CDP

Scores

Climate Change 2024 : B

Water Security 2024 : B

Responses to the CDP questionnaire

Tohoku Electric Power Co., Inc.

CDP Corporate Questionnaire 2024

Word version

Important: This exported file excludes unanswered questions.

This document contains answers exported from the organization’s CDP questionnaire. It includes all data points from questions answered or in process. Questions or data points whose submission was requested may be excluded from this document because they remain unanswered at this point. It is the respondent’s responsibility to check the completeness of answers before submission. The CDP is not liable for incomplete answers.

Corporate Question 2024 Disclosure Conditions - CDP

Details

C1. Introduction

(1.1) In which language are you submitting your response?

Select from:

☑ Japanese

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

Select from:

☑ Japanese yen (JPY)

(1.3) Provide an overview and introduction to your organization.

(1.3.2) Organization type

Select from:

☑ Publicly traded organization

(1.3.3) Description of organization

Company Name: Tohoku Electric Power Co., Inc.

Established: May 1, 1951

Capital: 251.4 billion yen

Total Assets (as of March 31, 2023): 4,381 billion yen (consolidated: 5,211.9 billion yen)

Operating revenue (FY2022): 2,301.5 billion yen (consolidated: 3,007.2 billion yen)

Ordinary income (FY2022): 220.8 billion yen (consolidated: 199.2 billion yen)

Representatives (as of July 31, 2023)

-Representative Director & Chairman of the Board: Jiro Masuko

-Representative Director & President: Kojiro Higuchi

Number of shareholders (as of March 31, 2023): 185,988

Supply area: Prefectures of Aomori, Iwate, Akita, Miyagi, Yamagata, Fukushima, Niigata and others.

Number of employees (as of March 31, 2023): 4,901 (consolidated: 24,528)

Electricity sales (FY2022): Lighting (Residential) 19,959 GWh, Power: 45,982 GWh, Total: 65,940 GWh

** In April 2020, the Company was split into Tohoku Electric Power Co., Inc., which handles the power generation and retail sectors, and Tohoku Electric Power Network Co., Inc., which handles the power transmission and power distribution sectors.*

[*Fixed row]*

(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years.

	End date of reporting year	Alignment of this reporting period with your financial reporting period	Indicate if you are providing emissions data for past reporting years.
	03/30/2023	*Select from:* ☑ Yes	*Select from:* ☑ No

[Fixed row]

(1.4.1) What was your organization's annual revenue for the reporting period?

3007200000000

(1.5) Provide details on your reporting boundary.

	Is your reporting boundary for your CDP disclosure the same as that used in your financial statements?	How does your reporting boundary differ to that used in your financial statement?
	Select from: ☑ No	*The scope of reporting includes Tohoku Electric Power Co., Inc. and its major subsidiary Tohoku Electric Power Network Co., Inc.*

[Fixed row]

(1.6) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

ISIN code – bond

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

ISIN code – equity

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ Yes

(1.6.2) Provide your unique identifier.

JP3605400005

CUSIP number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

Ticker symbol

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

SEDOL code

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

LEI number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ Yes

(1.6.2) Provide your unique identifier.

353800KTF7EYIIYHY088

DUNS number

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

Other unique identifier(s)

(1.6.1) Does your organization use this unique identifier?

Select from:

☑ No

[*Add rows*]

(1.7) Select the countries/areas in which you operate.

Select all that apply

☑ Japan

(1.8) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
	Select from: ☑ Yes, for some facilities	*Provided for major thermal and hydroelectric power stations.*

[Fixed row]

(1.8.1) Please provide all available geolocation data for your facilities.

Row 1

(1.8.1.1) Identifier

Hachinohe Thermal Power Station

(1.8.1.2) Latitude

40.534

(1.8.1.3) Longitude

141.506

(1.8.1.4) Comment

LNG combined thermal power

Row 2

(1.8.1.1) Identifier

Noshiro Thermal Power Station

(1.8.1.2) Latitude

40.191

(1.8.1.3) Longitude

139.994

(1.8.1.4) Comment

Coal-fired thermal power

Row 3

(1.8.1.1) Identifier

Akita Thermal Power Station

(1.8.1.2) Latitude

39.784

(1.8.1.3) Longitude

140.049

(1.8.1.4) Comment

Oil-fired thermal power

Row 4

(1.8.1.1) Identifier

Sendai Thermal Power Station

(1.8.1.2) Latitude

38.317

(1.8.1.3) Longitude

141.073

(1.8.1.4) Comment

LNG combined thermal power

Row 5

(1.8.1.1) Identifier

Shin-Sendai Thermal Power Station

(1.8.1.2) Latitude

38.276

(1.8.1.3) Longitude

141.041

(1.8.1.4) Comment

LNG COMBINED THERMAL POWER

Row 6

(1.8.1.1) Identifier

Haramachi Thermal Power Station

(1.8.1.2) Latitude

37.666

(1.8.1.3) Longitude

139.081

(1.8.1.4) Comment

Coal-fired thermal power

Row 7

(1.8.1.1) Identifier

Higashi-Niigata Thermal Power Station

(1.8.1.2) Latitude

38

(1.8.1.3) Longitude

139.241

(1.8.1.4) Comment

LNG COMBINED THERMAL POWER

Row 8

(1.8.1.1) Identifier

Niigata Thermal Power Station

(1.8.1.2) Latitude

37.946

(1.8.1.3) Longitude

139.081

(1.8.1.4) Comment

LNG COMBINED THERMAL POWER

Row 9

(1.8.1.1) Identifier

Joetsu Thermal Power Station

(1.8.1.2) Latitude

37.203

(1.8.1.3) Longitude

138.279

(1.8.1.4) Comment

LNG COMBINED THERMAL POWER

Row 10

(1.8.1.1) Identifier

Agekawa Hydroelectric Power Station

(1.8.1.2) Latitude

37.662

(1.8.1.3) Longitude

139.623

(1.8.1.4) Comment

Hydroelectric power station using the largest volume of water over the course of the report year

[Add rows]

(1.16) In which part of the electric utilities value chain does your organization operate?

Power business value chain

☑ Logistics

☑ Power generation

☑ Power transmission

Other segments

☑ Smart grid/demand response

(1.16.1) For your electricity generation activities, provide details of your nameplate capacity and electricity generation specifics for each technology employed.

Coal – Hard

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

3795

(1.16.1.3) Gross electricity generation (GWh)

24404

(1.16.1.4) Net electricity generation (GWh)

23005

(1.16.1.5) Comment

Fresh water is used as boiler water and sea water as cooling water at coal-fired thermal power stations. Boiler water is circulated in use. All cooling water is released into the sea after being used in condensers.

Lignite

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

No comments

Oil

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

600

(1.16.1.3) Gross electricity generation (GWh)

1978

(1.16.1.4) Net electricity generation (GWh)

1860

(1.16.1.5) Comment

Fresh water is used as boiler water and sea water as cooling water at oil-fired thermal power stations. Boiler water is circulated in use. All cooling water is released after being used in condensers.

Gas

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

7471

(1.16.1.3) Gross electricity generation (GWh)

25087

(1.16.1.4) Net electricity generation (GWh)

24403

(1.16.1.5) Comment

Fresh water is used as boiler water and sea water as cooling water at gas-fired thermal power stations. Boiler water is circulated in use. All cooling water is released after being used in condensers.

Sustainable biomass

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

No comments

Other biomass

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

5

(1.16.1.3) Gross electricity generation (GWh)

31

(1.16.1.4) Net electricity generation (GWh)

29

(1.16.1.5) Comment

Maximum electricity generation is converted from thermal ratio since mixed burning is employed.

Waste (non-biomass)

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

No comments

Nuclear

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

2750

(1.16.1.3) Gross electricity generation (GWh)

0

(1.16.1.4) Net electricity generation (GWh)

0

(1.16.1.5) Comment

Nuclear power stations use industrial water (fresh water) as site water.

Fossil fuel plants fitted with carbon capture and storage

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

No comments

Geothermal

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

139

(1.16.1.3) Gross electricity generation (GWh)

672

(1.16.1.4) Net electricity generation (GWh)

672

(1.16.1.5) Comment

Geothermal power stations use industrial water (fresh water) as site water.

Hydropower

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

2450

(1.16.1.3) Gross electricity generation (GWh)

7990

(1.16.1.4) Net electricity generation (GWh)

7990

(1.16.1.5) Comment

Hydroelectric power stations use river water (fresh water) to generate electricity via water turbines. All water is returned to the river after use.

Wind

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

1

Solar

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

5

(1.16.1.3) Gross electricity generation (GWh)

6

(1.16.1.4) Net electricity generation (GWh)

6

(1.16.1.5) Comment

Solar power stations do not use water.

Marine

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

1

Other renewables

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

1

Other non-renewables

(1.16.1.1) Own or control operations which use this power

Select from:

☑ No

(1.16.1.5) Comment

1

Total

(1.16.1.1) Own or control operations which use this power

Select from:

☑ Yes

(1.16.1.2) Nameplate capacity (MW)

17214

(1.16.1.3) Gross electricity generation (GWh)

60168

(1.16.1.4) Net electricity generation (GWh)

57965

(1.16.1.5) Comment

Each power station uses water.

[Fixed row]

(1.24) Has your organization mapped its value chain?

(1.24.1) Value chain mapped

Select from:

☑ Yes. We have mapped or are currently in the process of mapping our value chain.

(1.24.2) Value chain stages covered in mapping

Select all that apply

☑ Upstream value chain

☑ Downstream value chain

(1.24.3) Highest supplier tier mapped

Select from:

☑ Tier 1 suppliers

(1.24.4) Highest supplier tier known but not mapped

Select from:

☑ Tier 2 suppliers

(1.24.7) Description of mapping process and coverage

The Group will cocreate social and corporate value alongside our stakeholders into future generations and help achieve the SDGs by implementing "Working alongside *next +PLUS,” the Tohoku Electric Power Group’s medium- to long-term vision, and by taking on the challenge of achieving carbon neutrality by 2050.*

[Fixed row]

(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?

	Plastics mapping	Value chain stages covered in mapping
	Select from: ☑ Yes. We have mapped or are currently in the process of mapping the use of plastics across our value chain.	*Select all that apply* ☑ Downstream value chain

[Fixed row]

C2. Identification, Assessment, and Management of Dependencies, Impacts, Risks, and Opportunities

(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?

Short-term

(2.1.1) From (years)

0

(2.1.3) To (years)

3

(2.1.4) How this time horizon is linked to strategic and/or financial planning?

20222025

Medium-term

(2.1.1) From (years)

4

(2.1.3) To (years)

8

(2.1.4) How this time horizon is linked to strategic and/or financial planning?

20262030 We have set the target of halving FY2030 CO_2 emissions compared to FY2013 levels as an interim goal toward achieving carbon neutrality by 2050.

Long-term

(2.1.1) From (years)

9

(2.1.2) Is your long-term time horizon open ended?

Select from:

☑ No

(2.1.3) To (years)

28

(2.1.4) How this time horizon is linked to strategic and/or financial planning?

20312050 We are striving to achieve carbon neutrality by 2050.

[Fixed row]

(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?

	Process in place	Dependencies and/or impacts evaluated in this process
	Select from: ☑ Yes	*Select from:* ☑ Dependencies and impacts

[Fixed row]

(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?

	Process in place	Risks and/or opportunities evaluated in this process	Is this process informed by the dependencies and/or impacts process?
	Select from: ☑ Yes	*Select from:* ☑ Risks and opportunities	*Select from:* ☑ Yes

[Fixed row]

(2.2.2) Provide details of your organization's process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.

Row 1

(2.2.2.1) Environmental issue

Select all that apply

☑ Water

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue.

Select all that apply

☑ Dependencies

☑ Impacts

☑ Risks

☑ Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

☑ Direct operations

(2.2.2.4) Coverage

Select from:

☑ Partial

(2.2.2.7) Type of assessment

Select from:

☑ Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

☑ More than once a year

(2.2.2.9) Time horizons covered

Select all that apply

☑ Short-term

☑ Medium-term

☑ Long-term

(2.2.2.10) Integration of risk management process

Select from:

☑ Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

☑ National

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

☑ Taskforce on Nature-related Financial Disclosures (TNFD)

☑ WRI Aqueduct

International methodologies and standards

☑ Environmental impact assessment

Databases

☑ Local government databases

Other

☑ Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical risks

☑ Drought

☑ Landslides

☑ Pollution incidents

☑ Release of harmful substances

☑ Torrential precipitation (rain, hail, snow/ice)

☑ Cyclones, hurricanes, typhoons

☑ Flooding (coastal, river, heavy rainfall, groundwater)

Chronic physical risks

☑ Changing patterns and types of precipitation (rain, hail, snow/ice)

☑ Changing temperatures (air, fresh water, sea water)

☑ Reduced water quality

☑ Increasingly severe abnormal weather events

☑ Fluctuations in supply due to seasonal factors or changes over the years

Policy

☑ Changing domestic laws

☑ Adoption of regulatory standards on pollutants not previously regulated

Market risks

☑ Changing customer behavior

Reputational risks

☑ Impacts on human health

☑ Critical reporting on support for projects or activities with negative impacts on the environment (GHG emissions, forest cutting/conversion, water stress, etc.)

Liability risks

☑ Litigation

☑ Temporary suspension measures or voluntary agreements

(2.2.2.14) Partners and stakeholders considered

Select all that apply

☑ Customers

☑ Employees

☑ Local communities

☑ Water utilities at local levels

☑ Investors

☑ Regulators

☑ Suppliers

☑ Other water users at the basin/catchment level

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

☑ No

(2.2.2.16) Further details of process

[Process applied to assess essential financial or strategic impacts from risks and opportunities] We conduct annual surveys of short-, medium- and long-term "water security risks and opportunities" to identify business and financial impacts. Specific processes include identifying climate-related risks and opportunities in each department and assessing the potential impact on the supervising department of each risk factor. Based on scenario analysis, each supervisory department examines potential changes in the external environment and unfavorable events; the nature and potential extent of the damage of such events; and the assumption of the resulting financial losses. Each supervisory department examines "countermeasures to avoid and mitigate the examined damages." In studying the Medium-Term Environmental Plan, including responses to climate-related risks and opportunities, the Board of Directors exercises oversight by reviewing proposals and reports that emerge from deliberations by the Sustainability Committee, which meets several times each year and is chaired by the President. Each operating business section submits proposals and reports to the Board as necessary on the formulation and implementation of business plans. In addition, as part of an interdisciplinary companywide integrated risk management framework, a structure is in place for reporting water-security-related risks and non-climate-related risks that pose significant management risks to the Board of Directors based on deliberations and studies of risk response by the Integrated Risk Management Council chaired by the President. The Integrated Risk Management Council meets twice annually to provide guidance and advice on assessing the management of risks important to business administration and implementing and deploying risk-management activities, among other issues. The results of these deliberations are provided as feedback to each business execution section and to related committees to enhance risk-management activities.

[Process applied to physical risks and opportunities] Water security risks that may significantly impact our operations include physical risks such as sudden changes in rainfall affecting our 203 hydroelectric plants, which account for the largest number of such plants commercially operated in Japan (on an individual company basis). Specifically, 60% of our hydroelectric power, by power capacity, is mainly located in the Tadami River and Agano River water systems, which flow through the Niigata and Fukushima Aizu regions. Rapid changes in the pattern of precipitation within the region may result in serious equipment damage to the plants. We also have many

hydroelectric power stations in rivers that are relatively short and steep on the Pacific Ocean side, and we recognize that there is a relatively high risk of equipment damage to those plants due to rapid changes in precipitation regarding these rivers. In addition to hydroelectric power plants, we have a large number of facilities throughout the Tohoku and Niigata regions, with a total of 222 power plants, transmission line facilities of 15,506 km in length and distribution line facilities of 149,517 km in length, exposing us to a wide range of physical risks. To this end, each business section of the company identifies the potential impact on the supervising division for each risk factor based on data published by the Meteorological Agency and its Sendai Regional Headquarters (such as specific rainfall/snowfall data and future forecasts for the number of days of extreme heat and cold) as well as examples of disasters caused by major typhoons that we have experienced in the past. The magnitude of these impacts is assessed to the extent possible, and measures to deal with risks are examined. In studying the Medium-Term Environmental Plan, including management of these risks and opportunities, the Committee of Environmental Management deliberates across divisions and then submits proposals and reports to the Board of Directors based on deliberations by the Sustainability Committee, chaired by the President.

[Process applied to transition risks and opportunities] Should regulations governing GHG emissions grow more stringent, we expect the importance and competitiveness of our 203 hydroelectric plants, which account for the largest number of this type commercially operated in Japan (on an individual company basis), to grow. In addition, as stated in our Medium-to-Long-Term Vision "Working alongside next," we plan to achieve sustainable growth by improving the efficiency of thermal power generation (such as promoting development of the Joetsu Thermal Power Plant Unit No. 1, which has the goal of achieving the world's highest thermal efficiency, and discontinuing aging thermal power plants), developing 2 million kW of renewable energy, and commercializing VPPs. For this reason, as with physical risks and opportunities, each business section identifies what impact each risk factor (such as tightening regulations on CO2 emissions targets, expanding renewable energy introduction, and anticipated changes in customer behavior) has on the transition risks and opportunities of the supervising division. To the extent possible, the division assesses the magnitude of these impacts and considers countermeasures for risks. In studying plans, including management of risks and opportunities, the Sustainability Committee, chaired by the President, deliberates on and submits proposals and reports to the Board of Directors.

Row 2

(2.2.2.1) Environmental issue

Select all that apply

☑ Climate change

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue.

Select all that apply

☑ Dependencies

☑ Impacts

☑ Risks

☑ Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

☑ Direct operations

☑ Upstream value chain

☑ Downstream value chain

(2.2.2.4) Coverage

Select from:

☑ Full

(2.2.2.5) Supplier tiers covered

Select all that apply

☑ Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

☑ Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

☑ More than once a year

(2.2.2.9) Time horizons covered

Select all that apply

☑ Short-term

☑ Medium-term

☑ Long-term

(2.2.2.10) Integration of risk management process

Select from:

☑ Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

☑ National

(2.2.2.12) Tools and methods used

International methodologies and standards

☑ IPCC Climate Change Projections

Databases

☑ Nation-specific databases, tools, or standards

Other

☑ Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical risks

☑ Cyclones, hurricanes, typhoons

☑ Flooding (coastal, river, heavy rainfall, groundwater)

☑ Torrential precipitation (rain, hail, snow/ice)

☑ Storms (including blizzards, dust, and sandstorms)

Chronic physical risks

☑ Changing patterns and types of precipitation (rain, hail, snow/ice)

Policy

☑ Carbon pricing mechanisms

☑ Changes in international laws and bilateral agreements

☑ Changing domestic laws

Market risks

☑ Availability and/or increased cost of certified sustainable material

☑ Availability and/or increased cost of raw materials

☑ Changing customer behavior

Reputational risks

☑ Increased partner and stakeholder concern and partner and stakeholder negative feedback

Technology risks

☑ Transition to lower emissions technology and products

Liability risks

☑ Non-compliance with regulations

(2.2.2.14) Partners and stakeholders considered

Select all that apply

☑ Customers

☑ Employees

☑ Investors

☑ Regulators

☑ Suppliers

☑ Local communities

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

☑ No

(2.2.2.16) Further details of process

[Process applied to assess essential financial or strategic impacts from risks and opportunities] We conduct annual surveys of short-, medium- and long-term climate change risks and opportunities to identify business and financial impacts. Specific processes include identifying climate-related risks and opportunities in each department and assessing the "potential impact on the supervising department of each risk factor. Based on scenario analysis, each supervisory department examines potential changes in the external environment and unfavorable events"; the nature and potential extent of the damage, financial and reputation, of such events; and the assumption of the resulting financial losses. Each supervisory department examines "countermeasures to avoid and mitigate the examined damages." In studying the Medium-Term Environmental Plan, including responses to climate-related risks and opportunities, the Board of Directors exercises oversight by reviewing proposals and reports that emerge from deliberations by the Committee of Environmental Management, which meets several times each year, and the Promotion Council of Carbon Neutrality and Environmental Management, which is chaired by the President. Each operating business section submits proposals and reports to the Board as necessary on the formulation and implementation of business plans. In addition, as part of an interdisciplinary companywide integrated risk management framework, a structure is in place for reporting climate-change-related risks and other risks that pose significant management risks to the Board of Directors based on deliberations and studies of risk response by the Integrated Risk Management Council chaired by the President. The Integrated Risk Management Council meets twice annually to provide guidance and advice on assessing the management of risks important to business administration and implementing and deploying risk-management activities, among other issues. The results of these deliberations are provided as feedback to each business execution section and to related committees, including the Committee of Environmental Management, to enhance risk-management activities.
[Process applied to physical risks and opportunities] Climate-change risks that may significantly impact our operations include physical risks such as sudden changes in rainfall affecting our 203 hydroelectric plants, which account for the largest number of such plants commercially operated in Japan (on an individual company basis). Specifically, 60% of our hydroelectric power, by power capacity, is mainly located in the Tadami River and Agano River water systems, which flow through the Niigata and Fukushima Aizu regions. Rapid changes in the pattern of precipitation within the region may result in serious equipment damage to the plants. We also have many hydroelectric power stations in rivers that are relatively short and steep on the Pacific Ocean side, and we recognize that there is a relatively high risk of equipment damage to those plants due to rapid changes in precipitation regarding these rivers. In addition to hydroelectric power plants, we have a large number of facilities throughout the Tohoku and Niigata regions, with a total of 222 power plants, transmission line facilities of 15,506 km in length and distribution line facilities of 149,517 km in length, exposing us to a wide range of physical risks. To this end, each business section of the company identifies the potential impact on the supervising division for each risk factor based on data published by the Meteorological Agency and its Sendai Regional Headquarters (such as specific rainfall/snowfall data and future forecasts for the number of days of extreme heat and cold) as well as examples of disasters caused by major typhoons that we have experienced in the past. The

magnitude of these impacts is assessed to the extent possible, and measures to deal with risks are examined. In studying the Medium-Term Environmental Plan, including management of these risks and opportunities, the Committee of Environmental Management deliberates across divisions and then submits proposals and reports to the Board of Directors based on deliberations by the Promotion Council of Carbon Neutrality and Environmental Management, chaired by the President. In addition, a structure is in place for reporting climate-related risks that pose significant management risks in particular to the Board of Directors, through an interdisciplinary companywide integrated risk management framework in combination with non-climate-related risks.

[Process applied to transition risks and opportunities] Should regulations governing GHG emissions grow more stringent, we expect the importance and competitiveness of our 203 hydroelectric plants, which account for the largest number of this type commercially operated in Japan (on an individual company basis), to grow. In addition, as stated in our Medium-to-Long-Term Vision "Working alongside next," we plan to achieve sustainable growth by improving the efficiency of thermal power generation (such as promoting development of the Joetsu Thermal Power Plant Unit No. 1, which has the goal of achieving the world's highest thermal efficiency, and discontinuing aging thermal power plants), developing 2 million kW of renewable energy, and commercializing VPPs. For this reason, as with physical risks and opportunities, each business section identifies what impact each risk factor (such as tightening regulations on CO2 emissions targets, expanding renewable energy introduction, and anticipated changes in customer behavior) has on the transition risks and opportunities of the supervising division. To the extent possible, the division assesses the magnitude of these impacts and considers countermeasures for risks. In studying the Medium-Term Environmental Plan, including management of risks and opportunities, the Committee of Environmental Management deliberates across divisions, then submits proposals and reports to the Board of Directors based on deliberations by the Promotion Council of Carbon Neutrality and Environmental Management, which is chaired by the President. In addition, through an interdisciplinary companywide integrated risk management framework, a structure is in place for reporting climate-related risks that pose significant risks to management, in particular, to the Board of Directors in combination with non-climate-related risks.

[Add rows]

(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?

(2.2.7.1) Interconnections between environmental dependencies, impacts, risks and/or opportunities assessed

Select from:

☑ Yes

(2.2.7.2) Description of how interconnections are assessed

Our power-generation processes depend on fossil fuels and impact the environment by generating greenhouse gas emissions. Stricter regulation of GHG emissions

may increase thermal power generation costs. At the same time, it may also generate other opportunities, including more competitive non-fossil fuel power sources and increased revenue opportunities. While changes in the power demand and supply structure may pose the risk of lower use of thermal power as use of renewables increases, it may also create opportunities associated with higher demand for electricity as electrification expands. We assess such linked risks and opportunities in an integrated manner, seeking to ensure strategic resilience by minimizing the impact of management risks while swiftly reflecting opportunities in transition strategies and managing their progress.
[Fixed row]

(2.3) Have you identified priority locations across your value chain?

(2.3.1) Identification of priority locations

Select from:

☑ Yes. We are currently in the process of identifying priority locations.

(2.3.2) Value chain stages where priority locations have been identified

Select all that apply

☑ Direct operations

(2.3.3) Types of priority locations identified

Sensitive locations

☑ Areas important for biodiversity

☑ Areas of high ecosystem integrity

Locations associated with substantive dependencies, impacts, risks, and/or opportunities

☑ Locations associated with substantive dependencies, impacts, risks, and/or opportunities related to water

☑ Locations associated with substantive dependencies, impacts, risks, and/or opportunities related to biodiversity

(2.3.4) Description of process to identify priority locations

To identify priority locations, we assessed dependencies and impacts related to natural capital and analyzed anticipated risks and opportunities, referring to the TNFD recommendations v. 1.0. The subject consisted of our power generation business and the power transmission business of Tohoku Electric Power Network Co., Inc., which together account for the bulk of Group consolidated financial results. The power generation business includes directly-owned thermal, nuclear, hydroelectric, geothermal, solar, and wind power businesses, and the power transmission business includes the transmission, transformer, and distribution businesses.

(2.3.5) Will you be disclosing a list/spatial map of priority locations?

