

W0. Introduction

W0.1

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

Tokyo Electric Power Company, Incorporated (TEPCO) was established in 1951 to supply electric power to the Tokyo metropolitan area, and for more than half a century it has continued to support society and public life with high-quality electric power. The Tohoku-Chihou-Taiheiyou-Oki Earthquake, which struck on March 11, 2011, precipitated a serious accident at Fukushima Daiichi Nuclear Power Station. TEPCO has seen considerable weakening in its financial standing and income structure due to factors associated with the aforementioned event, such as the recording of substantial expenses and losses and an increase in fuel costs accompanying the suspension of nuclear power generation. In short, TEPCO has been confronted with an unprecedented major crisis. Addressing the situation, TEPCO, along with the Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF), formulated the Comprehensive Special Business Plan, putting together a program of drastic streamlining, management reforms, and other steps. Simultaneously, TEPCO strengthened its financial position through the issuance of preferred stocks totaling JPY 1 trillion, with the NDF as allottee. As a result of the above, including such initiatives as exhaustive cost reductions, in the year ended March 31, 2016, TEPCO achieved profitability for a third consecutive year. In April 2016, Tokyo Electric Power Company (TEPCO) transitioned to a holding company system by reorganizing into three independent businesses: fuel & thermal power generation, general power transmission and distribution, and retail electricity. With a responsibility to the community of Fukushima and to better serve our customers, TEPCO will implement major changes.

W-EU0.1a

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

Electricity generation
Transmission
Distribution

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	3200	5.5	23254884
Lignite	0	0	0
Oil	8700	15.1	8573785
Gas	30936	53.6	158447719
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	12612	21.9	0
Geothermal	3	0.01	10251
Hydroelectric	2193	3.8	7821933
Wind	18	0.03	24464
Solar	30	0.05	32880
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	57692	100	198165916

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	April 1 2016	March 31 2017

W0.3

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

Japan

W0.4

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

JPY

W0.5

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

Companies, entities or groups over which financial control is exercised

W0.6

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

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Overseas Offices (Washington, London, Beijing)	Small leased office space (about 10 employees) where the amount of water usage is small and water is provided through the lease and is managed by our landlord, water-related risk associated with these 3 offices is negligible.

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	Sufficient amounts of freshwater are important for our direct operations because they are necessary for electricity production. Freshwater is directly used in hydroelectric power plants, which consists 6% of TEPCO's electricity generation. Amount of fresh water used in thermal power and nuclear power plants is small due to circulated usage of treated freshwater and use of seawater for cooling. As for indirect water use, we recognize that some of our suppliers use a sizeable amount of freshwater to extract and wash coal, and in avoiding fire accident in stockyards. Due to diversification of suppliers and diversification of power supply configuration (coal-fired power consists of about 20% of our power generation), impact to our business is quite limited. About water quality, we manage radioactive contaminated water in Fukushima Daiichi Nuclear Power Station decommissioning process.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	We do not use brackish water, nor produced water in our facilities. We use recycled water in thermal power plants so that we could reduce fresh water consumptions. In particular, we collect water used at boilers and recycle it, then we use the water at boilers again. Likewise, we are not aware that any of our major suppliers uses a sizeable amount of recycled, brackish or produced water. This is why recycled brackish water or produced water is considered important for our suppliers. Future prospects of water utilization are thought to be little change by FY2018. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that TEPCO will exclude recycled water related to thermal power generations from the boundary.

W1.2

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

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	Water withdrawals are measured and monitored at all of our power stations and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At some power stations or offices, we submit yearly data based on the agreement with local governments where they are located. Total volumes of water withdrawals are always monitored by watching water level, flow meters, and operation hours of pumps.
Water withdrawals – volumes from water stressed areas	100%	According to the evaluation by WRI Aqueduct, the hydroelectric power generation area is evaluated as Medium-High at the maximum risk, and because the maintenance flow rate prescribed by the Ministry of Land, Infrastructure and Transport is able to be secured at all hydropower stations, we judge that there is no power stations located in water stressed area. All of thermal power plants are located in coastal areas and use sea water for indirect cooling facilities. The consumptions of sea water are always monitored by operation hours of pumps. Moreover we update information of water risks for each plants, and we judge whether plants are located in water stressed areas or not by using data of total volumes of water withdrawals and discharges more than once / year.

	% of sites/facilities/operations	Please explain
Water withdrawals – volumes by source	100%	Water withdrawals are measured and monitored at all of our power stations and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At some power stations or offices, we submit yearly data based on the agreement with local governments where they are located. Water withdrawals in thermal power plants and nuclear power plants are constantly monitored by flowmeters and operations of pumps working hours. Moreover, we always monitor volumes of water by checking water level meter in hydroelectric power 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	100%	In hydroelectric power plants, we grasp muddiness of water when we draw water. At thermal power plants located in coastal area, we monitor sea water temperature when we draw which is used for indirect cooling facilities. This data is useful for grasping temperature of the sea water difference between withdrawals and discharges.
Water discharges – total volumes	100%	Water discharges are measured and monitored at all of our power stations and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At some power stations or offices, we submit yearly data based on the agreement with local governments where they are located. Water discharges from thermal power plants and nuclear power plants are constantly monitored by flowmeters and operation hours of pumps. Moreover, we always monitor volumes of water by checking water level meter in hydroelectric power plants.
Water discharges – volumes by destination	100%	Water discharges by destination are measured and monitored at all of our power stations and offices every fiscal year in our environmental management system. At some power stations, we submit yearly data based on the agreement with local governments where they are located. Water discharges from thermal power plants and nuclear power plants are constantly monitored by flowmeters and operation hours of pumps. Moreover, we always monitor volumes of water by checking water level meter in hydroelectric power plants.
Water discharges – volumes by treatment method	100%	Water discharges are measured and monitored at all of our power stations and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At some power stations or offices, we submit yearly data based on the agreement with local governments where they are located. Volume of wastewater from the treatment facility is constantly monitored by flow meters in thermal power plants and nuclear power plants.
Water discharge quality – by standard effluent parameters	100%	The quality of water discharges is measured and monitored at all of our power stations and offices based on standards effluent parameters in our environmental management system. The monitoring frequency depends on laws and administrative guidelines set for each item. Regarding monitoring of water quality, pH, COD, oil film etc are constantly monitored, and heavy metals etc. are measured each year as determined by laws and administrative guidelines.
Water discharge quality – temperature	100%	In the thermal power plant, the temperature of water discharged to the sea which is used for the indirect cooling water is constantly monitored by the thermistor.
Water consumption – total volume	100%	Water consumption is measured and monitored at all of our power stations and offices every fiscal year in our environmental management system. It is calculated by the difference between withdrawals and discharges which are constantly monitored.
Water recycled/reused	100%	The boiler water of the thermal power plant blown for maintaining water quality is treated by the water treatment facility, but a part of it is always purified and returned to the boiler water system after purification. Regarding water quality of boilers, we constantly monitor pH, electrical conductivity and so on.
The provision of fully-functioning, safely managed WASH services to all workers	100%	TEPCO continuously monitors if we are providing all of our employees at all of our facilities with safe drinking water and sanitation. We respect our employees' character and individuality and are committed to providing them with a good working environment. Drinking water is provided from the public waterworks bureau, and residual chlorine concentration data etc. are confirmed every day.

