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ENVIRONMENT

- ◆ Environmental Management
- ◆ Climate Change
- ◆ Biodiversity
- ◆ Environmentally Friendly Business
- ◆ Resource Circulation
- ◆ Pollution Prevention
- ◆ Water Resources



Environmental Management

ENVIRONMENT



► Policy and Concept

● Environmental policy

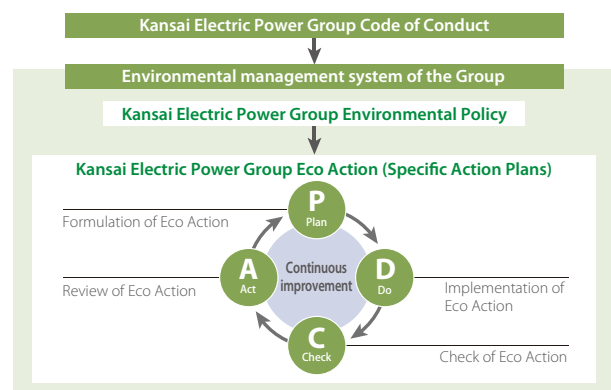
As a responsible energy business deeply involved with the environment, we recognize the importance of addressing various environmental issues, such as climate change, resource recycling promotion and local environmental conservation. We are also committed to reducing the environmental burden and risks related to our business activities in line with the Kansai Electric Power Group Code of Conduct, which aims to proactively contribute to building a better environment and a sustainable society by providing environmentally friendly products and services. Moreover, in line with our conduct standards for individuals, we fully recognize the significance of environmental conservation, pay due consideration to the environmental impact of our business operations and support environmentally friendly practices with an emphasis on resource and energy conservation.

The Kansai Electric Power Group Environmental Policy sets the direction of our medium- to long-term environmental management plans, featuring seven approaches to address climate change, each of which is being promoted. The Environmental Policy is subject to review and examination by the Sustainability Promotion Council as necessary, and the results of which are communicated to our employees as well as to employees of group companies.

● Environmental management system

Our Group has an environmental management system in place, incorporating the ISO 14001 guidelines, in order to promote measures for building a better environment and manage environmental risks. Our environmental management system, supervised by top management, is being upgraded through a continuous PDCA cycle—i.e., development of environmental policies; development, implementation, check and review of our Group's Eco Action (an action plan for environmental management); and management review by the Sustainability Promotion Council. Eco Action covers both our business activities and office activities while the latter concerns group-wide efforts to conserve resources and save energy.

◆ Environmental management system of the Kansai Electric Power Group (PDCA cycle)



● Kansai Electric Power Group Environmental Policy

1. Adhering to environmental laws, regulations and related rules

At the Kansai Electric Power Group, we adhere to laws, regulations and other rules related to the environment.

2. Responding to climate change

At the Kansai Electric Power Group, recognizing climate change as a key business challenge, we actively work to reduce greenhouse gas emissions. We pursue the goal of carbon neutrality throughout the entirety of our business activities and support our customers and society in achieving decarbonization by 2050. In addition, we also work to adapt in preparation for the harmful impacts of climate change.

3. Promoting resource circulation

At the Kansai Electric Power Group, recognizing that natural resources are limited, we advance efforts toward resource circulation in society as a whole. Our efforts include reducing natural resource consumption in our business activities, proactively promoting 3R (reduce, reuse, recycle) practices, and providing products and services that contribute to resource circulation.

4. Protecting local community environments

At the Kansai Electric Power Group, we seek to prevent environmental pollution while working to strictly manage and reduce toxic chemicals in our business activities in order to promote the environmental protection of local communities.

5. Conserving biodiversity

At the Kansai Electric Power Group, we recognize the importance of biodiversity. We properly assess, analyze and evaluate the impacts of our business activities and work to preserve biodiversity.

6. Promoting environmental communication

At the Kansai Electric Power Group, we work proactively to raise environmental awareness and disclose information related to the environment.

7. Continuously improving our environmental management systems

At the Kansai Electric Power Group, we seek to continuously improve our environmental management systems in order to increase our environmental performance.

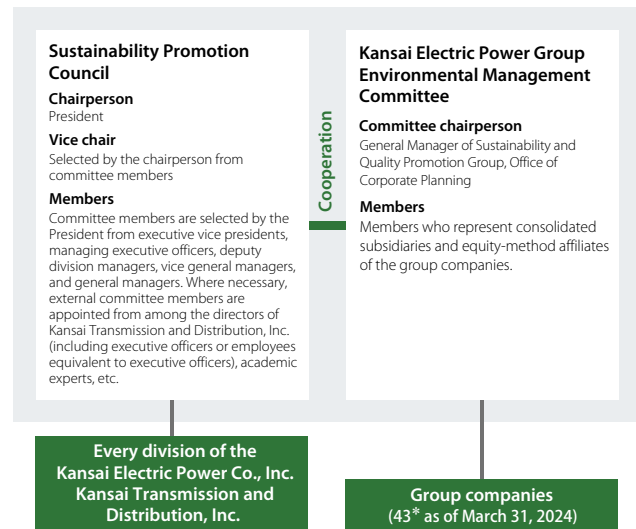


System

Environmental management efforts are ongoing, with the President (as Chief Environmental Management Officer) leading the environmental officers of each division and organization. Meanwhile, the Office of Corporate Planning and the Office of Energy and Environmental Planning are promoting corporate environmental management, utilizing their expertise in environmental issues while providing assistance and guidance to each division (support for independent environmental management).

The Sustainability Promotion Council, which is in principle held twice a year, reviews our environmental management system, the results of which are reflected in the system itself. At the same time, the Kansai Electric Power Group Environmental Management Committee, composed of representatives from consolidated subsidiaries and equity-method affiliates, usually holds an annual meeting to exchange information on issues concerning our Group's environmental management activities.

◆ Environmental management promotion system of the Kansai Electric Power Group



* 43 companies, which are selected from 90 consolidated subsidiaries and 9 equity-method affiliates, excluding those that have low environmental impacts and Kansai Transmission and Distribution, Inc.

