Environment-related data

○Environmental Management

Eco Action-related		Unit	FY2020	FY2021	FY2022
SF6 gas emissions※1		t	0.1	0.1	0.1
	·Upon inspection	t	0.0	0.0	0.1
	·Upon removal	t	0.1	0.0	0.0
Transmission and distribution loss rate※2※3		%	5.1	5.3	5.1

※1 Numerical values represent those of Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc.

※2 Transmission and distribution loss rates = (area transmission-end power – area consumption power (end use) – substation power) / area transmission-end power × 100 [%]
"Area" in this case refers to the entire supply area of Kansai Transmission and Distribution, Inc.

※3 Data of Kansai Transmission and Distribution, Inc. only

○Pollution Prevention

Atmospheric emissions	Unit	FY2020	FY2021	FY2022
SOx emissions※1※3	t	2,098	2,645	2,111
NOx emissions※2※3	t	4,551	4,125	3,875

*1 This is calculated from amounts of sulfur in fuel as well as SOx concentrations in gas emissions (measured values) and gas emission volumes.
(Some previous fiscal year amounts were calculated from the amount removed by desulfurization equipment.)

*2 This is calculated from NOx concentrations in gas emissions (measured values) and gas emission volumes.

*3 Numerical values represent those of Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc.

Dust Emissions*	Unit	FY2020	FY2021	FY2022
Dust Emissions	t	270	201	269

*Data of Kansai Electric Power Co., Inc. only

Environment-related data

○Climate Change

GHG emissions		Unit	FY2020	FY2021	FY2022
Direct greenhouse gas emissions (Scope 1) ※1※2※3		10,000 t-CO2	2,857.2	2,377.1	2,284.9
Electricity indirect greenhouse gas emissions (Scope 2) ※1※2※4		10,000 t-CO2	0.6	0.5	0.4
Other indirect greenhouse gas emissions (Scope 3) ※1※4		10,000 t-CO2	1,882.2	1,738.7	2,953.2
	Category 1 ※5	10,000 t-CO2	159.9	143.4	158.9
	Category 2 ※6		158.8	99.9	101.7
	Category 3 ※7		1,561.6	1,146.0	2,349.3
	Category 4 ※8		0.0	0.0	0.0
	Category 5 ※9		1.0	1.1	1.0
	Category 6 ※10		0.2	0.2	0.2
	Category 7 ※11		0.6	0.6	0.6
	Category 8 ※12		—	—	—
	Category 9 ※12		—	—	—
	Category 10 ※12		—	—	—
	Category 11 ※12		—	347.5	341.5
	Category 12 ※12		—	—	—
	Category 13 ※12		—	—	—
	Category 14 ※12		—	—	—
	Category 15 ※12		—	—	—

※1 The amount of greenhouse gases emitted in our entire supply chain is calculated in accordance with the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (ver. 3.3) issued by the Ministry of the Environment and the Ministry of Economy, Trade and Industry.

※2 Numerical values represent those of Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc.

※3 Direct GHG emissions (Scope 1) refer to emissions (energy-derived CO2, SF6 and N2O emissions) reported by electric companies in line with the Law Concerning the Promotion of the Measures to Cope with Global Warming along with CO2 emissions from transportation fuel use, which are excluded from the reporting obligations. SF6 emissions are based on the calendar year.

※4 Electricity indirect GHG emissions (Scope 2) include CO2 emissions originating from electricity and heat purchased from external corporations, which should be reported by electric operators in line with the Law Concerning the Promotion of the Measures to Cope with Global Warming. For electricity, adjusted factor was used.

※5 Price of purchased goods and services * Emission Factor [t-CO2/million yen]

※6 Capital Goods Price *Emission Factor [t-CO2/million yen]

※7 Fuel consumption * Emission Factor [t-CO2e/each unit] + amount of power purchased from other operators * Emission Factor[kgCO2e/kWh]

※8 Fuel consumption * Emission Factor [t-CO2e/each unit]

※9 Amount of waste processed* Emission Factor[tCO2/t] + Fuel consumption * Emission Factor [t-CO2e/each unit]

※10 Number of employees* Emission Factor[tCO2/person]

※11 By city class Σ (Number of employees*business days* Emission Factor [kgCO2/person・day])

※12 Not applicable due to business characteristics, etc.

