The Tokyo Electric Power Company Holdings, Inc (TEPCO) - Water Security 2020

W0. Introduction

W0.1

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

Tokyo Electric Power Company, Incorporated (TEPCO)is one of the largest electric power companies in Japan, which is responsible for the energy supply infrastructure centered on the Tokyo metropolitan area including the capital Tokyo. Established in 1951, TEPCO Co., Ltd. has been supporting the economic activities of the Tokyo metropolitan area and the lives of local customers for more than 60 years through an integrated system of power generation, transmission and distribution, and retail. In 2016, TEPCO moved to a holding company system ahead of other electric power companies, and then, in 2019, integrated the fuel procurement and thermal power generation business with JERA Co., Ltd. The group currently consists of operating companies that are responsible for the renewable energy and nuclear energy power generation businesses, power transmission and distribution businesses, and retail businesses.

W-EU0.1a

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

Electricity generation
Transmission
Distribution
Other, please specify (Gas transport and distribution)

W-EU0.1b

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

	Nameplate capacity (MW)	% of total nameplate capacity	Gross electricity generation (GWh)
Coal – hard	0	0	0
Lignite	0	0	0
Oil	57	0.31	160
Gas	0	0	0
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	8212	45.14	0
Fossil-fuel plants fitted with carbon capture and storage	0	0	0
Geothermal	0	0	0
Hydropower	9874	54.27	10743
Wind	21	0.12	32
Solar	30	0.16	31
Marine	0	0	0
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	18194	100	10966

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 2019	March 31 2020

W0.3

(W0.3) Select the countries/areas 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	As for direct use, 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 98% of TEPCO's electricity generation in FY2019. In the future, we promote renewable energy to be a main energy sources, and hydropower plants are expected to reinforce output. Amount of fresh water used in nuclear power plants is small because we use sea water for cooling generation facilities and if we use fresh water we treat and recycle it. As for indirect 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, impact to our business is quite limited. About water quality, we manage radioactive contaminated water in Fukushima Daiichi Nuclear Power Station decommissioning process. Our company has been treating contaminated water generated by the Fukushima Daiichi Nuclear Power Plant accident properly and has stored it in tanks. At hydroelectric power plants, maintaining the quality of withdrawals is important not only to maintain the ecosystem and natural environment, but also to avoid collisions with stakeholders such as local river authorities and nearby residents. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations have been transferred to JERA Co., Inc., so that TEPCO has exclude water consumption related to thermal power generations from the environmental reporting boundary in FY2019.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	As for direct use, we do not use brackish water, nor produced water in our facilities now and also in the future. Some offices recycle rainwater and use it for toilet drainage, but the amount of recycled water used is very small. As for indirect use, we consider the amount of recycled water used in thermal power plants, because we procure electricity generated there. For reducing fresh water consumption, water used at boilers is collected, recycled and reused at boilers again in thermal power plants.

W1.2

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

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	Water withdrawals are measured and monitored at all of our power plants and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At all of our hydroelectric power plants, we submit data of yearly water withdrawals based on the agreement with national or prefectural governments depended on river manager 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 by source	100%	Water withdrawals per each sources are measured and monitored at all of our power plants and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At all of our hydroelectric power plants power plants, we submit data of yearly water withdrawals based on the agreement with national or prefectural governments depended on river manager where they are located. Total volumes of water withdrawals are always monitored by watching water level, flow meters, and operation hours of pumps.
Entrained water associated with your metals & mining sector activities - total volumes [only metals and mining sector]	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	In hydroelectric power plants, we grasp muddiness of water when we draw water constantly. At nuclear power plants (if they are working) 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 plants and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At all of our hydroelectric power plants, we submit data of yearly water discharges based on the agreement with national or prefectural governments depended on river manager where they are located. Total volumes of water discharges are always monitored by watching water level, flow meters, and operation hours of pumps.
Water discharges – volumes by destination	100%	Water discharges by destination are measured and monitored at all of our power plants and offices every fiscal year in our environmental management system. At all of our hydroelectric power plants power plants, we submit data of yearly water discharges based on the agreement with national or prefectural governments depended on river manager where they are located. Total volumes of water discharges are always monitored by watching water level, flow meters, and operation hours of pumps.
Water discharges – volumes by treatment method	100%	Water discharges by treatment method are measured and monitored at all of our power plants and offices every fiscal year as INPUT/OUTPUT material flow in our environmental management system. At all of our hydroelectric power plants, we submit data of yearly water discharges based on the agreement with national or prefectural governments depended on river manager where they are located. Volume of wastewater from the treatment facility is constantly monitored by flow meters in nuclear power plants (if they are working).
Water discharge quality – by standard effluent parameters	100%	The quality of water discharges is measured and monitored on regular basis at all of our power plants 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 nuclear power plants (if they are working), the temperature of discharged water to the sea which is used for the indirect cooling is constantly monitored by the thermistor.
Water consumption – total volume	100%	Water consumption is measured and monitored at all of our power plants and offices every fiscal year in our environmental management system. It is calculated by the difference between withdrawals and discharges which are monitored on regular basis.
Water recycled/reused	100%	The boiler water of nuclear power plants blown for maintaining water quality is treated by the treatment facility, and a part of it is returned to the boiler water system after purification, then recycled. Regarding water quality of boilers, we constantly monitor pH, electrical conductivity and so on. Some offices recycle rainwater and use it for toilet drainage, and the amount of rainwater consumed is measured and reported to the municipalities annually.
The provision of fully-functioning, safely managed WASH services to all workers	100%	We continuously monitor if we are providing safe drinking water and sanitation to all of our employees at all of our facilities. 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 hydropower operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
Fulfilment of downstream environmental flows	100%	At all of our hydroelectric power plants, we submit data of yearly water discharges based on the agreement with national or prefectural governments depended on river manager where they are located, and discharge water in compliance with river maintenance flow. And also facilities 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 measure the sediment loading at all hydroelectric power plants on regular basis. We carry out dredging of volume sediment in dam as needed.
Other, please specify	100%	For measures of heavy rainfall, we manage and check the equipment near the river more than once / year and increase the priority of replacement and detoxification treatment so as not to flow out oils when the river flood occurs.