Select from:

☑ Yes. We will disclose a list/geospatial map of priority locations.

(2.3.6) Provide a list and/or spatial map of priority locations.

2.3_tohoku_sustainabilityreport2023_jp_32.pdf
[Fixed row]

(2.4) How does your organization define substantive effects on your organization?

Risks

(2.4.1) Type of definition

Select all that apply

☑ Qualitative

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Direct operating costs

(2.4.3) Change to indicator

Select from:

☑ Absolute increase

(2.4.5) Absolute increase/decrease figure

10000000000

(2.4.6) Metrics considered in definition

Select all that apply

☑ Time horizon over which the effect occurs

(2.4.7) Application of definition

The Integrated Risk Management Council, chaired by the President, has been established and an integrated risk management policy formulated, under which risks that may significantly affect our management are monitored and managed. In addition, each department routinely identifies and assesses risks related to its business activities and incorporates countermeasures to its annual business plans to manage risks as part of the management cycle. Climate-related risks determined through scenario analysis to have impacts of 10 billion yen or more, such as increased operating costs or decreased asset value, are defined as high-impact; these are reflected in transition plans to minimize their impact on management in light of their impact timelines (time horizons) and other considerations.

Opportunities

(2.4.1) Type of definition

Select all that apply

☑ Qualitative

☑ Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

☑ Sales

(2.4.3) Change to indicator

Select from:

☑ Absolute increase

(2.4.5) Absolute increase/decrease figure

10000000000

(2.4.6) Metrics considered in definition

Select all that apply

☑ Time horizon over which the effect occurs

(2.4.7) Application of definition

As with climate-change risks, we ascertain opportunities qualitatively and quantitatively through scenario analysis and swiftly reflect opportunities identified in transition *strategies to ensure strategic resilience.*

[Add rows]

(2.5) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

(2.5.1) Identification and classification of potential water pollutants

Select from:

☑ Yes. We identify and classify our potential water pollutants.

(2.5.2) How potential water pollutants are identified and classified

[*Policies and processes intended to identify and categorize potential water pollutants] We identify and manage subject substances and emissions based on the Water Pollution Prevention Act, the Soil Contamination Countermeasures Act, the PCB Special Measures Act, the Act on the Assessment Releases of Specified Chemical Substances in the Environment, and other environmental laws and regulations, as well as agreements with local governments. When establishing a new power plant, we carry out environmental impact assessments under the Environmental Impact Assessment Act, which establishes procedures for preventing and mitigating environmental impacts on water, air, etc., and explain the specifics to local governments and local residents. Based on the results of such assessments, we implement various measures based on a consideration of the surrounding air, water, and natural environment, and we strive to protect the environment in the vicinity. We also conduct voluntary environmental assessments when setting up power plants and other facilities that also include aspects not addressed by laws and ordinances.*

[*Details of applicable regulations] In addition to the base values for regulated substances identified in the Water Pollution Prevention Act, the Soil Contamination Countermeasures Act, and other laws and regulations, for some items we comply with base levels even stricter than those of laws and regulations, as established under agreements with local governments.* [*Measurement indicators and other indicators used to identify pollutants] We identify pollutants with reference to emissions standards, etc., through sampling and analysis based on the methods established in environmental standards and elsewhere.*

[Fixed row]

(2.5.1) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Row 1

(2.5.1.1) Water pollutant category

Select from:

☑ Other physical pollutants

(2.5.1.2) Description of water pollutant and potential impacts

Warming caused by the thermal exchange of cooling water qualifies as another physical pollutant. Nuclear and thermal power plants use sea water for thermal exchange to cool the steam used in steam turbines, releasing the water at depth in the sea as thermal discharge water. The Environmental Impact Assessment Act and other laws and ordinances identify thermal discharge water as subject to predictive assessments of water temperature, to avoid affecting aquatic ecosystems through temperature increases in the water and effects of flows of thermal discharge water on the terrain, aquatic migrations, seafloor creatures, and fisheries. To attain the understanding of the community, we believe it is important to identify substances with the potential to affect the surrounding environment.

(2.5.1.3) Value chain stage

Select all that apply

☑ Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

☑ Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

(2.5.1.5) Please explain.

At nuclear power stations, we conclude safety agreements with individual local governments to address environmental concerns. As part of these efforts, together with local governments, we survey the impact of thermal discharge water in the water near nuclear power stations (i.e., physical surveys of matters such as water temperature, *salinity, and current and biological surveys on matters such as eggs, fry, and plankton). If results are outside norms, we make the reasons clear. Results of thermal discharge water environmental impact surveys are studied and evaluated by third-party committees established by individual prefectures, and improvements are made in response to any issues identified as a result. The results of studies, assessments, and improvements are announced by the local governments. The following have been identified as possible impacts of thermal discharge water on the natural environment: impacts on aquatic creatures due to rising temperatures in the surrounding water; the geological effects of thermal discharge water flows; and impacts on fish migration and benthic organisms, as well as impact on commercial fisheries. Water is discharged to the sea in front of the power station while measuring water temperature to maintain differences in temperature at water intake and discharge points below a certain level (7°C). At thermal power stations, we conclude pollution prevention agreements with individual local governments that address environmental concerns. Considering regional characteristics, we apply stricter values than those in national regulations, according to which we measure temperature differences between the water at intake and discharge and report the results to relevant local governments. Water is discharged to the sea in front of the power station in a manner designed to keep these figures at or below the levels specified in these agreements. We control differences in temperature at water intake and discharge points at these power stations via the constant monitoring and control of circulation pumps. We also constantly remove shellfish that can adhere to heat exchangers and impede their efficiency. In certain cases, we restrain power-generating loads to comply with the regulatory values agreed upon with local governments on differences in temperature at water intake and discharge points. In building a new power station, alongside environmental impact assessments based on the Environmental Impact Assessment Act, which establishes procedures for avoiding and reducing environmental impacts such as those on water and air, we explain the specifics to local governments and local residents. Based on the results of these environmental assessments, we strive to protect the local environment in various ways that reflect consideration for the surrounding air, water, and natural environments. Even in aspects not addressed by laws and ordinances, we undertake voluntary environmental assessments when building new power stations. As a member of the local community, in pursuing our business activities the Group complies thoroughly with environmental laws and regulations across our entire value chain. Applicable policies and procedures are the same as for our direct operations.*

[Add rows]

C3. Disclosure of Risks and Opportunities

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.1.1) Environmental risks identified

Select from:

☑ Yes, both in direct operations and the upstream/downstream value chain.

Water

(3.1.1) Environmental risks identified

Select from:

☑ Yes, only within our direct operations.

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

☑ Environmental risks exist, but none with the potential to have significant consequences for our organization.

(3.1.3) Please explain.

The major suppliers on whom we depend in our power generation business supply fossil fuels such as coal, natural gas, and petroleum. Quality fresh water is relatively unimportant to the processes of fossil fuel extraction and refining. Fossil fuel refining processes depend on water other than fresh water, such as sea water and recycled water, chiefly for use as cooling water. We do not recognize a major risk here because the risks are distributed; we are currently striving to diversify and distribute our fuel procurement sources to ensure a stable supply of energy. We send CSR surveys to suppliers to monitor their use of water resources; if any concerns are identified, we meet with them individually and take other steps to identify their operational status and ask them to make improvements.

Plastics

(3.1.1) Environmental risks identified

Select from:

☑ Yes, both in direct operations and the upstream/downstream value chain.

[Fixed row]

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk 1

(3.1.1.3) Risk type and primary environmental risk driver

Chronic physical risks

☑ Changing patterns and types of precipitation (rain, hail, snow/ice)

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Japan

(3.1.1.9) Organization-specific description of risk

Hydroelectric power accounts for 14% of our total power generating facility capacity. Some 60% of our hydroelectric power capacity is concentrated on facilities in the Tadami River and Agano River water systems. Since these are located in a region characterized by some of Japan's heaviest snowfalls, they are subject to relatively high risks associated with chronic changes in snowfall patterns. For example, if a chronic change in annual snowfall patterns results in decreased snowmelt and drought, there is a risk that hydroelectric power generation may decline due to reduced water flows available for hydroelectric power stations. This may increase the use of thermal power, leading to the risk of a negative financial impact from rising fuel costs associated with such increased use.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Increase in direct operating costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ This risk has already had a significant impact on the organization over the course of the report year.

(3.1.1.14) Magnitude

Select from:

☑ Somewhat high

(3.1.1.15) Effect of the risk on the financial position, financial performance and cash flows of the organization in the reporting year

A drought may lead to higher fuel costs (direct costs). The monetary impact of a drought of the same degree as that of FY2022, when the water release rate was negative YoY, is estimated at 7.2 billion yen. This estimate is obtained by multiplying the balance effect of 2.4 billion yen per 1% of release rate in FY2022 by the release rate of 97.0% (down 3.0 points from the previous year) in FY2022. 2.4 billion yen/% 3.0% 7.2 billion yen

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.18) Financial effect figure in the reporting year (currency)

7200000000

(3.1.1.25) Explanation of financial effect figure

A drought may lead to higher fuel costs (direct costs). The monetary impact of a drought of the same degree as that of FY2022, when the water release rate was negative, is estimated at 7.2 billion yen. This estimate is obtained by multiplying the balance effect of 2.4 billion yen per 1% of release rate (balance effect of a 1% change in release rate in FY2022) by 3.0 (the release rate was most recently negative YoY in FY2022, when it was 97.0% [down 3.0 points from the previous year]). 2.4 billion yen/% 3.0% 7.2 billion yen

(3.1.1.26) Primary response to risk

Policies, plans

☑ Formulation of a climate transition plan

(3.1.1.27) Cost of response to risk

20600000000

(3.1.1.28) Explanation of cost calculation

The cost of responding to the risk of JPY20.6 billion is the total of the increase of JPY19.5 billion in the book value of thermal power facilities in FY2017 and drought reserves of JPY1.1 billion in FY2017.
JPY19.5 billion (increase in book value of thermal power facilities in FY2017) JPY1.1 billion (drought reserves in FY2017)

(3.1.1.29) Description of response

Status: We have 203 hydroelectric plants, which account for the largest number of such plants commercially operated in Japan (on an individual company basis), in the six Tohoku prefectures and Niigata Prefecture. Hydroelectric power accounts for 14% of our total power generating facility capacity. Some 60% of our hydroelectric power capacity is concentrated on facilities in the Tadami River and Agano River water systems.
Issues: Tadami is a region characterized by some of Japan’s heaviest snowfalls and is subject to relatively high risks associated with chronic changes in snowfall patterns. For example, if a chronic change in annual snowfall patterns results in decreased snowmelt and drought, there is a risk that hydroelectric power generation may decline due to reduced water flows available for hydroelectric power stations. This may increase the use of thermal power, leading to the risk of a negative financial impact from rising fuel costs associated with such increased use.
Responses: By putting water resources to effective use through new construction and renovations of hydroelectric power stations, we can boost power generation efficiency without changing the volumes of water used, thereby suppressing increases in fuel costs accompanying the expanded use of thermal power during droughts. For example, in September 2017 we completed large-scale renovations at the aging Kanose Power Station. We also strive to stabilize financial impacts to some degree by keeping drought reserves in preparation for higher fuel costs in a drought.
Results: Reducing the number of water turbines from six to two and adopting high-efficiency vertical shaft water turbines made it possible to increase maximum output

by about 10%, from 49,500 kW to 54,200 kW, without affecting water use in any way. This also helped reduce fuel costs while cutting GHG emissions associated with thermal power.

Water

(3.1.1.1) Environmental risks identified

Select from:

☑ Risk1

(3.1.1.3) Risk type and primary environmental risk driver

Acute physical risks

☑ Flooding (coastal, river, heavy rainfall, groundwater)

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Japan

(3.1.1.7) River basin where the risk occurs

Select all that apply

☑ Other (specifically): Agano River, Japan

(3.1.1.9) Organization-specific description of risk

Hydroelectric power accounts for 14% of our total power generating facility capacity. Some 60% of our hydroelectric power capacity is concentrated on facilities in the Tadami River and Agano River water systems. Damage to hydroelectric facilities due to a typhoon or heavy rainfall may reduce hydroelectric power supply. This may increase the use of thermal power, leading to the risk of a negative financial impact from rising fuel costs associated with such increased use.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Increase in direct costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Short term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Greater than 50% likelihood

(3.1.1.14) Magnitude

Select from:

☑ Somewhat high

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The financial impact of JPY6.2 billion is based on the amount recorded as extraordinary loss during Typhoon No. 19 in FY2019, the event associated with the most extensive damage over the past five years. (Breakdown: Book value equivalent of lost assets JPY550 million, disaster recovery costs for damaged equipment JPY5,648 million.) We expect a similar financial impact in the event of a typhoon on the same scale as Typhoon No. 19 in FY2019.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.19) Anticipated financial effect figure in the short term – minimum (currency)

6200000000

(3.1.1.20) Anticipated financial effect figure in the short term – maximum (currency)

6200000000

(3.1.1.25) Explanation of financial effect figure

The financial impact of JPY6.2 billion is based on the amounts recorded as extraordinary losses during Typhoon No. 19 in FY2019, the event associated with the most extensive damage over the past five years. (Breakdown: Book value equivalent of lost assets JPY550 million, disaster recovery costs for damaged equipment JPY5,648 million.) We expect a similar financial impact in the event of a typhoon on the same scale as Typhoon No. 19 in FY2019.

(3.1.1.26) Primary response to risk

Policies, plans

☑ Formulating emergency flood response plans

(3.1.1.27) Cost of response to risk

1065000000

(3.1.1.28) Explanation of cost calculation

*JPY537 million (companywide training cost) * 58.1% (personnel ratio of the transmission departments) = JPY312 million (estimated training costs)*
JPY753 million (FY2022 casualty insurance premiums) + JPY312 million (estimated training costs) = JPY1.065 billion

(3.1.1.29) Description of response

Status: We operate numerous facilities across the Tohoku and Niigata regions, exposing us to physical risks across a wide geographical area. The Tohoku and Niigata area, where we supply power, includes numerous sites ideally suited to wind power and other renewable energy; for this reason, we have received growing numbers of requests for connection to our power transmission lines.
Issues: We are exposed to a wide range of physical risks. Nevertheless, we are committed to our mission of delivering a stable supply of electric power.
Response: We are constantly striving to improve our emergency response capabilities through training and skill competitions so that we can respond quickly and precisely to damage to distribution equipment caused by natural disasters such as typhoons. In the competitions, we add surprise events of which participants are not informed in advance to improve the ability of competition participants to respond to various situations. The goal is to increase resilience for major typhoons and other disasters through practical training. We are also taking measures to mitigate the negative impact on our business performance and financial position by utilizing non-life insurance. Risk response costs of JPY1.065 billion include estimated training costs of JPY312 million and casualty insurance premiums of JPY753 million for FY2022. Since these training costs are included in those for the transmission departments, the estimated cost for the training is calculated by multiplying companywide training costs of JPY537 million in FY2022 by the personnel ratio of the transmission departments (58.1%), for convenience. In the above cost calculations, the total of individual costs and the total of all costs may not match due to rounding.

Plastics

(3.1.1.1) Risk identifier

Select from:

☑ Risk1

(3.1.1.3) Risk type and primary environmental risk driver

Market risks

☑ Rising costs and uncertainties associated with virgin plastics

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Downstream value chain

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Japan

(3.1.1.9) Organization-specific description of risk

Much of the power transmission equipment needed to supply customers with electricity is made using plastics, the costs of which are expected to be impacted by regulations governing or the rising cost of raw materials.

(3.1.1.11) Primary financial effect of the risk

Select from:

☑ Changing composition of sales and revenue sources

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

☑ Short term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

☑ Greater than 50% likelihood

(3.1.1.14) Magnitude

Select from:

☑ Unknown

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

Much of the power transmission equipment needed to supply customers with electricity is made using plastics, the costs of which are expected to be impacted by regulations governing or the rising cost of raw materials.

(3.1.1.26) Primary response to risk

Infrastructure, technology, expenditures

☑ Taking action to switch to recycled materials to reduce use of virgin plastics

(3.1.1.29) Description of response

Pursuant to the Plastic Resource Circulation Act, we have set quantitative targets on the waste plastic recycling rate and other matters (materiality items). To achieve these targets, in addition to maintaining current recycling efforts, we are striving to develop recycling schemes such as repelletization of used smart meters.

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk2

(3.1.1.3) Risk type and primary environmental risk driver

Acute physical risks

☑ Cyclones, hurricanes, typhoons

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Japan

(3.1.1.9) Organization-specific description of risk

We have a large number of facilities throughout the Tohoku and Niigata regions, with a total of 222 power plants, transmission line facilities of 15,506 km in length and *distribution line facilities of 149,517 km in length. In recent years, the frequency of typhoons making landfall in the Tohoku region, once rare, has increased, and the power of these typhoons is growing. In October 2019, Typhoon No. 19 damaged various facilities, inundating hydroelectric power plant buildings and causing the tilting and collapse of utility poles following record heavy rains and flooding of rivers. These events resulted in power outage for some 144,724 households in six prefectures in Tohoku and Niigata prefecture. At the same time, since the area has numerous locations well suited to wind power and other renewable energy sources, demand is growing for direct connections of such facilities to the power grid. In the event of equipment damage, long-term power outages and large-scale power outages due to further intensification of natural disasters caused by climate change (increasing frequency of major typhoons, for example), our business performance and financial position may be affected by the growing cost of equipment repairs and alternative fuel.*

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.26) Primary response to risk

Policies, plans

☑ Use of risk transfer measures

(3.1.1.27) Cost of response to risk

1065000000

(3.1.1.28) Explanation of cost calculation

*537 million yen (companywide training expenses) *58.1% (percentage of personnel in the transmission departments) 312 million yen (estimated value of costs related to training etc.) 753 million yen (FY2022 casualty insurance premiums) 312 million yen (estimated value of costs related to training etc.) 1.065 billion yen*

Climate change

(3.1.1.1) Risk identifier

Select from:

☑ Risk3

(3.1.1.3) Risk type and primary environmental risk driver

Market risks

☑ Unavailability or rising costs of certified sustainable raw materials

(3.1.1.4) Value chain stage where the risk occurs

Select from:

☑ Upstream value chain

(3.1.1.6) Country/area where the risk occurs

Select all that apply

☑ Japan

(3.1.1.9) Organization-specific description of risk

There is a risk that fuel costs may increase if the global warming countermeasure tax on fossil fuels or other taxes were to increase more than expected due to the impact of climate change. We also recognize that the fuel procurement environment is undergoing massive changes as the world moves toward withdrawal from investment in fossil fuels, particularly coal. Fossil fuels (such as coal, oil, and gas) account for 85.2% of our thermal power generating capacity, higher than the national average of 72.8% in national energy demand-supply figures.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

☑ Yes

(3.1.1.26) Primary response to risk

Policies, plans

☑ Formulation of a climate transition plan

(3.1.1.27) Cost of response to risk

179000000

(3.1.1.28) Explanation of cost calculation

The book value of new energy power generation facilities in FY2022, including capital investment in renewable energy facilities, increased by 179 million yen.

[Add rows]

(3.1.2) Provide the amount and proportion of your financial metrics from the reporting year that are vulnerable to the substantive effects of environmental risks.

Climate change

(3.1.2.1) Financial metric

Select from:

☑ Assets

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

415993000000

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

☑ 41-50%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.7) Explanation of financial figures

Since there is a risk that thermal power may be impacted by transition risks due to CO2 emissions, the ratio of the year-end balance in steam power generation facilities and the balance of property, plant and equipment in the electricity business is shown. In light of these transition risks, we are promoting decarbonization of thermal power under the Carbon Neutral Challenge 2050.

Water

(3.1.2.1) Financial metric

Select from:

☑ Assets

(3.1.2.2) Amount of financial metric vulnerable to transition risks for this environmental issue (unit currency as selected in 1.2)

165848000000

(3.1.2.3) % of total financial metric vulnerable to transition risks for this environmental issue

Select from:

☑ 31-40%

(3.1.2.4) Amount of financial metric vulnerable to physical risks for this environmental issue (unit currency as selected in 1.2)

0

(3.1.2.5) % of total financial metric vulnerable to physical risks for this environmental issue

Select from:

☑ Less than 1%

(3.1.2.7) Explanation of financial figures

Since hydroelectric power is at risk of facility damage due to typhoons, heavy rainfall, etc., it may be impacted by climate change. Accordingly, the ratio of the year-end *balance in hydroelectric power facilities and the balance of property, plant and equipment in the electricity business is shown.*

[Add rows]

(3.2) Within each river basin, how many facilities are exposed to substantive effects of water-related risks, and what percentage of your total number of facilities does this represent?

Row 1

(3.2.1) Country/area and river basin

Japan

☑ Other (specifically): Agano River water system, Japan

(3.2.2) Value chain stages where facilities at risk have been identified in this river basin

Select all that apply

☑ Direct operations

(3.2.3) Number of facilities within direct operations exposed to water-related risk in this river basin

11

(3.2.4) % of your organization’s total facilities within direct operations exposed to water-related risk in this river basin

Select from:

☑ 1-25%

(3.2.8) % of organization’s annual electricity generation that could be affected by these facilities

Select from:

☑ 1-25%

(3.2.10) % of organization's total global revenue that could be affected

Select from:

☑ Less than 1%

(3.2.11) Please explain.

Hydroelectric power accounts for 14% of our total power generating facility capacity. Some 60% of our hydroelectric power capacity is located in this area. All power generated here is consumed in Japan.

[Add rows]

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

	Water-related regulatory violations	Comment
	Select from: ☑ No	*There were no water-related regulatory violations in the reporting year.*

[Fixed row]

(3.5) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Select from:

☑ Yes

(3.5.1) Select the carbon pricing regulations(s) which impact your operations.

Select all that apply

☑ Japan carbon tax

(3.5.3) Complete the following table for each of the tax systems you are regulated by.

Japan carbon tax

(3.5.3.1) Period start date

03/31/2022

(3.5.3.2) Period end date

03/30/2023

(3.5.3.3) % of total Scope 1 emissions covered by tax

100

(3.5.3.4) Total cost of tax paid

8900000000

(3.5.3.5) Comment

Total cost of tax paid is estimated by multiplying fuel consumption in FY2022 by the tax rate of the global warming countermeasure tax.

[Fixed row]

(3.5.4) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The Tax for Climate Change Mitigation is a tax based on the amount of fossil fuels procured. We believe that reducing fossil fuel consumption and further improving efficiency will be effective as a strategic measure to comply with this system, while aiming for an optimal power source portfolio based on S+3E. Specifically, under the Carbon Neutral Challenge 2050, we are moving forward with various measures to reduce carbon emissions, including restarting nuclear power plants with a top priority on safety; expanding the introduction of renewable energy; increasing the efficiency of thermal power generation; and discontinuing use of aged thermal power generation facilities. Our goal is to halve FY2030 CO2 emissions from FY2013 levels. We expect reductions in the carbon taxes we pay as a result. At our nuclear power plants, we are targeting the early restart of Onagawa Nuclear Power Plant's Unit No. 2 and Higashidori Nuclear Power Plant's Unit No. 1, both based on the premise of assured safety. We expect to restart Onagawa Nuclear Power Plant's Unit No. 2 around September 2024. While these estimates are based on assumptions, we expect lower thermal fuel costs of approximately JPY60 billion per year once Onagawa Nuclear Power Plant's Unit No. 2 resumes operations and approximately JPY40 billion per year once Higashidori Nuclear Power Plant's Unit No. 1 resumes operations. Next, regarding renewable energy, we are undertaking new development and new business participation while drawing on our accumulated expertise in hydroelectricity, solar, geothermal, and biomass power, with a primary focus on wind power. Targeting 2 million kW mainly in the six prefectures of Tohoku and in Niigata Prefecture early after FY2030, we will preferentially devote our management resources to this effort. In addition, to enable the sustainable use of renewable energy in the long term, we will participate in all aspects of the renewable energy life cycle, with due consideration for efforts in areas such as operation and maintenance (O&M) and power source replacement. Regarding thermal power generation, our Noshiro Thermal Power Plant's Unit No. 3 came online in March 2020. Employing ultra-supercritical (USC) technology and boosting steam temperatures, Noshiro Thermal Power Plant's Unit No. 3 has achieved thermal efficiency of 46%, among the world's highest levels of thermal efficiency recorded to date (based on low-level heat generation volume) for coal-fired power generation equipment. We expect this also to result in lower CO2 emissions. Joetsu Thermal Power Station Unit No. 1 began operating commercially in December 2022, using the forced air cooling combustor system, which is highly economical and environmentally-friendly as it reduces both fuel consumption and CO2 emissions. Its goal is to achieve a thermal efficiency of at least 63%, world-beating performance for a gas combined cycle power generation facility. In addition, Akita Thermal Power Plant Unit No. 3 terminated operation in September 2019 and No. 2 in March 2020, as we make progress on suspending and decommissioning old and inefficient thermal power plants, which are neither environmentally-friendly nor economical. In March 2019, we discontinued the use of gas turbines at the emergency supply power supply facilities of Akita Thermal Power Plant's Unit No. 5 and Higashi Niigata Thermal Power Plant's Unit No. 5. In FY 2020, we utilized decommissioned facilities effectively and reduced fuel consumption and CO2 emissions by improving operability and thermal efficiency by diverting gas turbines to Higashi Niigata Unit No. 4-1 system. Furthermore, the Higashi Niigata Thermal Power Plant's Minato Unit No. 1 and No. 2 suspended operations in November 2022. Supply plans also reflect the discontinuation of operations at Akita Thermal Power Plant's Unit No. 4 in July 2024, based on overall assessments of *various considerations, including the age of its facilities and future maintenance costs. In addition, we introduced a system incorporating IoT technology in FY2019. We continue to strive to maintain and improve heat efficiency by conducting careful daily operation management and stable operation of high-efficiency plants. In this way, we are devising strategies to comply with regulations while aiming to reduce fossil fuel use and further improve efficiency. We estimate the result of FY2022 activities as a reduction of approx. JPY500 million in carbon tax. Since actual amounts paid contain sensitive information, we estimate this by multiplying Scope 1 emissions reductions by the tax rate for the Tax for Climate Change Mitigation.*

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

	Environmental opportunities identified
Climate change	*Select from:* ☑ Yes. We have identified opportunities, some or all of which are currently being realized.
Water	*Select from:* ☑ Yes. We have identified opportunities, some or all of which are currently being realized.