※13 Total gas sales volume*Emission Factor[tCO2/1000Nm3]

Environment-related data

○Resource Circulation

Waste-related※1※2	Unit	FY2020	FY2021	FY2022
Amount of industrial waste and other emissions	1,000 t	566.7	680.8	614.4
·Soot particles (heavy/crude oil ash, coal ash, etc.)		381.2	447.3	383.6
·Sludge (desulfogypsum, waste water processing sludge, etc.)		91.3	129.5	131.4
·Cinders		30.8	35.6	29.4
·Demolition debris (waste concrete utility poles, etc.)		17.1	16.4	15.0
·Metal scraps		26.6	24.5	24.5
·Glass/ceramic scraps (thermal insulation scraps, insulator scraps, etc.)		2.1	2.9	2.5
·Waste oil		4.5	3.4	3.0
·Waste plastic		1.1	1.3	1.9
·(Repeated) Ash and gypsum		498.6	608.7	537.1
·Other		12.0	19.9	23.1
(Repeated) Special controlled industrial waste		11.2	19.5	22.6
Amount of industrial waste for landfill disposal	1,000 t	0.9	1.2	1.4
·Glass/ceramic scraps (thermal insulation scraps, insulator scraps, etc.)		0.15	0.66	0.55
·Sludge (wastewater processing sludge, etc.)		0.03	0.02	0.02
·Demolition debris		0.00	0.02	0.00
·Cinders		0.00	0.00	0.03
·Waste plastic		0.08	0.35	0.29
·Metal scraps		0.02	0.01	0.32
·Other		0.61	0.16	0.16
·(Repeated) Amount except for special controlled industrial waste		0.31	0.11	1.24
Recycle rate of industrial waste※3	%	99.8	99.8	99.8
Recycle rate of ash and gypsum※2	%	100	100	87

※1 The totals may not match up due to rounding.

※2 Numerical values represent those of Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc.

※3 Industrial waste recycling rate = [(emissions of industrial waste-landfill disposal) ÷ (emissions of industrial waste)] x 100

○Water Resources

Water consumption※1	Unit	FY2020	FY2021	FY2022
Total net fresh water consumption※2	million m3	4.23	4.23	4.54
River water		0.37	0.44	0.44
Groundwater		0.00	0.00	0.00
Total municipal water supplies		3.86	3.79	4.10
Amount of industrial water used (for power generation)		2.73	2.51	2.61
Amount of service water used (for power generation)		1.13	1.28	1.49
Seawater (desalinated)※3		2.80	2.79	2.54

※1 Numerical values represent those of Kansai Electric Power Co., Inc. and Kansai Transmission and Distribution, Inc.

※2 Excluding desalinated seawater

※3 Desalinated seawater

Environmental protection records at thermal power plants ①

Item				Sakaiko Power Station	Nanko Power Station	Miyazu Energy Research Center	Kansai International Airport Energy Center	Maizuru Power Station
Main fuel				L	L	Heavy/crude oil	Kerosene	Coal
Air quality related	Sulfur oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	84	98	306※1	13	515※1
			Agreed value	–	–	112	–	255
			Actual value	–	–	Stopped	–	173
		Amount emitted daily (t/d)	Agreed value	10.1	–	–	–	–
			Actual value	–	–	–	–	–
		Amount emitted annually (t/y)	Agreed value	940	–	$492\times10^3m^3N$	–	1,523×103m3N
			Actual value	–	–	Stopped	–	632×103m3N
	Nitrogen oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	625	255	–	–	–
			Agreed value	–	–	58	–	244
			Actual value	41.4	31	Stopped	–	215
		Amount emitted daily (t/d)	Agreed value	7.7	1.8	–	–	–
			Actual value	1.8	1.1	–	–	–
		Amount emitted annually (t/y)	Agreed value	1,420	400	$244\times10^3m^3N$	–	1,457×103m3N
			Actual value	345	69	Stopped	–	1,169×103m3N
	Soot particles	Emission concentration (g/m3N)	Air Pollution Control Law	0.04	0.03	0.05	0.05	0.1
			Agreed value	0.02	Not emitted	0.014	–	0.009
			Actual value	<0.002	<0.002	Stopped	–	0.007
Water quality related	Hydrogen ion concentration index		Water pollution laws and regulations	5.8~8.6	5.0~9.0※2	5.0~9.0	–	5.0~9.0
			Agreed value	–	–	5.8~8.6	–	5.8~8.6
			Actual value	8	7.6	6.0~7.6	–	6.6~8.1
	Chemical oxygen demand	Highest concentration (mg/L)	Water pollution laws and regulations	12	–	160	–	160
			Agreed value	–	–	15	–	15
			Actual value	2.1	–	7.7	–	7.2
		Pollution load amount (kg/d)	Water pollution laws and regulations	209.2	–	–	–	–
			Agreed value	–	–	20.8	–	22
			Actual value	7.46	–	0.2	–	6.9
	Amount of suspended solids	Highest concentration (mg/L)	Water pollution laws and regulations	50	600※2	200	–	200
			Agreed value	–	–	20	–	15
			Actual value	<5	<5	3	–	1
	Amount of inclusion of normal hexane extractable substances	Highest concentration (mg/L)	Water pollution laws and regulations	2	4※2	5	–	5
			Agreed value	–	–	1	–	1
			Actual value	<1	<1.0	0.6	–	<1.0