Goals

● Environmental Management System (list of Eco Action)

Kansai Electric Power Group Eco Action (results in fiscal 2023 and targets for fiscal 2024)

◆ Responding to climate change

Item	FY 2023		FY 2024
	Targets	Results	Targets
Advancement of efforts to reduce GHG emissions	<ul style="list-style-type: none"> Keep the top spot for the amount of zero-carbon power generation in Japan. Halve CO₂ emissions associated with power generation in Japan in FY 2025 (compared to FY 2013). 	<ul style="list-style-type: none"> Retained the top spot for the amount of zero-carbon power generation in Japan. Reduction of 56% compared to FY 2013 Achieved the target on the left in FY 2023 two years ahead of schedule. (FY 2013 emissions: 48.5 million t-CO ₂ FY 2023 emissions: 21.2 million t-CO ₂)	<ul style="list-style-type: none"> GHG emissions from our business activities (Scope 1, 2) FY 2025: -55%* FY 2030: -70%* GHG emissions through the entire supply chain (Scope 1, 2, 3) FY 2030: -50%* *Compared to FY 2013
Continuation of safe and stable operation of nuclear power plants*1*4	<ul style="list-style-type: none"> Continue safe and stable operation based on the operation plan. (Number of unplanned stoppages: 0, Nuclear power generated: 45.3 billion kWh)	<ul style="list-style-type: none"> Continued safe and stable operations at running plants (Number of unplanned stoppages: 0, Nuclear power generated: 44.25 billion kWh)	<ul style="list-style-type: none"> Continue safe and stable operation of nuclear power plants. (Number of unplanned stoppages: 0, Nuclear power generated: 49.0 billion kWh)
Further development and utilization of renewable energy sources*5	<ul style="list-style-type: none"> Achieve 5 GW scale of new development and 9 GW scale of cumulative capacity in Japan by 2040. 	<ul style="list-style-type: none"> Cumulative capacity of 3.966 GW (as of the end of May) *Including plans before the start of operation	Continued
Maintain and improve thermal efficiency of thermal power plants*1*4	<ul style="list-style-type: none"> Achieve benchmark indicators*2 (A: 1.00, B: 44.3%)	<ul style="list-style-type: none"> Achieved benchmark indicators. 	Continued
Introduction of equipment for GHG emission reduction*3	<ul style="list-style-type: none"> Number of GHG emission reduction equipment units installed Transformer with vegetable oil: 1 unit SF₆ alternative gas appliance: 1 unit 	<ul style="list-style-type: none"> Number of GHG emission reduction equipment units installed Transformer with vegetable oil: 1 unit SF₆ alternative gas appliance: 1 unit 	<ul style="list-style-type: none"> Number of GHG emission reduction equipment units installed Transformer with vegetable oil: 2 units SF₆ alternative gas appliance: 1 unit
Efforts to introduce renewable energy and DER utilization in the grid network	<ul style="list-style-type: none"> Promptly and smoothly promote grid interconnection and facility expansion that correspond to future renewable energy power potential. Upgrade facilities and operations using IoT technology, etc. to introduce renewable energy and maximize DER utilization. 	<ul style="list-style-type: none"> Implemented initiatives as planned to promptly and smoothly promote grid interconnection and facility expansion corresponding to future renewable energy power potential. Conducted studies as planned to upgrade facilities and operations using IoT technology, etc. to introduce renewable energy and maximize DER utilization. 	Continued
Controlling SF ₆ emissions (calendar year basis) (gas recovery rate upon inspection/removal of equipment)	<ul style="list-style-type: none"> 97% (upon inspection) 99% (upon removal) 	<ul style="list-style-type: none"> 99.6% (upon inspection) 98.3% (upon removal) 	Continued

*1 CO₂ emissions per unit power consumed (sold)

*2 Indicators based on the benchmark system of the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy

*3 Targets apply only to Kansai Transmission and Distribution, Inc.

*4 Targets apply only to the Company.

*5 Targets apply to the Company and group companies (excluding Kansai Transmission and Distribution, Inc.)

◆ Conserving biodiversity

Item	FY 2023		FY 2024
	Targets	Results	Targets
Conservation of biodiversity	<ul style="list-style-type: none"> Consideration of biodiversity through business activities 	<ul style="list-style-type: none"> In addition to ongoing surveys, the existing invasive alien species around hydropower plants located along the Kiso River system in Nagano Prefecture are being investigated in accordance with the guidance and recommendations of experts and specialists in order to monitor, conserve, and restore the biodiversity around the plants. 	Continued

◆ Promoting resource circulation

Item	FY 2023		FY 2024
	Targets	Results	Targets
Maintaining industrial waste recycling rate	<ul style="list-style-type: none"> 99.5% 	<ul style="list-style-type: none"> 98.9% 	Continued

• Waste plastic reduction program
 Results in fiscal 2023 of waste plastic volume: 287 tonnes by the Kansai Electric Power Company
 583 tonnes by Kansai Transmission and Distribution
 Targets for fiscal 2024: Reduce and recycle waste plastics to as great a degree as possible.