[Fixed row]

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Market

☑ New market development

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

☑ Japan

(3.6.1.8) Organization specific description

Our service area of the Tohoku and Niigata region is one of Japan's most abundant in terms of renewable energy resources. Through our 203 hydroelectric plants, which account for the largest number of such plants commercially operated in Japan, and in other ways, we have energetically sought to put renewables to effective use. Our region offers high levels of renewable energy potential. For example, the Act on Promoting the Use of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities identifies the coasts off Aomori and Akita prefectures as promotion zones and promising zones for offshore wind power. Furthermore, "Working alongside next +PLUS," the Tohoku Electric Power Group's medium- to long-term vision has the goal of developing 2 million kilowatts of renewable power, and we are striving to grow renewables development centered on wind power generation. Expansion of non-fossil fuel value trading markets and other systemic transitions *are expected to realize hidden value of non-fossil fuels. As demand for non-fossil fuel value increases, new markets such as non-fossil fuel value trading markets can be expected to grow further, and we expect to be able to increase sales of non-fossil fuel certificates by participating in such markets. In these and other ways, we expect to see increased business opportunities in light of the high potential for adoption of renewable energy.*

(3.6.1.9) Primary financial effect of the opportunity

Select from:

☑ Increased revenues through access to new and emerging markets

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ This opportunity has already had a major impact on the organization during the reporting year.

(3.6.1.12) Magnitude

Select from:

☑ Medium

(3.6.1.13) Effect of the opportunity on the financial position, financial performance and cash flows of the Organization in the reporting period

The figure of JPY2.47 billion is obtained by multiplying 8,225 GWh of electricity generated by our renewable energy power plants in FY2022 (hydropower, wind power, solar power, geothermal) by JPY0.3/kWh, the lowest contract price on the renewables value trading market.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ Yes

(3.6.1.16) Financial effect figure in the reporting year (currency)

2470000000

(3.6.1.23) Explanation of financial effect figures

The figure of JPY2.47 billion is obtained by multiplying 8,225 GWh of electricity generated by our renewable energy power plants in FY2022 (hydropower, wind power, solar power, geothermal) by JPY0.3/kWh, the lowest contract price on the renewables value trading market.

(3.6.1.24) Cost to realize opportunity

100000000000

(3.6.1.25) Explanation of cost calculation

The opportunity capture cost is the amount invested in these efforts to develop renewable energy sources through 2030. We expect this to be JPY100 billion.

(3.6.1.26) Strategy to realize opportunity

Status: The area we serve in the Tohoku and Niigata regions has one of Japan's most extensive renewable energy reserves. With 203 locations, we own the largest number of hydroelectric power plants in Japan on a single-company basis. As such, our potential for renewable energy adoption is high. We see this high potential, in light of the growing non-fossil fuel value trading market and demand for non-fossil fuel value, as a key business opportunity.
Issues: To leverage such renewable energy-related business opportunities, we must adopt renewable energy power-generation facilities. To be an enterprise responsible for renewable energy reserves in the six Tohoku prefectures and I Niigata Prefecture, we need to pursue development and business projects based primarily on wind power, supplemented by hydroelectric, solar, geothermal, and biomass power.
Response: We are seeking to develop 2 million kW of capacity soon after FY2030, centered on the six Tohoku prefectures and Niigata Prefecture.
Results: These efforts are underway. As of the end of March 2024, the development projects in which we participate have a total output capacity of some 800,000 kW.

Water

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp1

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Energy sources

☑ Use of renewable energy sources

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

☑ Japan

(3.6.1.6) River basin where the opportunity occurs

Select all that apply

☑ Other (specifically): Agano River

(3.6.1.8) Organization specific description

For hydroelectric power generation, the Group is taking the practical course of renovating aging facilities to maintain and expand power generating capacity (as expressed in kWh). By putting water resources to effective use through new construction and renovations of hydroelectric power stations, we can boost power generation efficiency without changing the volumes of water used, thereby suppressing increases in fuel costs accompanying the expanded use of thermal power during droughts. Boosting hydroelectric power generation also creates Group business opportunities through participation in non-fossil fuel value trading markets, contributing to sales growth. These water-related opportunities will strengthen our capacity to generate the cash flows required to transform the business model and achieve the financial goal set for "Working alongside next +PLUS," our Medium-to Long-Term Vision, of JPY320 billion yen in consolidated cash income by FY2024. We regard these opportunities as strategic opportunities for the Group. For example, in February 2022, the Kanose Power Station 2 began operating with an increased maximum output of 57,200 kW, up from 55,000 kW, following work to modify water intake using excess capacity, with no modifications of existing water turbines or other equipment.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

☑ Decreased direct costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ This opportunity has had already significant effects on the organization during the reporting year.

(3.6.1.12) Magnitude

Select from:

☑ Medium

(3.6.1.13) Effect of the opportunity on the financial position, financial performance and cash flows of the organization in the reporting period

In FY 2022, we generated 8,012 GWh of electricity from hydroelectric power. The increase in maximum output capacity at Kanose Power Station 2 resulted in an *increase of about 3.1 GWh in power generation per year, accounting for about 0.04% of the hydroelectric power generated in FY2022. Since fuel costs fall by JPY2.4 billion for each 1% increase in hydroelectric power generation (impact on revenues and expenditures per 1% of the FY2022 water output rate), fuel costs at the 0.04% level declined by about JPY96 million.*

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ Yes

(3.6.1.16) Financial effect figure in the reporting year (currency)

96000000

(3.6.1.23) Explanat ion of financial effect figures

In FY 2022, we generated 8,012 GWh of electricity from hydroelectric power. The boost in maximum output capacity achieved at Kanose Power Station 2 resulted in an increase of about 3.1 GWh in power generation per year, accounting for about 0.04% of the hydroelectric power generated in FY2022. Since fuel costs fall by JPY2.4 billion for each 1% increase in hydroelectric power generation (impact on revenues and expenditures per 1% of the FY2022 water output rate), fuel costs at the 0.04% level declined by about JPY96 million.

(3.6.1.24) Cost to realize opportunity

11994000000

(3.6.1.25) Explanation of cost calculation

Since the investment amount includes sensitive management information, we responded by providing the book value increase for hydroelectric power generation equipment in 2022 of JPY11,994 million.

(3.6.1.26) Strategy to realize opportunity

Under "Working alongside next," the Group's Medium-to Long-Term Vision, which articulates our aspirations for the 2030s, we seek to be a group of companies that grows in step with societal progress by helping to establish a smart society for a new age, starting in Tohoku. This vision includes, as Priority 1, "Change: Thoroughly enhancing our competitive strengths through power supply business reforms," under which we identify renovating aging facilities and maintaining and expanding power generating capacity (as expressed in kWh) as the goals of practical hydroelectric power generation initiatives. By putting water resources to effective use through new construction and renovations of hydroelectric power stations, we can boost power generation efficiency without changing the volumes of water used, thereby suppressing increases in fuel costs accompanying the expanded use of thermal power during droughts. Boosting hydroelectric power generation also creates Group business opportunities through participation in non-fossil fuel value trading markets, contributing to sales growth. These water-related opportunities will strengthen our capacity to generate the cash flows required to transform the business model and achieve the financial goal set for "Working alongside next $^{+PLUS}$," our Medium-to Long-Term Vision, of JPY320 billion yen in consolidated cash income by FY2024. We regard these opportunities as strategic opportunities for the Group. For example, we will strive to put hydroelectric power, a renewable domestic energy source, to effective use to realize the "Working alongside next $^{+PLUS}$" vision for the 2030s by maximizing output through renovations and repowering work at hydroelectric power stations.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp2

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Energy sources

☑ Use of low-carbon energy sources

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ Short-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

☑ Near-certain (99-100%)

(3.6.1.12) Magnitude

Select from:

☑ High

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The financial impact of JPY60.0 billion represents reductions in fuel costs associated with the restart of the Onagawa Nuclear Power Plant's Unit No. 2 based on certain assumptions.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ Yes

(3.6.1.17) Anticipated financial effect figure in the short-term - minimum (currency)

60000000000

(3.6.1.18) Anticipated financial effect figure in the short-term - maximum (currency)

60000000000

(3.6.1.23) Explanat ion of financial effect figures

The financial impact of JPY60.0 billion represents the reductions in fuel costs associated with the restart of the Onagawa Nuclear Power Plant’s Unit No. 2 based on certain assumptions.

(3.6.1.25) Explanation of cost calculation

Detailed facility design was finalized with the approval of the construction plan in December 2021. Based on a careful examination of the cost of various safety measures, the amount was assessed to be approximately 570 billion yen, including safety construction costs related to public facilities needed to ensure the safety of the power station as a whole.

(3.6.1.26) Strategy to realize opportunity

Status: The growing need for climate change countermeasures and low-carbon power sources may lead to the promotion of nuclear power plants.
Issues: Restarting Onagawa Nuclear Power Plant's Unit No. 2 will require submitting applications to the Nuclear Regulation Authority for reviews of compliance with new regulatory standards, obtaining the necessary permits, and implementing construction on safety measures.
Responses: We have made steady progress in obtaining the necessary permits and in implementing safety measures.
Results: Construction on safety measures was completed for Onagawa Nuclear Power Plant's Unit No. 2 on May 27, 2024. Since then, we have moved forward with various tests and inspections and other work related to loading fuel and restarting the reactor in preparation for a restart expected to take place around November 2024.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

☑ Opp3

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Energy sources

☑ Transition to distributed energy generation

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

☑ Direct operations

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

Select all that apply

☑ Long-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

☑ Near-certain (99-100%)

(3.6.1.12) Magnitude

Select from:

☑ High

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The figure is based on preliminary projections of total sales in FY2030 (for a single fiscal year) for the two businesses (next-generation energy services and installation services for distributed energy and storage batteries described above) under the assumption that growing demand for low-carbon energy will result in a certain degree of growth and dissemination of solar power generation facilities, storage batteries, and EVs and that demand for our services will emerge in some of these areas. The figure is an estimated range of JPY3.5 billion to JPY5.3 billion due to uncertainty of market trends.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

☑ Yes

(3.6.1.21) Anticipated financial effect figure in the long-term - minimum (currency)

3500000000

(3.6.1.22) Anticipated financial effect figure in the long-term - maximum (currency)

5300000000

(3.6.1.23) Explanation of financial effect figures

The figure is based on preliminary projections of total sales in FY2030 (for a single fiscal year) for the two businesses (next-generation energy services and installation services for distributed energy and storage batteries described above) under the assumption that growing demand for low-carbon energy will result in a certain degree of growth and dissemination of solar power generation facilities, storage batteries, and EVs and that demand for our services will emerge in some of these areas. The figure is an estimated range of JPY3.5 billion to JPY5.3 billion due to uncertainty of market trends.

(3.6.1.25) Explanation of cost calculation

Based on the results anticipated for the above initiatives, we project expenses in the smart society business of approximately JPY2.3 billion to JPY3.1 billion as of FY2030, of which the cost of realized opportunity of JPY2.7 billion is the median.

(3.6.1.26) Strategy to realize opportunity

Status: Among Japan's regions, the Tohoku and Niigata region, where the Tohoku Electric Power Group's businesses are based, is often regarded as a bellwether of the societal consequences of population decline, an aging society, and declining birth rates.
Issues: In the Group's Medium-to Long-Term Vision "Working alongside next," which addresses our aspirations for the 2030s, we define a "smart society" as a comfortable, safe, and reliable society in which we can address and resolve, by applying next-generation digital technologies and innovations, the societal issues associated with population decline, low-birth rate, and aging society emerging in various fields, like transportation, education, and welfare. We are pursuing a number of new businesses to realize a "smart society."
Response: We will contribute to decarbonatization of society while growing the business domains through providing services that capitalize on the region's diverse energy resources using VPP technology.
Results: In the sphere of providing services that make the most of the region's various energy resources, we are redoubling efforts related to the market for power trading adjusted through a demand-response system based on VPP technology, home energy management services, and renewable energy aggregation services. (Specific examples of such efforts are provided below.) In addition, Tohoku Electric Power Solar e-Charge, which was established in April 2021, assumes initial costs and provides local customers with solar power generation equipment and storage batteries through a "third-party ownership model." To provide the services, we will generate synergies with Tohoku Electric Power Frontier Co., Ltd., which plays a central role in the "smart-society building businesses," and provide various services that lead to comfortable, safe, and secure living for our customers. To establish a smart society, we will develop marketing methods that meet customer needs, including raising awareness of improving resilience and heightened environmental awareness due to the frequent occurrence of disasters in recent years, and develop technologies that can control various resources through the businesses mentioned above and others. We will realize early commercialization and then grow our business over the medium to long term.
**Examples of services that make the most of the region's various energy resources: Specific examples include public offerings of adjustment power source I based on demand-response technologies for factories and other corporate resources beginning in 2019 and bids targeting 2024 in the capacity market. We are also considering participating in the demand-supply adjustment market. In the future, we will verify home demand-response services for remote control of home storage batteries in response to fluctuations in the market cost of electricity, demand-supply pressures, and other factors. In these ways, we will contribute to decarbonization by supporting adoption of storage batteries and, in the future, operating storage batteries numbering in the tens of thousands. With the scaling back of the FIT program and the adoption of the FIP program in FY2022, we began offering demand-supply operation support services (renewable energy aggregation services) for power generation forecasts and other areas. Demand is growing for corporate PPAs, long-term power contracts concluded between renewable energy generation businesses and*

corporate customers to procure renewable energy. We will strive to expand orders by meeting such needs through our renewable energy aggregation technologies. We expect these initiatives to contribute to the promotion and effective use of renewable energy.

[Add rows]

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities.

Climate change

(3.6.2.1) Financial metric

Select from:

☑ Assets

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

179000000

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:

☑ Less than 1%

(3.6.2.4) Explanation of financial figures

Increase in book cost of new energy generation facilities in FY2022 and the ratio of the increase in book cost of these facilities to the increase in book cost of all electric utility fixed assets

Water

(3.6.2.1) Financial metric

Select from:

☑ Assets

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

11994000000

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:

☑ 1-10%

(3.6.2.4) Explanation of financial figures

The increase in book cost of hydroelectric power generation equipment and the ratio of the increase in book cost of all power business fixed assets to book cost in FY2022

[Add rows]

C4. Governance

(4.1) Does your organization have a board of directors or an equivalent governing body?

(4.1.1) Board of directors or equivalent governing body

Select from:

☑ Yes

(4.1.2) Frequency with which the board or equivalent meets

Select from:

☑ Once or more per quarter

(4.1.3) Types of directors your board or equivalent is comprised of

Select all that apply

☑ Full-time directors or equivalent

☑ Part-time directors or equivalent

☑ Independent outside directors or equivalent

(4.1.4) Board diversity and inclusion policy

Select from:

☑ Yes. We have established and published a policy.

(4.1.5) Briefly describe what the policy covers.

The main policies are summarized below:

・ Objectivity, timeliness, and transparency are secured in the appointment and dismissal of directors through review by the Nomination and Remuneration Committee, which includes multiple independent outside directors.

・ Candidates for internal directors are chosen from persons highly knowledgeable in each field, with consideration for balance among specializations and other qualities, including technical specializations, abundant business experience, and knowledge of management of the power business overall.

・ Candidates for outside directors are chosen with an emphasis on whether they would contribute to appropriate decision making and management oversight in the Board of Directors, based on practical experience in business administration and other fields and strong insights into social and economic trends and other matters.

[Fixed row]

(4.1.1) Is there board-level oversight of environmental issues within your organization?

	Board-level oversight of this environmental issue
Climate change	*Select from:* ☑ Yes
Water	*Select from:* ☑ Yes
Biodiversity	*Select from:* ☑ Yes

[Fixed row]

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues.

Climate change

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

☑ Chairperson of the Board

(4.1.2.2) Positions' accountabili ty for this environmen tal issue is outlined in policies applicable to the board

Select from:

☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

☑ Rules for the Board of Directors

☑ Guidelines for the Board of Directors

☑ Job descriptions for individual directors

(4.1.2.4) Frequency with which this environment al issue is a scheduled agenda item

Select from:

☑ Some agenda items planned for the Board of Directors: At least once a year

(4.1.2.5) Governance mechanism s into which this environmen tal issue is integrated

Select all that apply

☑ Approval of companywide policies and commitments

☑ Monitoring compliance with companywide policies and commitments

☑ Oversight and guidance on formulating climate transition plans

☑ Monitoring of execution of climate transition plans

(4.1.2.7) Please explain.

The Representative Director and Chairman of the Board serves as the Board Chair. The Board Chair determines important business matters related to climate change; receives regular reports on the status of business execution from Directors; and supervises the execution of duties by Directors. For example, in "Working alongside next," the current Tohoku Electric Power Group mid-to long-term vision, we have set forth "Change: Thoroughly enhancing our competitive strengths through power supply business reforms" as Priority 1. One focus area of our measures is to develop 2 million kW of renewable energy centered around the six Tohoku prefectures and Niigata prefecture. "Working alongside next," the Tohoku Electric Power Group's mid-to long-term vision has been approved by the Board of Directors, which is chaired by the Chairman of the Board. Progress on various measures, including Renewable Energy Development, is reported at regular intervals to the Board of Directors; review, guidance, and other supervision is provided, where necessary. In addition to making decisions on major management plans and other important matters, the Board of Directors receives reports from directors concerning the state of business execution and carries out mutual oversight of the execution of the duties of the directors. The Board of Directors will strengthen our response to climate change by examining climate-related risks, opportunities, and responses and incorporating the results into management strategy. Climate-related responses are reported to the Board of Directors annually through the Sustainability Promotion Council as a Tohoku Electric Power Group priority sustainability topic (materiality topic), following review of progress under an environmental management framework that consists of the Committee of Environmental Management and the Promotion Council of Carbon Neutrality and Environmental Management, the latter of which has a membership drawn from members of management on the business execution side. Each operating business section also submits proposals and reports to the Board as necessary on formulating and implementing business plans. In addition, a structure is in place for reporting climate-related risks having major impacts on management in particular to the Board of Directors twice a year, through an integrated risk management framework in combination with non-climate-related risks.

Water

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

☑ Chairperson of the Board

(4.1.2.2) Positions' accountabili ty for this environmen tal issue is outlined in policies applicable to the board

Select from:

☑ Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

☑ Rules for the Board of Directors

☑ Job descriptions for individual directors

(4.1.2.4) Frequency with which this environment al issue is a scheduled agenda item

Select from:

☑ Some agenda items planned for the Board of Directors: At least once a year

(4.1.2.5) Governance mechanism s into which this environmen tal issue is integrated

Select all that apply

☑ Oversight and guidance on formulating business strategies

☑ Review and guidance on annual budgets

(4.1.2.7) Please explain.

The chairperson chairs the Board of Directors. The Board of Directors makes decisions concerning important business matters related to climate change and water and receives periodic reports from directors on the status of duties related to climate change to oversee the performance of their duties. Since many water risks are related to climate change, water-related issues are also subject to oversight by the Board of Directors. For example, the Group's current mid-to long-term vision "Working alongside next" includes as Priority 1, "Change: Thoroughly enhancing our competitive strengths through power supply business reforms." One measure under this priority item calls for developing 2 million kW of renewable energy centered on the Tohoku and Niigata regions. "Working alongside next," the Group's mid- to long-term vision, has been approved by the Board of Directors. The progress of measures to develop renewable energy, including hydroelectric power, is reported to the Board of Directors periodically and subject to oversight, including reviews and guidance as needed. These decisions on "Working alongside next" were made in 2020, within two years before the base year of 2021. Progress is monitored and review and guidance undertaken and provided annually. The Board of Directors makes decisions concerning important Group business matters, including important management-related plans, as well as soliciting and reviewing reports from directors on the state of business execution and facilitating mutual oversight among directors on the performance of their duties. With regard to climate-related and water-related issues, in addition to deciding on important business matters, it receives periodic reports from directors on the state of business execution and facilitates mutual oversight among directors on the performance of their duties. For example, the Group's current mid-to long-term vision "Working alongside next" includes as Priority 1, "Change: Thoroughly enhancing our competitive strengths through power supply business reforms." One measure under this priority item calls for developing 2 million kW of renewable energy centered on the Tohoku and Niigata regions. "Working alongside next," the Group's mid- to long-term vision, has been approved by the Board of Directors. The progress of measures to develop renewable energy, including hydroelectric power, is periodically reported to the Board of Directors and subject to oversight, including reviews and guidance as needed.

[Fixed row]

(4.2) Does your organization's board have competency on environmental issues?

Climate change

(4.2.1) Board-level competency on this environmental issue

Select from:

☑ Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

☑ Consulting regularly with an internal, permanent, and expert working group

☑ Engaging regularly with external stakeholders and experts on environmental issues

☑ Integrating knowledge of environmental issues into board nominating process

☑ Having at least one board member with expertise on this environmental issue

(4.2.3) Environmental expertise of the board member

Experience

☑ Executive-level experience in duties focused on environmental issues

Water

(4.2.1) Board-level competency on this environmental issue

Select from:

☑ Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

☑ Consulting regularly with an internal, permanent, and expert working group

☑ Engaging regularly with external stakeholders and experts on environmental issues

☑ Integrating knowledge of environmental issues into board nominating process

☑ Having at least one board member with expertise on this environmental issue

(4.2.3) Environmental expertise of the board member

Experience

☑ Executive-level experience in duties focused on environmental issues

[Fixed row]

(4.3) Is there management-level responsibility for environmental issues within your organization?

	Management-level responsibility for this environmental issue
Climate change	*Select from:* ☑ Yes
Water	*Select from:* ☑ Yes

[Fixed row]

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals).

Climate change

(4.3.1.1) Position of individual or committee with responsibility

Executive level

☑ President

(4.3.1.2) Environmental responsibilities of this position

Policies, commitments, and targets

☑ Formulation of a companywide environmental policy and/or commitment

☑ Setting companywide environmental targets

Strategies and financial plans

☑ Preparation of a climate transition plan

☑ Execution of a climate transition plan

(4.3.1.4) Reporting line

Select from:

☑ Direct reporting to the Board of Directors

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

☑ Once or more per quarter

(4.3.1.6) Please explain.

The President is the chair of the Promotion Council of Carbon Neutrality and Environmental Management, where we deliberate on company-wide environmental management, including climate change and water issues, from a comprehensive perspective and promote environmental management targeting sustainable development with the local community. The President has established, under the Promotion Council of Carbon Neutrality and Environmental Management, the Committee of Environmental Management, *which is chaired by a Managing Executive Officer and deliberates on company-wide environmental management policies and plans, individual measures, and performance evaluation across divisions, including climate change and water issues. The Committee of Environmental Management also submits proposals and reports to the Promotion Council of Carbon Neutrality and Environmental Management.*

Water

(4.3.1.1) Position of individual or committee with responsibility

Executive level

☑ President

(4.3.1.2) Environmental responsibilities of this position

Policies, commitments, and targets

☑ Formulation of a companywide environmental policy and/or commitment

☑ Setting companywide environmental targets

(4.3.1.4) Reporting line

Select from:

☑ Direct reporting to the Board of Directors

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

☑ Once or more per quarter

(4.3.1.6) Please explain.

The President is the chair of the Promotion Council of Carbon Neutrality and Environmental Management, where we deliberate on company-wide environmental management, including climate change and water issues, from a comprehensive perspective and promote environmental management targeting sustainable development with the local community.

The President has established, under the Promotion Council of Carbon Neutrality and Environmental Management, the Committee of Environmental Management which is chaired by a Managing Executive Officer and deliberates on company-wide environmental management policies and plans, individual measures, and performance evaluation across divisions, including climate change and water issues. The Committee of Environmental Management also submits proposals and reports to the Promotion Council of Carbon Neutrality and Environmental Management.

In evaluating the policies, plans, individual measures, and results of company-wide environmental management, we have formulated the Medium-Term Environmental Plan, which identifies as its pillars “Further intensification of measures to counter climate change,” “Comprehensive environmental protection,” and “Maintenance and promotion of communication with communities.” The President is responsible of the policy in formulating the Medium-Term Environmental Plan. We are implementing a plan-do-check-act (PDCA) cycle of measures to address water-related issues, including development of 2 million kilowatts of renewable energy, including hydroelectric power, mainly in the Tohoku region and Niigata prefecture; compliance with environmental laws and regulations; and ascertaining and managing climate-related risks and opportunities, including water-related risks.

In addition, we have established an environmental management organization under the leadership of the Chief Environmental Officer, a Managing Executive Officer appointed by the President, to oversee companywide activities as part of our environmental management. Heads of sections and sites serve as the persons responsible for environmental management, promoting environmental activities as part of our business activities. In business execution, we properly ascertain and comply with various applicable laws and regulations, including those that are related to water. In the event of an emergency we respond swiftly and appropriately to minimize resulting damage in addition to taking necessary initial responses immediately in corporation with relevant parties. In the event of an emergency that requires immediate judgment and decisions by top management, we establish an emergency task force, chaired by the president of the affected company or an executive or other person appointed by that president, to respond to the situation.

[Add rows]

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets?

