fortum invested in total EUR 88 million into hydro production in 2017, mainly maintenance, legislation and productivity investments.

Country/Region
Sweden

River basin
Other, please specify (Ljusnan)

Type of risk
Regulatory

Primary risk driver
Tighter regulatory standards

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Risk of stringent adoption of EU environmental regulation in Sweden Method for identifying the impact: The impact is identified by analysing the possibility of conflict of Fortum's hydropower production with Natura and the Water Framework Directive requirements if national implementation disregards the value of hydropower production. The potential main impact could be increase of spillage leading to loss of energy production. Impacts on Fortum's operations: This risk of production loss is highest at hydropower plants in Rivers Ljusnan, Dalälven and Klarälven. In addition to direct production losses on individual power plants, regulation possibilities of the whole cascase of power plant could be decreased.

Timeframe
More than 6 years

Magnitude of potential impact
Medium-low

Likelihood
Unlikely

Potential financial impact
20000000

Explanation of financial impact
Approach to calculate the figure: The potential financial impact may be 0-40 million € (the given figure is a median of this) and depends on the possible lost production and the price of electricity. The figure includes direct production losses and indirect production losses due to decrease of regulation possibilities of the whole cascade of power plants in all Fortum's hydropower plants where risks exist. Timescale for the financial impact: The impact would be annual if realized

Primary response to risk
Engage with regulators/policymakers

Description of response
Fortum engages in active dialogue with regulators and policy makers in national implementation of Water Framework Directive and Natura regulations, by sharing information and understanding of hydrological impacts of hydro operations as well as their connection to power production and river behaviour. In addition, Fortum is financing environmental actions to mitigate environmental impacts. The Swedish Government proposal states, that hydropower industry in Sweden should create a common

hydropower fund to finance large parts of the environmental actions needed. According to the Energy Commission, the fund has a total financial cap of SEK 10 billion to be paid over a 20-year period, and the largest operators will contribute to the fund proportionately based on their respective market share of hydro-power production. Fortum's share is expected to be 20-25% of the fund's total financing. Setting up the fund company is ongoing at the moment.

Cost of response
220000000

Explanation of cost of response
The figure represents the estimated Fortum's share of the fund. According to the Energy Commission, the fund has a total financial cap of SEK 10 billion to be paid over a 20-year period, and the largest operators will contribute to the fund proportionately based on their share of hydropower production. Fortum's share is expected to be 20-25% of the funds total financing. Setting up the fund company is ongoing and Fortum's costs depend on final % of Fortum's share.

Country/Region
Finland

River basin
Other, please specify (Baltic Sea, Gulf of Finland)

Type of risk
Physical

Primary risk driver
Other, please specify (Increased sea water temperature)

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
Risk of increase in water temperature, Loviisa nuclear power plant Increased water temperature may result in increasing cooling water temperature for Fortum’s condensing power plants in Finland: the Loviisa nuclear power plant and the Meri-Pori power plant, and this could require additional pumping capacity of cooling water and construction of longer pipelines in order to take the water from further away in the sea. Increase in the back-flow condensation water temperature on the other hand, affects the availability of the plants. Based on environmental restrictions, increased water temperature may result in production breaks during the times of highest water temperatures. Increase in water temperatures also affects the cleanliness of the systems (e.g. algae, mussels) and hence the system's reliability. For smaller energy production plants, algae doesn't pose a risk but for bigger production plants, such as Fortum's Loviisa nuclear power plant in Finland, masses of algae could be a problem, if they drifted close to the cooling water intake place due to e.g. storms or sea level rise. In such situations algae could cause business interruptions.

Timeframe
More than 6 years

Magnitude of potential impact
Low

Likelihood
Very unlikely

Potential financial impact
5000000

Explanation of financial impact
Water temperature rise can affect nuclear power plants since back-flow condensation water isn’t allowed to exceed 34 degrees e.g. at the Loviisa nuclear power plant in Finland. Seawater temperature rise could also affect the water intake in case of excessive algae growth. Thus algae cleaning can cause business interruptions. The financial impacts depend the length of the production break and the power price. The production break would result in financial loss of about EUR 5 million per week.