W-EU1.2a

(W-EU1.2a) For your hydroelectric operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
Fulfillment of downstream environmental flows	100%	At the hydroelectric power plants, equipments to detect the oil film are installed, and when it is detected it is collected so as not to affect the downstream area.
Sediment loading	100%	We regularly measure the sediment loading at all hydroelectric power plants.
Other, please specify	Please select	

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	86711621	About the same	The total volume of water withdrawn was almost the same as that in the previous year. FY2015 corrected value: 96,712,563. The total amount of water used in offices is expected to remain unchanged from the recent years by continuing efficient use. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that TEPCO will exclude water related to thermal power generations from the boundary.
Total discharges	86706193	About the same	The total volume of discharge was almost the same as that in the previous year. (FY2015 corrected value: 96,706,650 megaliters /year) There was no significant change in the power generation output, and the volume of discharge was hardly changed. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that TEPCO will exclude water related to thermal power generations from the boundary.
Total consumption	5428	About the same	The total volume of consumption was almost the same as that in the previous year. There was no significant change in the power generation output, there was almost no change in both withdrawals and drainage, and the water consumption was about the same as the previous year. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that TEPCO will exclude water related to thermal power generations from the boundary.

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	WRI Aqueduct widely used as a water risk assessment method is adopted. According to the evaluation by Aqueduct, the hydroelectric power generation area is evaluated as Medium-High at the maximum, and because the maintenance flow rate prescribed by the Ministry of Land, Infrastructure and Transport is able to be secured at all hydropower stations, we judge that there is no power station located in water stressed area. Since last fiscal year this risk situation has not changed. Also, since we are using seawater for indirect cooling water of all thermal power plants, we have judged that thermal power plants are not located in water stressed areas. we continually collect information on the fact that power stations are not located in 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	51000000	About the same	The figure is the quantity of water intake at our hydroelectric plants, approved by the Ministry of Land, Infrastructure, Transport and Tourism. The volume of rainwater used in a few offices as flush toilet water is quite small. There was no significant change in the hydroelectric power generation output, the total volume of withdrawals was almost the same as that in the previous year.(FY2015 corrected value: 56,800,000 megaliters/year) Hydroelectric power generation is really important as a role of renewable energy, so consumption of water will be supposed to remain the same level in the future.
Brackish surface water/seawater	Relevant	35700000	About the same	The figure is the quantity of designed seawater intake at our thermal power plants in operation based on the assumption that it was driving all the year. The seawater is used in heat exchangers in the condensers at each plant, but that does not accompany consumption. Note that all of our nuclear power plants have stopped their operation since 2011. There was no significant change in thermal power generation output, the total volume of seawater withdrawals used for indirect cooling at the condenser was almost the same as that in the previous year. In the future, in April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that seawater will be excluded from the boundary as indirect cooling water related to thermal power generation.
Groundwater – renewable	Relevant	282	About the same	The volume of renewable groundwater was about the same thanks to the effect of the inflow prevention countermeasure of groundwater at Fukushima Daiichi Nuclear Power Station. The total volume of consumption was almost the same as that in the previous year. Due to proceeding contaminated water management in Fukushima Daiichi Nuclear Power Station, consumption of renewable groundwater will be decrease up coming years.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	We do not use any non-renewable groundwater now and in the future because there are no processes and facilities using non-renewable groundwater in TEPCO's electric power systems.
Produced water	Not relevant	<Not Applicable>	<Not Applicable>	We do not use any produced water now and in the future because there are no processes and facilities using produced water in TEPCO's electric power systems.
Third party sources	Relevant	11339	About the same	Water of Third party sources is relevant because it is used for power generation water in thermal power plants and drinking water of all offices. There was no significant change in thermal power generation output, and we have continued water saving at offices, so the total volume of water consumption was almost the same as that in the previous year. In the future, in April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that consumption of water for thermal power generation and domestic use will be excluded from the boundary up coming years.

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	51000000	About the same	The figure is the same as the quantity of water intake at our hydroelectric plants, approved by the Ministry of Land, Infrastructure, Transport and Tourism. We assume the volume of water discharge should be the same as the volume of water intake. There was no significant change in the hydroelectric power generation output, the total volume of discharges was almost the same as that in the previous year. (FY2015 corrected value: 56,800,000 megaliters/year) Hydroelectric power generation is really important as a role of renewable energy, so consumption of water will be supposed to remain the same level in the future.
Brackish surface water/seawater	Relevant	35704900	About the same	We use seawater for making it steam and indirectly cooling condensers at thermal electric power plants, then discharge to the sea. There was no significant change in thermal electric power generation output, the total volume of discharges into the sea was almost the same as that in the previous year. In the future, in April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that consumption of discharge of brackish surface water / sea water for thermal power generation will be excluded from the boundary in upcoming years.
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	There is no plants and facilities penetrating and draining water into the ground now. And we do not introduce these systems in the future.
Third-party destinations	Relevant	1293	About the same	We have continued saving domestic use of water, and the volume of discharge third-party destinations was almost the same as that in the previous year. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that drained third-party destinations water for thermal power generation will be excluded from the boundary.

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	11-25	About the same	We use the ratio of recycled water in the boiler water of the thermal power plant. Boiler water has been used efficiently than before, and there has been no major change since the previous year. As a result, we have been able to reduce the withdrawals from the third party and contribute to the lowering of reliance on freshwater. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations will be transferred to JERA Co., Inc., so that water discharges for thermal power generation will be excluded from the boundary. We will continue on efforts to make effective use of water.

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
94.2	Other, please specify (Available power generation output)	Other, please specify (Power generation output)	About the same	Our general hydroelectric power plants, the rates of system operations are really high. Thanks to no water shortages and no droughts, hydroelectric power plants could operate same level as FY2015. Information on this flow rate value is released to institutional investors.

W1.4

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

Yes, our suppliers

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

76-100%

% of total procurement spend

76-100

Rationale for this coverage

We request suppliers to considerate lifecycles of products and services by green procurement guidelines. We purchase products and services considering various environmental burdens over the full product life cycle from resource extraction to disposal. We present green procurement guidelines to all suppliers. We request all corporations affiliated equity-method to submit actual results of water consumptions, because we judge if they are consistent in financial reports and how they influence our business. In near future, we plan to release the actual results of supply chains, and we think this would be an incentive for us known as an environmentally-friendly company to the society.