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	46015359	Much lower	Compared with the previous year, the amount of water withdrawals and discharges decreased because the water related to thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.
Total discharges	46015190	Much lower	Compared with the previous year, the amount of water withdrawals and discharges decreased because the water related to thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.
Total consumption	169	Much lower	Compared with the previous year, the amount of water withdrawals and discharges decreased because the water related to thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	No	<Not Applicable>	<Not Applicable>	WRI Aqueduct	Our hydroelectric power plants are located in Tochigi, Gunma, Kanagawa, Yamanashi, Shizuoka, Fukushima, Niigata and Nagano prefectures, central part of Honshu island of Japan and we have confirmed whether we have water stress in these areas. For confirming water stress, 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, we judge that there is no power plants located in water stressed area and there is no water intake from the drought area. We secure the maintenance flow rate prescribed by the Ministry of Land, Infrastructure and Transport at all hydropower plants, so there is no water competition with the downstream area. Since last fiscal year this risk situation has not changed. We continually collect information on the fact that power plants 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	46014248	Lower	Compared to the previous year, 49,133,813 mega liters as of FY2018, the amount of water withdrawals decreased. There are two reasons. First, the amount of hydroelectric power generation is less than the previous year due to the decline in hydropower plant operations related to typhoon No.19 and other incidents. The power generation results in FY2018 were 11,071GWh and 10,743GWh in FY2019. Secondly the water related to thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the thermal power generation business has been transferred to JERA Co., Inc. Hydroelectric power generation is really important as a role of renewable energy, so TEPCO is going to reinforce the capacity of hydroelectric plants, but we challenge to innovate much more efficient facilities and operations. So the consumption of water will be supposed to the same in the future.
Brackish surface water/Seawater	Relevant	0	Much lower	We use seawater for making it steam and indirectly cooling condensers at nuclear power plants, then discharge to the sea. However after the accident of Fukushima Daiichi nuclear power plant in 2011, all the nuclear power plants have been shut down, so the amount of seawater withdrawals is 0. Compared to the previous year, 33,542,000 mega liters as of FY2018, the amount of sea water withdrawals decreased because the water related to indirect cooling systems of thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.
Groundwater – renewable	Relevant	163	Lower	Treatment of contaminated water in the reactor building of the Fukushima Daiichi nuclear power plant has progressed, and the amount of groundwater contaminated with radioactive materials has decreased.
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 our electric power systems.
Produced/Entrained 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 our electric power systems.
Third party sources	Relevant	948	Lower	Water of third party sources is relevant because it is used for power generation in island internal combustion power plans and for drinking in all offices. Compared to the previous year, 1,622 mega liters as of FY2018, the amount of water withdrawals from municipal water supplies decreased because the water related to thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.

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	46014245	Lower	Most of the quantity of water discharge was nearly equal as water withdrawals at our hydroelectric plants, approved by the Ministry of Land, Infrastructure, Transport and Tourism. The difference of 3 mega liters is the amount consumed at the internal combustion power plants on the islands. Compared to the previous year, 49,124,416 mega liters as of FY2018, the amount of water discharges decreased. The amount of hydroelectric power generation is less than the previous year. The power generation results in FY2018 were 11,071GWh and 10,743GWh in FY2019. Hydroelectric power generation is really important as a role of renewable energy, so TEPCO is going to reinforce the capacity of hydroelectric plants, but we challenge to innovate much more efficient facilities and operations. So the consumption of water will be supposed to the same in the future.
Brackish surface water/seawater	Relevant	0	Much lower	We use seawater for making it steam and indirectly cooling condensers at nuclear power plants, then discharge to the sea. However after the accident of Fukushima Daiichi nuclear power plant in 2011, all the nuclear power plants have been shut down, so the amount of seawater withdrawals is 0. Compared to the previous year, 33,542,000 mega liters as of FY2018, the amount of sea water withdrawals and discharges decreased because the water related to indirect cooling systems of thermal power generations has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc.
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	There is no plants and facilities which penetrate and drain water into the ground now. And we do not introduce these systems in the future.
Third-party destinations	Relevant	945	Lower	Compared to the previous year, 1,102 mega liters as of FY2018, the amount of water discharges to municipal / industrial treatment plants decreased because the water related to thermal power generation business has been excluded from TEPCO's scope of consolidation and environmental reporting in FY2019. In April of 2019, the business of TEPCO Fuel and Power, Inc. such as fuel receiving, storage, and gas transmission, and thermal power generations has been transferred to JERA Co., Inc. We continue saving domestic use of water, and the volume of discharge to third-party destinations will be almost the same in the future.