Primary response to risk
Water-related capital expenditure

Description of response
Right now there’s no need to take colder cooling water far from the sea at Fortum's condensing power plants in Finland. If the amount of measurable constrains on the availability of nuclear power production became common due to water temperature, investments in a new water intake place could be considered. There are continously ongoing new investments at the Loviisa nuclear power plant to enhance safety in the improbable extreme situation, e.g. when seawater wouldn’t be available to cool the plant’s reactors. A reason for that could be among others an accident of oil tanker ship or a similar incident. Loviisa nuclear power plant’s new cooling system was commissioned in 2015, including among others the new cooling towers, which are independent of

seawater cooling. The system improves the plant's preparedness for extreme conditions when seawater for some reason becomes unavailable for its normal cooling function. There is also the algae cleaning process at the Loviisa nuclear power plant. In 2017, the renewal project of the emergency diesel engines' coolant pipes was started.

Cost of response
0

Explanation of cost of response
The temperature of condensation water is monitored and controlled by authorities. This is a part of normal operations. In practice no additional costs (0 euros). Loviisa nuclear power plant's new cooling system was commissioned in 2015, including among others the new cooling towers, which are independent of seawater cooling. In 2017, Fortum invested EUR 84 million into the Loviisa nuclear power plant.

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
Increased sales of existing products/services

Company-specific description & strategy to realize opportunity
Adjusting hydropower production to climate change impacts Changing temperature and rainfall change the prerequisites for energy production. Changes in temperature would affect snow amount, seasonal river flow patterns and thus Fortum's hydro power production (20.7 TWh in 2017), which has a 28% stake in Fortum's power production portfolio. Fortum has studied the impact of climate change on hydrology in rivers with Fortum's hydropower in Sweden and Finland. Changes in timing of river flow affect water regulation patterns and production planning. Sometimes temperature increase may shift inflows to high demand season. Temperature changes also affect power demand, production and electricity prices. Early adaptation to climate change creates competitive advantage to Fortum. In hydropower production planning Fortum is preparing for climate change by taking into account changes in precipitation and temperature and extreme weather phenomena. Inflow forecasts are adjusted with climate change corrections for more accurate production planning. Fortum is also monitoring the need for adjustments to regulation permits with changes in seasonal variation; one permit change is currently under way in preparation for autumn flooding. Climate change impact can also be taken into account in hydro power refurbishment projects. In 2017, the refurbishments of Fortum's own hydropower plants in Sweden and Finland introduced 8 MW of new, renewable electricity production capacity.

Estimated timeframe for realization
>6 years

Magnitude of potential financial impact
Medium

Potential financial impact
6000000

Explanation of financial impact
Hydropower, which has a 28% stake of Fortum's power production portfolio, is a very competitive production technology, because it is CO2-free and variable costs are low. With hydropower we can react quickly to changing markets and operate competitively in the electricity markets. Fortum has estimated the potential impacts of possible increase in precipitation and temperature on Fortum's hydropower production volumes and water regulation of rivers. The financial impact of potential change in hydropower production depends on the change in Fortum's hydropower production (20,7 TWh in 2017) and market price of electricity. The direct impact as an increase on the value of sold electricity would be EUR 6 million per 1% increase in hydropower production annually. The climate change can also affect power demand, production and electricity prices. Hydrological changes may also create negative impacts

on e.g. regulation possibilities.

Type of opportunity
Markets

Primary water-related opportunity
Strengthened social license to operate

Company-specific description & strategy to realize opportunity
Improved acceptability of power production by responsible operation and water-related measures Improved acceptability of Fortum's power production improves local community relations, makes licence processes easier, increases brand value and improves customer satisfaction and sales of Fortum's products. In Sweden and Finland Fortum works voluntarily with authorities and local interest groups to agree on and implement projects to improve the environment and the use of the water systems. Fortum finances projects that reduce the adverse environmental impacts of hydropower production and support biodiversity and local use of water areas. In 2017 Fortum carried our several types of voluntary environmental projects valued at EUR 1.5 million. Projects included e.g. restoring fish habitats, protection of aquatic red-listed species and construction of a trap-and-trasport facility for migratory fish in the River Oulujoki in Finland. In 2017 Fortum continued supporting local communities with several projects in the vicinity of the Kapeli and Amrit solar power plants in India. Among other things, Fortum has improved water and electricity supply in the villages. In three villages in the vicinity of the Bhadla power plant, a community development programme was started in 2017. The programme includes a Self Help Group for local women and provides drinking water through a “Water ATM”. Additionally, Fortum decreased water use at our Indian solar power, at the Amrit and Kapeli -11% in 2017.