	Provision of onetary incentives related to this environmental issue	% of total C-suite and board-level monetary incentives linked to the management of this environmental issue	Please explain.
Climate change	*Select from:* ☑ Yes	*10*	*Remuneration for directors (excluding audit and supervisory board members) consists of fixed remuneration, short-term performance-linked remuneration, and medium-/long-term performance-linked remuneration. Short-term performance-linked remuneration, which accounts for 10% of total remuneration, reflects the results of ESG initiatives.*
Water	*Select from:* ☑ Yes	*10*	*Remuneration for directors (excluding audit and supervisory board members) consists of fixed remuneration, short-term performance-linked remuneration, and medium-/long-term performance-linked remuneration. Short-term performance-linked remuneration, which accounts for 10% of total remuneration, reflects the results of ESG initiatives.*

[Fixed row]

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals).

Climate change

(4.5.1.1) Position entitled to monetary incentive

Director or officer level

☑ Directors

(4.5.1.2) Incentives

Select all that apply

☑ Bonus: fixed percentage of salary

(4.5.1.3) Performance metrics

Targets

☑ Progress toward environmental targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-term incentives or equivalent (contractual annual bonuses, etc.)

(4.5.1.5) Further details of incentives

Remuneration for directors (excluding audit and supervisory board members) consists of fixed remuneration, short-term performance-linked remuneration, and medium-/long-term performance-linked remuneration. Short-term performance-linked remuneration, which accounts for 10% of total remuneration, reflects the results of ESG initiatives.

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

Short-term performance-linked remuneration, which accounts for 10% of total remuneration for directors (excluding audit and supervisory board members), reflects the results of ESG initiatives. This incentive contributes to achievement of the environmental commitment and climate transition plan by impacting the performance of directors (excluding audit and supervisory board members).

Water

(4.5.1.1) Position entitled to monetary incentive

Director or officer level

☑ Directors

(4.5.1.2) Incentives

Select all that apply

☑ Bonus: fixed percentage of salary

(4.5.1.3) Performance metrics

Targets

☑ Progress toward environmental targets

☑ Achievement of environmental targets

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

☑ Short-term incentives or equivalent (contractual annual bonuses, etc.)

(4.5.1.5) Further details of incentives

The Tohoku Electric Power Group's mid- to long-term vision seeks to develop 2 million kilowatts of renewable power, mainly in the six prefectures of Tohoku and in Niigata Prefecture. This includes hydroelectric power development. Achieving this goal is related to efficient use of water. These results are used in evaluation and incentives in the Nomination and Remuneration Committee. In addition, we have established a system to reward all employees who have earned the national water-quality qualification of pollution prevention manager (water quality).

(4.5.1.6) How the position's incentives contribute to the achievement of your environmental commitments and/or climate transition plan

Our policy on compensation for Directors (excluding Directors serving as members of the Audit and Supervisory Committee) is intended to improve Directors' performance over the medium to long term and to increase their motivation to contribute to increasing corporate value, by making clear the links among compensation, performance, and stock price.
The Tohoku Electric Power Group Medium-/Long-Term Vision includes the aims of developing 2 million kW of renewable energy and thorough renovation of aging hydroelectric facilities to improve generating efficiency. Since this will contribute to enhancing our ability to generate the cash needed for business model transformation and affect consolidated cash income, executive compensation is linked to the state of achievement of water-related initiatives. In addition, maintenance and expansion of generating capacity through full renovation of aged facilities and development of new power sources will contribute to our ability to address the water-related risk of decreasing hydroelectric power generation capacity due to changing precipitation patterns.
[Add rows]

(4.6) Does your organization have an environmental policy that addresses environmental issues?

	Does your organization have any environmental policies?
	Select from: ☑ Yes

[Fixed row]

(4.6.1) Provide details of your environmental policies.

Row 1

(4.6.1.1) Environmental issues covered

Select all that apply

☑ Climate change

(4.6.1.2) Level of coverage

Select from:

☑ Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

☑ Direct operations

☑ Upstream value chain

☑ Downstream value chain

(4.6.1.4) Explain the coverage.

The Carbon Neutral Challenge 2050, announced in March 2021, declares the Tohoku Electric Power Group's commitment to take on the challenge of achieving carbon neutrality by 2050, based mainly on S+3E. In addition, the Tohoku Electric Power Group Environmental Policy announced in June 2014 states: "We commit firmly to thinking and taking action on the environment together with our communities and customers. We will also aim for the sustainable growth of society as a whole by creating new value with our communities and customers."

(4.6.1.5) Environmental policy content

Environmental commitments

☑ Commitment to comply with regulations and essential standards

☑ Stakeholder commitment and commitment on capacity building regarding environmental issues

Climate commitment

☑ Commitment to net zero emissions

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals.

Select all that apply

☑ Yes; in line with the Paris Agreement

(4.6.1.7) Public availability

Select from:

☑ Publicly available

(4.6.1.8) Attach the policy.

4.6.1_Tohoku Electric Power Group Carbon Neutral Challenge 2050, Tohoku Electric Power Group Environmental Policy

Row 2

(4.6.1.1) Environmental issues covered

Select all that apply

☑ Water

(4.6.1.2) Level of coverage

Select from:

☑ Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

☑ Direct operations

☑ Upstream value chain

☑ Downstream value chain

(4.6.1.4) Explain the coverage.

The abundant water resources of the Tohoku and Niigata regions are essential to our business operations. In addition to using sea water as cooling water at nuclear and thermal power stations, we use river water as plant water and to power water turbines at hydroelectric power stations.

The Tohoku Electric Power Group sees environmental conservation as a key management topic. We seek to steadily implement environmental initiatives alongside the community based on the Tohoku Electric Power Group Environmental Policy. Since a shared understanding among all employees is essential to environmental initiatives and continued efforts even in an ever-changing business environment, the Tohoku Electric Power Group Environmental Policy was established and is deployed to make its basic vision a core part of organizational and site culture. Since our business operations have an impact on the environment as we use water as an energy resource in the power generation business, we manage water-related matters in accordance with this policy. We strive to secure a stable supply of energy while balancing environmental and economic considerations and making safety a top priority, with a particular focus on four environmental action principles: Appreciate the earth's bounty and make careful use of its limited resources; minimize environmental impact; safeguard and coexist with the rich natural environment; and think and act with the local communities and our customers in mind. In formulating this policy, we organized our basic environmental courses of action from the four perspectives of proceeding as a group of companies that moves forward alongside the community, as an energy supplier, as a global citizen, and as an organization that works together with local communities and customers, which when taken together represent our vision. The Tohoku Electric Power Group Environmental Policy identifies water as an important element, since it is used as an energy resource and has an appreciable environmental impact. Our policy identifies the following specific aspects concerning water and guides our business operations:

Business dependency on water: The hydroelectric power generation business depends on the abundant water resources of the Tohoku and Niigata regions. As a global citizen, we strive to utilize this limited resource within the planetary boundaries while also reducing the resulting environmental impact to the extent possible.

(4.6.1.5) Environmental policy content

Water-specific commitments

☑ Commitment to reduce water consumption volumes

☑ Commitment to reduce water withdrawal volumes

☑ Commitment to safely managed WASH in local communities

☑ Commitment to the conservation of freshwater ecosystems

Additional references / Descriptions

☑ Description of dependencies on natural resources and ecosystems

☑ Description of impacts on natural resources and ecosystems

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals.

Select all that apply

☑ Yes; in line with Sustainable Development Goal 6 on Clean Water and Sanitation.

(4.6.1.7) Public availability

Select from:

☑ Publicly available

(4.6.1.8) Attach the policy

4.6.1_Tohoku Electric Power Group Environmental Policy.pdf

[Add rows]

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

(4.10.1) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

Select from:

☑ Yes

(4.10.2) Collaborative framework or initiative

Select all that apply

☑ Task Force on Climate-related Financial Disclosures (TCFD)

☑ UN Global Compact

(4.10.3) Describe your organization’s role within each framework or initiative.

• Task Force on Climate-Related Financial Disclosures (TCFD)
We announced our support for the TCFD recommendations in April 2019. Since then, we have promoted our environmental policies as a growth strategy by further enhancing communication with stakeholders and improving environmental management and environmental disclosure.
• UN Global Comact
Solutions to increasingly diverse and complex social challenges will require stronger partnerships among various businesses and organizations. By participating in the UN Global Compact, we expect to be able to advance our sustainability initiatives through cooperation and exchange with other participants.
[Fixed row]

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, laws, or regulations that may (positively or negatively) impact the environment?

(4.11.1) External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact

the environment

Select all that apply

☑ Yes. We engaged indirectly through and/or provided financial or in-kind support to a trade association or other intermediary organization or individual whose activities may influence policy, law, or regulation.

(4.11.2) Indicate whether your organization has a public commitment or position statement to conduct your engagement activities in line with global environmental treaties or policy goals.

Select from:

☑ Yes. We have a public commitment or position statement to conduct engagement activities in line with global environmental treaties or policy goals.

(4.11.3) Global environmental treaties or policy goals in line with public commitment or position statement

Select all that apply

☑ Paris Agreement

(4.11.4) Attach commitment or position statement.

4.11_Tohoku Electric Power Group “Carbon Neutral Challenge 2050”.pdf

(4.11.5) Indicate whether your organization is registered on a transparency register.

Select from:

☑ No

(4.11.8) Describe the process your organization has in place to ensure that your external engagement activities are

consistent with your environmental commitments and/or transition plan.

We applied to the Keidanren's Challenge Zero program, whose goal is to realize a decarbonized society in line with the Paris Agreement, for recognition of our efforts to achieve a hydrogen society and to achieve VPP commercialization as innovation case studies. Progress on these measures is reported to the Management Committee and to the Board of Directors. Information on developments that may impact the power business, including those concerning policies and regulations on water, is shared at the management level through the Federation of Electric Power Companies of Japan, an industry association, and as a result we are able to reflect it in management strategies. The Federation of Electric Power Companies of Japan was established in 1952. Its membership consists of the 10 major power companies across Japan. Its main duties are publicity and awareness-raising regarding the electricity business, collecting and distributing data, information, etc. on the electricity business, conducting surveys, research, and preparation of statistics on the electricity business, and expressing opinions concerning the electricity business. In particular, in making decisions on important matters such as public policy related to the power business, the Federation checks on the views of member companies and reflects these in expressing the industry perspective. We too offer our opinions in light of our own policies, and in the event of a conflict with our policies we express our opinions with the aim of ensuring that the views expressed by the industry reflect our policies.
[Fixed row]

(4.11.2) Provide details of your indirect engagement on policy, law, or regulation that may (positively or negatively) impact the environment through trade associations or other intermediary organizations or individuals in the reporting year.

Row 1

(4.11.2.1) Type of indirect engagement

Select from:

☑ Indirect engagement via trade association

(4.11.2.4) Trade association

Asia & Pacific

☑ Japan Business Federation (Keidanren)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

☑ Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with.

Select from:

☑ Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year.

Select from:

☑ Yes. We have publicly promoted their current position.

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position.

Positions of trade organizations on climate change and our positions are largely identical. As a participating company, we are asked to make declarations on innovations, investment, finance, and other factors in net-zero carbon technologies and to submit examples of practical initiatives. Specifics are posted on the Keidanren's Challenge Zero website (https://www.challenge-zero.jp).

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals.

Select from:

☑ Yes. Our evaluations indicate the alignment achieved.

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

☑ Paris Agreement

[Add rows]

(4.12) Have you published information about your organization's response to environmental issues for this reporting year in places other than your CDP response?

Select from:

☑ Yes

(4.12.1) Provide details on the information published about your organization's response to environmental issues for this reporting year in areas other than your CDP response. Please attach the publication.

Row 1

(4.12.1.1) Publication

Select from:

☑ In mainstream reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply

☑ Climate change

(4.12.1.4) Status of the publication

Select from:

☑ Complete

(4.12.1.5) Content elements

Select all that apply

☑ Governance

☑ Risks and opportunities

☑ Strategy

☑ Emissions figures

☑ Emission targets

(4.12.1.6) Page/section reference

Responding to climate change (efforts toward TCFD recommendations): p. 20

(4.12.1.7) Attach the relevant publication.

4.12.1_FY2022 Securities Report.pdf

(4.12.1.8) Comment

No comment

Row 2

(4.12.1.1) Publication

Select from:

☑ In voluntary communications

(4.12.1.3) Environmental issues covered in publication

Select all that apply

☑ Climate change

(4.12.1.4) Status of the publication

Select from:

☑ Complete

(4.12.1.5) Content elements

Select all that apply

☑ Strategy

☑ Governance

☑ Biodiversity indicators

☑ Water pollution indicators

☑ Emissions figures

☑ Emission targets

☑ Risks and opportunities

(4.12.1.6) Page/section reference

Governance and risk management: p. 60; strategy: pp. 61-63; risks and opportunities: pp. 62, 63; emissions figures: pp. 24, 65; emissions targets: p. 24

(4.12.1.7) Attach the relevant publication.

4.12.1_tohoku_integrated2023_jp.pdf

(4.12.1.8) Comment

No comment

Row 3

(4.12.1.1) Publication

Select from:

☑ In voluntary sustainability reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply

☑ Climate change

☑ Water

☑ Biodiversity

(4.12.1.4) Status of the publication

Select from:

☑ Complete

(4.12.1.5) Content elements

Select all that apply

☑ Strategy

☑ Governance

☑ Emissions figures

☑ Emission targets

☑ Risks and opportunities

☑ Biodiversity indicators

☑ Water pollution indicators

(4.12.1.6) Page/section reference

Climate change: pp. 16-27; consideration for water resources: pp. 29,32; consideration for biodiversity: p. 33; climate change, water, and biodiversity metrics: p. 77

(4.12.1.7) Attach the relevant publication.

4.12.1_tohoku_sustainabilityreport2023_jp.pdf

(4.12.1.8) Comment

No comment

[Add rows]

C5. Business Strategy

(5.1) Does your organization use scenario analysis to identify environmental outcomes?

Climate change

(5.1.1) Use of scenario analysis

Select from:

☑ Yes

(5.1.2) Frequency of analysis

Select from:

☑ Annually

Water

(5.1.1) Use of scenario analysis

Select from:

☑ Yes

(5.1.2) Frequency of analysis

Select from:

☑ Once a year

[Fixed row]

(5.1.1) Provide details of the scenarios used in your organization's scenario analysis.

Climate change

(5.1.1.1) Scenario used

Climate transition scenario

☑ IEA NZE 2050

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Policy

☑ Market

☑ Reputation

☑ Technology

☑ Liability

(5.1.1.6) Temperature alignment of scenario

Select from:

☑ 1.5°C or lower

(5.1.1.7) Reference year

2013

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Stakeholder and customer demands

☑ Consumer sentiment

Regulators and legal and policy regimes

☑ Global regulation

Direct interactions with the climate

☑ On asset values, on the corporate

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

This scenario envisions a temperature increase at the end of this century of less than 1.5° C from the time of the industrial revolution through strict measures specified in the Paris Agreement. This scenario assumes progress with decarbonization technologies and significant changes in policies and behavior overall in pursuit of effectively zero GHG emissions.

(5.1.1.11) Rationale for choice of scenario

We announced our support for TCFD in April 2019. While using climate scenarios such as the IEA2050 Net Zero Scenario as transition risk scenarios and RCP8.5 and other representative climate scenarios (e.g., 2°C, 4°C, and 1.5°C scenarios) as physical risk scenarios in accordance with the scenario analysis methods presented in TCFD's recommendations, we are currently seeking to identify companywide risks and opportunities related to climate change and to analyse their impact over the medium-to long-term time horizon of 2050 and beyond.
In the 1.5°C and 2°C scenario, which entail a large transition risk, we assumed that measures would be taken to realize a carbon-free society and that thermal power sources would shrink due to policies, markets, and other factors, while low-carbonization of electricity and electrification would greatly advance. In this scenario, rises in the cost of CO2 emissions due to policies, markets, and other factors could reduce the competitiveness of conventional power sources and adversely affect us financially. In terms of measures and opportunities to respond to this, we intend to mitigate the adverse financial impact and generate profits by taking on the challenges of "low-carbonization of electricity"; supplying electricity with superior economic efficiency and environmental performance in virtue of improving the efficiency of thermal power and expanding the development of renewable energy, and by promoting electrification, including for mobility, through switching to a variety of service provider businesses and promoting digital innovation.

Water

(5.1.1.1) Scenario used

Water scenario

☑ WRI Aqueduct

(5.1.1.3) Approach to scenario

Select from:

☑ Quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Business activity

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

(5.1.1.7) Reference year

2019

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Stakeholder and customer demands

☑ Consumer sentiment

Regulators and legal and policy regimes

☑ Global regulations

Direct interactions with the climate

☑ On asset values, on the corporate

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

Using WRI Aqueduct's Aqueduct Water Risk Atlas, we are identifying water-related risks related to our core power supply business and the stable operation of steam power generation as a power source for regulating power supply as renewables are used more extensively, and analyzing their impact, over a mid- to long-term timeframe envisioned for 2050 and later.

(5.1.1.11) Rationale for choice of scenario

We expect the importance of electricity supply resilience to grow in light of anticipated impacts on hydroelectric power generation due to changes in precipitation and snowfall patterns as chronic risks. For example, if changes in annual rain and snowfall patterns result in lower snow melt and summer drought, hydroelectric power generation may decline due to reduced water flows available for hydroelectric power stations. Since as a company that operates 203 hydroelectric plants, which is the largest number commercially operated in Japan (on an individual company basis), we would prefer to continue utilizing hydroelectric power generation to the maximum extent as a renewable energy source. The decrease in hydroelectric power generation would affect the use of clean energy. We also expect water risk to impact stable operation of steam power generation as a power source that moderates the fluctuating availability of renewables-based power.

Climate change

(5.1.1.3) Approach to scenario

Select from:

☑ Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

☑ Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

☑ Acute physical

☑ Chronic physical

(5.1.1.7) Reference year

2013

(5.1.1.8) Timeframes covered

Select all that apply

☑ 2030

☑ 2050

(5.1.1.9) Driving forces in scenario

Stakeholder and customer demands

☑ Consumer sentiment

Regulators and legal and policy regimes

☑ Global regulation

Direct interactions with the climate

☑ On asset values, on the corporation

(5.1.1.11) Rationale for choice of scenario

Under the 4°C scenario, where physical risks are high, the impact of climate change is conspicuous. We assumed that the importance of electricity supply resilience would increase due to anticipated damage to our facilities and supply interruptions due to frequent and severe weather disasters as acute risks, as well as the potential impact to hydroelectric power generation due to changes in precipitation and snowfall patterns as chronic risks. Under this scenario, climate change could adversely affect our finances by causing damage to our facilities and expanding impacts on electricity supply. However, we believe that adverse financial impacts can be mitigated, and profit generated through actions such as making facilities more resilient, improving recovery responsiveness and considering business opportunities utilizing distributed energy.

[Add rows]

(5.1.2) Provide details of the outcomes of your organization's scenario analysis.

Climate change

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

☑ Risk and opportunities: identification, assessment, and management

☑ Strategy and financial planning

(5.1.2.2) Coverage of analysis

Select from:

☑ Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Focal questions

<Transition risks> Thermal power using fossil fuels such as coal, oil, and gas accounts for 85.2% of the power we generate. This figure exceeds the nationwide average of 72.7% given in national energy supply-demand figures. We must also confront the issue of improving the efficiency of region-specific energy use. As one example, kerosene accounts for a large share of the composition of emissions by energy type in the household sector in the Tohoku area, where heavy snowfall and cold weather are typical. In responding to these transition risks, we must accelerate CO_2 emissions reductions and promote technological development under Tohoku Electric Power Group Carbon Neutral Challenge 2050. In light of such challenges, we are implementing initiatives based on three pillars: making maximum use of renewable energy and nuclear power; thermal power decarbonization; and achieving electrification and a smart society.

<Physical risks> We operate 222 power plants, 15,506 km of power transmission lines, and 149,517 km of power distribution lines. We operate the most extensive network of overhead power transmission lines and largest number of pylons of any general power distribution business in Japan. We are exposed to a broad range of physical risks. In responding to physical risks, we must improve our electric power resilience. We will strive to make power sources and supply facilities more robust and recoverable.

Results of the climate-related scenario analysis with respect to the focal questions

Under the 1.5°C and 2°C scenarios, which anticipate increasing transition risks, we anticipate significant progress in decarbonizing power sources in various ways, including reducing thermal power generation using coal and other fossil fuels, as part of measures to achieve a carbon zero society. At the same time, we expect business opportunities resulting from factors such as the growth in market share in low- and zero-carbon products and services, including renewable energy sources, growing demand for electricity resulting from higher rates of electrification, including EV use, lower cost of renewable energy power generation facilities, and progress and growing adoption of technologies in areas such as storage cells and CCUS.

Under the 4°C scenario, which anticipates considerable physical risk, we expect more damage to our facilities and obstacles to power supply due to more frequent and severe climate-related disasters, acute risks attributable to climate change.

Based on the above, our main initiatives to date are outlined below.

March 2021: announced the Tohoku Electric Power Group Carbon Neutral Challenge 2050

July 2021: set the target of halving FY2030 CO_2 emissions compared to FY2013 level

August 2021: joined Niigata Higashiminato biomass power generation project (planned to commence commercial operation in October 2024)

December 2022: opened Office of Corporate PPA to promote use of renewable energy through distributed energy services

December 2022: began commercial operation of Noshirominato Offshore Wind Farm, Japan's first large-scale offshore wind farm
October 2023: began mixed hydrogen burning at the Niigata Thermal Power Station, making it the first gas combined cycle power generation facility in Japan to do so
Under the Tohoku Electric Power Group Carbon Neutral Challenge 2050, in addition to decarbonizing thermal power sources, we will accelerate CO2 emission reductions by maximal use of renewable energy and nuclear power generation as well as developing smart-society building businesses.

Water

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

☑ Risk and opportunities: identification, assessment, and management

☑ Strategy and financial planning

(5.1.2.2) Coverage of analysis

Select from:

☑ Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Our water use includes use of river water in hydroelectric power generation and use of industrial water to turn steam turbines and sea water to cool steam after use in turbines at thermal and nuclear power stations. Industrial water used at power stations is circulated for use and then released. We strive to restrain volumes of water used. In office water use, we ascertain volumes used after environmental activities at each site and strive to conserve water independently, with the aim of using water resources effectively. We have used the WRI Aqueduct (3.0) tool Water Risk Atlas to assess water risk in our service area. According to the tool's Overall Water Risk, the maximum water risk level in the six Tohoku Prefectures and Niigata Prefecture, where our power generation equipment is located, is Low-Medium.
[Fixed row]

(5.2) Does your organization's strategy include a climate transition plan?

(5.2.1) Transition plan

Select from:

☑ Yes. We have established a climate transition plan aligned with a 1.5°C outcome.

(5.2.3) Publicly available climate transition plan

Select from:

☑ Yes

(5.2.4) Plan explicitly commits to cease all spending on, and revenue generation from, activities that contribute to fossil fuel expansion

Select from:

☑ No. We do not plan to add an explicit commitment within the next two years.

(5.2.6) Explain why your organization does not explicitly commit to cease all spending on and revenue generation from activities that contribute to fossil fuel expansion.

On the premise of ensuring S+3E, we are taking on the challenge of achieving carbon neutrality by 2050 centered on the three pillars of achieving maximum use of renewables and nuclear power, decarbonizing thermal power, and realizing electrification and a smart society.

(5.2.7) Mechanism by which feedback is collected from shareholders on your climate transition plan

Select from:

☑ We have a different feedback mechanism in place.

(5.2.8) Description of feedback mechanism

The officers responsible meet twice a year with major shareholders to brief them individually on the details of financial results, including the transition plan. These meetings make it possible to incorporate shareholder opinions into management strategies.
In addition, we post video and documents on Company financial results to the website for individual investors, and these include contact telephone numbers through which we can receive feedback.

(5.2.9) Frequency of feedback collection

Select from:

☑ More frequently than annually

(5.2.10) Description of key assumptions and dependencies on which the transition plan relies

Our transition plan targets effective GHG emissions of zero and is based on the assumption of progress with decarbonization technologies and significant changes in policies and behavior overall.

(5.2.11) Description of progress against transition plan disclosed in current or previous reporting period

As we strive toward carbon neutrality by 2050, our interim target for FY2030 is to halve CO2 emissions vs. FY2013. Results in FY2022 were down about 21% from FY2013.

(5.2.13) Explain how the other environmental issues are considered in your climate transition plan.

Select all that apply

☑ No other environmental issue considered

[Fixed row]

(5.3) Have environmental risks and opportunities influenced your strategy and/or financial planning?

(5.3.1) Environmental risks and/or opportunities have affected your strategy and/or financial planning

Select from:

☑ Yes, both strategy and financial planning.

(5.3.2) Business areas where environmental risks and/or opportunities have affected your strategy

Select all that apply

☑ Products and services

☑ Upstream/downstream value chain

☑ Investment in R&D

☑ Operations

[Fixed row]

(5.3.1) Describe where and how environmental risks and opportunities have influenced your strategy.

Products and services

(5.3.1.1) Effect type

Select all that apply

☑ Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area.