Impact of the engagement and measures of success

For increasing cooperate value of both TEPCO and corporations affiliated equity-method, we work on environmental consideration measures at supply chains. We feedback the total volume of water consumptions of corporations affiliated equity-method, and share the importance of considering water resources. In near future, we plan to release the actual results of supply chains, and we think this would be an incentive for us known as an environmentally-friendly company to the society.

Comment

W1.4b

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

Type of engagement

Incentivizing for improved water management and stewardship

Details of engagement

Offer financial incentives to suppliers improving water management and stewardship across their own operations and supply chain

% of suppliers by number

76-100

% of total procurement spend

76-100

Rationale for the coverage of your engagement

We present green procurement guidelines to all suppliers, we request all corporations affiliated equity-method to submit actual results of water consumptions.

Impact of the engagement and measures of success

For increasing cooperate value of both TEPCO and corporations affiliated equity-method, we work on environmental consideration measures at supply chains. We feedback the total volume of water consumptions of corporations affiliated equity-method, and share the importance of considering water resources. In near future, we plan to release the actual results of supply chains, and we think this would be an incentive for us known as an environmentally-friendly company to the society. We refer supply chain's scores of information disclosure by the third party evaluation organization, and we measure success of engagement by submission numbers of actual results of water consumptions of them.

Comment

W2. Business impacts

W2.1

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

Yes

W2.1a

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

Country/Region

Japan

River basin

Other, please specify (the Pacific Ocean)

Type of impact driver

Physical

Primary impact driver

Declining water quality

Primary impact

Constraint to growth

Description of impact

The Fukushima Daiichi Nuclear power station was attacked by a huge tsunami caused by the Tohoku-Chihou-Taiheiyou-Oki Earthquake on March 11 2011. After that, at the Fukushima Daiichi Nuclear Power Station, inflow into buildings (inflow such as groundwater and rainwater into buildings), though the evaluation entails uncertainty, has declined from around 400 m3/day before measures were implemented to the latest average of around 120 m3/day (the average in March 2017) by steadily implementing various measures for reduction. With this response, we have been financially impacted, in particular, labor and costs are additionally generated due to the processing and storage of contaminated water. We estimate that the expenses related to these contaminated water treatments are about 30% of the cost of 1.117 trillion yen required for decommissioning work. In addition to this, at the time of formulating the New Comprehensive Special Business Plan, we have secured a capital of more than 1 trillion yen separately for investment and cost of polluted water and stabilization measures as total amount for 10 years from FY 2013, it plans to allocate it to investment and expense of water and stabilization measures.

Primary response

Other, please specify (Technological development)

Total financial impact

99999999999

Description of response

At the Fukushima Daiichi Nuclear Power Station, some of the groundwater is entering into the nuclear reactor building at a rate of approximately 150 tons/day, converting into newly contaminated water. For this reason, we are implementing various measures to counter the risk of contaminated water flowing into the port of the power station and the risk of contaminated water flowing out from the storage tanks. These measures are based on our three basic policies of "REMOVE the source of water contamination", "REDIRECT fresh water from contaminated areas", and "RETAIN contaminated water from leakage". Specifically, contaminated water are treated as Multiple facilities including a Multi-nuclide Removal Facility, "Groundwater Bypass System" serves to reduce the amount of contaminated water flowing into the reactor building, and this land-side impermeable wall consists of frozen soil using a frozen construction method that can ensure excellent prevention of water seepage in order to block the flow of groundwater, etc. are set up. We estimate that the expenses related to these contaminated water treatments are about 30% of the cost of 1.117 trillion yen required for decommissioning work. At the time of formulating the New Comprehensive Special Business Plan, we have secured a capital of more than 1 trillion yen separately for investment and cost of polluted water and stabilization measures as total amount for 10 years from FY 2013, it plans to allocate it.

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?

Through our environmental management system, we ascertain emissions volumes, consumption volumes, and retention volumes for PCB (polychlorinated biphenyl) waste, toxic substances subject, ozone depleting substances, and asbestos. Substances subject to management are managed appropriately in accordance with applicable laws and we work towards emissions reduction by promoting switching to products not containing applicable substances. PCB has chemically stable properties such as high incombustibility and high electrical insulation, but gradually accumulates in the body by chronic ingestion due to its nature that it is soluble in fat, causing various symptoms. We are aware of the potential impact on water quality due to PCB leakage due to accidents, etc. by environmental impact assessment. By installing waterproof barrier etc. and installing oil film detection shutoff valves etc., leakage risk is sufficiently reduced. In addition, we are strictly handling leakage countermeasures and waste disposal appropriately for our power producers in the value chain as well as our company.

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	PCB has chemically stable properties such as high incombustibility and high electrical insulation, but gradually accumulates in the body by chronic ingestion due to its nature that it is soluble in fat, causing various symptoms. We are aware of the potential impact on water quality due to PCB leakage because of accidents, etc. is really high by environmental impact assessment. By installing waterproof barrier etc. and installing oil film detection shutoff valves etc., leakage risk is sufficiently reduced.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Through our environmental management system, we ascertain emissions volumes, consumption volumes, and retention volumes for PCB (polychlorinated biphenyl) waste, toxic substances subject, ozone depleting substances, and asbestos. Substances subject to management are managed appropriately in accordance with applicable laws and we work towards emissions reduction by promoting switching to products not containing applicable substances. PCB has chemically stable properties such as high incombustibility and high electrical insulation, but gradually accumulates in the body by chronic ingestion due to its nature that it is soluble in fat, causing various symptoms. We are aware of the potential impact on water quality due to PCB leakage due to accidents, etc. by environmental impact assessment. By installing waterproof barrier etc. and installing oil film detection shutoff valves etc., leakage risk is sufficiently reduced. In addition, we are strictly handling leakage countermeasures and waste disposal appropriately for our power producers in the value chain as well as our company. The PCB leakage correspondence procedure is tested at once a year, confirming that it functions in an emergency situation, and the environmental internal audit confirms the progress of the procedure and the status of the test implementation.

W3.3

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

Yes, water-related risks are assessed

W3.3a

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

Direct operations

Coverage

Full

Risk assessment procedure

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

Frequency of assessment

Six-monthly or more frequently

How far into the future are risks considered?

6 to 10 years

Type of tools and methods used

Tools on the market
International methodologies
Databases

Tools and methods used

WRI Aqueduct
Environmental Impact Assessment
Life Cycle Assessment
Regional government databases

Comment

We make use of various methods and databases to assess water-related risks in our direct operations and supply chain.