◆ Protecting local community environments

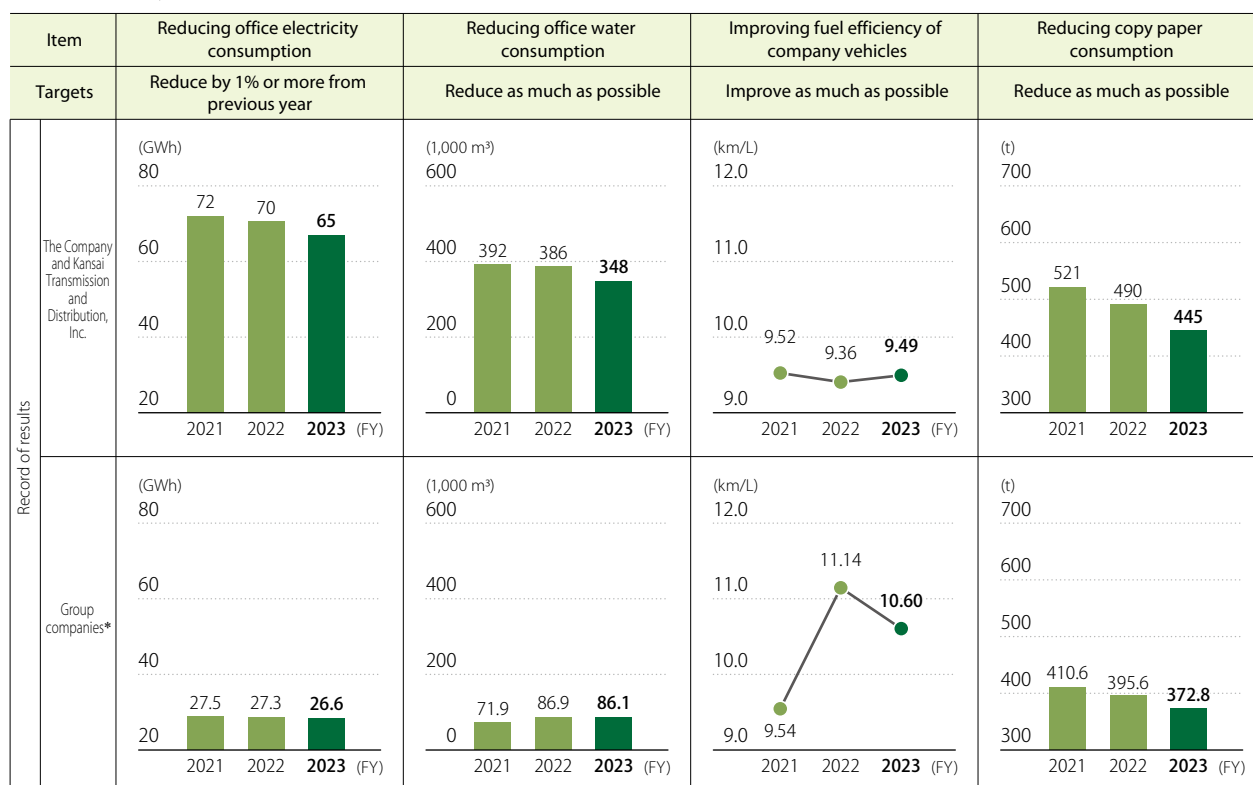
Item	FY 2023		FY 2024
	Targets	Results	Targets
Maintaining sulfur oxide (SOx) and nitrogen oxide (NOx) emission factors*1	SOx	Emission factors: maintain the lowest levels in the world Emissions: strictly adhere to agreed values at each power plant Overall: 0.019 g/kWh Thermal: 0.047 g/kWh All agreed values were met	Continued
	NOx	Overall: 0.036 g/kWh Thermal: 0.086 g/kWh All agreed values were met	
Proper processing of PCB*2 wastes	<ul style="list-style-type: none"> Proceed with certainty to achieve processing before the legal deadline 	<ul style="list-style-type: none"> PCB waste was disposed of according to the disposal period specified in the PCB Special Measures Law. Amount of PCB disposed of: 16,600 tonnes 	Continued
Proper handling of products containing asbestos	<ul style="list-style-type: none"> Proper control and processing in compliance with relevant laws and regulations 	<ul style="list-style-type: none"> Major environmental compliance violations: 3 Inappropriate handling of asbestos-containing industrial waste during demolition of the foundations of power transmission towers (2) Inappropriate handling of asbestos-containing equipment upon transfer (1) The causes of the violations were identified, with preventive measures put in place (revisions to in-house rules to comply with relevant laws and regulations, employee training, etc.). 	Continued

*1 Targets apply only to the Company.

*2 PCB: Poly chlorinated biphenyl, a compound widely used for transformer insulating oil, etc., because of its excellent electrical insulation properties. Being hazardous to ecological systems, however, PCB production/use is generally banned.



◆ Office energy and resource conservation activities (group-wide items)



* Calculated for 36 consolidated subsidiaries (excluding Kansai Transmission and Distribution, Inc.) for which three-year data (FY 2021–2023) is available.

▶ Efforts

● Environmental compliance

Recognizing “strict enforcement of compliance” as part of materiality (important issues), our Group is committed to eliminating any major violations of environmental compliance.

Major violations of environmental compliance reported in fiscal 2021 to 2023 are summarized below.

◆ Major environmental compliance violations

Item	Targets	Results		
		FY 2021	FY 2022	FY 2023
Major environmental compliance violations	0	4	2	7

• Major violations of environmental compliance occurred or reported in each fiscal year are included.

• “Major violations of environmental compliance” are defined as “violations that have impacted (or could impact) the surrounding environment and/or human health.”

• None of these major environmental compliance violations resulted in fines due to penalization.

Major violations of environmental compliance occurred or reported in fiscal 2023 are summarized below.

◆ Summary of major violations of environmental compliance

- Inappropriate handling of low PCB-containing waste during disposal of oil leaking from transformers, etc. (3)
- Inappropriate handling of mercury-containing industrial waste during demolition of electric facilities (1)
- Inappropriate handling of asbestos-containing industrial waste during demolition of the foundations of power transmission towers (2)
- Inappropriate handling of asbestos-containing equipment upon transfer (1)

We are implementing efforts to identify root causes, review in-house rules (observance of relevant laws and regulations), and educate employees to prevent any recurrence of these violations.

In addition, details of these incidents are communicated company-wide and preventive measures are shared between all those concerned to prevent similar violations from taking place at other offices.



