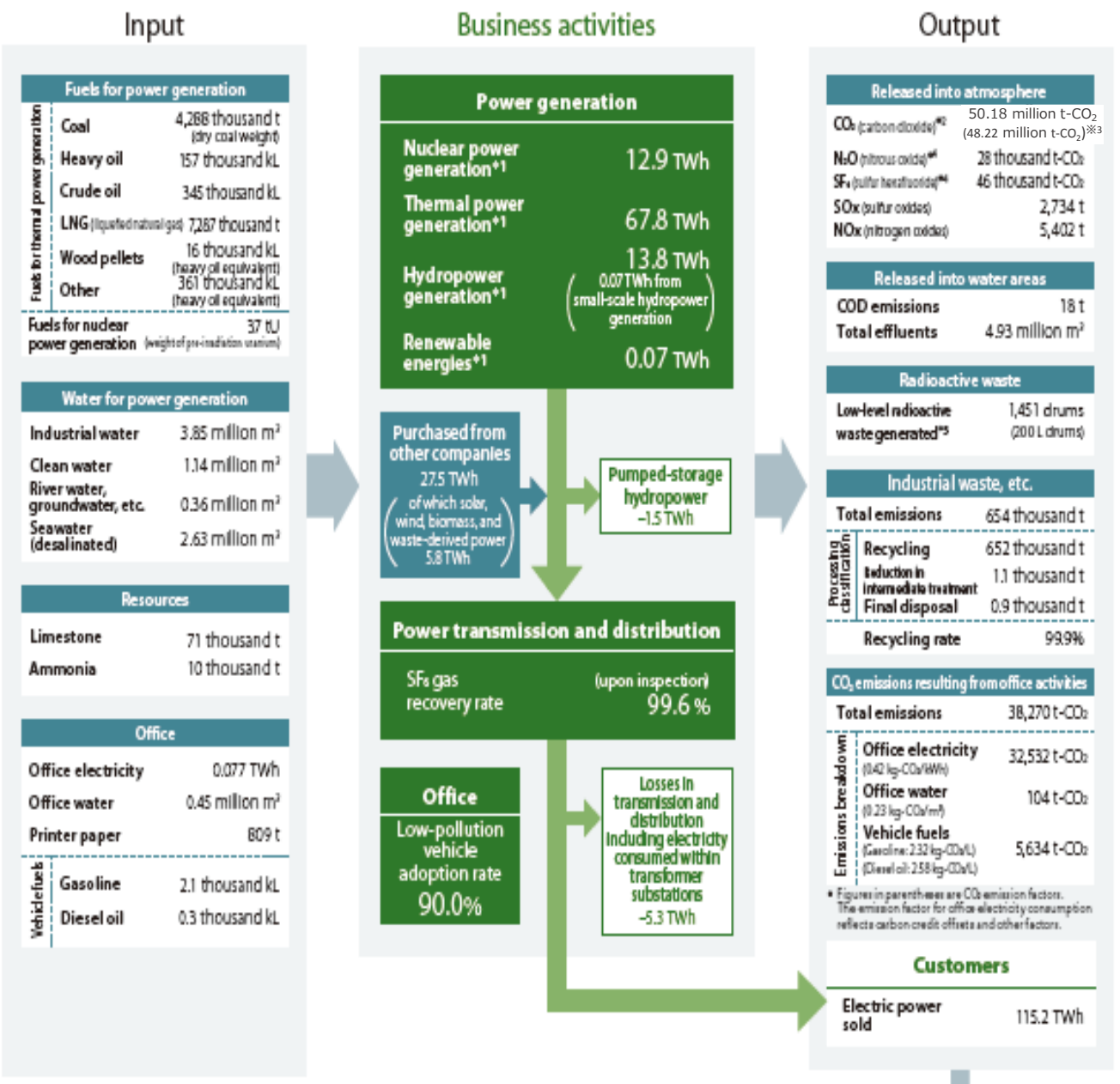
＜Data＞

Status overview of our business activities and environmental load (FY 2017)



Note 1: This table contains non-consolidated figures for Kansai Electric Power Co., Inc. only.
Note 2: Totals may not sum due to rounding.
Note 3: Thermal power generation figures do not include biomass power generation.