Climate risks and opportunities are reflected in the business fields of various services provided to customers and strategies for realizing them in the Tohoku Electric Power Group's Medium-to Long-Term Vision "Working alongside next," which expresses our aspirations for the 2030s. Specifically, in the FY2021 Group Medium-Term Plan, which outlines measures for realizing this vision, we focus on positioning renewable energy as a power source that will play a part in our future power source portfolio under Highlight 1 and formulating a strategy to develop services that reflect customers' environmental needs by utilizing renewable energy under Highlight 2. The following example illustrates efforts under these strategies.
[Tokyu Setagaya Line (light railway)] In March 2019, together with Tokyu Corporation and Tokyu Power Supply Co., Ltd., we realized the operation of the Setagaya Line with 100% renewable energy generated solely from hydro and geothermal power.
This initiative was the first in Japan to run all trains of an urban railway track using 100% renewable energy. The Setagaya Line, which previously emitted 1,263 tons of CO2, equivalent to about 0.5 units of the Tokyo Dome in one year, has been operated as "Japan's first urban commuter train with zero CO2 emissions."
Through this initiative, which serves as an advanced example of the use of renewable energy in Japan, the three companies will continue to promote sustainable urban development and work toward further enhancing the value of areas along the rail line.
[Offering electricity rate plans to deliver renewable energy from public hydropower] We have established new plans to deliver (CO2-free) renewable energy from public hydropower generation in Iwate, Akita, and Yamagata prefectures.
Specifically, we offer the following electricity rate plans with environmental added value to corporate and other customers receiving high-voltage and special-high-voltage power supplies in Iwate, Akita, and Yamagata prefectures:
• Iwate Recovery Power Hydropower Premium (limited to business sites in Iwate Prefecture)
• Akita E-Ne! Option 100% Hydropower (limited to business sites in Akita Prefecture)
• Yamagata Hydropower Premium (limited to business sites in Yamagata Prefecture)
Businesses and other companies using these plans receive power generated by hydropower plants operated by the enterprise bureau of each prefecture, by paying rates corresponding to the environmental value and other value provided in addition to current electricity rates.
Hydropower does not generate any CO2 emissions during power generation. For this reason, businesses and other companies using these plans are able to realise a level of zero CO2 emissions from electricity use and contribute to local production and local consumption of renewable energy in their regions through designation of the power plants where the power they use is generated.

Upstream/downstream value chain

(5.3.1.1) Effect type

Select all that apply

☑ Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

It affected the collaboration in the supply chain, especially the strategy for the efficient upgrading of the transmission and distribution network outlined in the Tohoku Electric Power Group's Medium-to Long-Term Vision "Working alongside next" which is our aspiration for the 2030s.
The following is an example of a major strategic decisions aimed at this.
[Low-loss wire with fins with Kitanihon Electric Cable] We have jointly developed a low-loss wire with fins with Kitanihon Electric Cable Co., Ltd., a wire supplier, to reduce the environmental impact of electricity transportation, including the reduction of CO2 emissions, and to build electric power infrastructures that can withstand the severe climates caused by snowfall in the six prefectures of Tohoku and Niigata prefecture. We are expanding the introduction of these low-loss wires.
"Low-loss wire with fins" can reduce electrical resistance by 20% or more and contribute to CO2 emission control by reducing power loss during power transmission.
In addition, "low-loss wire with fins" is shaped to inhibit snow adhesion and prevent equipment damage caused by snow accretion during winter, thereby contributing to a stable supply of electric power. Expanded deployment is also expected to have the effect of increasing resilience to large-scale disasters.
"Low-loss wire with fins" is measured by the installation volume (thousand km), and the status of introduction is monitored on an ongoing basis.

Investment in R&D

(5.3.1.1) Effect type

Select all that apply

☑ Risk

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area.

The Company has formulated strategies based on changes in the business environment, including the conversion of renewable energy into a mainstay power source and the expansion of distributed energy. It is actively investing in research and development to realize "Working alongside next," the Tohoku Electric Power Group's mid-to long-term vision, which articulates our aspirations for the 2030s. As renewable energy grows increasingly popular, it is important to work on upgrading power networks to adapt to changes in supply and demand. The following is an example of a major strategic decision aimed at this.
[Solar Demand Forecast, R&D Report] Recognizing the risks and opportunities of climate change, the Company actively invests in research and development related to climate change. For example, with growing interest in renewable energy, solar power generation (PV) interconnections are expanding. However, since PV is characterized by instantaneous and large fluctuations in output depending on the weather, there are concerns that if a large volume of PV is introduced into the power system, it may affect aspects of power quality and supply and demand operations. For this reason, we have studied methods for estimating and predicting the accuracy of solar radiation, which has a significant impact on PV output, and methods for estimating and predicting PV output, and developed a system for estimating the solar power output of the entire Tohoku region. The results of numerous other studies are available on our website.
Reference: https://www.tohoku-epco.co.jp/rdcenter/

Operations

(5.3.1.1) Effect type

Select all that apply

☑ Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

☑ Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area.

This affected our strategies for upgrading our power network to establish a smart society in "Working alongside next," the Tohoku Electric Power Group's mid-to long-term vision, which articulates our aspirations for the 2030s. The use of transmission and distribution facilities and smart meter data allows us to upgrade the operational aspects of our power network. As an example of our main strategic decisions aimed at this, we made the decision to install smart meters for all customers in our service area by the end of FY2023. With the introduction of renewable energy and the proliferation of distributed energy, we will consider ways to efficiently build facilities and grid operation adapted to changes in supply and demand, as well as work to upgrade our power networks to establish a smart society. In addition, we will consider and develop new businesses by making use of transmission and distribution facilities and smart meter data.
[Add rows]

(5.3.2) Describe where and how environmental risks and opportunities have influenced your financial planning.

Row 1

(5.3.2.1) Financial planning elements that have been affected

Select all that apply

☑ Access to capital

(5.3.2.2) Effect type

Select all that apply

☑ Opportunities

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply

☑ Climate change

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements.

To realize our medium-to long-term financial strategy, in February 2020, the Company became the first ex-general electric utility to issue a green bond, the Tohoku Electric Power Green Bond, from the viewpoint of expanding the renewable energy business and securing diverse funding. The use of proceeds of this green bond is limited to businesses that improve the environment in Japan and overseas, such as the development of renewable energy. The green bond had an issue amount of JPY5 billion and will mature in 10 years. In addition, the Company issued the "Second Tohoku Electric Power Green Bond" in September 2020, of which the issue amount is JPY10 billion and maturity period is 10 years, and the "Third Tohoku Electric Power Green Bond" in June 2022, of which the issue amount is JPY10 billion and maturity period is 10 years.

We aim to develop 2 million kW of renewable energy, mainly from wind power generation, in the six Tohoku prefectures and Niigata prefecture. Funds procured through the Tohoku Electric Power Green Bond will be used primarily for this project.

In addition, the status of the use of proceeds and the effects of environmental improvements such as annual CO2 reductions associated with the introduction of renewable energy is published in the Group's annual Integrated Report.

The issuance of the Tohoku Electric Power Green Bond has been evaluated and verified by DNV GL Business Assurance Japan K.K. (DNV GL), a third-party evaluation organization, for compliance with various standards related to the issuance of green bonds. In addition, we were the first ex-general electric utility to acquire certification from the CBI (Climate Bonds Initiative), an international NGO that sets strict standards for ensuring the reliability and transparency of green bonds.

In recent years, there has been a growing trend among shareholders and institutional investors, particularly in terms of medium-to long-term corporate growth potential and sustainability, toward companies seeking non-financial ESG management that emphasizes corporate ethics and legal compliance, environmental conservation considerations, and contributes to the development of local communities, in addition to their financial status.

Given these circumstances, we are strengthening our ESG management initiatives and will continue to actively engage in the renewable energy business and further promote ESG management.

[Add rows]

(5.4) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Methodology or framework used to assess alignment with your organization's climate transition
	Select from: ☑ Yes	*Select all that apply* ☑ Other methodology or framework

[Fixed row]

(5.4.1) Quantify the amount and percentage share of your spending/revenue that is aligned with your organization's climate transition.

Row 1

(5.4.1.1) Methodology or framework used to assess alignment

Select from:

☑ Other; please specify: capital expenditures on renewable energy.

(5.4.1.5) Financial metric

Select from:

☑ Our onshore wind power and geothermal power generation

(5.4.1.6) Amount of selected financial metric that is aligned in the reporting year (currency)

179000000

(5.4.1.7) Percentage share of selected financial metric aligned in the reporting year (%)

0.12

(5.4.1.12) Details of the methodology or framework used to assess alignment with your organization's climate transition

This is identified from the figure of JPY179 million in increased book value of new energy and other power generation facilities in the statement of changes in fixed assets during the term addressed by the FY2022 Financial Report. The ratio is calculated against the increase in book value of electric utility plant and equipment of JPY152.561 billion.

[Add rows]

(5.5) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

(5.5.1) Investment in low-carbon R&D

Select from:

☑ Yes

(5.5.2) Comment

Under the Tohoku Electric Power Group's Medium-to Long-Term Vision, "Working alongside next," we aim to help realize a smart society for the future starting from Tohoku, through structural reforms to the power supply business and swift attainment of profitability for the smart society building business. We are also taking on the challenge of achieving carbon neutrality by 2050 through power supply initiatives and realizing a smart society.

For the Group to continue growing, it will be essential to enhance our ability to tackle issues and generate revenue through innovations in areas such as adoption of innovative technologies in our facilities and proposing solutions to customers, as well as thoroughly enhancing our competitive strengths, including those in our core power business. By swiftly implementing innovations groupwide under the following three priorities, we will aim to grow together with the sustainable progress of our region.

• Contributing to progress on the Carbon Neutral Challenge

• Realizing a smart society and creating new revenue sources

• Steady efforts toward smart, secure, resilient electric power

[Fixed row]

(5.5.7) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Row 1

(5.5.7.1) Technology area

Select from:

☑ Storage batteries

(5.5.7.2) Stage of development in the reporting year

Select from:

☑ Pilot demonstration

(5.5.7.3) Average % of total R&D investment over the last 3 years

24

(5.5.7.6) Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan.

To further expand the introduction of renewable energy, we started operation of the Hydrogen Production System in March 2017 to conduct research on hydrogen production and are conducting research using this system. Specifically, we have installed new solar power generation facilities and hydrogen production equipment in *the buildings of our Research and Development Center to produce and store hydrogen using electricity generated by solar power and generate electricity for Research and Development Center using this hydrogen as fuel.*

Row 2

(5.5.7.1) Technology area

Select from:

☑ Other; please specify: Improving the thermal efficiency of thermal power generation.

(5.5.7.2) Stage of development in the reporting year

Select from:

☑ Large-scale commercial deployment

(5.5.7.3) Average % of total R&D investment over the last 3 years

24

(5.5.7.6) Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan.

In 1984, we became the first company in Japan to introduce a large-capacity gas turbine combined cycle for business use as the Higashi Niigata Unit No. 3 system (Seiro town, Niigata Prefecture). Since then, we have been developing pioneering technologies for gas turbines that contribute to reducing energy consumption and pollution in emissions.
We have accumulated knowledge and expertise through developing high-efficiency gas combined-cycle power generation facilities. Incorporating fundamental technologies for heat-resistant materials, blade-cooling technologies, and high-temperature and low NOX combustors developed for 1,500°C class high-efficiency gas turbines, the Higashi Niigata Unit No. 4 system achieved a world-leading figure in thermal efficiency (55% or above; lower calorific value) in 2006. A world-leading figure for thermal efficiency (58%) was once again achieved when Sendai Unit No. 4 began operating commercially in 2010. Unit No. 3-1 and Unit No. 3-2 at the Shinsendai

thermal power plant also commenced operations in 2015 and 2016, respectively. They achieved the world-leading figure (for that era) of 60%.

As further expansion of the introduction of renewable energy will require thermal power generation facilities to absorb further natural fluctuations, it is anticipated that the operation of these facilities will result in an increase in operations at parts that will be inefficient. Accordingly, research and development (from FY2020 to FY2022) was conducted to further improve operational efficiency and improve efficiency, including partial output. Specifically, we are working on the development of steam turbines compatible with the minimum output reduction operation to increase the amount of output change, the development of an operation method to shorten the start-up time within a range where the environmental load does not increase, the development of a method to optimize the cooling air flow rate at the partial output, and the development of heat-resistant materials to further improve the combustion temperature. Some of the results of this research conducted through FY2021 were adopted for Joetsu Thermal Power Station Unit 1 and existing combined-cycle power generation equipment. Since FY2021, we have also advanced technological development efforts to achieve carbon neutrality through various feasibility studies, including studies to assess the burning stability and potential environmental burdens of non-fossil fuels such as hydrogen.

As for power development (from FY2020 to FY2022), the Noshiro Thermal Power Station Unit No. 3, 600MW, which started commercial operation in March 2020, achieved the world's highest thermal efficiency of about 46% as a power generation facility that uses coal. Joetsu Thermal Power Plant Unit No. 1 (572 MW), which began operating in December 2022, uses a next-generation gas turbine employing a forced-air-cooled incinerator system, developed jointly by us and the plant builder. (In FY2018, this system won the Ministry of Economy, Trade and Industry Prize, the highest award in the awards for energy-saving machinery and systems.) It has achieved a thermal efficiency level of 63%, the highest in the world for gas-combined-cycle generation equipment.

[Add rows]

(5.7) Break down, by source, your organization's CAPEX in the reporting year and CAPEX planned over the next 5 years.

Coal – hard

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

34914758369

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

22.05

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Lignite

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Oil

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

5520119900

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

3.49

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Gas

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

68734692959

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

43.4

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Sustainable biomass

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Other biomass

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

46000999

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0.03

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Waste (non-biomass)

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Nuclear

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

25300549543

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

15.98

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Geothermal

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

1276987737

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0.81

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Hydropower

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

22540489593

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

14.23

(5.7.5) Explain your CAPEX calculations, including any assumptions.

Calculated by prorating the amount of capital investment in the financial reports for the reporting year by maximum power generating capacity in the answer to 1.16.1.

Wind

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

Solar

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

41400899

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0.03

Marine

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

Fossil-fuel plants fitted with CCS

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the

reporting year

0

Other renewable (e.g., renewable hydrogen)

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

Other non-renewable (e.g., non-renewable hydrogen)

(5.7.1) CAPEX in the reporting year for power generation from this source (unit currency as selected in 1.2)

0

(5.7.2) CAPEX in the reporting year for power generation from this source as % of total CAPEX for power generation in the reporting year

0

[Fixed row]

(5.7.1) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Row 1

(5.7.1.1) Products and services

Select from:

☑ Distributed generation

(5.7.1.2) Description of product/service

We are actively promoting the use of renewable energy, but on the other hand, renewable energy may be greatly affected by nature such as weather and temperature, so it is difficult to avoid fluctuations in power generation or output.
Therefore, we are working on “the Virtual Power Plant (VPP)” business, which we connect storage batteries and electric vehicles scattered in the area to each other with new information and communication technology such as IoT and perform remote control to utilize it for balancing the supply and demand of electric power.
The main initiatives are listed below:
-Strategic partnership with Next Kraftwerke, the world’s largest VPP operator, to further enhance VPP-related knowledge and technology, including technologies for accurately controlling energy resources
-Verifying remote control of storage batteries and deploying large-capacity storage batteries in partnership with local governments
-Participation in a Municipal VPP Demonstration Project
-Implementation of VPP demonstration project for home use
-Participation in a Vehicle to Grid Demonstration Project
-Demonstration of P2P power trading based on blockchain technology
-Consideration of a storage-battery sharing service
-Providing renewable-energy aggregation services for renewable-energy power-generating businesses.
Planned CAPEX includes the increased book value of new energy and other power generation facilities in FY2022. Total facility construction costs in power supplies in FY2022 are used for the total planned CAPEX.

(5.7.1.3) CAPEX planned for product/service

179000000

(5.7.1.4) Percentage of total CAPEX planned for products and services

0.11

(5.7.1.5) End year of CAPEX plan

2024

[Add rows]

(5.9) 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?

(5.9.1) Water-related CAPEX (+/- % change)

16

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

-12.1

(5.9.3) Water-related OPEX (+/- % change)

6.9

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

-2.5

(5.9.5) Please explain.

Since the amount invested includes sensitive management information, water-related capital expenditures (CAPEX) indicate trends in changes in the increase in book value (mainly expenditures related to new acquisition of hydroelectric power facilities) of Tohoku Electric Power's hydroelectric power generation facilities from FY2020 to FY2021. Water-related operating expenses (OPEX) indicate trends in changes in hydroelectric power generation expenses (labor, maintenance, and other expenses related to the hydroelectric power generation business) of Tohoku Electric Power's hydroelectric power from FY2020 to FY2021. The increase in the book value of hydroelectric power generation facilities reflects mainly the price of new acquisition of hydroelectric power generation facilities. It varies slightly from year to year. We are pursuing continual capital investments with a target of generating 2 million kW from renewables. OPEX remained largely unchanged from FY2020 to FY2021 since no hydroelectric power stations were newly opened or closed and there were no changes to power generation processes during the period.
Water-related CAPEX in the next reporting year shows the trend in changes in the increase in book value (mainly expenditures related to the acquisition of hydroelectric power facilities) of Tohoku Electric Power's hydroelectric power generation facilities in FY2022, while water-related OPEX in the next reporting year shows the trend in changes in hydroelectric power generation expenses (labor, maintenance, and other expenses related to the hydroelectric power generation business) of Tohoku Electric Power's hydroelectric power in FY2022.
[Fixed row]

(5.10) Does your organization use an internal price on environmental externalities?

	Use of internal pricing of environmental externalities	Environmental externality priced
	Select from: ☑ Yes	*Select all that apply* ☑ Carbon

[Fixed row]

(5.10.1) Provide details of your organization’s internal price on carbon.

Row 1

(5.10.1.1) Type of pricing scheme

Select from:

☑ Shadow price (potential price)

(5.10.1.2) Objectives for implementing internal price

Select all that apply

☑ Promoting energy efficiency

☑ Promoting low carbon investment

(5.10.1.3) Factors considered when determining the price

Select all that apply

☑ Cost of required measures to achieve climate-related targets

(5.10.1.4) Calculation methodology and assumptions made in determining the price

Prices that reflect recent conditions are converted based on a national average coefficient, assumed to be 0.45 kg-CO2/kWh, and a near-term contracted price in markets to achieve the advancement obligation. The minimum price is JPY0.6/kWh. The maximum is estimated based on the upper limit of JPY1.3/kWh.

(5.10.1.5) Scopes covered

Select all that apply

☑ Scope 1

(5.10.1.6) Pricing approach used – spatial variance

Select from:

☑ Differentiated

(5.10.1.7) Indicate how and why the price is differentiated

In actual application, we use prices that reflect the properties of individual projects, including regional properties, and recent conditions.

(5.10.1.8) Pricing approach used – temporal variance

Select from:

☑ Evolutionary (time axis)

(5.10.1.9) Indicate how you expect the price to change over time.

We refer to the latest prices of non-fossil fuel energy certificates that can be used to report the CO2 emission factors of electric power companies under the Act on Promotion of Global Warming Countermeasures. Note that the contract specifies market prices, which fluctuate over time.

(5.10.1.10) Minimum actual price used (currency per metric ton CO2e)

1333

(5.10.1.11) Maximum actual price used (currency per metric ton CO2e)

2888

(5.10.1.12) Business decision-making processes the internal price is applied to

Select all that apply

☑ Risk management

☑ Opportunity management

(5.10.1.13) Internal price is mandatory within business decision-making processes

Select from:

☑ No

(5.10.1.15) Pricing approach is monitored and evaluated to achieve objectives

Select from:

☑ No

[Add rows]

(5.11) Do you engage with your value chain on environmental issues?

Suppliers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ Yes

(5.11.2) Environmental issues covered

Select all that apply

☑ Climate change

☑ Water

Customers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ Yes

(5.11.2) Environmental issues covered

Select all that apply

☑ Climate change

Investors and shareholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ Yes

(5.11.2) Environmental issues covered

Select all that apply

☑ Climate change

Other value chain stakeholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

☑ No. We do not plan to do so within the next two years.

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

☑ Judged negligible or not relevant

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues.

Because no cooperative projects with customers on water-related issues are currently underway.

[Fixed row]

(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment? [No data available]

Climate change

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

☑ Yes. We assess the dependencies and/or impacts of our suppliers.

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

☑ Contributions to supplier-related Scope 3 emissions

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

☑ 100%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment.

We survey Tier 1 suppliers to assess the state of their sustainability initiatives. This survey includes questions on the suppliers' consideration of environmental issues efforts, including whether they produce products or provide services that account for environmental issues. The threshold is defined as a "no" response to this question.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

☑ 100%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

234

Water

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

☑ Yes. We assess the dependencies and/or impacts of our suppliers.

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

☑ Dependence on water

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

☑ 100%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment.

We survey Tier 1 suppliers to assess the state of their sustainability initiatives. This survey includes questions on the suppliers' consideration of environmental issues efforts, including whether they produce products or provide services that account for environmental issues. The threshold is defined as a "no" response to this question.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

☑ 100%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

234

[Fixed row]

(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues? [No data available]

Climate change

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

☑ Yes. We prioritize with which suppliers to engage with concerning this environmental issue.

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

☑ Procurement spend

☑ Product safety and compliance

☑ Regulatory compliance

(5.11.2.4) Please explain.

In prioritizing materials suppliers, we consider procurement costs, product safety, and compliance. Our Basic Procurement Policy calls for compliance with laws, regulations, and social norms. We demand similar compliance from materials suppliers.

Water

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

☑ Yes. We prioritize which suppliers to engage with concerning this environmental issue.

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

☑ Procurement spend

☑ Product safety and compliance

☑ Regulatory compliance

(5.11.2.4) Please explain.

In prioritizing materials suppliers, we consider procurement costs, product safety, and compliance. Our Basic Procurement Policy calls for compliance with laws, regulations, and social norms. We demand similar compliance from materials suppliers.

[Fixed row]

(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization's purchasing process?

	Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process.	Policy in place for addressing supplier non-compliance	Comment
Climate change	*Select from:* ☑ Yes. Our supplier contracts include environmental requirements related to this environmental issue.	*Select from:* ☑ Yes. We have a policy in place for addressing non-compliance.	*Contracts with suppliers include environmental requirements related to climate change. We have a policy of implementing penalties in response to supplier compliance violations.*

	Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process.	Policy in place for addressing supplier non-compliance	Comment
Water	*Select from:* ☑ Yes. Our supplier contracts include environmental requirements related to this environmental issue.	*Select from:* ☑ Yes. We have a policy in place for addressing non-compliance	*Contracts with suppliers include environmental requirements related to climate change. We have a policy of implementing penalties in response to supplier compliance violations.*

[Fixed row]

(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Climate change

(5.11.6.1) Environmental requirement

Select from:

☑ Reducing wastes and resource consumption, and increasing recycling of materials

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

☑ Grievance mechanisms / whistleblowing hotline

☑ Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

☑ 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

☑ 100%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

☑ 100%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

☑ 100%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

☑ Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

☑ Less than 1%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

☑ Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

We provide information on appropriate actions that can be taken to address supplier non-compliance.

Water

(5.11.6.1) Environmental requirement

Select from:

☑ Reducing wastes and resource consumption, and increasing recycling of materials

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

☑ Grievance mechanisms / whistleblowing hotline

☑ Supplier self-assessment

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

☑ 100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

☑ 100%

(5.11.6.5) % tier 1 suppliers with substantive environmental dependencies and/or impacts related to this environmental issue required to comply with this environmental requirement

Select from:

☑ 100%

(5.11.6.6) % tier 1 suppliers with substantive environmental dependencies and/or impacts related to this environmental issue that are in compliance with this environmental requirement

Select from:

☑ 100%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

☑ Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

☑ Less than 1%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

☑ Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

We provide information on appropriate actions that can be taken to address supplier non-compliance.

[Add rows]

(5.11.7) Provide further details of your organization's supplier engagement on environmental issues.

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

☑ Circular economy

(5.11.7.3) Type and details of engagement

Building capacity

☑ Providing training, support, and best practices on methods of mitigating environmental impact

(5.11.7.4) Upstream value chain coverage

Select all that apply

☑ Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

☑ 100%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

☑ 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action.

We survey all suppliers at least once every five years. We verify appropriate consideration of environmental issues as a gauge of engagement success. In the reporting year, we verified the absence of any inappropriate cases or issues regarding involvement in climate-change issues. We will continue to engage in transactions with all current suppliers.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

☑ Yes. Please specify the environmental requirement: Reducing wastes and resource consumption, and increasing recycling of materials

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

☑ Yes

Water

(5.11.7.2) Action driven by supplier engagement

Select from:

☑ Circular economy

(5.11.7.3) Type and details of engagement

Building capacity

☑ Providing training, support, and best practices on methods of mitigating environmental impact

(5.11.7.4) Upstream value chain coverage

Select all that apply

☑ Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

☑ 100%

(5.11.7.7) % tier 1 suppliers with substantive impacts and/or dependencies related to this environmental issue covered by engagement

Select from:

☑ 100%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action.

We survey all suppliers at least once every five years. We verify appropriate consideration of environmental issues as a gauge of engagement success. In the reporting year, we verified the absence of any inappropriate cases or issues regarding involvement in climate-change issues. We will continue to engage in transactions with all current suppliers.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

☑ Yes. Please specify the environmental requirement: Reducing wastes and resource consumption, and increasing recycling of materials

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

☑ Yes

[Add rows]

(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain. [No data available]

Climate change

(5.11.9.1) Type of stakeholder

Select from:

☑ Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

☑ Run an engagement campaign to educate stakeholders about the environmental impacts about your products, goods and/or services.

(5.11.9.3) % of stakeholder type engaged

Select from:

☑ 100%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

☑ 100%

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

Since our core business is electricity supply, cooperation with all entities involved in electricity demand is vital to promoting energy conservation. For this reason, we strive to engage with 100% of customers. For example, compared to other regions in Japan, kerosene accounts for a large share of emissions by energy type in the household sector in the Tohoku area, a region where heavy snowfall and cold weather are typical. Given this situation, to promote energy conservation at home, it is also essential to promote high-efficiency, highly airtight houses that improve the performance of houses themselves, while taking into account the regional characteristics of customers' residences, along with high-efficiency hot water supply and heating systems that utilize heat pump technology. We provide energy services to customers who use our electricity, including factories, hospitals and welfare facilities, school-related facilities, and agricultural facilities, which lead to energy savings and cost savings.