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 (m3)	Numerator: water aspect	Denominator	Comparison with previous reporting year	Please explain
105.5	Other, please specify (Hydropower generation capacity for fiscal 2019)	Other, please specify (Average hydropower capacity over the past 30 years)	Higher	The amount of river water was rich in FY2019, and the water discharge rate has increased by +9.1 from FY 2018 as 96.4. If the water discharge rate is 100%, it can be said that the actual amount of power generation is equal to the average amount of power generation over the past 30 years. In other words, the actual water discharge rate is an index to determine whether the water is rich or drought, and is affected by the weather conditions of that year. Our general hydroelectric power plants, the rates of system operations are really high. In the case of rich water, the operation rate tends to be increased by the increase in the operating time of the hydropower plants, and the operation rate could be lowered in the case of drought. However the hydropower plants are dispersed in various regions, the risk of generation decline is also dispersed, we control the amount of power generation across the energy mix. In the future, we will analyze the secular change of the water discharge rate, analyze the factors and risks if the year of drought continues, and use it for the equipment renewal and equipment operation of the hydroelectric power plants. 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 all suppliers to considerate efficient use of water and resources by the procurement basic policy and green procurement guidelines, explained by CEO and presented on websites. We purchase products and services considering various environmental burdens over the full product life cycle from resource extraction to disposal. Also we positively accept “eco-proposals” from suppliers according to the guidelines. As a result, the environment-friendly products including hydroelectric power equipment which uses water more efficiently are purchased with the highest priority, which is beneficial to suppliers. In addition, we request all consolidated subsidiaries to submit water consumption data, because we judge if they are consistent in financial reports and how they influence our business. In near future, we plan to release supply chain’s data, and we think this would be an incentive for us and also consolidated subsidiaries known as an environmentally-friendly group 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. For example, an affiliated company, TEPCO Town Planning Co. Ltd, have managed and renovated the printing method of electric pole advertisement of their suppliers so that they reduce water consumption from 4,600 liters per a year to 0. In addition, the printing process renovation work not only to reduce the amount of water used, but also to eliminate to use chemicals (organic solvents) and the need to use protective masks. It contribute the surrounding environment protected and employees making it easier to work. Moreover, it has been improved productivity due to process changes also improved earnings. In this way, we feedback the total volume of water consumptions of corporations affiliated equity-method, and share the importance of considering water resources. Good practice is shared by TEPCO group company e-mail magazine.

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 procurement basic policy and 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. For example, an affiliated company, TEPCO Town Planning Co. Ltd, have managed and renovated the printing method of electric pole advertisement of their suppliers so that they reduce water consumption from 4,600 liters per a year to 0. In addition, the printing process renovation work not only to reduce the amount of water used, but also to eliminate to use chemicals (organic solvents) and the need to use protective masks. It contribute the surrounding environment protected and employees making it easier to work. Moreover, it has been improved productivity due to process changes also improved earnings. Good practice is shared by TEPCO group company e-mail magazine.

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 the total financial impact.

Country/Area & River basin

Japan	Tone

Type of impact driver & Primary impact driver

Physical	Flooding

Primary impact
Impact on company assets

Description of impact
Due to the heavy rain of Typhoon No. 19 that occurred in October 2019, the Agatsuma river of the Tone river system and the Chikuma river of the Shinano river system were flooded, so that inundation occurred at nine of our hydroelectric power plants. Approximately 60,000 kW of power generation facility was stopped, but the supply and demand could have been adjusted by other power sources, so the impact on supply and demand due to the suspension of the hydropower plants was minor. However, there was damage to the facility of hydroelectric power plants and about 3.5 billion yen was recorded as extraordinary loss related to typhoon disasters in FY2019.

Primary response
Develop flood emergency plans

Total financial impact
3500000000

Description of response
Based on the damage caused by Typhoon No. 19 in October 2019, at the ``Examination Meeting for Strengthening Flood Control Function of Existing Dams'', which was composed of related ministries such as Ministry of Land, Infrastructure, Transport and Tourism and Ministry of Economy, Trade and Industry, led by the Prime Minister's Office In December 2019, the basic policy of flood control cooperation of water utilization dams was announced. We believe that the government's efforts will contribute to regional disaster prevention and coexistence with the community, and concluded a flood control agreement for 40 dams (6 river systems) owned by TEPCO Renewable Power. After that, the guideline for pre-release was prepared in consultation with the Kanto Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism, which is the river administrator for each dam. As a result of this effort, the flood control capacity of our company was 210 million m3 for all 40 dams. In recent years, with typhoon and heavy rain damage becoming the norm, in order to contribute to mitigating the damage, we will further strengthen cooperation with river managers, other dam managers, related water users and related local governments. We would like to carry out flood control cooperation.