*1 Includes amounts of power for inside power plants
*2 Includes CO₂ originating from electricity purchased from other electric power companies
*3 Emissions taking carbon credits into account
*4 CO₂ conversion
*5 Net generation (generated amount − reduced amount)

Environmental efficiency (FY 1990 = 100)

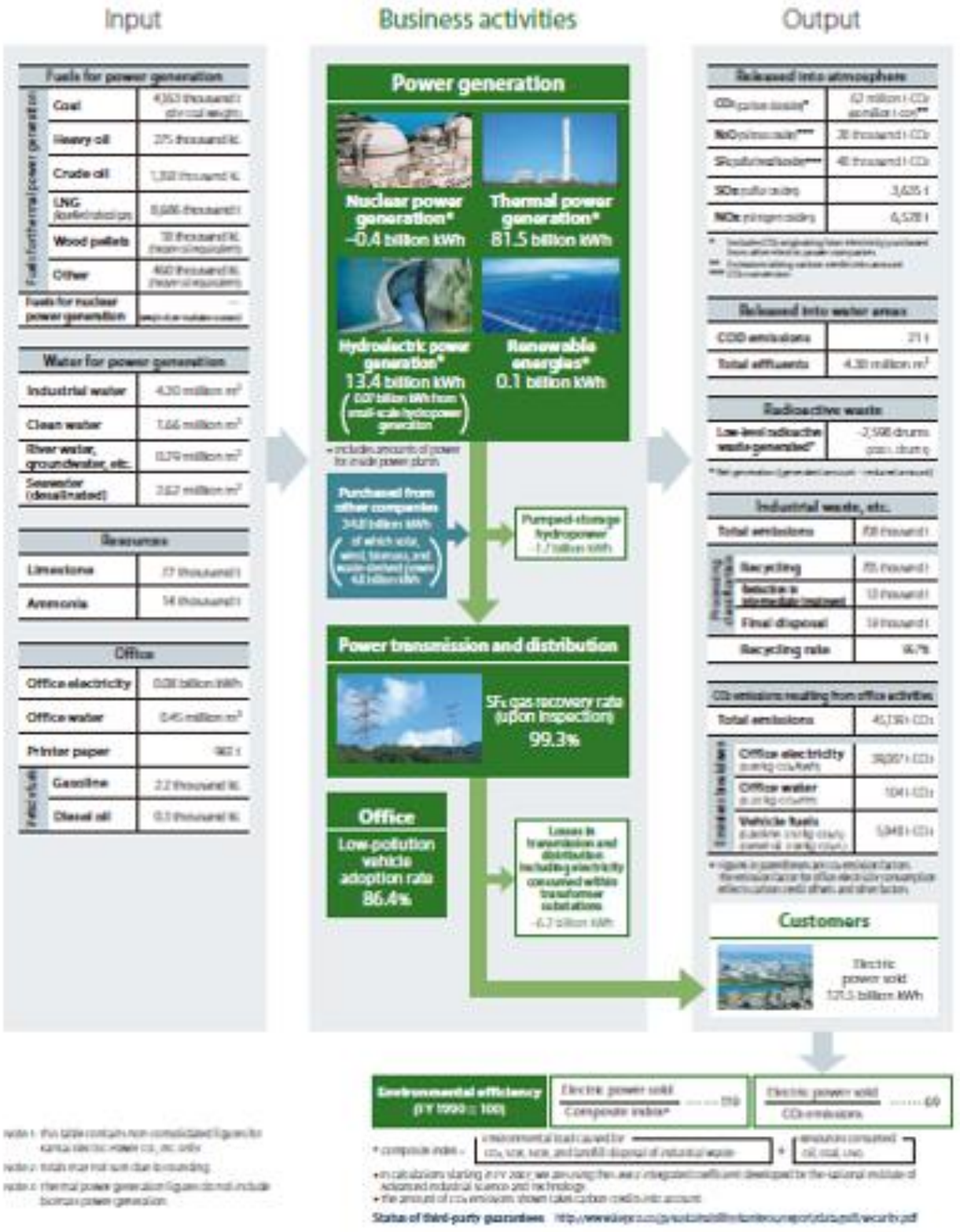
Electric power sold / Composite index* ……146