(5.11.9.6) Effect of engagement and measures of success

We provide energy services to our customers who use our electricity, including homes, factories, hospitals and welfare facilities, school-related facilities and agricultural facilities, that lead to energy savings and cost savings. In particular, since a large share of energy consumption by households in the Tohoku area (a region where heavy snowfall and cold weather are typical) is related to heating water, one potential key to protecting the environment is to minimize this consumption. Heat pumps use relatively small amounts of electricity to capture heat in the air and to deliver it to the destination, which means they offer outstanding energy efficiency. EcoCute, a hot water supply system based on heat pump technology, reduces CO2 emissions otherwise generated by water heating.

We cooperate with manufacturers, electric appliance stores, and housing builders to propose the introduction of EcoCute to customers. In addition, in conjunction with the introduction of equipment, we are working to conserve energy in terms of electricity use and to equalize load by proposing a menu of electricity rates for each time zone that matches lifestyles. We monitor on an ongoing basis the cumulative total of EcoCute units introduced through our company as a metric for our climate-related engagement. This figure has steadily grown from 44,475 in FY2020 to 51,753 in FY2021 and 54,682 in FY2022. We believe we are making steady progress in this area, having achieved our goal of growth from previous levels.

[Add rows]

C6. Environmental Performance – Consolidation Approach

(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.

	Consolidation approach used	Provide the rationale for the choice of consolidation approach.
Climate change	*Select from:* ☑ Operational control	*The scope of the reporting includes Tohoku Electric Power Co., Inc. and Tohoku Electric Power Network Co., its major subsidiary.*
Water	*Select from:* ☑ Operational control	*The scope of the reporting includes Tohoku Electric Power Co., Inc. and Tohoku Electric Power Network Co., its major subsidiary.*
Plastics	*Select from:* ☑ Operational control	*Not applicable*
Biodiversity	*Select from:* ☑ Operational control	*Not applicable*

[Fixed row]

C7. Environmental Performance – Climate Change

(7.1) Is this your first year of reporting emissions data to CDP?

Select from:

☑ No

(7.1.1) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

	Has there been a structural change?
	Select all that apply ☑ No

[Fixed row]

(7.1.2) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?
	Select all that apply ☑ No

[Fixed row]

(7.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Select all that apply

☑ Act on the Rational Use of Energy

☑ Act on Promotion of Global Warming Countermeasures (2005 Amendment, Japan)

(7.3) Describe your organization's approach to reporting Scope 2 emissions.

	Scope 2, location-based	Scope 2, market-based	Comment
	Select from: ☑ We are reporting a Scope 2 location-based figure.	*Select from:* ☑ We are reporting a Scope 2 market-based figure.	*No comment*

[Fixed row]

(7.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

Select from:

☑ No

(7.5) Provide your base year and base year emissions.

Scope 1

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

36777400.0

(7.5.3) Methodological details

Scope 1 and Scope 2 GHG emissions are calculated based on Japan's Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures.

Scope 2: location-based

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

Scope 1 and Scope 2 GHG emissions are calculated based on Japan's Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures.

Scope 2: market-based

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

0.0

(7.5.3) Methodological details

Scope 1 and Scope 2 GHG emissions are calculated based on Japan's Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures.

Scope 3, Category 1: Purchased goods and services

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

596000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 2: Capital goods

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

633000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 3: Fuel- and energy-related activities (not included in Scope 1 or 2)

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

13167550.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 4: Upstream transportation and distribution

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

19000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 5: Waste generated by operations

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

14000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 6: Business travel

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

2000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in

March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 7: Employee commuting

(7.5.1) Base year end

03/31/2014

(7.5.2) Base year emissions (metric tons CO2e)

8000.0

(7.5.3) Methodological details

Referring to p. 19 of the Ministry of the Environment Supply-chain Emissions Calculations Q&A (revised March 2022) (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/files/tools/QandA_202203.pdf), calculations are based on emissions figures obtained from the Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html).

Scope 3, Category 11: Use of sold products

(7.5.1) Base year end

03/30/2014

(7.5.2) Base year emissions (metric tons CO2e)

0

(7.5.3) Methodological details

Calculated based on Japan’s Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures

[Fixed row]

(7.6) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

	Gross global Scope 1 emissions (metric tons CO2e)	Methodological details
Reporting year	*31069000*	*Scope 1 and Scope 2 GHG emissions are calculated based on Japan’s Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures. * Scope 1 emissions have been verified by a third party.*

[Fixed row]

(7.7) What were your organization’s gross global Scope 2 emissions in metric tons CO2e?

	Gross global Scope 2, location-based emissions (metric tons CO2e)	Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)	Methodological details
Reporting year	*1000*	*1000*	*Scope 1 and Scope 2 GHG emissions are calculated based on Japan’s Act on the Rational Use of Energy and Act on Promotion of Global Warming Countermeasures. * Scope 2 emissions have been verified by a third party.*

[Fixed row]

(7.8) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

330000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying prices of purchased goods and services by emissions intensities

** Source for emissions intensities: Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html)*

Capital goods

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

504000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying equipment construction costs by emissions intensities

** Source for emissions intensities: Emission Intensity Unit Database for Calculating an Organization's Greenhouse Gas Emissions, etc. throughout the Supply Chain (Ver. 3.3), published by the Japanese Ministry of the Environment in March 2023. (https://www.env.go.jp/earth/ondanka/supply_chain/gvc/estimate.html)*

Fuel- and energy-related activities (not included in Scope 1 or 2)

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

12953000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Emissions related to power received from other companies: Calculated by multiplying the volume of power received from other companies by emissions intensities.

Emissions related to fuel extraction and transport: Calculated by multiplying the volume of fuel used by emissions intensity for each fuel type.

** Category 3 emissions have been verified by a third party.*

Upstream transportation and distribution

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

2000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Fuel-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying thermal value consumed by type of vehicle, vessel, etc. by emissions intensity. For vessels for which fuel type could not be determined, we use the domestic vessel coefficients indicated in the CO2 Emissions Calculation Methods Guidelines for the Logistics Field, published by the Ministry of Economy, Trade and Industry and the Ministry of Land, Infrastructure, Transport and Tourism of Japan.

Waste generated by operations

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

16000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by adding the product of multiplying final disposal volume of industrial waste by emissions intensity to the product of multiplying industrial waste recycling volume by emissions intensity

Business travel

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

2000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying the number of employees by emissions intensity

Employee commuting

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

8000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying the number of employees by business days and emissions intensity

Upstream leased assets

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Figures are very small because this concerns activities that are largely irrelevant to our core power generation business.

Downstream transportation and distribution

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Figures are very small because this concerns activities that are largely irrelevant to our core power generation business.

Processing of sold products

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

We perform no end-of-life treatment for sold products.

Use of sold products

(7.8.1) Evaluation status

Select from:

☑ Relevant, calculated

(7.8.2) Emissions in reporting year (metric tons CO2e)

709000

(7.8.3) Emissions calculation methodology

Select all that apply

☑ Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

(7.8.5) Please explain.

Calculated by multiplying the volume of gas sold by emissions intensity

End-of-life treatment of sold products

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

We perform no end-of-life treatment for sold products.

Downstream leased assets

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Figures are very small because this concerns activities that are largely irrelevant to our core power generation business.

Franchises

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Figures are very small because this concerns activities that are largely irrelevant to our core power generation business.

Investments

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Figures are very small because this concerns activities that are largely irrelevant to our core power generation business.

Other (upstream)

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Not applicable

Other (downstream)

(7.8.1) Evaluation status

Select from:

☑ Not relevant; explanation provided

(7.8.5) Please explain.

Not applicable

[Fixed row]

(7.9) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	*Select from:* ☑ Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	*Select from:* ☑ Third-party verification or assurance process in place
Scope 3	*Select from:* ☑ Third-party verification or assurance process in place

[Fixed row]

(7.9.1) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Row 1

(7.9.1.1) Verification or assurance cycle in place

Select from:

☑ Annual process

(7.9.1.2) Status in the current reporting year

Select from:

☑ Complete

(7.9.1.3) Type of verification or assurance

Select from:

☑ Limited assurance

(7.9.1.4) Attach the statement

Independent Assurance Report.pdf

(7.9.1.5) Page/section reference

See p. 1 of the Independent Assurance Report; see p. 2 for a letter from the independent third party on CDP responses and for Scope 1 emissions.

(7.9.1.6) Relevant standard

Select from:

☑ ISAE 3000

(7.9.1.7) Proportion of reported emissions verified (%)

100

[Add rows]

(7.9.2) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Row 1

(7.9.2.1) Scope 2 approach

Select from:

☑ Scope 2 market- based

(7.9.2.2) Verification or assurance cycle in place

Select from:

☑ Annual process

(7.9.2.3) Status in the current reporting year

Select from:

☑ Complete

(7.9.2.4) Type of verification or assurance

Select from:

☑ Limited assurance

(7.9.2.5) Attach the statement.

Independent Assurance Report.pdf

(7.9.2.6) Page/ section reference

See p. 1 of the Independent Assurance Report; see p. 2 for a letter from the independent third party on CDP responses and for Scope 2 emissions.

(7.9.2.7) Relevant standard

Select from:

☑ ISAE 3000

(7.9.2.8) Proportion of reported emissions verified (%)

100

[Add rows]

(7.9.3) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Row 1

(7.9.3.1) Scope 3 category

Select all that apply

☑ Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

(7.9.3.2) Verification or assurance cycle in place

Select from:

☑ Annual process

(7.9.3.3) Status in the current reporting year

Select from:

☑ Complete

(7.9.3.4) Type of verification or assurance

Select from:

☑ Limited assurance

(7.9.3.5) Attach the statement.

Independent Assurance Report.pdf

(7.9.3.6) Page/section reference

See p. 1 of the Independent Assurance Report; see p. 2 for a letter from the independent third party on CDP responses and for Scope 3 emissions.

(7.9.3.7) Relevant standard

Select from:

☑ ISAE 3000

(7.9.3.8) Proportion of reported emissions verified (%)

100

[Add rows]

(7.10) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Select from:

☑ Decreased

(7.10.1) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

Change in renewable energy consumption

(7.10.1.1) Change in emissions (metric tons CO2e)

0

(7.10.1.2) Direction of change in emissions

Select from:

☑ No change

(7.10.1.3) Emissions value (percentage)

0

(7.10.1.4) Please explain calculation.

No renewable energy consumed.

Other emissions reduction activities

(7.10.1.1) Change in emissions (metric tons CO2e)

550920

(7.10.1.2) Direction of change in emissions

Select from:

☑ Decreased

(7.10.1.3) Emissions value (percentage)

1.68

(7.10.1.4) Please explain calculation.

(FY2022 Scope 1 and 2 emissions of 31,070,000t - FY2021 Scope 1 and 2 emissions of 32,816,000t) – decrease in emissions associated with change in production volumes (1,195,080t) 550,920t reduction in emissions from decrease/Scope 1 and 2 emissions in previous year 550,920/32,816,000 1.68%

Change in output

(7.10.1.1) Change in emissions (metric tons CO2e)

1195080

(7.10.1.2) Direction of change in emissions

Select from:

☑ Decreased

(7.10.1.3) Emissions value (percentage)

3.64

(7.10.1.4) Please explain calculation.

(FY2022 company power generation of 57,934GWh - FY2021 company power generation of 60,532GWh) Company FY2022 emissions coefficient 460t-CO2/GWh 1,195,080t-CO2 reduction in emissions from decrease/Scope 1 and 2 emissions in previous year 1,195,080t/32,816,000 3.64%
[Fixed row]

(7.10.2) Are your emissions performance calculations in 7.10 and 7.10.1 based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Select from:

☑ Market-based

(7.12) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Select from:

☑ No

(7.15) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Select from:

☑ Yes

(7.15.1) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used global warming potential (GWP).

Row 1

(7.15.1.1) Greenhouse gas

Select from:

☑ CO2

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

30997000

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 2

(7.15.1.1) Greenhouse gas

Select from:

☑ N2O

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

42000

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 3

(7.15.1.1) Greenhouse gas

Select from:

☑ CH4

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

0

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 4

(7.15.1.1) Greenhouse gas

Select from:

☑ SF6

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

30000

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Fourth Assessment Report (AR4 - 100 year)

Row 5

(7.15.1.1) Greenhouse gas

Select from:

☑ HFCs

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

0

(7.15.1.3) GWP Reference

Select from:

☑ IPCC Fourth Assessment Report (AR4 - 100 year)

[Add rows]

(7.15.3) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

Fugitives

(7.15.3.1) Gross Scope 1 CO2 emissions (metric tons CO2)

0

(7.15.3.2) Gross Scope 1 methane emissions (metric tons CH4)

0

(7.15.3.3) Gross Scope 1 SF6 emissions (metric tons SF6)

1.32

(7.15.3.4) Total gross Scope 1 emissions (metric tons CO2e)

30000

(7.15.3.5) Comment

No comment

Combustion (electric utilities)

(7.15.3.1) Gross Scope 1 CO2 emissions (metric tons CO2)

30997000

(7.15.3.2) Gross Scope 1 methane emissions (metric tons CH4)

0

(7.15.3.3) Gross Scope 1 SF6 emissions (metric tons SF6)

141

(7.15.3.4) Total gross Scope 1 emissions (metric tons CO2e)

31039000

(7.15.3.5) Comment

No comment

Combustion (gas utilities)

(7.15.3.1) Gross Scope 1 CO2 emissions (metric tons CO2)

0

(7.15.3.2) Gross Scope 1 methane emissions (metric tons CH4)

0

(7.15.3.3) Gross Scope 1 SF6 emissions (metric tons SF6)

0

(7.15.3.4) Total gross Scope 1 emissions (metric tons CO2e)

0

(7.15.3.5) Comment

No comment

Combustion (other)

(7.15.3.1) Gross Scope 1 CO2 emissions (metric tons CO2)

0

(7.15.3.2) Gross Scope 1 methane emissions (metric tons CH4)

0

(7.15.3.3) Gross Scope 1 SF6 emissions (metric tons SF6)

0

(7.15.3.4) Total gross Scope 1 emissions (metric tons CO2e)

0

(7.15.3.5) Comment

No comment

Emissions not classified elsewhere

(7.15.3.1) Gross Scope 1 CO2 emissions (metric tons CO2)

0

(7.15.3.2) Gross Scope 1 methane emissions (metric tons CH4)

0

(7.15.3.3) Gross Scope 1 SF6 emissions (metric tons SF6)

0

(7.15.3.4) Total gross Scope 1 emissions (metric tons CO2e)

0

(7.15.3.5) Comment

No comment

[Fixed row]

(7.16) Break down your total gross global Scope 1 and 2 emissions by country/area.

	Scope 1 emissions (metric tons CO2e)
Japan	*31069000*

[Fixed row]

(7.17) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

Select all that apply

☑ By activity

(7.17.3) Break down your total gross global Scope 1 emissions by business activity.

	Activity	Scope 1 emissions (metric tons CO2e)
Row 1	*Power generation business*	*31069000*

[Add rows]

(7.19) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility activities	*31069000*	*No comment*

[Fixed row]

(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.

Consolidated accounting group

(7.22.1) Scope 1 emissions (metric tons CO2e)

31069000

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

1000

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

1000

(7.22.4) Please explain.

No Scope 1 or 2 emissions from business entities other than the consolidated accounting group.

All other entities

(7.22.1) Scope 1 emissions (metric tons CO2e)

0

(7.22.2) Scope 2, location-based emissions (metric tons CO2e)

0

(7.22.3) Scope 2, market-based emissions (metric tons CO2e)

0

(7.22.4) Please explain.

No Scope 1 or 2 emissions from business entities other than the consolidated accounting group.

[Fixed row]

(7.23) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Select from:

☑ No

(7.29) What percentage of your total operational spend in the reporting year was on energy?

Select from:

☑ More than 35% but less than or equal to 40%

(7.30) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year.
Consumption of fuel (excluding feedstocks)	*Select from:* ☑ Yes
Consumption of purchased or acquired electricity	*Select from:* ☑ Yes
Consumption of purchased or acquired heat	*Select from:* ☑ No
Consumption of purchased or acquired steam	*Select from:* ☑ No
Consumption of purchased or acquired cooling	*Select from:* ☑ No
Generation of electricity, heat, steam, or cooling	*Select from:* ☑ Yes

[Fixed row]

(7.30.1) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

Consumption of fuel (excluding feedstock)

(7.30.1.1) Heating value

Select from:

☑ HHV (higher heating value)

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

122613850

(7.30.1.4) Total (renewable and non-renewable) MWh

122613850

Consumption of purchased or acquired electricity

(7.30.1.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

523

(7.30.1.4) Total (renewable and non-renewable) MWh

523

Consumption of self-generated non-fuel renewable energy

(7.30.1.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.4) Total (renewable and non-renewable) MWh

0

Total energy consumption

(7.30.1.1) Heating value

Select from:

☑ HHV (higher heating value)

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

122614373

(7.30.1.4) Total (renewable and non-renewable) MWh

122614373

[Fixed row]

(7.30.6) Select the applications of your organization’s consumption of fuel.

	Indicate whether your organization undertakes this fuel application.
Consumption of fuel for the generation of electricity	*Select from:* ☑ Yes
Consumption of fuel for the generation of heat	*Select from:* ☑ No
Consumption of fuel for the generation of steam	*Select from:* ☑ No
Consumption of fuel for cooling	*Select from:* ☑ No
Consumption of fuel for co-generation or tri-generation	*Select from:*

	Indicate whether your organization undertakes this fuel application.
	☑ No

[Fixed row]

(7.30.7) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

(7.30.7.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Other biomass

(7.30.7.1) Heating value

Select from:

☑ HHV

(7.30.7.2) Total fuel MWh consumed by the organization

95976

(7.30.7.3) MWh fuel consumed for self-generation of electricity

95976

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Other renewable fuels (e.g. renewable hydrogen)

(7.30.7.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Coal

(7.30.7.1) Heating value

Select from:

☑ HHV

(7.30.7.2) Total fuel MWh consumed by the organization

61394494

(7.30.7.3) MWh fuel consumed for self-generation of electricity

61394494

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Oil

(7.30.7.1) Heating value

Select from:

☑ HHV

(7.30.7.2) Total fuel MWh consumed by the organization

6052227

(7.30.7.3) MWh fuel consumed for self-generation of electricity

6052227

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Gas

(7.30.7.1) Heating value

Select from:

☑ HHV

(7.30.7.2) Total fuel MWh consumed by the organization

54114210

(7.30.7.3) MWh fuel consumed for self-generation of electricity

54114210

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

(7.30.7.1) Heating value

Select from:

☑ Unable to confirm heating value

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

Total fuel

(7.30.7.1) Heating value

Select from:

☑ HHV

(7.30.7.2) Total fuel MWh consumed by the organization

121656907

(7.30.7.3) MWh fuel consumed for self-generation of electricity

121656907

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.8) Comment

No comment

[Fixed row]

(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.

Japan

(7.30.16.1) Consumption of purchased electricity (MWh)

499597

(7.30.16.2) Consumption of self-generated electricity (MWh)

2161790

(7.30.16.4) Consumption of purchased heat, steam, and cooling (MWh)

4837.5

(7.30.16.5) Consumption of selfgenerated heat, steam, and cooling (MWh)

0

(7.30.16.6) Total heat/steam/cool ing energy consumption (MWh) [Autocalculated]

2666224.50

[Fixed row]

(7.33) Does your electric utility organization have a transmission and distribution business?

Select from:

☑ Yes

(7.33.1) Disclose the following information about your transmission and distribution business.

Row 1

(7.33.1.1) Country/area/region

Select from:

☑ Japan

(7.33.1.2) Voltage level

Select from:

☑ Distribution (low voltage)

(7.33.1.3) Annual load (GWh)

80949

(7.33.1.4) Annual energy losses (% of annual load)

5

(7.33.1.5) Scope where emissions from energy losses are accounted for

Select from:

☑ Scope 2 (market-based)

(7.33.1.6) Emissions from energy losses (metric tons CO2e)

0

(7.33.1.7) Length of network (km)

149517

(7.33.1.8) Number of connections

3168564

(7.33.1.9) Area covered (km2)

0.18

(7.33.1.10) Comment

Annual load and annual energy losses are disclosed as power transmission and distribution figures.

Row 2

(7.33.1.1) Country/area/region

Select from:

☑ Japan

(7.33.1.2) Voltage level

Select from:

☑ Transmission (high voltage)

(7.33.1.3) Annual load (GWh)

80949

(7.33.1.4) Annual energy losses (% of annual load)

5

(7.33.1.5) Scope where emissions from energy losses are accounted for

Select from:

☑ Scope 2 (market-based)

(7.33.1.6) Emissions from energy losses (metric tons CO2e)

0

(7.33.1.7) Length of network (km)

15506

(7.33.1.8) Number of connections

58604

(7.33.1.9) Area covered (km2)

8.86

(7.33.1.10) Comment

Annual load and annual energy losses are disclosed as power transmission and distribution figures.

[Add rows]

(7.45) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Row 1

(7.45.1) Intensity figure

0.0000103319

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

31070000

(7.45.3) Metric denominator

Select from:

☑ Total revenue

(7.45.4) Metric denominator: Unit total

3007204000

(7.45.5) Scope 2 figure used

Select from:

☑ Market-based

(7.45.6) % change from previous year

33.74

(7.45.7) Direction of change

Select from:

☑ Decreased

(7.45.8) Reasons for change

Select all that apply

☑ Other emissions reduction activities

☑ Change in revenue

(7.45.9) Please explain.

Intensity declined for various reasons, including a major increase of 142.9% year on year in the denominator of revenue as a result of increased fuel cost adjustments and other factors. Various other emissions reduction activities included efforts to expand renewable energy generation facilities and boost the thermal efficiency of thermal power stations.

Row 2

(7.45.1) Intensity figure

0.5362999275

(7.45.2) Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

31070000

(7.45.3) Metric denominator

Select from:

☑ Megawatt hour generated (MWh)

(7.45.4) Metric denominator: Unit total

57934000

(7.45.5) Scope 2 figure used

Select from:

☑ Market-based

(7.45.6) % change from previous year

1.07

(7.45.7) Direction of change

Select from:

☑ Decreased

(7.45.8) Reasons for change

Select all that apply

☑ Change in physical operating conditions

(7.45.9) Please explain.

CO_2 emissions intensity decreased alongside CO_2 emissions for various reasons, including the start of operations at the Joetsu Thermal Power Plant Unit No. 1, which demonstrates the world's highest thermal efficiency.

[Add rows]

(7.46) For your electric utility activities, provide a breakdown of your Scope 1 emissions and emissions intensity relating to your total power plant capacity, and generation during the reporting year by source.

Coal – Hard

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

20017045

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

820.24

(7.46.4) Scope 1 emissions intensity (Net generation)

870.12

Oil

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

1557842

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

787.58

(7.46.4) Scope 1 emissions intensity (Net generation)

837.55

Gas

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

9643783

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

384.41

(7.46.4) Scope 1 emissions intensity (Net generation)

395.19

Other biomass

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

0

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

0.00

(7.46.4) Scope 1 emissions intensity (Net generation)

0.00

Nuclear

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

0

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

Geothermal

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

0

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

0.00

(7.46.4) Scope 1 emissions intensity (Net generation)

0.00

Hydropower

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

0

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

0.00

(7.46.4) Scope 1 emissions intensity (Net generation)

0.00

Solar

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

0

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.3) Scope 1 emissions intensity (Gross generation)

0.00

(7.46.4) Scope 1 emissions intensity (Net generation)

0.00

Total

(7.46.1) Absolute scope 1 emissions (metric tons CO2e)

31218669

(7.46.2) Emissions intensity based on gross or net electricity generation

Select from:

☑ Net

(7.46.4) Scope 1 emissions intensity (Net generation)

538.58

[Fixed row]

(7.52) Provide any additional climate-related metrics relevant to your business.

Row 1

(7.52.1) Description

Select from:

☑ Other; please specify: Thermal efficiency of thermal power stations

(7.52.2) Metric value

46.2

(7.52.3) Metric numerator

Generator thermal efficiency (low-grade thermal volume based) (%)

(7.52.7) Please explain.

The improvement of thermal efficiency in thermal power generation not only reduces the use of fossil fuels and contributes to the efficient use of energy resources, but also contributes to the reduction of CO2 emissions, so we are actively introducing thermal power generation technologies with higher thermal efficiency.

Higashi Niigata Unit No. 3 system, which began commercial operation in 1985, was the first large-capacity combined-cycle power plant in Japan to achieve a thermal efficiency of approximately 48%, the highest level at that time. Since then, we have achieved even higher thermal efficiency at Higashi Niigata Unit No.4 system and Sendai Thermal Power Plant's Unit No.4, and at the Shin-Sendai Unit No.3 system (which began commercial operation on a full scale in July 2016) we have achieved *a thermal efficiency of 60% or higher, the highest level in the world at that time.*

Joetsu Thermal Power Station Unit No. 1, which started commercial operations in December 2022, uses the forced air cooling combustor system, which is highly economical and environmentally friendly as it reduces both fuel consumption and CO2 emissions. As a result, it achieved a thermal efficiency of at least 63%, world-beating performance for a gas combined cycle power generation facility.

[Add rows]

(7.53) Did you have an emissions target that was active in the reporting year?

Select all that apply.

☑ Total target

(7.53.1) Provide details of your absolute emissions targets and progress made against those targets.

Row 1

(7.53.1.1) Target reference number

Select from:

☑ Abs 1

(7.53.1.2) Is this a science-based target?

Select from:

☑ No. We do not anticipate establishing one in the next two years.