● Performance data

● Eco Action-related (non-consolidated)

	Unit	FY 2021	FY 2022	FY 2023
SF ₆ gas emissions	t	0.1	0.1	0.2
• Upon inspection		0.0	0.1	0.1
• Upon removal		0.0	0.0	0.1
SF ₆ gas recovery rate	%			
• Upon inspection		98.3	99.6	99.6
• Upon removal		99.4	99.4	98.3

● Office-related

		Unit	FY 2021	FY 2022	FY 2023
Energy and resource conservation (Office division)	Office electricity consumption* ¹	GWh	72	70	65
	Office water consumption* ¹	1,000 m ³	392	386	348
	Fuel efficiency of company vehicles	km/L	9.52	9.36	9.49
	Vehicle fuel consumption (gasoline)	1,000 kL	1.6	1.5	1.4
	Vehicle fuel consumption (diesel oil)		0.8	0.8	0.8
	Copy paper consumption	t	521	490	445
CO ₂ emissions resulting from office activities* ²	Office electricity	10,000 t-CO ₂	2.2	2.9	2.7
	Office water		0.01	0.01	0.01
	Vehicle fuels		0.6	0.6	0.5

*1 The scope of this calculation was reviewed for the actual consumption amounts of office electricity and water.

*2 CO₂ emissions from office activities = amount of electricity consumption × adjusted emission factor
 CO₂ emissions from office water consumption = amount of office water consumption × emission factor
 CO₂ emissions from vehicle use = amount of vehicle fuel consumption × emission factor by type of fuel

● Material-related, revegetation rate (non-consolidated)

		Unit	FY 2021	FY 2022	FY 2023
Amount of limestone used* ¹		1,000 t	71	62	54
Amount of ammonia used* ¹			7	8	6
Revegetation rate* ² (end of fiscal year)	Thermal power plants* ³	%	41	44	41
	Nuclear power plants		66	66	66
	Electric power offices (substations)		28	28	27

*1 Figures representing the Company only

*2 Revegetation rate = (business site revegetation area ÷ business site total area) × 100

*3 The method of calculating the area of forests was revised.

● Rates of conversion to underground transmission and distribution lines*

	Unit	FY 2021	FY 2022	FY 2023
Rate of conversion to underground transmission lines (end of fiscal year)	%	24.6	24.6	24.6
Rate of conversion to underground distribution lines (end of fiscal year)		10.4	10.4	10.4

* Figures representing Kansai Transmission and Distribution, Inc. only



● Environmental conservation cost

We practice and announce the results of environmental accounting for the Company and Kansai Transmission and Distribution, Inc. as well as those for our group companies, where the costs and effects of environmental conservation in our business activities are determined.

◆ FY 2023 assessment

We invested a total of about 9.5 billion yen in environmental conservation, a year-on-year increase of about 1.2 billion yen, while the total cost amounted to about 20.70 billion yen, a year-on-year increase of about 3.51 billion yen, due to a higher radioactive waste processing cost, etc.

◆ Environmental conservation costs (100 million yen)

Category	Investment		Expenses		Major items
	FY 2022	FY 2023	FY 2022	FY 2023	
1. Global environmental conservation costs (CO ₂ reductions, etc.)	0.0	0.0	2.0	3.3	SF ₆ gas recovery
2. Local environmental conservation costs	80	91	40.2	48.5	—
(1) Measuring/monitoring environmental impact	1.4	4.1	12.1	20.2	Radiation control and measurement, air quality concentration measurement, marine area surveys
(2) Pollution control (air pollution, water contamination, oil leakage, etc.)	78.1	86.8	21.6	22.7	Air pollution control measures, water contamination prevention measures
(3) Nature conservation	0	0	6.5	5.6	Revegetation
3. Costs to build a circular economy	3.4	3.6	124.7	145.3	—
(1) Industrial waste processing, recycling	3.3	3.5	55.1	58.7	Industrial waste processing, PCB processing
(2) General waste processing, recycling	0	0	0.0	0.1	Paper recycling
(3) Radioactive waste processing	0	0	69.6	86.6	Low-level radioactive waste processing
(4) Green purchasing	0.0	0.1	0.0	0.0	Research-related work
4. Environmental management costs	0	0	0.6	0.8	Environmental reports
5. R&D costs	0.0	0.0	4.6	8.9	Load leveling, environmental conservation, energy savings and recycling, natural energy
6. Other costs	0	0	0.2	0.2	Research Center repairs
Total	83.0	94.5	171.9	207.0	—
Total capital investment during the period	4,658	4,535	—	—	—
Operating expenses during the period	—	—	40,039	27,371	—

Note: Based on the Environmental Accounting Guidelines 2005 issued by the Ministry of the Environment.

Depreciation is not calculated into expenses.

Composite costs are tallied proportionally by one of three methods: (1) calculation of differences; (2) proportional division based on rational criteria; and (3) proportional division based on criteria of expediency.

Costs involved in generating nuclear power are calculated with the sum of individual measures to protect the environment taken as environmental conservation costs (radiation control and measurement, low-level radioactive waste processing, etc.).

Figures may not add up due to rounding off.



● Effects of environmental conservation

◆ FY 2023 assessment

In fiscal 2023, CO₂ emissions before adjustment showed a decrease from fiscal 2022 levels due to increases in nuclear power plant operating rates, etc. As a leading company in zero-carbon energy, we are committed to operating its nuclear power stations in a safe and stable manner while developing and promoting renewable energy.

SO_x and NO_x emission intensities improved as our coal-fired thermal power plants operated at lower rates, with lower emissions.

◆ Effects of environmental conservation

Category	Item (unit)		FY 2022	FY 2023	Year-on-year change
1. Global environmental conservation	CO ₂ emissions (before adjustment)	(10,000 t-CO ₂)	4,012	3,733	-279
	CO ₂ emission intensity (before adjustment)	(kg-CO ₂ /kWh)	0.360	0.318	-0.042
	CO ₂ emissions (after adjustment)	(10,000 t-CO ₂)	4,689	4,704	+15
	CO ₂ emission intensity (after adjustment)	(kg-CO ₂ /kWh)	0.420	0.401	-0.019
2. Local environmental conservation	Air pollution control				
	SO _x emissions	(t)	2,111	1,905	-206
	SO _x emission intensity	(g/kWh)	0.045	0.047	+0.002
	NO _x emissions	(t)	3,875	3,524	-351
	NO _x emission intensity	(g/kWh)	0.082	0.086	+0.004
	Landscape integration				
	Revegetation area	(1,000 m ²)	3,167	3,140	-27
3. Building a circular economy	Industrial and other waste generated	(1,000 t)	591	557.6	-33
	Recycling rate for industrial waste, etc.	(%)	99.8	98.9	-0.9
	Low-level radioactive waste	(Rods)	-2,245	-2,094	+151.0