Country/Area & River basin

Japan	Tone

Type of impact driver & Primary impact driver
Please select

Primary impact
Reduced revenues from lower sales/output

Description of impact
In September of 2015, with the passing of the typhoon, heavy rains continued and the embankment was destroyed in Kinugawa River in Tone river system. It was necessary to stop the distribution of electricity so that it does not interfere with the rescue operation even though a large scale blackout did not occur. Power outage at 11,000 houses had occurred and it took six days to recover. The financial impact was ¥ 14,225,640, when the lost electricity sales were estimated from the average electricity consumption per household. In addition to this, labour costs (total 1300 staff members work for 7 days) and equipment restoration costs for resuming power transmission after a power failure occurred.

Primary response
Develop flood emergency plans

Total financial impact
14225640

Description of response
At Tokyo Electric Power Grid Co., Ltd., the Ryugasaki branch office confirmed the heavy rain special warning, prepared the equipment needed for the flood, and confirmed the power supply network on the assumed flood area map. Although there were no large-scale blackouts due to heavy rain, it was necessary to shut off the electricity so that it would not interfere with the restoration. By checking the distribution network in advance, the blackout area was minimized. After the water was drained, 38 employees and vehicles in other branch were supported, priority was given, power transmission was resumed, and efficient restoration work was performed. The establishment of a system for recovery from floods and lessons learned from the responses obtained through these restoration operations are horizontally spread throughout the company and used for future flood control. Total financial impact was calculated as follows. The average monthly electricity consumption per household was 248 kWh, and the amount used for six days when a power failure occurred was 49.74 kWh. The unit price of the electricity charge was 26 yen, which is the unit price of the two-stage charge (more than 120 kWh and up to 300 kWh) in the plan of the metered lamp B. The number of household outages was 11,000. From the above, Total financial impact is 49.74 kWh × 26 yen × 11,000 houses = 14,225,640 yen.

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
Other, please specify (PCB)	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.	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. 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. For measures of heavy rainfall, we manage and check the equipment near the river and increase the priority of replacement and detoxification treatment so as not to flow out PCB when the river flood occurs. Moreover, we have our own detoxification facilities so that we could reduce our PCB stock by ourselves, and process other companies' PCB also.

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
More than once a year

How far into the future are risks considered?
More than 6 years

Type of tools and methods used
Tools on the market
International methodologies
Databases

Tools and methods used
WRI Aqueduct
WWF Water Risk Filter
Environmental Impact Assessment
Life Cycle Assessment
Regional government databases
Other, please specify (Cabinet Office, Central disaster prevention meeting September 6, 2012, (2) About metropolitan area large-scale flood measures general rules [decision matter],)

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?
3 to 6 years

Type of tools and methods used
International methodologies
Databases

Tools and methods used
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.

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 and quality 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. With regard to the quality of stored water and effluent water, in the conditioning ponds of hydroelectric power plants, conduct environmental impact assessments (EIA) at all times (at least 4 times a year) and during floods (at any time) based on the Environmental Basic Law and the survey guidelines. The survey involves sampling of items such as water temperature, transparency, light colour, pH, COD, BOD, turbidity, and so on. The survey points are upstream of the dam, in the reservoir, and downstream of the dam. As the evaluation of the survey results varies in measurement value due to the influence of the season, rainfall, etc., the trend in the long cycle is grasped. In addition to the EIA, in order to prevent the outflow of machine oil used in the hydroelectric power plants, an oil detection devices are deployed and constantly monitored. Furthermore, some power plants, like Yuzawa hydroelectric power plant, have replaced generators to reduce the amount of lubricating oil and pressure oil used in power generators and reduce the risk of oil leakage. 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. In Agatsuma river, water quality deterioration and bad smell have occurred by reproduction of algae. We have improved the environment so that aquatic life can live in cooperation with river management authority.
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 including fishery 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	Hydroelectric power accounts for 98% of our main products, electric power, and in the future, the meaning of water is very significant in making renewable energy the main power source. 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.). 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.
Water-related regulatory frameworks	Relevant, always included	The amount of water withdrawals and discharge in hydroelectric power generation are regulated by the River Act, and the operation is carried out to protect the respective flow rates. In closed waters such as Tokyo Bay, strict restrictions are imposed by COD etc. in order to suppress eutrophication of the sea area. There are many thermal power plants in this area, and we procure electricity generated by them. Strengthening these regulations have some impact on our company's electricity procurement. 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	In the operation of hydroelectric power plants, we are trying to understand the impact on the ecosystem. For example, In Agatsumagawa River, water quality deterioration and bad smell have occurred by reproduction of algae. We have improved the environment so that aquatic life can live in cooperation with river management authority.
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, Labour 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	Relevant, always included	Heavy rainfalls may have risks of flooding our electrical equipment. These physical risks can cause major blackouts and we correspond with water related risk assessment of climate change.