Electric power sold / CO₂ emissions ……85

* Composite index = Environmental load caused by CO₂, SOx, NOx, and landfill disposal of industrial waste + Resources consumed Oil, coal, LNG

*In calculations starting in FY 2007, we are using the LIME2 integrated coefficient developed by the National Institute of Advanced Industrial Science and Technology.
*The amount of CO₂ emissions shown takes carbon credits into account.

Reference : Status overview of our business activities and environmental load (FY 2016)



Environmental accounting （KEPCO ①）

KEPCO has introduced environmental accounting both on a non-consolidated basis and for group companies to clarify the costs of environmental conservation in our business activities and the benefits achieved.

FY2017 assessment（Environmental conservation costs）

For environmental conservation costs, investments were about 9 billion yen, about 3 billion less than the previous fiscal year. Due to industrial waste processing costs and other cost reduction efforts, expenses were about 18 billion yen, which is about 1 billion yen less than the previous fiscal year.

Environmental conservation costs (100 million yen)

Category	Investment		Expenses		Major items
	FY2016	FY2017	FY2016	FY2017	
1. Global environmental conservation costs (CO_2 reductions,etc.)	8.5	3.4	1.9	0.7	SF_6 gas collection
2. Local environmental conservation costs	109	87	46.8	44.0	
(1)Measuring/monitoring environmental impact	1.9	4.0	11.4	12.5	Radiation control and measurement, air quality concentration measurement, marine area surveys
(2)Pollution control(air pollution, water contamination, oil leakage, etc.)	106.8	82.5	27.6	23.4	Air pollution control measures, water contamination prevention measures
(3)Nature conservation	0	0	7.8	8.1	Revegetation
3. Costs to build a circular economy	3.4	1.2	140.5	134.7	
(1)Industrial waste processing, recycling	3.3	1.2	65.7	63.9	Industrial waste processing, PCB processing
(2)General waste processing, recycling	0	0	0.1	0.1	Paper recycling
(3)Radioactive waste processing	0	0	74.7	70.7	Low-level radioactive waste processing
(4)Green purchasing	0.1	0.1	0	0	Research-related work
4. Environmental management costs	0	0	1.1	0.8	Environmental reports
5. R&D costs	0.2	0.2	4.3	3.0	Load leveling, environmental conservation, energy savings and recycling, natural energy
6. Other costs	0	0	0.2	0.2	Research Laboratory repairs
Total	120.7	91.3	194.9	183.5	
Total capital investment during the period	2,324	2,954	–	–	
Operating expenses during period	–	–	24,499	25,185	

Note: Based on the Environmental Reporting Guidelines (FY2005 version) 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; (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.

Environmental accounting （KEPCO ②）

FY2017 assessment（Effects of environmental conservation）

We improved the CO_2 emission intensity over the previous fiscal year. In addition to the increased utilization ratios of nuclear power and hydroelectric power compared to the previous fiscal year, this result was due to the increased utilization rate of high-efficiency natural gas power generation equipment at the Himeji No.2 Power Station as well as the increased use of renewable energy using a feed-in tariff system and other efforts for carbon reduction.

Moreover, the SOx and NOx emission intensities improved over the previous fiscal year as a result of the the suitable use of sulfur scrubbers and nitrogen scrubbers, and other efforts.