Note: CO₂ emissions: including from power supplied by other companies; CO₂ emissions and CO₂ emission intensity: the results for FY 2023 are provisional and the actual CO₂ emission factor will be officially announced by the government in accordance with the Law Concerning the Promotion of the Measures to Cope with Global Warming, etc.; CO₂ emission factor: by the amount of power sold (adjusted CO₂ emissions include environmental value adjustments under the surplus solar power purchasing system and the renewable energy feed-in tariff system in addition to deduction reflecting carbon credits); SO_x and NO_x emissions: only the Company's self-generated power; SO_x and NO_x emission factor: by the amount of power generated by thermal power plants of the Company; Low-level radioactive waste: Net generation (generated amount – reduced amount)

● Economic benefits from environmental conservation measures

◆ FY 2023 assessment

Economic benefits decreased by approximately 0.2 billion yen from the previous year due to decreases in gains from the sale of disused articles, etc.

◆ Economic benefits from environmental conservation measures (100 million yen)

Category		FY 2022	FY 2023	Major items
Revenue	Operating revenues from recycling, etc.	74.3	73.6	Gain on sale of disused articles (recycling)
Cost savings	Cost savings from reuse, recycling, etc.	0.5	0.0	Cost savings from the purchase of recycled items
Total		74.7	73.6	—



● Environmental accounting (group companies)

◆ Environmental accounting of group companies

The environmental accounting applies to 17 group companies that participate in the Kansai Electric Power Group Environmental Management Committee (as of FY 2023).

◆ Environmental conservation costs (thousand yen)

Category	Major items	Investment		Expenses	
		FY 2022	FY 2023	FY 2022	FY 2023
Costs for pollution control	Air, water and soil pollution prevention	8,952	12,092	40,157	33,079
Costs for resource recycling	General and industrial waste processing and recycling	0	0	89,682	87,348
Costs for management activities	Environmental protection efforts, environmental education and related activities at business places and in their neighborhoods	1,632	3,330	30,941	34,852
Costs for community activities	Contributions to and support of environmental protection activities and environmental protection organizations outside the company	0	0	0	0
Costs for research and development	Research and development of products, for example, that contribute to environmental protection	0	0	2,500	0
Costs related to environmental damages	Natural restoration, damage compensation, etc.	0	0	238	226
Other costs		—	—	0	0
Total		10,584	15,422	163,518	155,505

• Only group companies with proven track records that comprise the Kansai Electric Power Group Environmental Management Committee (excluding Kansai Transmission and Distribution, Inc.)

◆ Environmental conservation effects (physical effects)

Category	Item (unit)	FY 2022	FY 2023
Global and local environmental conservation	CO ₂ emissions (10,000 t-CO ₂)	20.5	18.7
	SO _x emissions (t)	0.4	0.3
	NO _x emissions (t)	42.9	15.3
Environmental management	ISO or other external certifications (locations)*	5	4
Building a circular economy	Industrial waste generated (1,000 t)	57.4	52.3

* Cumulative to end of fiscal year

• Only group companies with proven track records that comprise the Kansai Electric Power Group Environmental Management Committee (excluding Kansai Transmission and Distribution, Inc.)

◆ Economic benefits from environmental conservation measures (million yen)

Category	Major items	FY 2022	FY 2023
Revenue	Operating revenues from recycling, etc.	59.0	52.9
Cost savings	Cost savings from reuse, recycling, etc.	0.3	0.3
Total		59.3	53.2

• Only group companies with proven track records that comprise the Kansai Electric Power Group Environmental Management Committee (excluding Kansai Transmission and Distribution, Inc.)



◆ Management of chemical substances (PRTR)

				Releases (t/year)
Name of targeted chemical substance	Unit	FY 2021	FY 2022	FY 2023
Asbestos	t	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
Ethylbenzene		3.2	6.5	7.4
		(3.2)	(6.5)	(7.4)
Xylene		3.7	7.4	8.1
		(3.7)	(7.4)	(8.1)
Styrene		—	1.2	1.3
		(—)	(1.2)	(1.3)
Dioxins		0.061 (mg-TEQ/year)	0.019 (mg-TEQ/year)	0.014 (mg-TEQ/year)
		(0.061 (mg-TEQ/year))	(0.019 (mg-TEQ/year))	(0.014 (mg-TEQ/year))
Trimethylbenzene		—	—	—
		(—)	(—)	(—)
Toluene		3.6	4.7	3.5
		(3.6)	(4.7)	(3.5)
Hydrazine		<0.1	<0.1	<0.1
		(<0.1)	(<0.1)	(<0.1)
Hexane		—	0.2	0.1
		(0.0)	(0.2)	(0.1)
Benzenes		0.1	0.1	<0.1
		(0.1)	(0.1)	(<0.1)
Boron compound		—	0.0	0.0
		(—)	(0.0)	(0.0)
PCB		—	—	—
		(—)	(—)	(—)
Methylnaphthalene		1.1	1.6	1.4
		(1.1)	(1.6)	(1.4)
Bromotrifluoromethane		—	—	—
		(—)	(—)	(—)
Nonylphenoxypolyoxyethanol		—	—	—
		(—)	(—)	(—)
Ethylenediaminetetraacetic acid		—	—	—
		(—)	(—)	(—)
Manganese and its compounds		0.0	—	—
		(0.0)	(—)	(—)
2-Aminoethanol		—	—	<0.1
		(—)	(—)	(<0.1)
2-Methyl-2-propanethiol		—	—	0.0
		(—)	(—)	(0.0)
2,6-Di- <i>tert</i> -butyl- <i>p</i> -cresol		(0.0)	(0.0)	(0.0)
Methanol		(—)	(0.0)	(0.0)
4-Methyl-2-pentanone		(—)	(0.0)	(0.0)
Chloroform		(—)	(—)	(0.0)
Dichloromethane		(—)	(—)	(0.0)
Mercury		(—)	(—)	(0.0)
Tetrachloroethylene		(—)	(0.0)	(—)