(7.53.1.5) Date target was set

03/23/2021

(7.53.1.6) Target coverage

Select from:

☑ Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

☑ Methane (CH4)

☑ Carbon dioxide (CO2)

☑ Nitrous oxide (N2O)

☑ Sulphur hexafluoride (SF6)

☑ Nitrogen trifluoride (NF3)

☑ Perfluorocarbons (PFCs)

☑ Hydrofluorocarbons (HFCs)

(7.53.1.8) Scopes

Select all that apply

☑ Scope 1

☑ Scope 3

(7.53.1.10) Scope 3 categories

Select all that apply

☑ Scope 3, Category 3: Fuel- and energy-related activities (not included in Scope 1 or 2)

(7.53.1.11) End date of base year

03/30/2014

(7.53.1.12) Base year Scope 1 emissions covered by target (metric tons CO2e)

36777400

(7.53.1.16) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)

13167550

(7.53.1.31) Base year total Scope 3 emissions covered by target (metric tons CO2e)

13167550.000

(7.53.1.32) Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

49944950.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

(7.53.1.37) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

100

(7.53.1.52) Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

100

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

(7.53.1.54) End date of target

03/30/2051

(7.53.1.55) Targeted reduction from base year (%)

100

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

0.000

(7.53.1.57) Scope 1 emissions in reporting year covered by target (metric tons CO2e)

31069000

(7.53.1.61) Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

12953000

(7.53.1.76) Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

12953000.000

(7.53.1.77) Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

44022000.000

(7.53.1.78) Land-related emissions covered by target

Select from:

☑ No. It does not cover any land-related emissions (e.g. non-FLAG SBT)

(7.53.1.79) % of target achieved relative to base year

11.86

(7.53.1.80) Target status in reporting year

Select from:

☑ Underway

(7.53.1.82) Explain target coverage and identify any exclusions

We have set a target of carbon neutrality by FY2050. However, since our fiscal year starts on April 1 and ends on March 31, the final target date is March 31, 2051, the last day of the 2050 fiscal year. The target is organization-wide and has no exceptions.

(7.53.1.83) Target objective

We are seeking to achieve carbon neutrality by FY2050.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

To achieve carbon neutrality by FY2050, the Group is striving to make maximum use of renewable energy and nuclear power, decarbonize thermal power, and promote electrification and a smart society. In the sphere of renewable energy, we are seeking to develop 2 million kW or more early in the 2030s. As of the end of March 2024, we held a total stake of approximately 800,000 kW of large-scale renewable energy sources. In addition, we completed safety work on Onagawa Nuclear Power Plant's Unit No. 2 in May 2024, and various tests and other work are underway in preparation for restarting the unit, planned for around September 2024. To decarbonize thermal power, in addition to the systematic decommissioning and replacement of aging thermal power facilities, we began mixed hydrogen burning at the Niigata Thermal Power Station in October 2023, making it the first gas combined cycle power generation facility in Japan to do so. We are also enhancing on-site PPA proposals as part of efforts to promote electrification and optimize energy use. We estimate CO2 emissions reductions at corporate customers provided with on-site PPA services at 4,979t-CO2 in FY2022.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

☑ No

Row 2

(7.53.1.1) Target reference number

Select from:

☑ Abs 2

(7.53.1.2) Is this a science-based target?

Select from:

☑ No. We do not anticipate establishing one in the next two years.

(7.53.1.5) Date target was set

07/29/2021

(7.53.1.6) Target coverage

Select from:

☑ Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

☑ Methane (CH4)

☑ Carbon dioxide (CO2)

☑ Nitrous oxide (N2O)

☑ Sulphur hexafluoride (SF6)

☑ Nitrogen trifluoride (NF3)

☑ Perfluorocarbons (PFCs)

☑ Hydrofluorocarbons (HFCs)

(7.53.1.8) Scopes

Select all that apply

☑ Scope 1

☑ Scope 3

(7.53.1.10) Scope 3 categories

Select all that apply

☑ Scope 3, Category 3: Fuel- and energy-related activities (not included in Scope 1 or 2)

(7.53.1.11) End date of base year

03/30/2014

(7.53.1.12) Base year Scope 1 emissions covered by target (metric tons CO2e)

36777400.0

(7.53.1.16) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)

13167550.0

(7.53.1.31) Base year total Scope 3 emissions covered by target (metric tons CO2e)

13167550.000

(7.53.1.32) Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

49944950.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100.0

(7.53.1.37) Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

100.0

(7.53.1.52) Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

100.0

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100.0

(7.53.1.54) End date of target

03/30/2031

(7.53.1.55) Targeted reduction from base year (%)

50

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

24972475.000

(7.53.1.57) Scope 1 emissions in reporting year covered by target (metric tons CO2e)

31069000

(7.53.1.61) Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

12953000

(7.53.1.76) Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

12953000.000

(7.53.1.77) Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

44022000.000

(7.53.1.78) Land-related emissions covered by target

Select from:

☑ No. We do not anticipate establishing one in the next two years.

(7.53.1.79) % of target achieved relative to base year

23.72

(7.53.1.80) Target status in reporting year

Select from:

☑ Underway

(7.53.1.82) Explain target coverage and identify any exclusions

The target is organization-wide and has no exceptions.

(7.53.1.83) Target objective

As an interim target on the way to carbon neutrality by 2050, we are seeking to halve CO2 emissions in FY2030 vs. their FY 2013 level.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

As an interim target on the road to carbon neutrality by 2050, the Group is seeking to halve CO2 emissions for FY2030 vs. their FY 2013 levels by making maximum use of renewable energy and nuclear power, decarbonizing thermal power, and promoting electrification and a smart society. In the sphere of renewable energy, we are seeking to develop 2 million kW or more early in the 2030s. As of the end of March 2024, we held a total stake of approximately 800,000 kW of large-scale renewable energy sources. In addition, we completed safety work on Onagawa Nuclear Power Plant's Unit No. 2 in May 2024, and various tests and other work are underway in preparation for restarting the unit, planned for around September 2024. To decarbonize thermal power, in addition to the systematic decommissioning and replacement of aging thermal power facilities, we began mixed hydrogen burning at the Niigata Thermal Power Station in October 2023, making it the first gas combined cycle power generation facility in Japan to do so. We are also enhancing on-site PPA proposals as part of efforts to promote electrification and optimize energy use. We estimate CO2 emissions reductions at corporate customers provided with on-site PPA services at 4,979t-CO2 in FY2022.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

☑ No

[Add rows]

(7.54) Did you have any other climate-related targets that were active in the reporting year?

Select all that apply

☑ Targets to increase or maintain low carbon energy consumption or production:

☑ Net-zero targets

(7.54.1) Provide details of your targets to increase or maintain low-carbon energy consumption or production.

Row 1

(7.54.1.1) Target reference number

Select from:

☑ Low 1

(7.54.1.2) Date target was set

12/30/2015

(7.54.1.3) Target coverage

Select from:

☑ Organization-wide

(7.54.1.4) Target type: energy carrier

Select from:

☑ Electricity

(7.54.1.5) Target type: activity

Select from:

☑ Production

(7.54.1.6) Target type: energy source

Select from:

☑ Low carbon energy source(s)

(7.54.1.7) End date of base year

03/30/2016

(7.54.1.8) Consumption or production of selected energy carrier in base year (MWh)

8796000

(7.54.1.9) % share of low-carbon or renewable energy in base year

19

(7.54.1.10) End date of target

03/30/2031

(7.54.1.11) % share of low-carbon or renewable energy at end date of target

44

(7.54.1.12) % share of low-carbon or renewable energy in reporting year

20

(7.54.1.13) % of target achieved relative to base year

4.00

(7.54.1.14) Target status in reporting year

Select from:

☑ Underway

(7.54.1.16) Is this target part of an emissions target?

No, this target is not part of the emissions target because it is a non-fossil fuel power supply ratio target. However, we believe that an increase in the ratio of non-fossil fuel power sources will directly contribute to the reduction of our emissions.

(7.54.1.17) Is this target part of an overarching initiative?

Select all that apply

☑ No. This is not part of an overarching initiative.

(7.54.1.19) Explain target coverage and identify any exclusions

The target is organization-wide and has no exceptions.

(7.54.1.20) Target objective

As part of our efforts to reduce CO2 emissions to realize a low carbon society, the entire Group will work together to achieve the 44% or more ratio of non-fossil fuel power sources by FY2030 stipulated in the Act on Sophisticated Methods of Energy Supply Structures.

(7.54.1.21) Plan for achieving target, and progress made to the end of the reporting year

As part of our efforts to reduce CO2 emissions to realize a low carbon society, the entire Group will work together to achieve the 44% or more ratio of non-fossil fuel power sources by FY2030 stipulated in the Act on Sophisticated Methods of Energy Supply Structures. While seeking to expand the use of non-fossil fuel energy in supply, including the utilization of nuclear power, with safety assured as a major prerequisite, and the utilization of renewable energy, we will continue to promote initiatives in both demand and supply, based on the pursuit of an optimal power source structure from the viewpoint of "S+3E."

[Add rows]

(7.54.3) Provide details of your net-zero target(s).

Row 1

(7.54.3.1) Target reference number

Select from:

☑ NZ1

(7.54.3.2) Date target was set

03/30/2021

(7.54.3.3) Target Coverage

Select from:

☑ Organization-wide

(7.54.3.4) Targets linked to this net zero target

Select all that apply

☑ Abs1

(7.54.3.5) End date of target for achieving net zero

03/30/2051

(7.54.3.6) Is this a science-based target?

Select from:

☑ No. We do not anticipate setting one in the next two years.

(7.54.3.8) Scopes

Select all that apply

☑ Scope 1

☑ Scope 3

(7.54.3.9) Greenhouse gases covered by target

Select all that apply

☑ Methane (CH4)

☑ Carbon dioxide (CO2)

☑ Nitrous oxide (N2O)

☑ Sulphur hexafluoride (SF6)

☑ Nitrogen trifluoride (NF3)

☑ Perfluorocarbons (PFCs)

☑ Hydrofluorocarbons (HFCs)

(7.54.3.10) Explain target coverage and identify any exclusions

The target is organization-wide and has no exceptions.

(7.54.3.11) Target objective

We strive to achieve carbon neutrality by 2050.

(7.54.3.12) Do you intend to neutralize any residual emissions with permanent carbon removals at the end of the target?

Select from:

☑ Unsure

(7.54.3.13) Do you plan to mitigate emissions beyond your value chain?

Select from:

☑ No. We do not plan to mitigate emissions beyond our value chain.

(7.54.3.17) Target status in reporting year

Select from:

☑ Underway

(7.54.3.19) Process for reviewing target

To achieve carbon neutrality by FY2050, we are striving to make maximum use of renewable energy and nuclear power, decarbonize thermal power, and promote electrification and a smart society. Since the CO2-reduction effects of each initiative may vary with factors such as future power demand trends, development of decarbonization technology, and national systemic trends related to adoption and use of decarbonization technology, we will increase the likelihood of achieving our targets while continually fine-tuning related initiatives based on related progress and projections.
[Add rows]

(7.55) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Select from:

☑ Yes

(7.55.1) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tons CO2e (only for rows marked *)
Under investigation	*0*	*Numerical field*
To be implemented	*7*	*0*
Implementation commenced	*0*	*0*
Implemented	*2*	*432.26*
Not to be implemented	*0*	*Numerical field*

[Fixed row]

(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.

Row 1

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

☑ Machine/equipment replacement

(7.55.2.2) Estimated annual CO2e savings (metric tonnes CO2e)

432.26

(7.55.2.3) Scope(s) or Scope 3 category(ies) where emissions savings occur

Select all that apply

☑ Scope 1

(7.55.2.4) Voluntary/Mandatory

Select from:

☑ Voluntary

(7.55.2.5) Annual monetary savings (unit currency – as specified in C0.4)

10781213

(7.55.2.6) Investment required (unit currency – as specified in C0.4)

11994000000

(7.55.2.7) Payback period

Select from:

☑ 21-25 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

☑ 21-30 years

(7.55.2.9) Comment

To control CO2 emissions and reduce power generation costs, we are implementing repowering work at aging generation facilities and striving to put water resources to effective use. In FY2022, we carried out repowering work on the water turbine generators at the Asanai and Iwaizumi power stations. Operations resumed in July 2022 at the Asanai Power Station and in January 2023 at the Iwaizumi Power Station. Improved power generating efficiency means that these stations can generate more low carbon energy through hydroelectric power than before the repowering. The estimated annual CO2e emissions reduction is 0.000429t-CO2/kWh on approx. 1,007,590 kWh in power generated related to these initiatives (calculated using the FY2022 emissions coefficient [alternative value] by power company). The annual reduction in costs is calculated as a rough estimate based on assumed power generation costs. Annual power generation is about 1,007,590 kWh/year at 10.7 yen/kWh.
** Since the investment required involves sensitive management information, our answer is 11.994 billion yen, the increase in book cost of thermal power generation equipment in FY2022. Our answer on payback period is the useful life of depreciable assets under tax law.*
** For LNG thermal power generated under this initiative, we used the 2020 figure for LNG thermal power generation cost from the power generation cost working group, assuming a reduction in thermal power generation volume.*

[Add rows]

(7.55.3) What methods do you use to drive investment in emissions reduction activities?

Row 1

(7.55.3.1) Method

Select from:

☑ Compliance with regulatory requirements/standards

(7.55.3.2) Comment

We will make investment decisions in consideration of national policy trends and regulations imposed or expected to be imposed on businesses.

[Add rows]

(7.58) Describe your organization's efforts to reduce methane emissions from your activities.

For the following reasons, no link exists between our business activities and methane emissions.

Conceivable methane leaks in our core business of supplying electric power consist mainly of those from fuel-production facilities that generate methane and boil-off gas (BOG: a gas consisting mainly of methane, generated from gasification of a part of LNG in storage due to natural heating from outside the storage tanks). However, we operate no fuel-production facilities that generate methane. The Shin-Sendai Thermal Power Station, which does have LNG storage facilities, employs a structure capable of consuming, inside the generation equipment, 100% of the BOG generated from LNG in storage; thus, no methane leaks from the facilities. For these reasons, we firmly believe there is no connection between our business activities and methane emissions from leaks.

Furthermore, in FY2019 we modified the gas-turbine combustors in the Higashi-Niigata Thermal Power Unit 4-2 System to make them compatible with gases characterized by high methane densities, such as shale gas. In addition, the Higashi-Niigata Thermal Power Unit 4-1 System has been capable of consuming gases characterized by high methane densities since FY2020 when we transferred gas turbines from Akita Thermal Power Unit 5 and Higashi-Niigata Thermal Power Unit 5, emergency power sources for which use was discontinued in March 2019. These efforts help reduce CO2 emissions by allowing more efficient consumption of methane in power-generation equipment.

The Joetsu Thermal Power Station, which boasts the world's highest thermal efficiency figure of 63.6%, alongside other measures to make thermal power generation more efficient, can help reduce methane emissions at the oil and gas production stage through progress on reducing fuel consumption.

(7.73) Are you providing product level data for your organization's goods or services?

Select from:

☑ No, I am not providing data

(7.74) Do you classify any of your existing goods and/or services as low-carbon products?

Select from:

☑ Yes

(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.

Row 1

(7.74.1.1) Level of aggregation

Select from:

☑ Product or service

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:

☑ Green Bond Principles (ICMA)

(7.74.1.3) Type of product(s) or service(s)

Power

☑ Hydropower

(7.74.1.4) Description of product(s) or service(s)

[Supplying electricity from 100% renewables]

We have 203 hydropower plants, the largest number of any single company in Japan, and we believe that these plants play very important roles in supplying environmental value to our customers, as clean, CO2-free energy sources. We offer Eco-Denki Premium services as an option for household users to supply electricity from renewable sources—our hydropower and geothermal power plants—in exchange for payment of rates corresponding to CO2-free power (i.e., power that generates *zero CO2 emissions) in addition to our standard rates. This makes it possible to achieve a level of zero CO2 emissions from the customer's use of electricity. In addition, in response to rising corporate demand for environmental value (e.g., CO2 emissions reductions, SDG performance, and RE100 compatibility) in recent years, in cooperation with Iwate, Akita, and Yamagata prefectures we offer rate plans utilising prefecture-operated hydropower plants. These rate plans enable customers to achieve a level of zero CO2 emissions from their use of electricity through supply of power from specific hydropower plants in each prefecture, in exchange for payment of rates corresponding to the environmental value achieved in addition to our standard rates. Companies purchasing power under these plans are able to realise publicity benefits from local production and local consumption of renewable energy and use of hydropower from each prefecture. We also offer Yori, Sou Energy-saving Electricity services that supply corporate users with CO2-free hydroelectric and geothermal power from the Company and Group members. These renewable energy options have been certified by the Ministry of the Environment as eligible for its subsidies for 100% renewable energy options. In addition, since March 25, 2019 in cooperation with Tokyu Power Supply Co., Ltd. we have been supplying energy from 100% renewable sources, generated solely from hydropower and geothermal power, to the Tokyu Setagaya Line (light railway) operated by Tokyu Corporation. This initiative became Japan's first example of operation of an urban railway line running 100% on renewable energy, for all vehicles on a full-year basis. Under the Tohoku Electric Power Group's Medium-to Long-Term Vision "Working alongside next," our goal aims to develop the capacity to generate 2 million kW of renewable energy as early as possible in the 2030s. We regard this as a key business opportunity. We are using green bonds and green loans to raise the funds needed to achieve this goal. For example, with the Tohoku Electric Power Green Bonds issued in February 2020, we became the first of the former general electric power businesses to issue green bonds. The green bond had an issue amount of JPY5 billion and will mature in 10 years. In addition, the Company issued the "Second Tohoku Electric Power Green Bond" in September 2020, of which the issue amount is JPY10 billion and maturity period is 10 years, and the "Third Tohoku Electric Power Green Bond" in June 2022, of which the issue amount is JPY10 billion and maturity period is 10 years. In addition, in March 2023 we raised funds through a transition loan for the first time. We are also raising funds through green loans, which are restricted to funding eco-friendly projects in areas such as renewable energy development. For example, in February 2023, we raised funds through green loans for use in covering costs related to construction at the Tamagawa No. 2 Hydroelectric Power Plant (located in Yamagata Prefecture; maximum output 14,640 kW), a facility operated by Group member company Tohoku Sustainable & Renewable Energy Co., Inc.*

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)?

Select from:

☑ No

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

12

[Add rows]

(7.79) Has your organization canceled any project-based carbon credits within the reporting year?

Select from:

☑ No

C9. Environmental Performance – Water Security

(9.1) Are there any exclusions from your disclosure of water-related data?

Select from:

☑ No

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

Water withdrawals - total volume

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

We check total water intake by water source.

(9.2.4) Please explain.

As part of our environmental management, each year we total water intake at all business sites and power stations and check total water intake.

Water withdrawals - volumes by source

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

(2) Freshwater (river water): We measure and monitor freshwater use at hydroelectric power stations by constantly monitoring water levels in reservoirs and canals along with power generation output and by converting these measurements to water flows. At nuclear and thermal power stations, water volumes are monitored using integrated flow meters.

(9.2.4) Please explain.

As part of environmental management efforts, we measure and monitor water intake at all power stations and other sites annually. In our businesses, we use (1) freshwater (water purchased from third parties), (2) freshwater (river water), and (3) sea water (cooling water). We monitor various data, including water levels and flows, as part of facility management efforts, and communicate this information to national and local governments and to the public. The scope encompasses all power stations and other sites. We have elected to provide information on measurement frequencies and methods for (2) freshwater (river water), which accounts for a significant volume of water intake. (1) Freshwater (water purchased from third parties) and (3) sea water (cooling water) are monitored as follows: (1) Freshwater (water purchased from third parties): Measurement frequency: Monthly; Measurement method: Ascertained using bills from local governments. (3) Sea water (cooling water): Calculated from sea water pump rated flow and power plant usage rate.

Water withdrawals quality

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

(1) Freshwater (river water): We constantly monitor the turbidity of water used at hydroelectric power stations. We conduct water quality surveying about once a month for items as specified in water use regulations, etc.

(9.2.4) Please explain.

The scope encompasses all power stations and other sites. Regarding measurement frequencies and methods, we provide water use at hydroelectric power stations under (1) freshwater (river water). In the catchments of (pumping-up) hydroelectric power stations, operations are based on constant measurements of turbidity obtained with turbidimeters. We strive to preserve water quality through monthly water quality surveys of the parameters stipulated as subject to frequent measurement based on water use regulations and other rules and regulations.

Other (1) freshwater (river water) used as industrial water and (2) sea water (cooling water) are monitored as follows:

(1) Freshwater (river water)

Measurement frequency: Daily

Measurement method: Water used as industrial water by thermal power stations and other facilities is monitored daily based on the results of measurement by local governments (turbidity, pH, temperature, hardness, etc.).

Description: Industrial water from fresh river water or water supplied by waterworks services (sourced mainly from rivers) is used as plant water for power generation *or other purposes. We check its water quality (pH, turbidity, hardness components, etc.) for this purpose, using sources such as instrument readings and results of analysis published by local governments.*

(2) Sea water (cooling water)

Measurement frequency: Constant

Measurement method: Intake and discharge sea water temperature is constantly measured and monitored using thermometers.

Description: At nuclear and thermal power stations, based on arrangements with local governments, we constantly monitor seawater temperature at water intake and discharge points using thermometers.

Water discharges - total volume

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

This is monitored by totaling water discharge by discharge destination.

(9.2.4) Please explain.

As part of our environmental management efforts, we calculate total water discharge at all power stations and other sites, as our total water discharge. Total water discharge is managed using daily, monthly, and annual reports at all power stations and other sites.

Water discharges - volumes by destination

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

(1) Fresh groundwater (river water): Water intake at hydroelectric power stations is measured based on the assumption that it is identical to discharge of water used to power water turbines in power generation.

(9.2.4) Please explain.

As part of our environmental management efforts, we measure and monitor water discharge at all power stations and other sites. In our businesses, we release water through (1) fresh groundwater (river water), (2) sea water, and (3) third-party discharge. We check and ascertain data such as water levels, flows, and purchased volumes as part of facility management, and for notification to national and local governments and disclosure purposes.
Under measurement frequency and methods, we describe typical information for (1) fresh groundwater (river water), which accounts for the largest volume of water discharge.
(2) Sea water and (3) third-party discharge are outlined below:
(2) Sea water
This refers to water discharged after plant processing and cooling water at nuclear and thermal power stations. Each is measured as described below:
(i) Plant processing water
Measurement frequency: Constant

Measurement method: Measured using flow meters and discharge tank water level gauges

(ii) Cooling water

Measurement frequency: Annual

Measurement method: Water discharge is monitored using water intake, since this water is released without any consumption.

(3) Third-party discharge

This mainly refers to tap water used at and discharged from business sites.

Measurement frequency: Monthly

Measurement method: Monitored based on the assumption that it is identical to water volume purchased from the waterworks system.

Water discharges - volumes by treatment method

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

For river water used by hydroelectric power stations, which is released without any consumption, intake and outtake are identical. These values are measured constantly (hourly).

(9.2.4) Please explain.

Water discharge is processed differently by water use method. We employ tertiary treatment or no processing. Regarding measurement frequencies and methods, for *unprocessed discharge, we provide river water discharge at hydroelectric power stations that release significant volumes of water, as typical examples. These use water only as potential energy to rotate turbines, returning it to the river unprocessed. Other processing methods include no processing (sea water) and tertiary treatment. Details are provided below:*

Unprocessed discharge (sea water)

This refers to sea water used as cooling water at nuclear and thermal power stations. It is used to cool turbine steam and is released unprocessed to the sea after thermal exchange, with no consumption.

Measurement frequency: Annual

Measurement method: Water discharge is monitored using water intake, since this water is released without any consumption.

Tertiary-treated discharge

Plant water used at nuclear and thermal power stations is released after processing based on the Water Pollution Prevention Act and agreements with local governments.

Measurement frequency: Constant

Measurement method: Measured using flow meters and discharge tank water level gauges.

Tap water used at each site is released into the public sewer system.

Water discharge quality - by standard effluent parameters

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

These are measured and monitored as described below, based on laws, regulations, agreements with local governments, and other provisions. Constant monitoring is conducted using instruments that satisfy national standards.

(9.2.4) Please explain.

The scope encompasses nuclear and thermal power stations, which use heat and potential energy only and use water for purposes other than tap water.
(1) Nuclear power stations
We measure substances that are potentially harmful to water ecosystems or human health using analytical and other equipment based on manuals conforming to the Water Pollution Prevention Act, the Reactor Regulation Act, and agreements with local governments. This is conducted using the methods and frequencies specified for each measurement item. Management efforts seek to ensure that base levels are not exceeded, and we report the results of measurement to local governments.
(2) Thermal power stations
We measure substances that are potentially harmful to water ecosystems or human health using analytical and other equipment based on manuals conforming to the Water Pollution Prevention Act and agreements with local governments on a monthly basis. Management efforts seek to ensure that base levels are not exceeded, and we report the results of measurement to local governments.
We have entered constant monitoring by permanently deployed instruments as a typical example of monitoring frequencies and methods.
We also undertake measurements through manual analysis periodically, based on in-house standards and manuals conforming to Japanese regulations and standards.
Some examples of subjects of monitoring are provided below:
pH, oil film (constant), ss, n-hexane (once a month), COD (once a year)

Water discharge quality - emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

Under the Act on the Assessment Releases of Specified Chemical Substances in the Environment, we ascertain volumes released into water using the calculation methods specified by the Japanese government and related agencies.
At nuclear and thermal power stations, we measure harmful substances as prescribed by laws and regulations at least once a year, mainly through manual analysis.
This manual analysis is conducted based on in-house standards and manuals conforming to Japanese regulations and standards.

(9.2.4) Please explain.

For all our power stations and other sites, we disclose information on harmful substances and other substances identified under the Act on the Assessment Releases of Specified Chemical Substances in the Environment as part of our environmental management, and individual sites report any excesses over regular levels to their local governments.
We employ results of measurement of harmful substances at our nuclear and thermal power stations in management efforts to ensure that base levels are not exceeded, and we report the results of measurement to local governments and attain community understanding.