Estimated timeframe for realization
4 to 6 years

Magnitude of potential financial impact
Medium

Potential financial impact
20000000

Explanation of financial impact
Improved acceptability of Fortum's power production improves local community relations, makes licence processes easier, increases brand value and improves customer satisfaction and sales of Fortum's products. The total financial impact of the improvement is difficult to distinguish from other changes in business. Potentially, if improved acceptability of power production would enable new energy production, the value of the increase in sold electricity would, depending on the power price, could be EUR 20 million per 1 % increase in power production annually.

Type of opportunity
Efficiency

Primary water-related opportunity
Improved water efficiency in operations

Company-specific description & strategy to realize opportunity
Improving the efficiency of water use at Fortum´s power plants Increasing water recycling and decreasing water use may generate cost savings and environmental benefits and in some cases ensure compliance with environmental permits and ensure water security especially at Fortum's power plants in Russia, but also in other operating countries. Fortum develops and carries out projects to increase water recycling and water use efficiency where feasible, withing the ISO14001 environmental management systems. Examples of projects: 1. Chelyabinsk CHP-2, Russia: Installation of recycling tanks for collecting flush water from Na-cation and mechanic filters in order to re-use water. Part of water with excessive salt and particles content will be delivered to the wet ash removal system. At present all flush water is conducted to the industrial rainwater discharge system. The goal of the project is to reduce water consumption due to its re-use and to decrease the amount of contaminated water discharged into the industrial rainwater discharge system and the finally the recipient lake. The project in a planning phase. 2. Klaipeda CHP-plant, Lithuania: Rainwater is collected and used for cooling of flue gas condenser pipelines from outside. Project implemented. 3. Järvenpää CHP-plant, Finland: Improvements of the boiler to decrease steam consumption. Project implemented in 2017. Several studies are ongoing for decreasing water use at Fortum's power plants.

Estimated timeframe for realization
4 to 6 years

Magnitude of potential financial impact
Low

Potential financial impact
60000

Explanation of financial impact
The given example of the potential financial impact represents the cost saving of decrease of Fortum's water use in Russia per 10 000 megalitres. In addition to cost savings, positive impacts may in some cases include environmental benefits, ensure compliance with environmental permits and ensure water security.

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)

Country/Region
Sweden

River basin
Dalalven

Latitude
61.3807

Longitude
13.7255

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)
0

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
0

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
0

Comparison of consumption with previous reporting year
About the same

Please explain
The location (biggest plant) represents the risks in the whole river. Water withdrawal, equal to water discharge at hydropower plants is excluded from our water accounting (exclusion in W0.6). The flow through the turbines plus spillage (river flow bypassing turbines) by for example at the biggest hydropower plant was 1,780,000 megalitres in 2017. The amount was decreased 10% from 2016 due to the hydrological situation. Used thresholds: +/- 5% is higher/lower, +/-20% is much higher/much lower

Facility reference number
Facility 2

Facility name (optional)

Country/Region
Sweden

River basin
Other, please specify (Klarälven)

Latitude
60.9508

Longitude
12.547

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)
0

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
0

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
0

Comparison of consumption with previous reporting year
About the same

Please explain
The location (biggest plant) represents the risks in the whole river. Water withdrawal, equal to water discharge at hydropower plants is excluded from water accounting (exclusion in W0.6). The flow through the turbines plus the spillage (river flow bypassing turbines)for example at the biggest hydropower plant was 3,180,000 megalitres in 2017. The amounts were decreased, about 8%, from 2016, due to the hydrological situation . Used thresholds: +/- 5% is higher/lower, +/-20% is much higher/lower

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Facility reference number
Facility 3

Facility name (optional)

Country/Region
Sweden

River basin
Other, please specify (Ljusnan)

Latitude
62.0421

Longitude
14.8988

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)
0

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
0

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
0

Comparison of consumption with previous reporting year
About the same

Please explain
The location (biggest plant) represents the risks in the whole river. Water withdrawal, equal to water discharge at hydropower plants is excluded from water accounting according to the exclusion in W0.6. The flow through the hydropower plant plus the spillage (river flow bypassing turbines) for example at the biggest hydropower plant was 3,610,000 megalitres. The amounts were about the same in 2016. Used thresholds: +/- 5% is higher/lower, +/-20% is much higher/much lower.