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	Customers are concerned about the risk of stop electricity when the river would break due to a natural disaster such as heavy rain, causing a flood, and the electrical equipment would be flooded. Moreover, 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. For example, we hold a tour of the Fukushima Daiichi Nuclear Power Station, have customers check on measures against contaminated water (such as the amount of reduction in production and the status of treatment), and conduct direct dialogues.
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 confirm the working environment at the Health and Safety Committee and 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. In addition, based on the work environment questionnaire conducted by the labour union, the interactive communication can be conducted with the CEO on the working environment of employees including water use. Although the public waterworks bureau measures residual chlorine of drinking water every day, we also regularly check the water quality.
Investors	Relevant, always included	Hydroelectric power accounts for 98% of our main products, electric power, and in the future, the meaning of water is very significant in making renewable energy the main power source. 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.). Moreover, since our water issues (especially contaminated water issues) may have some impact on our reputation, which in turn may influence investors' behaviour, 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. For example, in the Oze area located upstream of the Tone River water system where the hydroelectric power plants are located, about 40% of the Oze area designated as a national park is owned by TEPCO. While we implement nature conservation through discharge of river maintenance flow, we maintain the natural environment of the Oze area like Installations of a public toilet complete with a septic tank, and it also contribute to water source conservation in the Tone River water system. On the other hands, 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. For example, in the Oze area located upstream of the Tone River water system where the hydroelectric power plants are located, about 40% of the Oze area designated as a national park is owned by TEPCO. While we implement nature conservation through discharge of river maintenance flow, we maintain the natural environment of the Oze area through two-way communication with the Oze Conservation Foundation, and it also contribute to water source conservation in the Tone River water system.
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. On the other hand, with regard to the flood risk of rivers caused by heavy rain etc., we participated in discussions at the Central Disaster Management Council of the Cabinet Office and the Ministry of Land, Infrastructure, Transport and Tourism, and shared the risks. Based on the risks presented at the Central Disaster Prevention Council, measures are taken to prevent inundation of electrical facilities.
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. In addition, we monitor the fact that the hydroelectric power plants is conducting water discharge with minimum flow based on the River Law, and submit annual data to the local river management authorities. On the other hand, river basin management authorities are considering the water quality, and we are cooperating in the improvement of water quality. For example, in the Agatsuma River in the Tone River water system, we cooperated with the Ministry of Land, Infrastructure, Transport and Tourism's business for improvement of water quality, because rainwater infiltrated into the sulphur mine mountain and penetrated underground, and water in which sulphur components are dissolved flows into the river. So we put lime juice into the river and neutralize the river water. This project contributes not only to establishing a good relationship with river basin management authorities but also to reducing the deterioration of our hydropower facilities. 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 electricity generated by coal fired power plants. The shortage of water in the area where coal is mined may possibly affect the procurement of coal and the operation of the thermal power plant. We manage water-related procurement risks by diversifying suppliers based on our risk analysis. In addition, in areas where there are risks of flooding due to natural disasters such as heavy rain, suppliers take into consideration the risks that distribution would be cut off and supply would be stopped.
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 hydroelectric power plants.

Our hydroelectric power plants are located in Tochigi, Gunma, Kanagawa, Yamanashi, Shizuoka, Fukushima, Niigata and Nagano prefectures, central part of Honshu island of Japan and we have confirmed whether we have water stress in these areas. For confirming water stress, WRI Aqueduct widely used as a water risk assessment method is adopted. According to the evaluation by Aqueduct, the "Baseline Water Stress" of the hydroelectric power generation area is evaluated as Medium-high at the maximum, we judge that there is no power plants located in water stressed area and there is no water intake from the drought area. We secure the maintenance flow rate prescribed by the Ministry of Land, Infrastructure and Transport at all hydropower plants, so there is no water competition with the downstream area.

We recognize that this Aqueduct tool tells us higher water stress of our operation areas next 20 years. However, we consider the "Future Water Stress" results of Aqueduct, but we believe that we should asses the water risks by specific river / basin and hydroelectric power plants locations actually. We continually secure the maintenance flow rate prescribed by the Ministry of Land, Infrastructure and Transport at all hydropower plants, so we assume that there will rarely be water competition with the downstream area in the future, too. If drought occurs in the downstream area, we cooperate at supplying water for tap water at the request of local governments. In addition, it is judged that seawater is used for cooling water of nuclear power plants, and they are not located in water stressed areas. In the current and future prospects we continuously collect information on the fact that power stations are not located in water stressed areas.

We have 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. And annual management plans are approved by board. 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 "Revised Comprehensive Special Business Plan (The Third 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 Revised Comprehensive Special Business Plan (The Third Plan) deeply concerns our whole business, operations, revenue or expenditure. The revised comprehensive special business plan (third plan) is closely related to the whole business, revenue or expenditure. Decommissioning of the Fukushima Daiichi Nuclear Power Station plays an important role in this plan, and contaminated water management is an important factor. The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022. Based on "Decommissioning Medium- and Long-Term Execution Plan 2020", we will proceed with decommissioning work safely, steadily, systematically and rationally. Regarding measures against contaminated water, we will continue to implement multi-layered measures, aiming to further reduce the amount of contaminated water generated, and promote the treatment of contaminated water that accumulates in the building.

Regarding the treatment of treated water such as multi-nuclide removal equipment, we will endeavor to gain the understanding of all parties concerned and will take appropriate measures based on the instruction indicated by the government. The solution of polluted water problems will lead to the success of the abolition project to complete a comprehensive special business plan within a set period.