Transfers (t/year)

Name of targeted chemical substance	Unit	FY 2021	FY 2022	FY 2023
Asbestos	t	4.2	4.6	136.1
		(4.2)	(4.6)	(136.1)
Ethylbenzene		0.0	<0.1	<0.1
		(0.0)	(<0.1)	(<0.1)
Xylene		0.0	<0.1	<0.1
		(0.0)	(<0.1)	(<0.1)
Styrene		—	0.0	0.0
		(—)	(0.0)	(0.0)
Dioxins		0.0019 (mg-TEQ/year)	0.00055 (mg-TEQ/year)	0.00071 (mg-TEQ/year)
		(0.0019 (mg-TEQ/year))	(0.00055 (mg-TEQ/year))	(0.00071 (mg-TEQ/year))
Trimethylbenzene		—	—	—
		(—)	(—)	(—)
Toluene		0.0	0.1	0.0
		(0.0)	(0.1)	(0.1)
Hydrazine		6.3	2.8	4.1
		(6.3)	(2.8)	(4.1)
Hexane		—	0.0	0.0
		(1.4)	(1.7)	(1.6)
Benzenes		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
Boron compound		—	0.0	2.0
		(—)	(0.0)	(2.0)
PCB		—	—	—
		(—)	(—)	(—)
Methylnaphthalene		0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)
Bromotrifluoromethane		—	—	—
		(—)	(—)	(—)
Nonylphenoxypolyoxyethanol		—	—	—
		(—)	(—)	(—)
Ethylenediaminetetraacetic acid		—	—	—
		(—)	(—)	(—)
Manganese and its compounds		0.3	—	—
		(0.3)	(—)	(—)
2-Aminoethanol		—	—	0.0
		(—)	(—)	(0.0)
2-Methyl-2-propanethiol		—	—	<0.1
		(—)	(—)	(<0.1)
2,6-Di- <i>tert</i> -butyl- <i>p</i> -cresol		(<0.1)	(<0.1)	(<0.1)
Methanol		(—)	(<0.1)	(<0.1)
4-Methyl-2-pentanone		(—)	(<0.1)	(<0.1)
Chloroform		(—)	(—)	(<0.1)
Dichloromethane		(—)	(—)	(<0.1)
Mercury		(—)	(—)	(<0.1)
Tetrachloroethylene		(—)	(<0.1)	(—)

Notes:

- The chart shows total values reported in compliance with the PRTR Law.
- "0" indicates no releases or transfers at targeted business sites.
- "<0.1" indicates less than 0.1 t/year releases, etc.
- "—" indicates no business sites targeted for totaling.
- Significant figures are displayed in two digits.
- The figures in parentheses include the results from the Company, Kansai Transmission and Distribution, Inc., and the majority of group companies.
- Reporting coverage is shown on page 26.



◆ Radioactive substances, radioactive waste (non-consolidated)

			Unit	FY 2021	FY 2022	FY 2023
Gaseous waste	Evaluated dose values for the public in the vicinity of power plants (inert gases)	Mihama Nuclear Power Station	millisievert* ¹	<0.001	<0.001	<0.001
		Takahama Nuclear Power Station		<0.001	<0.001	<0.001
		Ohi Nuclear Power Station		N.D.	N.D.	N.D.
	Evaluated dose values for the public in the vicinity of power plants (iodine)	Mihama Nuclear Power Station	millisievert* ¹	N.D.	N.D.	N.D.
		Takahama Nuclear Power Station		N.D.	N.D.	N.D.
		Ohi Nuclear Power Station		N.D.	N.D.	N.D.
Liquid waste	Evaluated dose values for the public in the vicinity of power plants	Mihama Nuclear Power Station	millisievert* ¹	<0.001	<0.001	<0.001
		Takahama Nuclear Power Station		<0.001	<0.001	<0.001
		Ohi Nuclear Power Station		<0.001	<0.001	<0.001
Radioactive gaseous waste discharged (inert gas)		Mihama Nuclear Power Station	becquerel* ²	500,000,000	170,000,000	280,000,000
		Takahama Nuclear Power Station		747,000,000	89,000,000	1,500,000,000
		Ohi Nuclear Power Station		N.D.	N.D.	N.D.
Radioactive gaseous waste discharged (iodine)		Mihama Nuclear Power Station	becquerel* ²	N.D.	N.D.	N.D.
		Takahama Nuclear Power Station		N.D.	N.D.	N.D.
		Ohi Nuclear Power Station		N.D.	N.D.	N.D.
Radioactive liquid waste discharged (excluding tritium)		Mihama Nuclear Power Station	becquerel* ²	N.D.	N.D.	N.D.
		Takahama Nuclear Power Station		N.D.	N.D.	N.D.
		Ohi Nuclear Power Station		N.D.	N.D.	N.D.
Radioactive liquid waste (tritium) discharged		Mihama Nuclear Power Station	becquerel* ²	1,400,000,000,000	2,800,000,000,000	10,000,000,000,000
		Takahama Nuclear Power Station		20,000,000,000,000	26,000,000,000,000	32,000,000,000,000
		Ohi Nuclear Power Station		34,000,000,000,000	24,000,000,000,000	48,000,000,000,000
Radioactive solid waste generated (200-L drum equivalent)* ⁴			Equivalent in drums	10,089	9,973	12,242
	• Mihama Nuclear Power Station			2,469	1,918	2,141
	• Takahama Nuclear Power Station			4,905	4,695	5,807
	• Ohi Nuclear Power Station			2,715	3,360	4,294
Radioactive solid waste reduced (200-L drum equivalent)* ⁵			Equivalent in drums	11,666	12,218	14,336
	• Mihama Nuclear Power Station			2,196	2,195	2,227
	• Takahama Nuclear Power Station			5,451	6,336	6,817
	• Ohi Nuclear Power Station			4,019	3,687	5,292
Amount of solid radioactive waste generated – Amount of solid radioactive waste reduced (200-L drum equivalent)* ⁶			Equivalent in drums	-1,577	-2,245	-2,094
	• Mihama Nuclear Power Station			273	-277	-86
	• Takahama Nuclear Power Station			-546	-1,641	-1010
	• Ohi Nuclear Power Station			-1,304	-327	-998
Cumulative amount of solid radioactive waste stored (200-L drum equivalent)* ^{7*8}			Equivalent in drums	101,276	99,031	96,938
	• Mihama Nuclear Power Station			28,211	27,934	27,848
	• Takahama Nuclear Power Station			45,143	43,501	42,491
	• Ohi Nuclear Power Station			27,922	27,596	26,599