Supply chain

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

International methodologies
Databases

Tools and methods used

Environmental Impact Assessment
Life Cycle Assessment
Regional government databases

Comment

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

W3.3b

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

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Sufficient amounts of freshwater are important for our direct operations because they are necessary for electricity production. We always obtain information on water availability of each region from WRI Aqueduct, regional government databases, and assesses its impact on our business.
Water quality at a basin/catchment level	Relevant, always included	Sufficient amounts of freshwater are important for our direct operations because they are necessary for electricity production. We always obtain information on water availability and quality of each region from regional government databases, and assesses its impact on our business. In the pumped storage hydro-power plant, we monitor the turbidity from the upstream and the like constantly so that there is no oil outflow to the downstream. Even if it is detected, an adsorbing mat, etc. are installed so as not to flow into the downstream area.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Sufficient amounts of freshwater are important for our direct operations because they are necessary for electricity production, and any stakeholder conflicts concerning water resources may have some negative impact on our business. We keep collecting information on potential conflicts from various sources, especially our internal company knowledge accumulated in our power plants, and prepare to deal with them as our risk management.
Implications of water on your key commodities/raw materials	Relevant, always included	We understand that a certain amount of freshwater is used by some of our suppliers, especially coal producers. They need lots of water to extract and wash coal, and in avoiding fire accident in stockyards. We use our internal company knowledge (location of our suppliers, etc.) to assess potential water risks of these suppliers. Results of the assessment is used as a part of our risk scenario analysis. And for hydroelectric power plants, we evaluate its potential water risks using our internal company knowledge, i.e. influence on power generation accompanying in precipitation changes, and regional government databases (precipitation data, etc.).
Water-related regulatory frameworks	Relevant, always included	In closed waters such as Tokyo Bay, strict restrictions are imposed by COD etc. in order to suppress eutrophication of the sea area. Because we have many thermal power stations in this area, strengthening these regulations have some impact on our company. Therefore, it is necessary to pay attention to national standards whether rational regulatory review will be conducted.
Status of ecosystems and habitats	Relevant, always included	When we construct a new power plant, environmental impact assessment is conducted as required by the Environmental Impact Assessment Act. We assesses impact from water withdrawals and discharges on the ecosystems and habitats so that our operations will not disrupt them.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	TEPCO is committed to creating a fair and secure working environment to all employees, and helps them maintain and improve their health. And we ensure the safety of water by providing fully-functioning WASH services at all power plants and offices. The tap water quality standards are stipulated by the Ministry of Health, Labor and Welfare based on the law, and we use water that satisfies this standard. We continuously monitor if we are providing all of our employees at all of our facilities with safe drinking water and sanitation. Monitoring is conducted using the internal company method of water quality management. Failure to do so will entail significant risk. We take into account the information gained through this monitoring when we evaluate water-related risks.
Other contextual issues, please specify	Not considered	

W3.3c

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

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Facing electricity deregulation in Japan, TEPCO needs to prevent customers from defecting. Since our water issues (especially contaminated water issues) may have some impact on our reputation, we are working on collecting opinions from customers on water issues and improving transparency of information disclosed so that our credibility is enhanced.
Employees	Relevant, always included	TEPCO is committed to creating a fair and secure working environment to all employees, and helps them maintain and improve their health. And we ensure the safety of water by providing fully-functioning wash services at all power plants and offices. Failure to do so will entail significant risk, so that we violate the laws and rules of society. As Possible risks, it happens employees' health damages, troubles for power supply, and confusion in society. Our company thinks people preciously than anything. We continuously monitor if we are providing all of our employees at all of our facilities with safe drinking water and sanitation. We take into account the information gained through this monitoring when we evaluate water-related risks. Although the public waterworks bureau measures residual chlorine of drinking water every day, we also regularly check the water quality.
Investors	Relevant, always included	Since our water issues (especially contaminated water issues) may have some impact on our reputation, which in turn may influence investors' behavior, we are working on promptly disclosing correct data and accurate information on contaminated water in which investors seem keenly interested. At the time of announcement of financial results, we publish major progress and major countermeasures for polluted water decontamination at Fukushima Daiichi Nuclear Power Station as explanatory materials for analysts. Reaction from investors and analysts are reflected in our risk analysis.
Local communities	Relevant, always included	Relationship with local communities are essential to our business. We conduct mutual communication on water related issues with the local communities where our facility locates so as to reflect their opinions and secure transparency. Results of these communications are reflected in our risk analysis. We recognize that good relations with fishery related persons, local residents, etc. are an important foundation for power station management on continuing.
NGOs	Relevant, always included	In dialogue with NGOs, we are working on reflecting opinions from them and securing transparency. We are working on promptly disclosing correct data and accurate information on contaminated water in which NGOs seem keenly interested. Results of these communications are reflected in our risk analysis.
Other water users at a basin/catchment level	Relevant, always included	Water risks are common issues for local users. In dialogue with them, we are working on information exchange and sharing countermeasures especially in case of water shortages. In the environmental impact assessment of the thermal power plant, we refer to the warm discharge data of other companies. Results of these communications are reflected in our risk analysis.
Regulators	Relevant, always included	Legislative amendments may have some impact on our business. We are working on getting a situation of status change in close communications with regulators concerning water issues, especially Ministry of Environment or Ministry of Land, Infrastructure, Transport and Tourism. Results of these communications are reflected in our risk analysis. In closed waters such as Tokyo Bay, strict restrictions are imposed by COD etc. in order to suppress eutrophication of the sea area. Because we have many thermal power stations in this area, strengthening these regulations have some impact on our company. Therefore, initiatives such as encouraging rational review of regulations are necessary.
River basin management authorities	Relevant, always included	A status change in river basin management plan may have some impact on our facilities' operations. We maintain close communication with local river management authorities of the Ministry of Land, Infrastructure and Transport on water issues and are working on information exchange. Results of these communications are reflected in our risk analysis.
Statutory special interest groups at a local level	Relevant, sometimes included	Concerning thermal effluent and Fukushima contaminated water problem, we conduct dialogues in a regular basis with fishery cooperatives and agricultural cooperatives in the power station location area. The opinions received there are reflected in water discharge management and business management including risk analysis.
Suppliers	Relevant, sometimes included	Since coal producers need a certain amount of water with extracting and washing coal, we estimate that existing water risk in our supply chain is procurement of coal. Although there is a possibility that the shortage of water in the area where coal is mined affects the procurement of coal and the operation of the thermal power plant may possibly be affected. We manage water-related procurement risks by diversifying suppliers based on our risk analysis.
Water utilities at a local level	Relevant, always included	Water supply stability and tariffs are significant factors in our water risk assessment. Since they are different depending on the local water utilities, each of our facilities is considering the supply stability and tariffs under its contract and continues close communication with them. Although the supply of freshwater from water utilities is stable, we exchanged opinions on operations and countermeasures under weather conditions such as typhoons and are trying to reduce the impact on our power station operation.
Other stakeholder, please specify	Not considered	

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.