For more details about the response of treated water which is stored in tanks, follow the link below:

https://www.tepco.co.jp/en/hd/newsroom/reports/archives/2020/pr20200327-e.html

http://www.tepco.co.jp/en/decommission/progress/watertreatment/index-e.html

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 180 power generation plants (as of the end of FY2019), 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 financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Japan	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
21-30

Comment
Currently, TEPCO's business is proceeded based on "Revised Comprehensive Special Business Plan (The Third 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 Revised Comprehensive Special Business Plan deeply concerns our whole business, operations, revenue or expenditure. Decommissioning of the Fukushima Daiichi Nuclear Power Station plays an important role in this plan, and contaminated water management is an important factor. The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022. The solution of contaminated water problems will lead to the success of the abolition project to complete a comprehensive special business plan within a set 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/Area & River basin

Japan	Other, please specify (Pacific Ocean)

Type of risk & Primary risk driver

Physical	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 100 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". Decommissioning of the Fukushima Daiichi Nuclear Power Station plays an important role in this plan, and contaminated water management is an important factor. The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022. The solution of contaminated water problems will lead to the success of the abolition project to complete a comprehensive special business plan within a set period.

Timeframe
More than 6 years

Magnitude of potential impact
High

Likelihood
Virtually certain

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
114931182000

Potential financial impact figure - minimum (currency)
<Not Applicable>

Potential financial impact figure - maximum (currency)
<Not Applicable>

Explanation of financial impact
The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022.

Primary response to risk
Improve pollution abatement and control measures

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. Based on "Decommissioning Medium- and Long-Term Execution Plan 2020", we will proceed with decommissioning work safely, steadily, systematically and rationally. Regarding measures against contaminated water, we continue to implement multi-layered measures, aiming to further reduce the amount of contaminated water generated, and promote the treatment of contaminated water that accumulates in the building. The treatment method of treated water was discussed by the subcommittee on the treatment of treated water such as the multi-nuclide removal equipment of the government. Regarding the treatment of treated water such as multi-nuclide removal equipment, we try to gain the understanding of all stakeholders concerned and will take appropriate measures based on the direction indicated by the government. In addition, we are considering ways to deal with the risk of heavy rainfall disasters in the future. TEPCO takes measures to pile sandbags with a height of 30 cm at the entrance for large items in order to prevent direct inflow to the building when it is expected to rain more than 300 mm. These are to control the increase in the amount of contaminated water generation and to deal with the risk of the pollution expansion to areas other than the reactor building. In the future, we plan to increase the drainage capacity and take measures to prevent inundation.

Cost of response
114931182000

Explanation of cost of response
The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022.

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

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
60000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

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.

Type of opportunity
Markets

Primary water-related opportunity
Stronger competitive advantage

Company-specific description & strategy to realize opportunity
Hydroelectric power generation is really important as a role of renewable energy. Customer needs for renewable energy are also growing thanks to the framework such as RE100. So we are going to reinforce the capacity of hydroelectric plants. In Japan, we use subsidies for equipment investment costs under the national FIT system. Kanagawa hydroelectric power plant in Fukushima prefecture started operation in 1919 and has a maximum capacity of 6,500kW. In 2019, at this hydroelectric power plant, the FIT system was used to upgrade to a more efficient generator, increasing the output to 7100kW. The amount of water intake will not change. In other words, it has made it possible to produce more electricity more efficiently. Overseas, we have started the hydroelectric power business in Vietnam at first in 2018 and Georgia as a second in 2020. We have advantages of our long-established technological capabilities, and we are aiming to expand the overseas projects further.

Estimated timeframe for realization
More than 6 years

Magnitude of potential financial impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
100000000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact
We aim to achieve a profit level of 100 billion yen over the entire 10 years of our renewable energy business.

W5. Facility-level water accounting

W5.1

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

Facility reference number
Facility 1

Facility name (optional)
Fukushima Daiichi Nuclear Power Station

Country/Area & River basin

Japan	Other, please specify (Pacific Ocean)

Latitude
37.42

Longitude
141.03

Located in area with water stress
No

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)
243

Comparison of total withdrawals with previous reporting year
About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Withdrawals from brackish surface water/seawater
0

Withdrawals from groundwater - renewable
163

Withdrawals from groundwater - non-renewable
0

Withdrawals from produced/entrained water
0

Withdrawals from third party sources
80

Total water discharges at this facility (megaliters/year)
80

Comparison of total discharges with previous reporting year
About the same

Discharges to fresh surface water
0

Discharges to brackish surface water/seawater
0

Discharges to groundwater
0

Discharges to third party destinations
80

Total water consumption at this facility (megaliters/year)
163

Comparison of total consumption with previous reporting year
About the same

Please explain
Due to the progress of measures against contaminated water, the amount of contaminated water accumulated in the reactor building and underground of the building increased, resulting in a slight increase in groundwater consumption. The treated water is properly stored in the tank.