*1 Millisievert (effective dose): unit indicating the degree of radiation's effect on the human body

*2 Becquerel: unit of radioactivity (one becquerel is defined as one nucleus decaying per second, representing the rate at which radioactive material emits radiation.)

*3 Notes 4–7 are for the storage status at power plants.

*4 The amount of solid low-level radioactive waste produced in the fiscal year.

*5 The total of amount of solid waste with low-level radioactivity reduced through incineration, etc. and transported out of facilities in the fiscal year.

*6 The net increase of solid waste with low-level radioactivity calculated by deducting the amount reduced from the amount generated in the fiscal year.

*7 Cumulative amount of low-level solid radioactive waste

*8 Totals might not match due to rounding after conversion to drum equivalent.

Notes:

• "N.D." in the table stands for "not detected" (below detection limits).

• Figures representing the Company only



◆ Environmental protection records at thermal power plants

Item				Sakaiko Power Station	Sakai LNG Center	Nanko Power Station	Miyazu Energy Research Center	Kansai International Airport Energy Center	Maizuru Power Station	Gobo Power Station	Himeji No. 1 Power Station 5, 6 U & GT 1, 2 U	Himeji No. 2 Power Station	Ako Power Station	
Main fuel				LNG	LNG	LNG	Heavy/crude oil	Kerosene	Coal	Heavy/crude oil	LNG	LNG	Heavy/crude oil	
Air quality related	Sulfur oxides	Amount emitted hourly (m³N/h)	Air Pollution Control Law (total amount regulation)	84	—	98	306*¹	13	515*¹	6,510*³	129	195	2,158*³	
			Agreed value	—	—	—	112	—	255	184	—	—	180	
			Actual value	—	—	—	Stopped	—	174	55	—	—	46	
		Amount emitted daily (t/d)	Agreed value	10.1	—	—	—	—	—	—	—	—	—	
			Actual value	—	—	—	—	—	—	—	—	—	—	
		Amount emitted annually (t/y)	Agreed value	940	—	—	492 × 10³m³N	—	1,523 × 10³m³N	970 × 10³m³N	—	—	650 × 10³m³N	
			Actual value	—	—	—	Stopped	—	650 × 10³m³N	11,508 × 10³m³N	—	—	6.5 × 10³m³N	
	Nitrogen oxides	Amount emitted hourly (m³N/h)	Air Pollution Control Law (total amount regulation)	625	—	255	—	—	—	—	—	—	—	
			Agreed value	—	—	—	58	—	244	110	123.5	72	94	
			Actual value	46.3	—	31	Stopped	—	207	33	57	59	64	
		Amount emitted daily (t/d)	Agreed value	7.7	—	1.8	—	—	—	—	—	—	—	
			Actual value	1.9	—	1.2	—	—	—	—	—	—	—	
		Amount emitted annually (t/y)	Agreed value	1,420	—	400	244 × 10³m³N	—	1,457 × 10³m³N	560 × 10³m³N	701 × 10³m³N	505 × 10³m³N	340 × 10³m³N	
			Actual value	337	—	45	Stopped	—	1,145 × 10³m³N	5,965 × 10³m³N	111,335 × 10³m³N	264 × 10³m³N	15.0 × 10³m³N	
	Soot particles	Emission concentration (g/m³N)	Air Pollution Control Law	0.04	0.05	0.03	0.05	0.05	0.1	0.07	0.05	0.05	0.05	
			Agreed value	0.02	—	Not emitted	0.014	—	0.009	0.01	—	—	0.015	
			Actual value	<0.002	—	<0.002	Stopped	—	0.008	0.002	—	—	0.003	
	Water quality related	Hydrogen ion concentration index		Water Pollution Control Law and ordinances	5.8–8.6	—	5.0–9.0*²	5.0–9.0	—	5.0–9.0	—	5.0–9.0	5.0–9.0	5.0–9.0
				Agreed value	—	—	—	5.8–8.6	—	5.8–8.6	5.8–8.6	5.8–8.6	5.8–8.6	5.8–8.6
				Actual value	7.8	—	7.8	6.5–7.3	—	6.7–7.6	6.3–7.9	6.8–7.7	7.0–7.4	6.5–7.5
		Chemical oxygen demand	Highest concentration (mg/L)	Water Pollution Control Law and ordinances	12	—	—	160	—	160	—	70	70	70
Agreed value				—	—	—	15	—	15	10	15	15	15	
Actual value				2.8	—	—	6.5	—	7.8	5.3	1.4	6.0	3.2	
Pollution load amount (kg/d)			Water Pollution Control Law and ordinances	209.2	—	—	—	—	—	—	38.8	54.6	85.5	
			Agreed value	—	—	—	20.8	—	22	36.8	15.2	35	22.4	
			Actual value	19.73	—	—	0.3	—	8.10	7.8	1.4	12.3	4.4	
Amount of suspended solids		Highest concentration (mg/L)	Water Pollution Control Law and ordinances	50	—	600*²	200	—	200	—	90	90	90	
			Agreed value	—	—	—	20	—	15	20	20	20	20	
			Actual value	<5	—	<5	3	—	2	6.6	1	4	1.7	
Amount of inclusion of n-hexane extractable substances		Highest concentration (mg/L)	Water Pollution Control Law and ordinances	2	—	4*²	5	—	5	—	5	5	5	
			Agreed value	—	—	—	1	—	1	1	1	1	1	
			Actual value	<1	—	<1.0	<0.5	—	<1.0	0.4	<0.1	0.1	<0.5	

*1 Regulated value of Kyoto Prefecture ordinance execution rules to protect and nurture the environment

*2 Regulated value of Osaka City sewer ordinance execution rules

*3 Regulated K value

Notes:

• “<0.1” refers to a maximum concentration of less than 0.1.