Facility reference number
Facility 4

Facility name (optional)
Loviisa nuclear power plant

Country/Region
Finland

River basin
Other, please specify (The Baltic Sea, Gulf of Finland)

Latitude
60.3706

Longitude
26.3466

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)
1373000

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
1373000

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
0

Comparison of consumption with previous reporting year
Much lower

Please explain
Water withdrawal and discharge comprises almost totally of cooling water. Cooling water withdrawal and discharge was 1,372,000 megalitres. Water consumption in 2017 was slightly negative, less than -1 megalitres. The negative value is due to discharge of water withdrawn and stored in previous years for power plant processes. Water withdrawal and discharge of Loviisa nuclear power plant increased with 2.5% from 2016. Used thresholds: +/- 5% is higher/lower, +/-20% is much higher/much lower

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W6. Governance

W6.1

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

No

W6.2

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

Yes

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)

Other C-Suite Officer, please specify (SVP, Corporate Affairs and Communication)

Responsibility

Other, please specify (Follow-up of water-related incidents)

Frequency of reporting to the board on water-related issues

More frequently than quarterly

Please explain

Corporate Affairs and Communications Function, led by Senior Vice President, Corporate Affairs and Communications, is responsible of the lead in managing sustainability, including water issues. SVP, Corporate Affairs and Communications is a member of Fortum Executive Management (FEM). Performance against Fortum's sustainability targets are reported regularly to FEM and the Board. One of the sustainability targets, number of major EHS-incidents, is reported monthly to FEM and regularly also to the Board. Major EHS incidents include spills to water, dam safety incidents, water-related non-compliances such as non-compliance with water regulation limits. Also the Nordic hydrological situation is reported to the Board regularly. Risk assessment of major investments in terms of sustainability, as well as oversight of operational sustainability risks, fall under the responsibilities of SVP, Corporate Affairs and Communications. These assessments cover also water-related risks.

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	> 30	Investment cycles in energy and hydro power are tens of years and thus Fortum put lots of emphasis on long term strategic planning and target setting. Hydro power is in the core of Fortum strategy and we do extensive modeling how hydrological situation in our core markets in Nordic, Russia and continental Europe develops. Climate change impacts have been taken also into account in our models (temperature changes, hydro inflows, availability and temperature of cooling water). For investment planning purposes we use comprehensive hydro dam categorisation that helps us prioritisating capex for most imporant dams and hydro equipment.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	> 30	Fortum long term market outlook is the basis for your strategy. Especially in Nordic countries, where hydro power has a major role in electirity generation, water releted issues are in key role. On top of inflow estimates we constantly update our view on regulatory changes (hydro permiting, taxation, EU directive updates etc). Estimetes on future power prices, hydro power availability and production estimates, possible power upgrades etc are done for next 30+ years. In addtion, as hydro power is part of the larger electiricty and energy system we also need to take into account how the whole energy system may change during coming decades (role of solar power, role of combined heat and power generation, future of nuclear and fossile thermal power, changes in power and heat demand, consumer behiviour, politics, digitalization etc).
Financial planning	Yes, water-related issues are integrated	> 30	Hydro power is in the core of our financial planning too. Hydro power provides us significant revenues and we invest tens of millions of euros to hydro power every year. We take care of large number of hydro power related costs (hydro plant operating, maintenance and modernisation, EU Water Framework Directive implementation, hydro related R&D, etc. In financial planning we need to estimate how the hydro cost will develop in coming years and decades. In order to do that, we need to have solid insight on potential regulatory changes such as EU Water Framework Directive. As said, hydro power investment horizon is over 30 years and thus it is relevant for us to assess all hydro related issues in very long time frame.

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 Activity 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	The Fortum Executive Management decides on the sustainability approach and Group-level sustainability targets that guide annual planning. The targets are ultimately approved by Fortum's Board of Directors. Fortum Executive Management monitors the achievement of the targets in its monthly meetings and in quarterly performance reviews. The achievement of the targets is regularly reported also to Fortum's Board of Directors. In addition to the Group-level sustainability targets, Fortum sets activity-level and business-level targets and goals as a part of the ISO 14001 environmental management system. These targets can address e.g. water used in water-stressed areas.

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
Increase freshwater availability for users/natural environment within the basin

Description of target
Water is used to clean the solar panels at Fortum's solar power plants in India. India's share of our water use in 2017 was about 6 megalitres, i.e. only 0.0003% of our total water withdrawal. While the water volumes are small, Fortum aims to increase the efficiency of our water use in India. The locations of Fortum's solar power plants in India are assessed to be water stressed according to the WRI Aqueduct database and therefore saving of water is essential for achieving water security. We have set a target in the Indian solar power production environmental management system to discontinue the use of water for cleaning panels at our current solar power plants by 2020, so the target is 100% reduction of water consumption.