TEPCO practices comprehensive risk management to prevent accidents or disasters. We believe that water risks have to be dealt with in a comprehensive manner as part of a company-wide risk assessment, because water risks could significantly affect our operations. For example, a reduced availability of water could affect the amount of electricity generated at our hydro power plants.

According to the evaluation by WRI Aqueduct, the hydroelectric power generation area is evaluated as Medium-High at the maximum, and because the maintenance flow rate is able to be secured at all hydropower stations, we judge that there is no power station located in water stressed area. We recognize that this tool will be able to evaluate in the next 20 years and this situation has not changed since last year. In addition, it is judged that seawater is used for cooling water of all thermal power plants, and they are not located in water stressed areas. Continuously collect information on the fact that power stations are not located in water stressed areas. We are confirmed that water related risks are sufficiently low by conducting the same assessment for businesses who operate power generation business in the value chain.

The Risk Management Committee, chaired by the president of TEPCO as the chief risk management executive, plays a central role in assessing and evaluating risks related to direct operations and supply chain that could have a particularly serious impact on business. Its deliberations are reflected in annual management plans. Risks associated with water are also assessed and evaluated in this process in consideration of those stemming from economic and climatic conditions, industry deregulation, equipment and operations, and interest rate fluctuation. Risks specific to each risk management unit (head office departments, offices, and power plants) are managed and addressed by each risk manager. Risks common to all risk management units are addressed by internal committees.

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

W4.1a

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

We understand that our power generation business has smaller water risks by referring evaluations of WRI Aqueduct.

However, for our company's continuation, it is really important to measure radioactive contaminated water management in Fukushima Daiichi Nuclear Power Stations. In particular, proceeding decommissioning project for Fukushima Daiichi Nuclear Power Stations as the road map mentioned "Comprehensive Special Business Plan" which has decided by Nuclear Damage Compensation and Decommissioning Facilitation Corporation and TEPCO, is really essential.

Currently, TEPCO's business is proceeded based on "Comprehensive Special Business Plan" drafted by the Nuclear Damage Liability Facility Fund and TEPCO. The substantive change in our business is supposed to be the delay, incomplete execution or revision of this plan. When we determine if there is such a substantive change, we take into account factors such as the gap between the plan and achievement, and the achievability of the plan, which reflects the results of our risk evaluation. There can be no single, pre-determined quantitative threshold with which we can determine if a change is substantive or not. Our determination is rather comprehensive, based on multiple criteria, which include qualitative ones. This definition of 'substantive change' applies to our direct operations and supply chain, but we do not anticipate such a substantive change in our supply chain. Our Comprehensive Special Business Plan deeply concerns our whole business, operations, revenue or expenditure. The decommissioning of the Fukushima Daiichi Nuclear Power Station occupies an important role in this plan, and contaminated water management, which is our biggest risk, is a key factor of it. In 2014, re-evaluated risks related to contaminated water contributed to revising the Comprehensive Special Business Plan, and the additional expenditure expansion has required for more 1 trillion JPY within the next decade. The solution of contaminated water issues would lead to the success of the decommissioning project, which would help complete the Comprehensive Special Business Plan in a defined period.

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	1	Less than 1%	The facility exposed serious water risks is only Fukushima Daiichi Nuclear Power Station. TEPCO has 196 power generation stations (as of the end of FY2015), and the proportion of total operations is 0.5%.

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

Japan

River basin

Other, please specify (Pacific Ocean)

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

1-25

Comment

Currently, TEPCO's business is proceeded based on "Comprehensive Special Business Plan" drafted by the Nuclear Damage Liability Facility Fund and TEPCO. The substantive change in our business is supposed to be the delay, incomplete execution or revision of this plan. When we determine if there is such a substantive change, we take into account factors such as the gap between the plan and achievement, and the achievability of the plan, which reflects the results of our risk evaluation. There can be no single, pre-determined quantitative threshold with which we can determine if a change is substantive or not. Our determination is rather comprehensive, based on multiple criteria, which include qualitative ones. This definition of 'substantive change' applies to our direct operations and supply chain, but we do not anticipate such a substantive change in our supply chain. Our Comprehensive Special Business Plan deeply concerns our whole business, operations, revenue or expenditure. The decommissioning of the Fukushima Daiichi Nuclear Power Station occupies an important role in this plan, and contaminated water management, which is our biggest risk, is a key factor of it. In 2014, re-evaluated risks related to contaminated water contributed to revising the Comprehensive Special Business Plan, and the additional expenditure expansion has required for more 1 trillion JPY within the next decade. The solution of contaminated water issues would lead to the success of the decommissioning project, which would help complete the Comprehensive Special Business Plan in a defined period.

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

Japan

River basin

Other, please specify (Pacific Ocean)

Type of risk

Physical

Primary risk driver

Inadequate infrastructure

Primary potential impact

Increased operating costs

Company-specific description

It is really important for us to measure radioactive contaminated water treatment in Fukushima Daiichi Nuclear Power Station as risk management. At the Fukushima Daiichi Nuclear Power Station, some of the groundwater flowing from the mountain-side to the sea is entering into the nuclear reactor building at a rate of approximately 150 tons / day, converting into newly contaminated water. For this reason, we are implementing various measures to counter the risk of contaminated water flowing into the port of the power station and the risk of contaminated water flowing out from the storage tanks. These measures are based on our three basic policies of "REMOVE the source of water contamination", "REDIRECT fresh water from contaminated areas", and "RETAIN contaminated water from leakage". We estimate that the expenses related to these contaminated water treatments are about 30% of the cost of 1.117 trillion yen required for decommissioning work. In addition to this, at the time of formulating the New Comprehensive Special Business Plan, we have secured a capital of more than 1 trillion yen separately for investment and cost of polluted water and stabilization measures as total amount for 10 years from FY 2013. It plans to allocate it to investment and expense of contaminated water and stabilization of decommissioning measures.

Timeframe

More than 6 years

Magnitude of potential impact

High

Likelihood

Virtually certain

Potential financial impact

300000000000

Explanation of financial impact

We estimate that the expenses related to contaminated water treatments of Fukushima Nuclear Power Plant are about 30% of the cost of 1.117 trillion yen required for decommissioning work. In addition to this, we have secured a capital of more than 1 trillion yen separately as total amount for 10 years from FY2013, it plans to allocate it to investment and expense of contaminated water and stabilization of decommissioning measures.