Effects of environmental conservation

Category	Item (unit)		FY2016	FY2017	Year-on-year change
1. Global environmental conservation	CO_2 emissions (before carbon credits)	(10,000t-CO_2)	6,179	5,018	▲ 1,161
	CO_2 emissions intensity (before carbon credits)	(kg-CO_2/kWh)	0.509	0.435	▲ 0.07
	CO_2 emissions (after carbon credits)	(10,000t-CO_2)	5,989	4,822	▲ 1,167
	CO_2 emissions intensity (after carbon credits)	(kg-CO_2/kWh)	0.493	0.418	▲ 0.08
2. Local environmental conservation	Air pollution control				
	SOx emissions	(t)	3,635	2,734	▲ 901
	SOx emissions intensity	(g/kWh)	0.043	0.039	▲ 0.004
	NOx emissions	(t)	6,528	5,402	▲ 1,126
	NOx emissions intensity	(g/kWh)	0.077	0.077	0.000
	Landscape integration				
	Revegetation area	(1,000 m^2)	3,425	3,341	▲ 84
3. Building a circular economy	Industrial waste and other emissions	(1,000 t)	708	654	▲ 54
	Recycling rate for industrial waste, etc	(%)	99.7	99.9	0.2
	Low-level radioactive waste processing	(Rods)	-2,598	1,451	4,049

Note: CO_2 emissions: including from power supplied by other companies; CO_2 emissions coefficient: by amount of power sold(after adjustment CO_2 emission factors include deductions that reflect CO_2 credits and other deductions, as well as environmental value adjustments based on the purchasing system for surplus solar and the purchasing system for total amounts of renewable); SOx and NOx emissions: only KEPCO-generated power; SOx and NOx emissions coe cient: by amount of power generated by KEPCO thermal power plants

Environmental accounting （KEPCO ③）

FY2017 assessment（Economic benefits from environmental conservation measures)

Economic benefits increased approximately 1.7 billion yen from the previous year due to a reduction in results from efforts that lead to cost savings.

Economic benefits from environmental conservation measures (100 million yen)

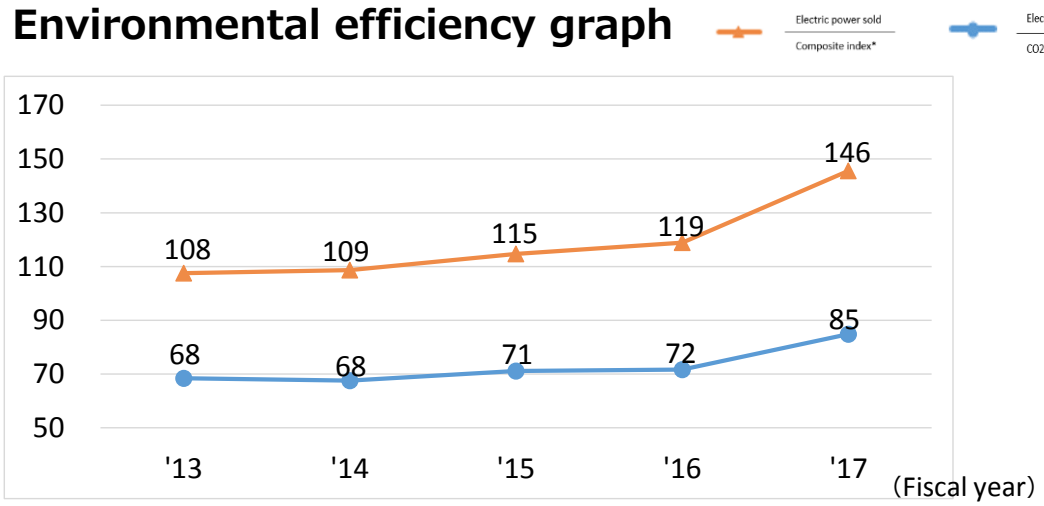
Category		FY2016	FY2017	Major Items
Revenue	Operating revenues from recycling, etc.	23.2	39.9	Gain on sale of disused articles(recycling)
Cost savings	Cost savings from reuse and recycling, etc.	0.1	0.1	Cost savings from the purchase of recycled items
Total		23.3	40.0	

Environmental efficiency

Environmental efficiency (with FY1990 as the base year) is calculated to indicate the relationship between environmental load and economic value.

Environmental efficiency for fiscal 2017 include scores of 146 for electric power sold/composite index, which is an increase of 27 points from the previous fiscal year, and 85 for electric power sold/CO_2 emissions, which is an increase of 13 points from the previous fiscal year. Main factors for this included reductions in CO_2, SOx and NOx emissions intensities and a decrease in fuel consumption accompanying the resumption of nuclear power plant operation.