※1 Regulation in rules for the execution of ordinances to protect and nurture the environment of Kyoto Prefecture
※2 Regulated value of Osaka City sewer ordinance execution rules

Environmental protection records at thermal power plants ②

Item				Gobo Power Station	Himeji No.1 Power Station 5,6U & GT1,2U	Himeji No.2 Power Station	Aioi Power Station	Ako Power Station
Main fuel				Heavy/crude oil	LNG	LNG	LNG	Heavy/crude oil
Air quality related	Sulfur oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	6,510※3	129	195	2,757※3	2,158※3
			Agreed value	184	–	–	165	180
			Actual value	72	–	–	3	32
		Amount emitted daily (t/d)	Agreed value	–	–	–	–	–
			Actual value	–	–	–	–	–
		Amount emitted annually (t/y)	Agreed value	970×103m3N	–	–	885×103m3N	650×103m3N
			Actual value	66.155×103m3N	–	–	0.528×103m3N	40.8×103m3N
	Nitrogen oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	–	–	–	–	–
			Agreed value	110	123.5	72	85	94
			Actual value	43	51	66	40	68
		Amount emitted daily (t/d)	Agreed value	–	–	–	–	–
			Actual value	–	–	–	–	–
		Amount emitted annually (t/y)	Agreed value	560×103m3N	701×103m3N	505×103m3N	390×103m3N	340×103m3N
			Actual value	49.955×103m3N	71.526×103m3N	274×103m3N	18.453×103m3N	106.9×103m3N
	Soot particles	Emission concentration (g/m3N)	Air Pollution Control Law	0.07	0.05	0.05	0.07	0.05
			Agreed value	0.01	–	–	0.015	0.015
			Actual value	0.004	–	<0.002	0	0.005
Water quality related	Hydrogen ion concentration index		Water pollution laws and regulations	–	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
			Actual value	6.2~7.8	6.8~7.7	7.1~7.7	6.6~7.5	6.2~7.4
	Chemical oxygen demand	Highest concentration (mg/L)	Water pollution laws and regulations	–	70	70	70	70
			Agreed value	10	15	15	15	15
			Actual value	6.7	2.7	5.6	3	1.6
		Pollution load amount (kg/d)	Water pollution laws and regulations	–	38.8	54.6	67.8	85.5
			Agreed value	36.8	15.2	35	18	22.4
			Actual value	18.9	2.7	9	3.2	2.5
	Amount of suspended solids	Highest concentration (mg/L)	Water pollution laws and regulations	–	90	90	90	90
			Agreed value	20	20	20	20	20
			Actual value	9.9	4	<5	2	1.6
	Amount of inclusion of normal hexane extractable substances	Highest concentration (mg/L)	Water pollution laws and regulations	–	5	5	5	5
			Agreed value	1	1	1	1	1
			Actual value	0.3	0.2	<1	<0.1	0.5

※3 Regulated K value