Quantitative metric
% reduction in total water consumption

Baseline year
2016

Start year
2017

Target year
2020

% achieved
11

Please explain
At the Amrit solar power plant, Fortum has built an absorption basin to collect and absorb rainwater. By improving the efficiency of the cleaning processes, water use at the Amrit and Kapeli power plants (the plants in use in 2016) decreased by 11% in 2017. The target is to decrease the consumption by 100%. Fortum is also developing waterless cleaning methods for solar panels. Fortum has in 2018 started a waterless cleaning pilot project, which is anticipated to contribute to the target of stopping water use in cleaning of panels.

Target reference number
Target 2

Category of target
Water pollution reduction

Level
Company-wide

Primary motivation
Reduced environmental impact

Description of target
In 2017 Fortum had a target of having at most 21 major EHS incidents in our operations. The target level is revised each year for continuous operational improvement. The major EHS incidents include e.g. leaks, INES (International Nuclear Event Scale) incidents exceeding level 0, dam safety incidents and environmental non-compliances, such as non-compliance with water regulation or wastewater discharge limits. Low level of incidents ensures water security for all water users.

Quantitative metric
Other, please specify (Number of major EHS-incidents)

Baseline year
2015

Start year
2017

Target year
2017

% achieved
100

Please explain

The target was achieved in 2017 as there were 20 major EHS incidents. The target level is revised each year for continuous operational improvement, in 2016 the target level was 23 incidents. For 2018 the target level is up to 20 incidents and in 2020 up to 15 incidents.

W8.1b

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

Goal

Watershed remediation and habitat restoration, ecosystem preservation

Level

Company-wide

Motivation

Reduced environmental impact

Description of goal

Because the water dependency in Fortum's direct operations is vital, we aim to improve biodiversity, especially aquatic biodiversity in connection with its operations, carry out biodiversity-related projects and cooperate with stakeholders in projects. Fortum's impacts on biodiversity are primarily related to our hydropower production operations in Finland and Sweden, but biodiversity issues are managed in all operations according to Fortum's Biodiversity manual updated in 2017. Fortum's annually updated biodiversity action plan, created according to the updated manual, includes biodiversity enhancing voluntary measures like watershed remediation, habitat restorations and ecosystem preservation. Fortum annually finances several types of voluntary environmental projects, in 2017 valued at EUR 1.5 million. The goal to implement biodiversity related actions annually is important for Fortum, as we have the responsibility of minimizing our impacts of power and heat production and other operations, and measures are also important for maintaining business possibilities in the future. This is especially connected to Fortum's hydropower production in Sweden and Finland, to ensure that operation are in line with environmental regulations such as Water Framework Directive as well as expectations of various stakeholders. Importance of minimizing impacts and maintaining business possibilities can also be connected to other types on Fortum's operations.

Baseline year

2017

Start year

2017

End year

2017

Progress

Fortum assesses progress of the goal for biodiversity-related measures by annual follow-up of the implemention Fortum's Biodiversity Action plan. Also the monetary value on voluntary environmental projects are followed and published in Fortum's Sustainability report. In 2017 the value of the projects was EUR 1.5 million. Fortum also follows the success of previously restored habitats. In 2017 Fortum carried out several habitat restorations, examples: In Sweden, we tore down the Acksjön dam in a tributary of the River Klarälven. This resulted in a new 100 m long stretch of river and the removal of a migration barrier that will benefit biodiversity. At the River Dalälven in Sweden, we restored a 180 m-long river stretch in 2017. The aim was to increase possibilities for sea trout to spawn in the River Dalälven. Gravel and boulders were added to the river. The restoration was part of the "Biodiversity in lower Dalälven" project, with the goal to enhance fish spawning of migratory fish in the River Dalälven. Monitoring of the River Vuoksi in Finland gave positive results regarding fish abundance at previously restored riverine habitats upstream of the Imatra hydropower plant. The restored areas were further amended by morphological modifications in 2017. All the projects were carried out in cooperation with partners such as municipalities and environmental authorities. For improved the habitat of Myrstarr (Carex heleonastes), a rare aquatic plant species growing in River Ljusnan

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	President and CEO	Chief Executive Officer (CEO)

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	Public	Investors

Please confirm below

I have read and accept the applicable Terms