Environmental efficiency graph



Note: LIME2 integration coefficients developed by the National Institute of Advanced Industrial Science and Technology have been used for calculations since fiscal 2007.

Environmental accounting (group companies)

Environmental accounting in group companies

Environmental accounting figures are totaled for group companies represented on the Group Environmental Management Committee in FY2017, composed of 15 companies.

Environmental conservation costs (million yen)

Category	Major Items	Investment		Expenses	
		FY2016	FY2017	FY2016	FY2017
Costs for pollution control	Air, water and soil pollution prevention	4.5	-	37.7	35.2
Costs for resource recycling	General and industrial waste processing and recycling	0	0.4	710.0	952.4
Costs for management activities	Environmental protection efforts, environmental education and related activities at business places and in their neighborhoods	0.1	0	217.7	147.4
Costs for community activities	Contributions to and support of environmental protection activities and environmental protection organizations outside the company	-	-	0.7	0.7
Costs for research and development	Research and development of products, for example, that contribute to environmental protection	-	-	3.0	6.4
Costs related to environmental damages	Natural restoration, damage compensation, etc.	-	-	0.3	0.3
Other costs		-	-	0.1	0.1
Total		4.5	0.4	969.5	1,142.7

Environmental conservation effects (physical effects)

Category	Items (unit)	FY2016	FY2017
Global and local environmental conservation	CO_2 emissions (10,000 t-CO_2)	31	28
	SOx emissions (t)	0.4	0.3
	NOx emissions (t)	29	24
Environmental management	ISO or other external certifications(locations)*	56	95
Building a circular economy	Industrial waste emissions (1,000 t)	115	181

*Cumulative to end of fiscal year

Economic benefits from environmental conservation effects (million yen)

Category	Major Items	FY2016	FY2017
Revenue	Business income from recycling	901.6	1210.0
Cost savings	Cost savings from re-use and recycling, etc.	0.2	0.1
Total		901.8	1,210.1

Environment-related data

○Initiatives contributing to the realization of a low-carbon society

Fiscal year	2014	2015	2016	2017
Total direct GHG emissions (Scope1)*1	4,571	4,180	3,949	3,284
Indirect greenhouse gas emissions from energy purchased and consumed (Scope2)*2	1.0	1.0	1.0	1.0
Other indirect greenhouse gas emission amounts*3 (related to scope 3, categories 4 and 5)	–	3.6	2.6	1.9

※1 The direct greenhouse gas emission amounts (scope 1) are totals of direct greenhouse gas emissions (CO_2, SF_6 and N_2O from energy) reported (for the business) in accordance with the Warming Countermeasures Act and CO_2 emissions from vehicle fuel not included in this reporting.
※2 The indirect greenhouse gas emission amounts (scope 2) are totals of CO_2 emissions from electricity and heat purchased from others among those reported (for the business) in accordance with the Warming Countermeasures Act as indirect CO_2 emissions.
※3 For other indirect greenhouse gas emission amounts (scope 3, categories 4 and 5), contracted transportation amounts were extracted from the reporting (of the shippers) in accordance with the Warming Countermeasures Act. They were mainly calculated using the ton-kilometer method.