• Figures representing the Company only



▶ Reporting Coverage

● Reporting coverage of the Kansai Electric Power Co., Inc. and its 90 consolidated subsidiaries (as of the end of March 2024)

Specific data of environmental impact including electricity consumption in an office is grasped and reported in this report ⇒ **96.4%**

<Explanation>

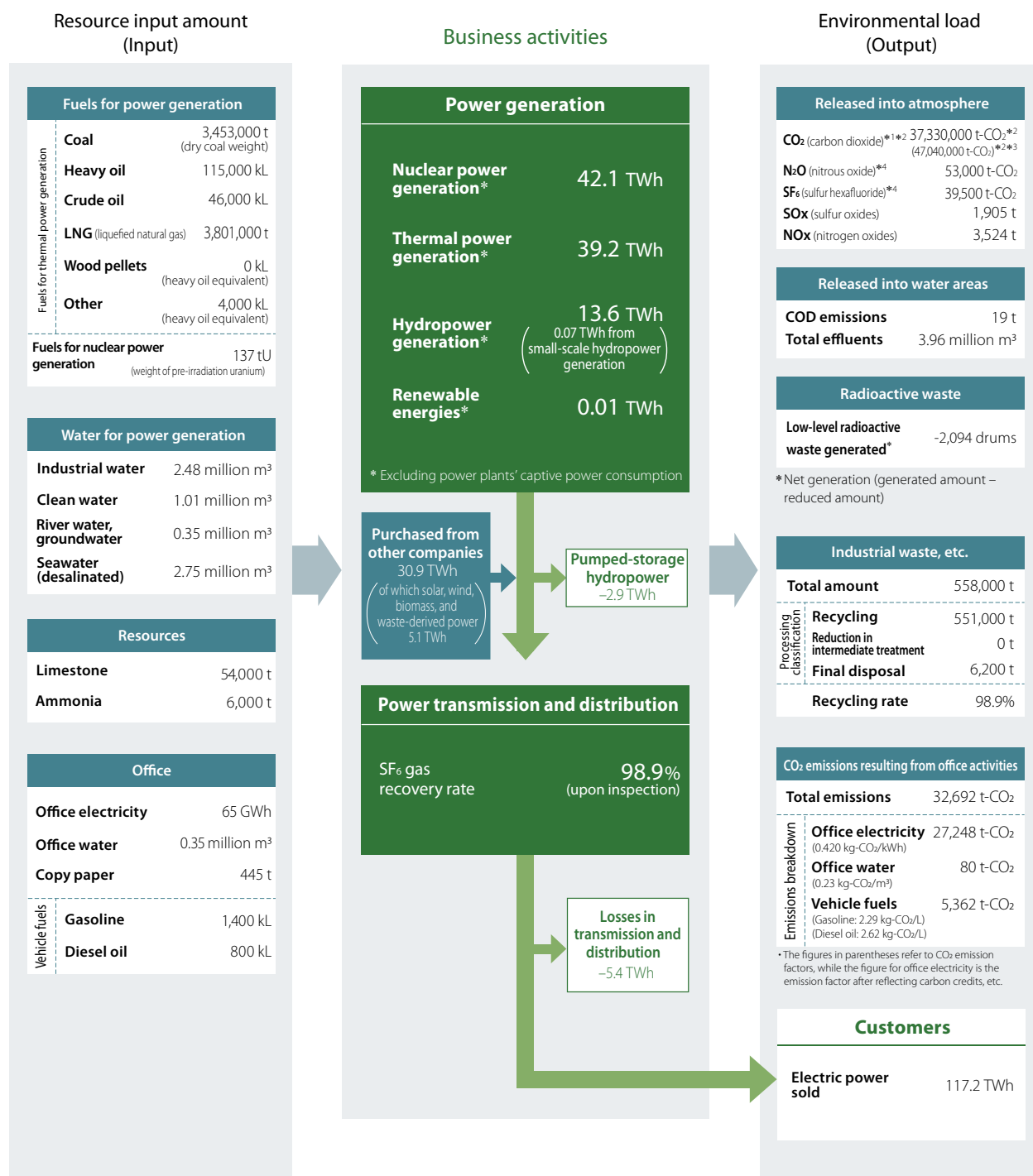
It represents the ratio of companies that are performing Eco Action among the Kansai Electric Power Co., Inc. and its 90 consolidated subsidiaries (ratio of sales).

◆ Calculation method

$$\frac{\left(\begin{array}{l} \text{Sales of the Kansai} \\ \text{Electric Power Co.,} \\ \text{Inc. in FY 2023} \end{array} \right) + \left(\begin{array}{l} \text{Sales of 36 consolidated subsidiaries in FY 2023} \\ \text{that are performing Eco Action as of the end of} \\ \text{March 2024} \end{array} \right)}{\left(\begin{array}{l} \text{Sales of the Kansai} \\ \text{Electric Power Co.,} \\ \text{Inc. in FY 2023} \end{array} \right) + \left(\begin{array}{l} \text{Sales of 90 consolidated} \\ \text{subsidiaries in FY 2023} \end{array} \right)}$$



◆ Status overview of our business activities and environmental load (FY 2023 results)



Note 1: Totals may not sum due to rounding.

Note 2: Thermal power generation figures do not include biomass power generation.

*1 Includes CO₂ originating from electricity purchased from other companies*2 The results for FY 2023 are provisional; the actual CO₂ emission factor will be officially announced by the government in accordance with the Law Concerning the Promotion of the Measures to Cope with Global Warming, etc.

*3 Emissions reflecting carbon credits, etc.

*4 CO₂ conversion