W5.1a

(W5.1a) 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?
<Not Applicable>

Water withdrawals – volume by source

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water withdrawals – quality

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water discharges – total volumes

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water discharges – volume by destination

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water discharges – volume by treatment method

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water discharge quality – quality by standard effluent parameters

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water discharge quality – temperature

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water consumption – total volume

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

Water recycled/reused

% verified
Not verified

What standard and methodology was used?
<Not Applicable>

W6. Governance

W6.1

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

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

W6.1a

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

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	For electricity production, freshwater is directly used in hydroelectric power plants. In nuclear power plants we use fresh water for making it steam and generate electricity. The water used in the power generation is properly treated and its quality confirmed, but it may have an impact on the water environment in that it is draining. In addition, there is an event that contaminated water was generated inside the reactor building due to the Fukushima Daiichi Nuclear Power Station accident. For contaminated water measures in Fukushima Daiichi Nuclear Power Station, there is a standard to control the completion of indoor stagnant water treatment and the amount of polluted water generation to around 150m3 / day by 2020 and 100m3 / day by 2025. And this standard is our goal, too. We request suppliers to considerate efficient use of water and resources by procurement basic policy. Participated in the Water Project of the Ministry of the Environment, we are working on preservation of rivers and ocean environment. And we support the declaration of biodiversity and action guidelines of the Keidanren or Japan Business Federation. Especially in Oze, with contributing SDG No.15, we aim to protect and recover water related ecosystem such as Ayamedaira wetland and acquire FSC certification continually. By the agreement with the local government where the power plants are located, water discharges are conducted with each standards that are stricter than legal regulations. R & D is being carried out to properly implement decommissioning measures, including measures against contaminated water at the Fukushima Daiichi Nuclear Power Station. TEPCO has developed its group environmental policy, and we reduce environmental burdens and take action with environmental consideration in every corporate activities. The safety of the clean water used in the workplace is ensured because it is managed and monitored by the Waterworks Bureau in accordance with the water quality standards based on the Waterworks Law.The workplace environment is managed and monitored by the Safety and Health Committee. The respect for the human rights of employees is managed and monitored by the Corporate Ethics Committee. All employees can use water and sewage without discrimination, and are maintaining private toilets with consideration for diversity and privacy. Water risks caused by floods are managed in the business execution as natural disaster risks due to climate change.

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) (do not include any names) 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). President is also the head of the Risk Management Committee and ESG Committee.

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 Providing employee incentives Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	We have formulated action plans for business execution (business plan) including risk management issues and select responsible officers (executive officers). In addition, we report to the Board of Directors on the status of business execution quarterly, and are supervised strategies, action plans (actions) and performance targets, including revisions as necessary. 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) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)
Chief Executive Officer (CEO)

Responsibility
Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues
Annually

Please explain
At Risk Management Committee, the risks to be considered as management issues in the business execution (business plan) for the next fiscal year are discussed, and the risks are reported to the Executive Board meeting. At the Executive Board meeting, the matters to be decided by the Risk Management Committee are discussed, and the risks to be included in the business plan for the next fiscal year are determined and approved by the president (CEO). Finally, the business plan which includes risk management is discussed and approved by Board of Directors.

Name of the position(s) and/or committee(s)
Other C-Suite Officer, 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.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	

W6.4a

(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Role(s) entitled to incentive	Performance indicator	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 consumption volumes Implementation of 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. The resultant of these operations is reflected in its personal performance and its monetary reward.
Non-monetary reward	Board/Executive board Director on board Other C-suite Officer (Chief Decommissioning Officer)	Reduction of water withdrawals Reduction in consumption volumes Implementation of 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.

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 in Japan, 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 such as Federation of Electric Power Companies of Japan (FEPC), and so on.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

Yes (you may attach the report - this is optional)

security report FY2019_202006-j.pdf

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 2025. TEPCO aims reduction of contaminated water generation to about 150 m3/day within 2020 and 100 m3/day within 2025, 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 2025. TEPCO aims reduction of contaminated water generation to about 150 m3/day within 2020 and 100 m3/day within 2025, and completion of treatment of stagnant water in buildings within 2020. In FY 2020-22, about 115 billion JPY will be 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 2025. TEPCO aims reduction of contaminated water generation to about 150 m3/day within 2020 and 100 m3/day within 2025, and completion of treatment of stagnant water in buildings within 2020. TEPCO continues to monitor underground water and sea water following after 2020. The cost of decommissioning the Fukushima Daiichi Nuclear Power Station is estimated at approximately 8 trillion yen which includes the cost of contaminated water treatment. As for the decommissioning reserve, we plan to allocate approximately 115 billion yen to the contaminated water countermeasure program from FY2020 to FY2022.

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?

Row 1

Water-related CAPEX (+/- % change)

-28

Anticipated forward trend for CAPEX (+/- % change)

0

Water-related OPEX (+/- % change)

-20

Anticipated forward trend for OPEX (+/- % change)

0

Please explain

The tendency of CAPEX is calculated from the amount recorded for the purpose of contaminated water countermeasures, out of the planned amount for the recovery of the decommissioning fund of the Decommissioning Fund of the Nuclear Damage Compensation and Decommissioning Support Organization Act. In FY2019, as measures against contaminated water in the Fukushima Daiichi Nuclear Power Station, such as land-side impermeable walls and sub-drain, we have been implement multi-layered measures such as repairing the building roof and paving the site, In addition to steadily reducing the amount of contaminated water generated, we have been purifying the contaminated water that remains inside the building. The OPEX trend is calculated from the amount recorded as the stabilization maintenance cost of the Fukushima Daiichi Nuclear Power Station, including the measures for contaminated water at the end of FY2019. For both CAPEX and OPEX, FY2020 is expected to be the same scale as FY2019.