Water discharge quality - temperature

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

Nuclear and thermal power stations measure and monitor the temperature of seawater discharge constantly.

(9.2.4) Please explain.

Facilities subject to these efforts include nuclear and thermal power stations that use seawater as cooling water.
While they operate, nuclear and thermal power plants use sea water to cool the steam used in steam turbines through thermal exchange. We monitor and manage water discharge temperatures to ensure that any increases in temperature do not exceed the levels agreed upon with local governments.

Water consumption - total volume

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Yearly

(9.2.3) Method of measurement

We measure differences between total water intake and total water discharge.

(9.2.4) Please explain.

While we do ascertain our current water use, we do not use this information in environmental management. We plan to make progress in areas such as disclosure of *water use within the coming few years.*

Water recycled/reused

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

We use permanently deployed instruments to check water circulation and supply levels and estimate this using the difference between the two.

(9.2.4) Please explain.

At coal-fired power plants, which use particularly high volumes of freshwater, we reuse water through recirculation and reuse some discharge water on the plant site.

The provision of fully-functioning, safely managed WASH services to all workers

(9.2.1) % of sites/facilities/operations

Select from:

☑ 100%

(9.2.2) Frequency of measurement

Select from:

☑ Continuously

(9.2.3) Method of measurement

We supply all employees with tap water whose safety and sanitation have been checked, supplied by public waterworks bureaus.

(9.2.4) Please explain.

We consider it important to provide fully managed water, sanitation, and hygiene (WASH) services to all employees in all of our business sites. We constantly check for any abnormalities based on information concerning water quality and other topics provided by waterworks bureaus and other agencies and on results of inspections.

[Fixed row]

(9.2.1) For your hydropower operations, what proportion of the following water aspects are regularly measured and monitored?

Fulfilment of downstream environmental flows

(9.2.1.1) % of sites/facilities/operations measured and monitored

Select from:

☑ 100%

(9.2.1.2) Please explain.

Based on the requirements specified in permits for use of river water in power generation and the Japanese government's power generation guidelines (on maintaining *steady river flows when renewing rights to use water for power generation), we discharge sufficient volumes of water to maintain steady river flows downstream. We measure and monitor flows constantly to ensure steady river flows.*

Sediment loading

(9.2.1.1) % of sites/facilities/operations measured and monitored

Select from:

☑ 100%

(9.2.1.2) Please explain.

We also undertake annual depth measurements and dredging for sedimentation in reservoirs in a regular basis at hydroelectric power stations. We dredge periodically depending on sedimentation conditions.

Other; please specify

(9.2.1.1) % of sites/facilities/operations measured and monitored

Select from:

☑ Not relevant

(9.2.1.2) Please explain.

No other relevant items.

[Fixed row]

(9.2.2) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare with the previous reporting year, and how are they forecasted to change?

Total withdrawals

(9.2.2.1) Volume (megaliters/year)

108564705

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.2.4) Five-year forecast

Select from:

☑ About the same

(9.2.2.5) Primary reason for forecast

Select from:

☑ Expansion/contraction of business activities

(9.2.2.6) Please explain.

While we have included sea water (cooling water), which was not recorded last year, it accounts for less than 10% of total water use, and total intake is largely constant. Since power generation processes are unlikely to change, we expect these figures to remain relatively constant, aside from fluctuations due to volumes of power generated and inspections at nuclear and thermal power stations.

Total discharges

(9.2.2.1) Volume (megaliters/year)

108557089

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Maximum feasible reduction in water use volume already achieved

(9.2.2.4) Five-year forecast

Select from:

☑ About the same

(9.2.2.5) Primary reason for forecast

Select from:

☑ Expansion/contraction of business activities

(9.2.2.6) Please explain.

While we have included sea water (cooling water), which was not recorded last year, it accounts for less than 10% of total water use, and total intake is largely constant. Since power generation processes are unlikely to change, we expect these figures to remain relatively constant, aside from fluctuations due to volumes of power generated and inspections at nuclear and thermal power stations.

Total consumption

(9.2.2.1) Volume (megaliters/year)

7616

(9.2.2.2) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.2.4) Five-year forecast

Select from:

☑ About the same

(9.2.2.5) Primary reason for forecast

Select from:

☑ Expansion/contraction of business activities

(9.2.2.6) Please explain.

Since power generation processes are unlikely to change, we expect these figures to remain relatively constant, aside from fluctuations due to volumes of power generated and inspections at nuclear and thermal power stations.

[Fixed row]

(9.2.4) Indicate whether water is withdrawn from areas with water stress, provide the volume, how it compares with the previous reporting year, and how it is forecasted to change.

(9.2.4.1) Withdrawals are from areas with water stress

Select from:

☑ No

(9.2.4.8) Identification tool

Select all that apply

☑ WRI Aqueduct

(9.2.4.9) Please explain.

Our nuclear, thermal, and hydroelectric power stations are located in the prefectures of Aomori, Iwate, Akita, Miyagi, Yamagata, Fukushima, and Niigata. We check water stress in these regions. We use the WRI Water Aqueduct water risk evaluation tool to check water stress. According to the Water Aqueduct evaluation, the overall water risk in all regions where our power stations are located is Low or Low-Medium. Accordingly, we believe that we are not taking in water from regions under water stress.

[Fixed row]

(9.2.7) Provide total water withdrawal data by source.

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

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

102657598

(9.2.7.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.7.5) Please explain.

At hydroelectric power stations, we use river water to power water turbines in the power generation process by withdrawing reservoir water, via pipes or other facilities, from our dams built on rivers or from dams and other facilities managed by local governments. We monitor water levels in reservoirs and canals, along with power *generation output and convert these measurements to water flows.*

Water from nearby rivers or water supplied by waterworks services (sourced mainly from rivers) is used as industrial plant water to operate steam turbines at nuclear and thermal power stations. Intake volumes are monitored using integrated flow meters.

Brackish surface water/Seawater

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

5906778

(9.2.7.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.7.5) Please explain.

Sea water intake is used as cooling water at nuclear and thermal power stations and released after thermal exchange.

Groundwater - renewable

(9.2.7.1) Relevance

Select from:

☑ Not relevant

(9.2.7.5) Please explain.

We operate no equipment that uses renewable groundwater.

Groundwater - non-renewable

(9.2.7.1) Relevance

Select from:

☑ Not relevant

(9.2.7.5) Please explain.

We operate no equipment that uses non-renewable groundwater.

Produced/Entrained water

(9.2.7.1) Relevance

Select from:

☑ Not relevant

(9.2.7.5) Please explain.

We operate no equipment that uses produced/entrained water.

Third party sources

(9.2.7.1) Relevance

Select from:

☑ Relevant

(9.2.7.2) Volume (megaliters/year)

330

(9.2.7.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

☑ Other; please specify: No major change in number of employees

(9.2.7.5) Please explain.

We purchase tap water from local governments for uses such as drinking water at Group business sites. The volume of such water used is identified from monthly invoices and other sources.

[Fixed row]

(9.2.8) Provide total water discharge data by destination.

Fresh surface water

(9.2.8.1) Relevance

Select from:

☑ Relevant

(9.2.8.2) Volume (megaliters/year)

102647018

(9.2.8.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

☑ Other; please specify: Power generation processes are unlikely to change, aside from fluctuations due to volumes of power generated and inspections conducted.

(9.2.8.5) Please explain.

All water withdrawn from rivers at hydroelectric power stations is used in the power generation process and returned to rivers as is. For this reason, this type of water *is relevant to our businesses. Since the entire water intake is released, discharge and intake volumes are identical. We measure and monitor intake by monitoring water levels in reservoirs and canals along with power generation output and converting these measurements to water flows.*

Brackish surface water/seawater

(9.2.8.1) Relevance

Select from:

☑ Relevant

(9.2.8.2) Volume (megaliters/year)

5909741

(9.2.8.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.8.5) Please explain.

Water from nearby rivers or water supplied by waterworks services (sourced mainly from rivers) is used as industrial plant water at nuclear and thermal power stations. Since treated surplus water from these sources is discharged to the sea, this type of water is relevant to our businesses. Discharge volumes are monitored based on flow meter readings and discharge tank water levels.

Groundwater

(9.2.8.1) Relevance

Select from:

☑ Not relevant

(9.2.8.5) Please explain.

None of our businesses discharges water underground.

Third-party destinations

(9.2.8.1) Relevance

Select from:

☑ Relevant

(9.2.8.2) Volume (megaliters/year)

330

(9.2.8.3) Comparison with previous reporting year

Select from:

☑ About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

☑ Other; please specify: No major change in number of employees

(9.2.8.5) Please explain.

We purchase tap water from local governments and other providers for various purposes, including use as drinking water at business sites and other facilities. Water generated by or remaining from these uses is discharged to public sewer systems. Water discharged is estimated as the same volume as that of purchased tap water.
[Fixed row]

(9.2.9) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

Tertiary treatment (advanced treatment)

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Relevant

(9.2.9.2) Volume (megaliters/year)

2964

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

☑ About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

☑ 100%

(9.2.9.6) Please explain.

Thermal power stations discharge water. Plant water used to drive steam turbines is eventually recycled and discharged to the sea. Since it contains impurities and other contamination, in compliance with the Water Pollution Prevention Act and pollution prevention agreements with local governments, this water discharge is subjected to tertiary treatment to meet water discharge standards in various ways, including coagulating sedimentation, filtration, and purification. In general, we measure and monitor water quality based on pH, COD, SS, and other established parameters. These discharge volumes are continually monitored based on flow meter readings and discharge tank water levels.

Nuclear power stations discharge water. Since it contains impurities and other contamination, in compliance with the Water Pollution Prevention Act, the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, and other applicable laws and regulations, this water discharge is treated by a combination of various methods, including filtration, desalination, and evaporative concentration, based on the quality of the water discharged. In general, we measure and monitor water quality based on pH, COD, SS, and other established parameters. These discharge volumes are continually monitored based on flow meter readings and discharge tank water levels.

Secondary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Not relevant

(9.2.9.6) Please explain.

All water withdrawn from rivers at hydroelectric power stations is used in the power generation process and returned to rivers as is, since the power generation process has no effect on water quality. Thermal power stations and nuclear power stations discharge water arising from their operations that contains impurities and other contamination. In compliance with the Water Pollution Prevention Act, the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, and pollution prevention agreements with local governments, this water discharge is subjected to tertiary treatment. This type of water does not pertain to our businesses because we employ either no treatment or tertiary or later treatment in our treatment of discharged water and do not subject any discharge to secondary treatment only.

Primary treatment only

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Not relevant

(9.2.9.6) Please explain.

All water withdrawn from rivers at hydroelectric power stations is used in the power generation process and returned to rivers as is, since the power generation process has no effect on water quality. Thermal power stations and nuclear power stations discharge water arising from their operations that contains impurities and other contamination. In compliance with the Water Pollution Prevention Act, the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, and pollution prevention agreements with local governments, this water discharge is subjected to tertiary treatment. This type of water does not pertain to our businesses because we employ either no treatment or tertiary or later treatment in our treatment of discharged water and do not subject any discharge to primary treatment only.

Discharge to the natural environment without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Relevant

(9.2.9.2) Volume (megaliters/year)

108553796

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

☑ About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

☑ Expansion/contraction of business activities

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

☑ 100%

(9.2.9.6) Please explain.

All water withdrawn from rivers at hydroelectric power stations is used in the power generation process. Since the power generation process has no effect on water quality, discharge and intake volumes are identical. We measure intake by monitoring water levels in reservoirs and canals along with power generation output and converting these measurements to water flows.
While nuclear power stations do withdraw sea water as cooling water for use in condensers and discharge the water as is, the water used in this way is not contaminated by chemical or radioactive substances. None of the water is consumed and the intake volume is managed when discharging industrial water into the sea. Since it is not subjected to constant measurement and monitoring, it is exempt from reporting requirements. Although intake and discharge volumes are not continually monitored, we measure and record water temperature at water intake and discharge points based on safety agreements and other arrangements with local governments.
Similarly, while thermal power stations do withdraw and discharge sea water as cooling water for use in condensers, the water quality remains unchanged during the

power generation process. In addition, none of the water is consumed and the intake volume is managed when discharging industrial water into the sea. Although intake and discharge volumes are not continually monitored, we measure and record water temperature at water intake and discharge points constantly based on pollution prevention agreements and other arrangements with local governments.

Discharge to a third party without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Relevant

(9.2.9.2) Volume (megaliters/year)

330

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

☑ About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

☑ Other; please specify: No major change in number of employees

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

☑ 100%

(9.2.9.6) Please explain.

We purchase tap water from local governments and other providers for various purposes, including use as drinking water at business sites and other facilities. Water generated by or remaining from these uses is discharged to public sewer systems after use. Water discharged is estimated as the same volume as that of purchased tap water. The volume purchased from third parties (e.g., local governments) is measured and monitored once a month based on invoices. We are not aware of the highest level of treatment by the third parties (public sewers) at the discharge destinations.

Other

(9.2.9.1) Relevance of treatment level to discharge

Select from:

☑ Not relevant

(9.2.9.6) Please explain.

No other relevant treatment methods.
[Fixed row]

(9.2.10) Provide details of your organization’s emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

(9.2.10.1) Emissions to water in the reporting year (metric tons)

0

(9.2.10.2) Categories of substances included

Select all that apply

☑ Nitrates

☑ Phosphates

☑ Pesticides

☑ Priority substances listed under the EU Water Framework Directive

(9.2.10.3) List the specific substances included

No subject substances were emitted.

(9.2.10.4) Please explain.

These are ascertained based on periodic analysis and Japan’s PRTR Act. No such emissions occurred in FY2022.

[Fixed row]

(9.3) In your direct operations and upstream value chain, what is the number of facilities where you have identified substantive water-related dependencies, impacts, risks, and opportunities?

Direct operations

(9.3.1) Identification of facilities in the value chain stage

Select from:

☑ Yes. We identified facilities with water-related dependencies, impacts, risks, or opportunities in assessment of this stage of the value chain.

(9.3.2) Total number of facilities identified

214

(9.3.3) % of facilities in direct operations that this represents

Select from:

☑ 76-99

(9.3.4) Please explain.

Facilities with water-related dependencies, impacts, risks, or opportunities were identified in assessment of hydroelectric, thermal, and nuclear power stations, which are facilities related to our power generation business, based on the TNFD.

Value chain (upstream)

(9.3.1) Identification of facilities in the value chain stage

Select from:

☑ No. We have not assessed stages of the value chain with regard to facilities having water-related dependencies, impacts, risks, or opportunities, but we plan to conduct such assessment within the next two years.

(9.3.4) Please explain.

We plan to identify dependencies, impacts, risks, and opportunities related to matters such as water used in fuel extraction and other purposes and ballast water in fuel transport vessels.

[Fixed row]

(9.3.1) For each facility referenced in 9.3, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Row 1

(9.3.1.1) Facility reference number

Select from:

☑ Facility 1

(9.3.1.2) Facility name (optional)

Noshiro Thermal Power Station

(9.3.1.3) Value chain stage

Select from:

☑ Direct operations

(9.3.1.4) Dependencies, impacts, risks, and/or opportunities identified at this facility

Select all that apply

☑ Dependencies

☑ Impacts

☑ Risks

☑ Opportunities

(9.3.1.5) Withdrawals or discharges in the reporting year

Select from:

☑ Yes, water intake and water discharge

(9.3.1.7) Country/Area & River basin

Japan

☑ Other; please specify: Yoneshiro River

(9.3.1.8) Latitude

40.191

(9.3.1.9) Longitude

139.994

(9.3.1.10) Located in area with water stress

Select from:

☑ No

(9.3.1.11) Primary power generation source for your electricity generation at this facility

Select from:

☑ Coal - Hard

(9.3.1.13) Total water withdrawals at this facility (megaliters)

1983661

(9.3.1.14) Comparison of total withdrawals with previous reporting year

Select from:

☑ About the same

(9.3.1.15) Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

1983661

(9.3.1.16) Withdrawals from brackish surface water/seawater

1983661

(9.3.1.17) Withdrawals from groundwater - renewable

0

(9.3.1.18) Withdrawals from groundwater - non-renewable

0

(9.3.1.19) Withdrawals from produced/entrained water

0

(9.3.1.20) Withdrawals from third party sources

15.63

(9.3.1.21) Total water discharges at this facility (megaliters)

1983661

(9.3.1.22) Comparison of total discharges with previous reporting year

Select from:

☑ About the same

(9.3.1.23) Discharges to fresh surface water

0

(9.3.1.24) Discharges to brackish surface water/seawater

1983661

(9.3.1.25) Discharges to groundwater

0

(9.3.1.26) Discharges to third party destinations

0

(9.3.1.27) Total water consumption at this facility (megaliters)

10

(9.3.1.28) Comparison of total consumption with previous reporting year

Select from:

☑ About the same

(9.3.1.29) Please explain.

Although it may vary with factors such as thermal power generation output and whether inspections are conducted, total water use is expected to remain largely unchanged because power generation processes remain unchanged.
[Add rows]

(9.3.2) For the facilities in your direct operations referenced in 9.3.1, what proportion of water accounting data has been third party verified?

Water withdrawals - total volume

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, we use freshwater (river water, water purchased from third parties) and sea water (cooling water). We measure and monitor water withdrawn using properly calibrated water level and flow meters and based on the purchased volume, as part of facility management efforts.

Water withdrawals: volumes by source

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, we use freshwater (river water, water purchased from third parties) and sea water (cooling water). We measure and monitor water withdrawn using properly calibrated water level and flow meters and based on the purchased volume, as part of facility management efforts.

Water withdrawals quality - by standard water-quality parameters

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

The water used in our businesses is measured and monitored continually using properly calibrated water-quality monitoring instruments and thermometers.

Water discharges - total volume

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

As part of our environmental management efforts, we calculate total water discharge at all power stations and other sites, as our total water discharge. Total water discharge is managed appropriately using daily, monthly, and annual reports at all power stations and other sites.

Water discharges - volumes by destination

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, we use freshwater (river water, water purchased from third parties) and sea water (cooling water). We measure and monitor water discharge using properly calibrated water level and flow meters and based on the purchased volume as part of facility management efforts.

Water discharges - volumes by final treatment level

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, we use freshwater (river water, water purchased from third parties) and sea water (cooling water). We measure and monitor water discharge using properly calibrated water level and flow meters and based on the purchased volume as part of facility management efforts.

Water discharge quality - by standard effluent parameters

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, water discharged from power generation facility sites is analyzed by a measurement certification agency and reported to local governments and others. The water also is measured and monitored continually using properly calibrated water-quality monitoring instruments and thermometers.

Water consumption - total volume

(9.3.2.1) % verified

Select from:

☑ Not verified

(9.3.2.3) Please explain.

In our businesses, we use freshwater (river water, water purchased from third parties) and sea water (cooling water). We measure and monitor water discharge, including water flows, using properly calibrated water level and flow meters, as part of facility management efforts.
[Fixed row]

(9.5) Provide a figure for your organization's total water withdrawal efficiency.

	Revenue (currency)	Total water withdrawal efficiency	Anticipated forward trend
	1566203000000	*14426.45*	*Although it may vary with factors such as nuclear or thermal power station output and whether inspections are conducted, it is expected to remain largely unchanged in the future because power generation processes will remain unchanged.*

[Fixed row]

(9.7) Do you calculate water intensity for your electricity generation activities?

Select from:

☑ Yes

(9.7.1) Provide the following intensity information associated with your electricity generation activities.

Row 1

(9.7.1.1) Water intensity value (m3/denominator)

1873.95

(9.7.1.2) Numerator: water aspect

Select from:

☑ Total water intake

(9.7.1.3) Denominator

Select from:

☑ MWh

(9.7.1.4) Comparison with previous reporting year

Select from:

☑ About the same

(9.7.1.5) Please explain.

As an indicator of water intensity, we measure and manage total water intake divided by the volume of water used in the power generation process. This value can be used to ascertain the volume of water used for the given power volume generated by the Group. We believe this contributes to an improved understanding and the promotion of efficient use of water resources. Specifically, by improving generating efficiency through new construction and renovation of hydroelectric power stations, we can generate more electricity using the same volume of water and suppress fuel consumption for thermal power generation.
We expect no major changes in our power generation processes and intend to continue making the most of the abundant hydroelectric power sources available in the Tohoku and Niigata regions. In light of considerations such as improvements in the power generation efficiency of our facilities, we expect water intensity to decrease gradually in the future, except for fluctuations due to volumes of power generated and inspections.
[Add rows]

(9.13) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances	Comment
	Select from: ☑ No	*Our product of electricity contains no harmful substances.*

[Fixed row]

(9.14) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Please explain.
	Select from: ☑ Yes	*Our newest coal-fired power station uses technology that requires no use of water on the clinker attached to the boiler.*	*Our newest coal-fired power station uses air cooling to help process clinker within the boiler (dry method). This approach uses less water than traditional wet processing methods.*

[Fixed row]

(9.15) Do you have any water-related targets?

Select from:

☑ Yes

(9.15.1) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

	Target set in this category	Please explain.
Water pollution	*Select from:* ☑ Yes	*Enter rich text [up to 1000 characters].*
Water intake	*Select from:*	*Enter rich text [up to 1000 characters].*

	Target set in this category	Please explain.
	☑ Yes	
WASH services	*Select from:* ☑ No. We do not plan to do so within the next two years.	*Immaterial to the company because its use is far lower than in hydroelectric or thermal power generation*
Other	*Select from:* ☑ No. We do not plan to do so within the next two years.	*None in particular*

[Fixed row]

(9.15.2) Provide details of your water-related targets and the progress made.

Row 1

(9.15.2.1) Target reference number

Select from:

☑ Target 1

(9.15.2.2) Target coverage

Select from:

☑ Business activities

(9.15.2.3) Category of target & Quantitative metric

Water withdrawals

☑ Describe any other water pollution specifically**:** Sea water discharge controlled to temperatures at or below standard values

(9.15.2.4) Date target was set

03/31/1977

(9.15.2.5) End date of base year

03/30/2023

(9.15.2.6) Base year figure

7

(9.15.2.7) End date of target year

03/30/2023

(9.15.2.8) Target year figure

7

(9.15.2.9) Reporting year figure

7

(9.15.2.10) Target status in reporting year

Select from:

☑ Achieved and maintained

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

☑ Other; please specify: Pollution prevention agreements

(9.15.2.13) Explain target coverage and identify any exclusions.

Applies to temperature differences on sea water discharged after intake and use as cooling water for condensers at thermal power generation facilities.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

Differences in sea water temperature at intake and discharge are measured and recorded continuously using water thermometers, based on pollution prevention agreements and other arrangements with local governments.

(9.15.2.16) Further details of target

Thermal power stations intake and discharge sea water for use as cooling water for condensers. Based on pollution prevention agreements and other arrangements with local governments, we strive to keep the difference in sea water temperature between intake and discharge to no more than seven degrees.

Row 2

(9.15.2.1) Target reference number

Select from:

☑ Target 2

(9.15.2.2) Target coverage

Select from:

☑ Business activities

(9.15.2.3) Category of target & Quantitative metric

Water withdrawals

☑ Reducing water intake per unit of production

(9.15.2.4) Date target was set

03/12/2024

(9.15.2.5) End date of base year

10/31/1957

(9.15.2.6) Base year figure

2.47

(9.15.2.7) End date of target year

11/29/2031

(9.15.2.8) Target year figure

1.91

(9.15.2.9) Reporting year figure

2.47

(9.15.2.10) Target status in reporting year

Select from:

☑ New

(9.15.2.11) % of target achieved relative to base year

0

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

☑ None; consistency not assessed

(9.15.2.13) Explain target coverage and identify any exclusions.

The scope of the target is decommissioning of the Kamimatsuzawa Power Station and use of some canals and other existing facilities for the planned Shin-Kamimatsuzawa Power Station.

(9.15.2.14) Plan for achieving target, and progress made to the end of the reporting year

Full construction of the power station, including building the generating equipment, is planned for FY2025.

(9.15.2.16) Further details of target

We plan to decommission the Kamimatsuzawa Thermal Power Station and build the new, highly efficient Shin-Kamimatsuzawa Power Station to replace it. The new plant is planned to have approximately twice the maximum output of the previous facility. This will make it possible to reduce water use per output (m3/kWh) by about 20%.
[Add rows]

C10. Environmental Performance – Plastics

(10.1) Do you have plastics-related targets, and if so what type?

(10.1.1) Targets in place

Select from:

☑ Yes

(10.1.2) Target type and metric

· **End-of-life (EOL) management**

☑ Reducing the percentage of inappropriately managed plastic waste

(10.1.3) Please explain.

In addition to choosing products that use less plastic or alternative products where possible, we target a minimum waste plastic recycling rate of 90%.

[Fixed row]

C11. Environmental Performance - Biodiversity

(11.3) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?
	Select from: ☑ No

[Fixed row]

C13. Additional Information and Final Approval

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?

	Other environmental information included in your CDP response is verified and/or assured by a third party.	Primary reason why other environmental information included in your CDP response is not verified and/or assured by a third party	Explain why other environmental information included in your CDP response is not verified and/or assured by a third party.
	Select from: ☑ No. We do not plan to obtain third party verification/assurance for other environmental information in the CDP responses within the next two years.	*Select from:* ☑ Not a strategic priority at this time	*Our strategic priority is to reduce GHG emissions. We have obtained assurance regarding GHG emissions reduction results.*

[Fixed row]

(13.3) Provide the following information for the person that has signed off (approved) your CDP response.

(13.3.1) Job title

Managing Executive Officer/General Manager, Corporate Strategy Division

(13.3.2) Corresponding job category

Select from:

☑ Other top management

[Fixed row]