Primary response to risk

Increase investment in new technology

Description of response

At the Fukushima Daiichi Nuclear Power Station, some of the groundwater flowing from the mountain-side to the sea is entering into the nuclear reactor building at a rate of approximately 150 tons/day, converting into newly contaminated water. For this reason, we are implementing various measures to counter the risk of contaminated water flowing into the port of the power station and the risk of contaminated water flowing out from the storage tanks. These measures are based on our three basic policies of "REMOVE the source of water contamination", "REDIRECT fresh water from contaminated areas", and "RETAIN contaminated water from leakage". Specifically, contaminated water are treated as Multiple facilities including a Multi-nuclide Removal Facility (Advanced Liquid Processing System = ALPS) ,"Groundwater Bypass System" serves to reduce the amount of contaminated water flowing into the reactor building, and This land-side impermeable wall consists of frozen soil using a frozen construction method that can ensure excellent prevention of water seepage in order to block the flow of groundwater, etc. are set up.

Cost of response

300000000000

Explanation of cost of response

We estimate that the expenses related to contaminated water treatments of Fukushima Nuclear Power Plant are about 30% of the cost of 1.117 trillion yen required for decommissioning work. In addition to this, we have secured a capital of more than 1 trillion

yen separately as total amount for 10 years from FY2013, it plans to allocate it to investment and expense of contaminated water and stabilization of decommissioning measures.

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	TEPCO undertakes comprehensive risk assessments six-monthly. So far substantive water risks associated with our suppliers have not been identified. For example, we understand that a certain amount of freshwater is used by some of our suppliers of coal when they extract and wash coal, and spraying over stockyards in order to avoid fire accident. We conducted scenario analysis using our internal company knowledge (location of our suppliers, etc.), and assessed potential water risks of these suppliers. We manage and reduce potential water risks in supply chain by ensuring multiple fuel suppliers.

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

Efficiency

Primary water-related opportunity

Cost savings

Company-specific description & strategy to realize opportunity

Water usage in all TEPCO offices are measured and monitored every fiscal year in our environmental management system. Very challenging targets (-15%) for the years FY2001-2005 were set against FY2000 benchmark, and resulted in a 39% decrease in FY2005. We pasted posters to pay attention employees for saving water. We introduce this activities as environmental consideration activities on the CSR report, so that we motivate employees and show our contribution for developing sustainable society. This initiative was a campaign in which all TEPCO employee is engaged to reduce water usage as well as energy and other resources usage in offices, and the cost reduction of this whole campaign is estimated at about a hundred million JPY. From FY2006 onwards, we have been aiming to maintain the reduced level of water usage we achieved in FY2005 since we realized we came to a point where a further reduction of water usage is extremely difficult. As a strategy to achieve on an ongoing basis, we have been monitoring our water usage in our offices every fiscal year. TEPCO has developed the group environmental policy, and for this policy, we reduce environmental burdens, manage risks of environmental pollution and take action for sure. We reduce water consumption following this policy. We monitor water consumption and publish it on our web site. We are able to show our corporate activities that we considerate water resource to the public.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Low

Potential financial impact

60000000

Explanation of financial impact

The cost impact of water is really low because we could keep same level of water consumption we achieved in FY 2005. Now, we consume approximately 1,000,000t of domestic use of water / year. Since we were able to reduce 15% from then, and this means we reduce about 150,000t of domestic use of water compared to FY2005 at offices. If we assume 1t of domestic use of water as 400 JPY, we could say that we reduce about 60,000,000 JPY per year.

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)

Fukushima Daiichi Nuclear Power Station

Country/Region

Japan

River basin

Other, please specify (Pacific Ocean)

Latitude

37.42

Longitude

141.03

Primary power generation source for your electricity generation at this facility

Nuclear

Oil & gas sector business division

<Not Applicable>

Total water withdrawals at this facility (megaliters/year)

337

Comparison of withdrawals with previous reporting year

About the same

Total water discharges at this facility (megaliters/year)

85

Comparison of discharges with previous reporting year

About the same

Total water consumption at this facility (megaliters/year)

252

Comparison of consumption with previous reporting year

About the same

Please explain

The figure given is in fact the amount of water newly stored at the Fukushima Daiichi Nuclear Power Station in FY2016. Almost all of the water withdrawals at this Nuclear Power Station is stored for purification for the time being, and not discharged in the contaminated state. We estimate that the quantity of water leaked to the sea or groundwater was quite small, in the region of a few thousand liters in total. The amount of the water withdrawals in FY2016 was about same as in FY2015.

W5.1a

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

Facility reference number

Facility 1

Facility name

Fukushima Daiichi Nuclear Power Station

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

0

Brackish surface water/seawater

0

Groundwater - renewable

252

Groundwater - non-renewable

0

Produced water

0

Third party sources

85

Comment

We do not use water of municipalities for cooling nuclear power reactors, because we use water in flowed to the building after removing cesium and desalination. For domestic use of water, we withdraw third party sources.

W5.1b

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

Facility reference number

Facility 1

Facility name

Fukushima Daiichi Nuclear Power Station

Fresh surface water

0

Brackish surface water/Seawater

85

Groundwater

0

Third party destinations

0

Comment

Almost all of the water withdrawals at the Fukushima Daiichi Nuclear Power Station is stored for purification for the time being, and not discharged in the contaminated state. We estimate that the quantity of water leaked to the sea or groundwater was quite small, in the region of a few thousand liters in total, which is 0.00 million liter if we round the number to two decimal places. Domestic use of water is purified by effluent treatment facilities, and then discharged into the sea.

W5.1c

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

Facility reference number

Facility 1

Facility name

Fukushima Daiichi Nuclear Power Station

% recycled or reused

None

Comparison with previous reporting year

About the same

Please explain

There is no facilities used recycled or reused water.

W5.1d

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

Water withdrawals – total volumes

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water withdrawals – volume by source

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water withdrawals – quality

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water discharges – total volumes

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water discharges – volume by destination

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water discharges – volume by treatment method

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water discharge quality – quality by standard effluent parameters

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water discharge quality – temperature

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water consumption – total volume

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

Water recycled/reused

% verified

Not verified

What standard and methodology was used?

There is no water accounting data externally verified.

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.

Row	Scope	Content	Please explain
1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to water stewardship and/or collective action	TEPCO has developed the group environmental policy, and we reduce environmental burdens and take action with environmental consideration in every corporate activities. It is essential not only we comply laws and rules, but also we communicate with stakeholders and positively disclosure of information. Regarding water security, we are contributing to the construction of a sustainable society on the premise of coexistence with nature, in accordance with The Federation of Electric Power Companies in Japan 'The Biodiversity Action Guidelines'. For contaminated water measures in Fukushima Daiichi Nuclear Power Station, the measures are based on our three basic policies of "REMOVE the source of water contamination", "REDIRECT fresh water from contaminated areas", and "RETAIN contaminated water from leakage", and these are written in "Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station". We evaluate and manage the progress according to it. TEPCO Group Environmental Policy(page75).pdf

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
President	President and Representative Executive Officer, who is responsible for installing water pollution control facility, as a member of the Board of Directors, monitors the execution status and is responsible. The Board of Directors also monitors the execution status of the Decommissioning Project of the Fukushima Daiichi Nuclear Power Plant, including contaminated water treatment, as reported by executive officers (Chief Decommissioning Officer: CDO).