Fiscal year			2013	2014	2015	2016	2017	Unit
CO_2 emissions (before adjustment)※1			7,325	7,141	6,487	6,179	5,018	10,000 t-CO_2
CO_2 emissions (after adjustment)※2			7,251	7,029	6,331	5,989	4,822	10,000 t-CO_2
CO_2 emissions coefficient (end use)(before adjustment) (by amount of electric power sold)※3			0.522	0.531	0.509	0.509	0.435	kg-CO_2/kWh
CO_2 emissions coefficient (end use)(after adjustment) (by amount of electric power sold)※3			0.516	0.523	0.496	0.493	0.418	kg-CO_2/kWh
Reference	Global CO_2 emissions※4		321	324	—	—	0.42	100 million t-CO_2
	Japan's CO_2 emissions※5		13.16	12.66	12.26	12.06	—	100 million t-CO_2
	Electric power industry※6	CO_2 emissions (before carbon credits,etc.)	4.94	4.70	4.44	4.32	—	100 million t-CO_2
		CO_2 emissions (after carbon credits,etc.)	4.93	4.69	4.41	4.30	—	
		CO_2 emissions (before carbon credits,etc.) (by amount of electric power sold)	0.567	0.553	0.534	0.518	—	kg-CO_2/kWh
		CO_2 emissions (after carbon credits,etc.) (by amount of electric power sold)	0.567	0.552	0.531	0.516	—	
Greenhouse gases other than CO_2	N_2O (dinitrogen oxide)※7		2.6	2.9	2.7	2.8	2.8	10,000 t-CO_2
	SF_6 (sulfur hexafluoride)※7		4.9	5.0	4.4	4.8	4.6	10,000 t-CO_2
Utilization rate of nuclear power facilities※8			10.9	0.0	1.0	0.0	18.0	%
Net thermal efficiency of thermal power facilities※9			44.6	46.5	46.6	47.6	48.3	%
Total energy use※10			765,923	760,782	701,315	675,113	554,793	1,000GJ

※1 The amount of CO_2 emissions is the amount produced from consumption of fuel used for power generation by thermal power plants and includes that for power purchased from other companies.
※2 After adjustment figures include deductions that reflect CO_2 credits as well as environmental value adjustments based on the purchasing system for surplus solar and the purchasing system for total amounts of renewable energy in the CO_2 emissions amounts.
CO_2 emissions amount = CO_2 emissions amount(before adjustment) + feed-in tariff adjustment CO_2 emissions amount,etc.
※3 CO2 emissions coefficient (end use) is the amount of CO_2 emissions per kWh of Kansai Electric Power Company electricity used.
・CO_2 emissions coefficient (end use) (before adjustment) = amount of CO_2 emissions (before adjustment) ÷ electricity sales volume
・CO_2 emissions coefficient (end use) (after adjustment) = amount of CO_2 emissions (after adjustment) ÷ electricity sales volume
※4 Global CO_2 emissions： IEA "CO_2 Emissions From Fuel Combustion" 2015 Edition
※5 Japan's CO_2 emissions： Source： Greenhouse Gas Inventory Office of Japan (Center for Global Environmental Research, National Institute for Environmental Studies)
※6 Sources for CO_2 emissions and CO_2 emission coefficients for the electric power industry are resources from the Industrial Structure Council and materials from the Natural Resources and Energy Working Group of the Electric Power Council for a Low Carbon Society(ELCS).(Through fiscal 2014, the total of results of the Federation of Electrical Power Companies of Japan and volunteering PPS (power producer and supplier) companies are used. In fiscal 2015,the results of 39 companies that undertook business activities that fiscal year among member businesses of the ELCS are used.)
※7 Published in FY2010 results; figures are CO_2 equivalents
※8 Utilization rate of nuclear power facilities = amount of power generated÷(permitted output× calendar hours)×100
※9 Net thermal efficiency of thermal power facilities = (amount of power transmitted × quantity of heat per kWh)
※10 Figures reported to the government based on the Act on the Rational Use of Energy.(Fossil fuel used, purchased electricity, purchased heat)