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	According to the scenario analysis method in the TCFD recommendations, we have identified multiple climate scenarios including the 2 ° C scenario and analyzed the resilience of the TEPCO Group's business strategy. For the climate scenario, IEAWEO 2018 NPS is used as a reference. We identified opportunities and risks related to climate change "transition" based on the scenario analysis conducted in 2019. The contents of the scenario analysis were reported to the ESG Committee, of which the representative director and president and executive officers such as presidents of core business companies are members. The summary of scenario analysis results was published in the 2019 Integrated Report. We are conducting a scenario analysis of the physical risks including water security risk in our business areas due to the effects of climate change over the medium to long term and will publish them in the Integrated Report 2020.

W7.3a

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

Yes

W7.3b

(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization's response?

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	IEA Sustainable Development Scenario Other, please specify (IEA NPS)	As a business opportunity related to the transition to climate change, it has been identified that customer needs for renewable energy including hydro power generation will continue to expand as demand-side electrification expands to realize decarbonized society in line with the Paris Agreement.	In light of the rising demand for renewable energy, we decided to spin off TEPCO Renewable Power Company, which develops businesses utilizing renewable energy assets of the TEPCO Group, including hydroelectric power plants (In April 2020, TEPCO Renewable Power has been spun off as a wholly owned subsidiary of TEPCO Holdings).

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, but we are currently exploring water valuation practices

Please explain

At present, we have not introduced water pricing because our hydro and thermal power plants are not uniformly located in the water stress area. However, we are examining the future risks of climate change physical risks and WRI Aqueduct's water risks, and considering what kind of water pricing mechanism is effective in accordance with the results. At the time of new and expansion of power plants in and outside Japan, we would like to conduct environmental impact assessment appropriately and implement water pricing in advance if water stress is not uniform.

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 nuclear 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 nuclear 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
Under the medium-term goal from FY 2001 to FY 2005, each TEPCO employee has worked on energy and resource saving in offices. The extremely difficult reduction target (-15%) of office water use was set based on approximately 2.2 million tons in FY 2000 results. In FY 2005, we reduced water use to 1.34 million tons and achieved a 39% reduction. We introduce this activity as an environmentally conscious activity in our integrated report and show that we contribute to the development of a sustainable society. This water saving effort has been continued since FY 2006, and the amount of water used in FY 2018 was 1.10 million tons and 0.945 million tons in FY2019. So that we have continually achieved the water consumption target.

Quantitative metric
% sites monitoring water withdrawals total volumes

Baseline year
2005

Start year
2006

Target year
2019

% of target 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. 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. Recently, we are gradually replacing water-saving toilets. We continue to monitor water consumption and publish it on our integrated report and 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 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 towards the Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station" set a goal to reduce the daily amount of polluted water generated at the Fukushima Daiichi Nuclear Power Station to 150 m3 within 2020. TEPCO has formulated an action plan to reduce the amount of contaminated water and reduce the risk from contaminated water in order to achieve the targets of this roadmap. Due to multi-layered measures such as installation of land-side impermeable walls and sub-drains, the amount of polluted water generated was reduced from 540 m3/day (May 2014) to 170 m3/day (FY2018). The roadmap for December 2019 was revised, and a new target was set to reduce it to 100m3 by 2025.

Baseline year
2011

Start year
2016

End year
2025

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 reduce contaminated water generation as 150 m3 / day within 2020. By these countermeasures, we have achieved reduction of stagnant contaminated water in buildings from 540 m3/day (May 2014) to 170 m3/day (FY2018). The mid- to long-term roadmap for December 2019 was revised, and a new target was set to reduce it to 100m3 by 2025.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?
No, we are waiting for more mature verification standards and/or processes

W10. 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.

On March 24, 2020, TEPCO has released its report on two potential methods indicated by government for disposing water that has been treated with the Multi-nuclide Removal Equipment (referred to as “ALPS”) and is now being stored at Fukushima Daiichi Nuclear Power Station. This report describes the response to the disposal methods and countermeasures for strengthen the Fukushima area's reputation. Going forward, the government will continue to consider the options for disposing the ALPS-treated water and communicate with stakeholders regarding this matter. TEPCO will continue to actively share information regarding Fukushima Daiichi's decontamination and decommissioning as well as cooperate closely with the government as it works toward its final decision, always keeping safety as the top priority.

https://www.tepco.co.jp/en/hd/newsroom/reports/archives/2020/pr20200327-e.html

The full report is attached and also available at the following link: http://www.tepco.co.jp/en/decommission/progress/watertreatment/images/200324.pdf

For the latest data on the treated water, please visit: http://www.tepco.co.jp/en/decommission/progress/watertreatment/index-e.html

Our essential responsibility in Fukushima is not only safe and stable decommissioning of the reactors but also revitalization of environment and communities in Fukushima.

Even outside of the decommissioning sites, the TEPCO Group continues to collaborate with various stakeholders including local residence to revitalize the environment, comunities and industries of Fukushima. Although we fully understand that these efforts are not included in the activities assesed by CDP, we strongly hope that stakeholders give rise to interests in these activities.

https://www.tepco.co.jp/en/hd/responsibility/revitalization/index-e.html
200324_TEPCO report on treated water.pdf

W10.1

(W10.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	The President and Representative Executive Officer, who is a member of the Board of Directors and a chairman of the ESG Committee.	Chief Executive Officer (CEO)

W10.2

(W10.2) 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

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

Please confirm below

I have read and accept the applicable Terms