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 Overseeing acquisitions and divestiture Overseeing major capital expenditures Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	CDO(Chief Decommissioning Officer) was appointed as the chief executive officer of the decommissioning project of Fukushima Daiichi Nuclear Power Plant including contaminated water countermeasures. And the action plan for contaminated water measures was formulated and enforced at the "Management Committee of the Decommissioning Company" where CDO is in charge. Execution status is reported to the Board of Directors at least every quarter, and supervised.

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, please specify (Chief Decommissioning Officer)

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

CDO(Chief Decommissioning Officer) was appointed as the chief executive officer of the decommissioning project of Fukushima Daiichi Nuclear Power Plant including contaminated water countermeasures. And the action plan for contaminated water measures based on "Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station" was formulated, enforced, and managed the schedule of the roadmap at the "Management Committee of the Decommissioning Company" where CDO is in charge. CDO has also a role of Managing Executive Officer, the execution status is reported to the Executive Committee and Board of Directors at least every quarter, and supervised.

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

Yes

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

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

	Who is entitled to benefit from these incentives?	Indicator for incentivized performance	Please explain
Monetary reward	Board/Executive board Director on board Chief Sustainability Officer (CSO) Other C-suite Officer (Chief Decommissioning Officer)	Reduction of water withdrawals Reduction in consumptive volumes Reduction of product water intensity Efficiency project or target – direct operations Effluent quality improvements Water-related community project	"Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station" which has been decided by the governmental organization, the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues, tells TEPCO has a responsibility to conclude the accident of the Fukushima Daiichi Nuclear Power Station. The goal for the end of decommissioning project is after 30-40 years when fuel debris removal starts, each year the implementation status is reviewed. It will be disincentives for Chief Decommissioning Officer (CDO) if the schedule of decommissioning project completion delays.
Recognition (non-monetary)	Board/Executive board Director on board	Reduction of water withdrawals Reduction in consumptive volumes Reduction of product water intensity	"Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station" which has been decided by the governmental organization, the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues, tells TEPCO has a responsibility to conclude the accident of the Fukushima Daiichi Nuclear Power Station. The goal for the end of decommissioning project is after 30-40 years when fuel debris removal starts, each year the implementation status is reviewed. It will be disincentives for Chief Decommissioning Officer (CDO) if the schedule of decommissioning project completion delays.
Other non-monetary reward	Board/Executive board Director on board	Reduction of water withdrawals Reduction in consumptive volumes Reduction of product water intensity	"Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station" which has been decided by the governmental organization, the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues, tells TEPCO has a responsibility to conclude the accident of the Fukushima Daiichi Nuclear Power Station. The goal for the end of decommissioning project is after 30-40 years when fuel debris removal starts, each year the implementation status is reviewed. It will be disincentives for Chief Decommissioning Officer (CDO) if the schedule of decommissioning project completion delays.

W6.5

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

Yes, direct engagement with policy makers

W6.5a

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

In regulatory review concerning thermal power plants and nuclear power plants installed in coastal areas, engagement is being implemented for administrative organizations. As the review of wastewater regulation by national government and local governments may have financial influences such as facility operation and additional equipment installation, we evaluate the necessity of additional conservation measures, and the contents of engagement are group environmental policy and business plan. We confirm to the partner in charge of correspondence whether it is consistent with that. If they do not agree, they are seeking policy change through industry groups, and so on.

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	In order to conclude the accident of the Fukushima Daiichi Nuclear Power Station happened in March of 2011, the governmental organization, the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues has decided on a "Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station". This Roadmap is mentioned "New Comprehensive Special Business Plan", and the Business Plan tells that TEPCO has a responsibility to conclude the accident of the Fukushima Daiichi Nuclear Power Station. The goal for the end of decommissioning project is after 30-40 years when fuel debris removal starts. Especially, the goal of radioactive contaminated water management is within 2020. TEPCO aims reduction of contaminated water generation to about 100 m ³ /day and completion of treatment of stagnant water in buildings within 2020. TEPCO continues to monitor underground water and sea water following after 2020.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	> 30	The goal of radioactive contaminated water management is within 2020. TEPCO aims reduction of contaminated water generation to about 100 m ³ /day and completion of treatment of stagnant water in buildings within 2020. In FY 2016, about 180 billion JPY was spent for contaminated water countermeasure expenses as the mid- and long-term roadmap-related expenses for the decommissioning measures of Fukushima Daiichi Nuclear Power Plant, etc. TEPCO continues to monitor underground water and sea water following after 2020. Within the company, contaminated water management is reported by a board of directors and developed strategies. For achieving long-term decommissioning objectives, Nuclear Damage Compensation and Decommissioning Facilitation Corporation reviews technical development by "Technical Strategic Plan for Decommissioning of the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company Holdings, Inc".
Financial planning	Yes, water-related issues are integrated	> 30	Financial planning is written in "Comprehensive Special Business Plan" which has decided by Nuclear Damage Compensation and Decommissioning Facilitation Corporation and TEPCO. This business plan has authorized by the competent ministers of Office for Nuclear Damage Compensation Facilitation Corporation in Cabinet Office and Agency for Natural Resources and Energy in the Ministry of Economy, Trade and Industry. The Business Plan tells that TEPCO has a responsibility to conclude the accident of the Fukushima Daiichi Nuclear Power Station. The goal for the end of decommissioning project is after 30-40 years when fuel debris removal starts. Especially, the goal of radioactive contaminated water management is within 2020. TEPCO aims reduction of contaminated water generation to about 100 m ³ / day and completion of treatment of stagnant water in buildings within 2020. TEPCO continues to monitor underground water and sea water following after 2020. Expenditure for contaminated water management is prospected about 30% of total decommissioning project which is about 300 billion JPY.

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	0	0	0	0	As a related expenses related to the mid- and long-term roadmap-related expenses for the decommissioning measures of Fukushima Daiichi Nuclear Power Plant, we spent approximately 180 billion yen as a contaminated water countermeasure expenses by fiscal 2016. Both cost and capital investment (CAPEX) have not changed since FY 2015.

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	Our business complying with Japanese government's regulations (Act on the use of non-fossil energy sources by energy suppliers and promotion of effective use of fossil energy raw materials and Act on the rational use of energy etc.) is consistent in climate-related scenario analysis, because Japanese government officially declared commitments of reduction of greenhouse gas emissions up to 2050 for achieving the 2 °C target, as indicated in the IPCC Fifth Assessment Report, "by 20150, reducing greenhouse gas half in the world, 80% in developed countries".

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

As the present situation, hydroelectric plants and thermal power plants have small water risks, because they are located in smaller risk areas. And internal incentives work well for water management . Thus there is no necessity to introduce internal price systems on water by now. It is important to discuss whether we introduce internal price systems when we plan to set up new and additional facilities.

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 Brand/product specific targets and/or goals Basin specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	In thermal power plants, we monitor the amount, COD and etc. of discharging water constantly whether it is complied with the effluent standard by law. In addition, we voluntarily set a goal that we discharge water to the public area with reducing environmental burdens as possible as we can. And we reduce water consumption by collecting, purifying and recycling water for boilers. This procedure also contribute to reduce in costs. On the other hand, in hydroelectric plants, we constantly monitor discharging water not to outflow of oil to lower stream. We recognize water risks are really small by checking WRI Aqueduct evaluation for both thermal power plants and hydroelectric plants' locations. In offices, employees continue to save water in the purpose of effective utilization of water resources, and we make the goal continuing with the status quo. This goal also contributes to reduce in costs. In contaminated water management in Fukushima Daiichi Nuclear Power Station, we proceed the road map as mentioned "Comprehensive Special Business Plan" which has decided by Nuclear Damage Compensation and Decommissioning Facilitation Corporation and TEPCO. This business plan has authorized by the competent ministers of Office for Nuclear Damage Compensation Facilitation Corporation in Cabinet Office and Agency for Natural Resources and Energy in the Ministry of Economy, Trade and Industry. It is really important for TEPCO not only to continue business but also to manage risks.

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

Monitoring of water use

Level

Company-wide

Primary motivation

Reduced environmental impact

Description of target

Medium-term targets for the years FY2001-2005 have engaged each TEPCO Employee in the tackle to conserve energy and resources. Very challenging reduction target (-15%) in water usage in offices were set against FY2000 benchmark. As a result, we achieved a 39% reduction in FY2005. We introduce this activities as environmental consideration activities on the CSR report, so that we show our contribution for developing sustainable society. From FY2006 onwards, we have been aiming to maintain the reduced level of water usage we achieved in FY2005 since we realized we came to a point where a further reduction of water usage is extremely difficult. Therefore, our current target is to keep our water usage at the FY2005 level not only in offices bet also in all facilities..

Quantitative metric

Please select

Baseline year

2005

Start year

2006

Target year

2017

% achieved

100

Please explain

Water usage in all TEPCO offices are measured and monitored every fiscal year in our environmental management system. Very challenging targets were set against FY2000 benchmark, and resulted in a 39% decrease in FY2005. This initiative was a campaign in which all TEPCO employee is engaged to reduce water usage as well as energy and other resources usage in offices, and the cost reduction of this whole campaign is estimated at about a hundred million JPY. From FY2006 onwards, we have been aiming to maintain the reduced level of water usage we achieved in FY2005 since we realized we came to a point where a further reduction of water usage is extremely difficult. As a strategy to achieve on an ongoing basis, we have been monitoring our water usage in our offices and all facilities every fiscal year. We continue to monitor water consumption and publish it on our web site. We are able to show our consideration for water resource to the public.

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 (Contaminated water management)

Level

Site/facility

Motivation

Risk mitigation

Description of goal

In TEPCO's business, hydroelectric plants and thermal power plants have small water risks, because they are located in smaller water risk areas. On the other hand, proceeding decommissioning project for Fukushima Daiichi Nuclear Power Stations as the road map mentioned "Comprehensive Special Business Plan" which has decided by Nuclear Damage Compensation and Decommissioning Facilitation Corporation and TEPCO, is really important for us to continue our business, and we have a responsibility to revitalize Fukushima. Especially for contaminated water management, the governmental organization, the Inter-Ministerial Council for Contaminated Water and Decommissioning Issues has established, and it has been managing schedules and risks. The Mid-and-long-term Roadmap set FY2020 a goal of completion of contaminated water treatment retained in the facilities at the Fukushima Daiichi Nuclear Power Station, and TEPCO formulated action plans for reducing the risk of contaminated water and completing processing based on the roadmap. By these countermeasures, we have achieved reduction of stagnant contaminated water in buildings from 400m³ / day to about 120-130 m³ / day, as we nearly achieved the goal 100m³ / day. We continue to reduce contaminated water generation as this level.

Baseline year

2011

Start year

2016

End year

2020

Progress

We have achieved the schedule goal mentioned "Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station". Specifically, completion of the contaminated water treatment (RO concentrated salt water) in May 2015 by fully utilizing the polynuclear species removal equipment and the high performance polynuclear removal equipment. With regard to "REDIRECT" measures, we proceed pump-up of groundwater from the well near the facilities (operating from September 2015), and installed the Land-side Impermeable Wall (Frozen Soil Wall) (starting freezing in March 2016), etc. As for "RETAIN" countermeasures, installation of Sea-side impermeable wall (closing in October 2015), etc. are carried out in FY2015. Measures against polluted water are making steady progress in line with the Mid-and-long-Term Roadmap. For contaminated water management, we proceed as "Mid-and-Long-Term Roadmap towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station", and aim to complete contaminated water management within 2020. By these countermeasures, we have achieved reduction of stagnant contaminated water in buildings from 400m³ / day to about 120-130 m³ / day in 2016, as we nearly achieved the goal of 100m³ / day. We continue to reduce contaminated water generation as this level.

W9. Linkages and trade-offs

W9.1

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

Yes

W9.1a

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

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Decreased GHG emissions

Description of linkage/tradeoff

At thermal power plants, if impurities of boiler water are concentrated more than a certain concentration, we blow and supply new water the amount we have blown. Thus we maintain quality of boiler water. When we put new water for boilers, energy consumption for boiling is increased. In this way, if the water consumption for boilers are increased, the energy for heating and boiling are increased, thus CO2 emissions are also increased. At TEPCO Fuel & Power, we constantly monitor the concentration of impurities for boiler water and manage to reduce the amount of blowdown. For impurities, it is allowed to concentrate to a certain concentration, and blowing is carried out only when the concentration is increased. We can reduce – 13 % of water consumptions because of using recycled water for boilers. Therefore, we can reduce energy consumption and CO2 emissions.

Policy or action

This initiative at TEPCO Fuel &Power contribute to reduce not only water consumptions and CO2 emissions, but also operating costs. Thus, this initiative is being implemented at all thermal power stations including combined cycle power generation facilities.

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 are waiting for more mature verification standards and/or processes

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, Member of the Board of Directors	Board/Executive 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)].

Yes

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

Please confirm below

I have read and accept the applicable Terms