Environment-related data

○Initiatives contributing to the realization of a low-carbon society

Fiscal year		2013	2014	2015	2016	2017	Unit
Thermal fuel consumption	Coal	3,890	4,034	3,871	4,163	4,288	1,000 t
	Heavy oil	289	332	193	275	157	1,000 kL
	Crude oil	6,044	4,240	3,366	1,358	345	1,000 kL
	LNG	7,729	8,824	8,319	8,686	7,287	1,000 t
	Wood pellets	19	17	18	18	16	1,000 kL (equivalent in heavy oil)
	Other	0.2	0.1	0.6	460	361	1,000 kL (equivalent in heavy oil)
Fuel for nuclear power generation (weight of pre-irradiated uranium)		—	—	61	—	37	tU
Hydroelectric power station replacement		10	0	1,744	1500	500	kW
Power distribution loss rate※11		5.1	5.4	5.2	5.5	4.4	%
SF_6 gas emissions		0.2	0.1	0.1	0.1	0.1	t
	● (Repeated) Upon inspection	0.2	0.1	0.1	0.1	0	t
	● (Repeated) Upon removal	0	0	0	0	0.1	t
SF_6 collection rate							
	●Upon inspection	99.1	98.8	99.1	99.3	99.6	%
	●Upon removal	99.4	99.5	99.1	99.6	99.3	%
Making efforts for renewable energy development	each year	6,490	36,500	31,464	9,080	500	kW
	Cumulative total※12	30,390	66,890	98,354	107,434	107,934	
	●Solar power generation	11,204	11,662	11,000	11,000	11,000	
	●Wind power generation	153	153	0	0	0	
	●Fuel cell batteries	0	0	0	0	0	
Energy and resource savings (Office division)	Office electricity use※13	85	79	78	80	77	GWh
	Everyday water use※13	473	461	424	454	452	1,000 m^3
	Vehicle fuel costs	10.44	10.73	11.13	11.13	11.31	km/L
	Vehicle fuel use(gasoline)	2.7	2.6	2.3	2.2	2.1	1,000 kL
	Vehicle fuel use(diesel)	0.5	0.5	0.3	0.3	0.3	1,000 kL
	Copier paper use	873	839	908	961	809	t
Low-pollution vehicle introduction rate※14		87.5	86.1	86.2	86.4	90.0	%
CO_2 emissions from office activities※15	Office electricity	4.4	4.2	3.9	3.9	3.3	10,000 t-CO_2
	Everyday water	0.01	0.01	0.01	0.01	0.01	10,000 t-CO_2
	Vehicle fuel	0.7	0.7	0.6	0.6	0.6	10,000 t-CO_2

※11 Power distribution loss rate =[1-{(amount of power sold＋amount of power at transformer substation) ÷(generated and purchased electric power - amount of power at KEPCO power plants)}]×100
※12 Actual figures for FY2014 include equipment used by the company.
※13 The scope for calculation of office electricity use and everyday water use has been revised.
※14 Rate of introduction of low-pollution Vehicles = No. of low-pollution vehicles purchased ÷ Total no. of vehicles×100
※15 CO_2 emissions from office activities = amount of electricity used×CO_2 emissions coefficient after carbon credits, etc.
CO_2 emissions from everyday water use = amount of everyday water used × emissions coefficient
CO_2 emissions from vehicle use = amount of vehicle fuel used × coefficient by type of fuel
Source：Ministry of the Environment, Summary of Energy & Economic Statistics

Environment-related data

○Initiatives contributing to the realization of a recycling-oriented society

Fiscal year	2013	2014	2015	2016	2017	Unit
Amount of industrial waste and other emissions	747.1	698.6	670.2	707.9	653.6	1,000 t
(Repeated) Special controlled industrial waste	12.0	3.4	4.0	4.4	5.5	1,000 t
●Soot particles (Heavy/crude oil ash, coal ash,etc.)	477.1	474.3	443.8	480.6	438.3	
●Sludge (Desulfogypsum,wastewater processing sludge,etc.)	156.9	143.2	141.9	141.1	130.3	
●Cinders	29.7	27.4	28.8	28.0	28.6	
●Demolition debris(Waste concrete utility poles,etc.)	19.3	21.0	23.8	18.3	16.5	
●Metal scraps	42.4	21.7	20.6	28.9	29.1	
●Glass/ceramic scraps(Thermal insulation scraps,insulator scraps, etc.)	2.7	2.5	2.2	2.6	1.8	
●Waste oil	3.4	2.4	2.2	2.4	2.2	
●Waste plastic	1.2	1.0	0.8	0.8	0.9	
●Other	14.5	5.1	6.0	5.4	6.0	
Amount of industrial waste for landfill disposal	1.3	1.2	0.9	1.8	0.9	1,000 t
(Repeated) Total amount except for Special controlled industrial waste	0.00	1.20	0.90	1.40	0.50	1,000 t
●Glass/ceramic scraps (Thermal insulation scraps,insulator scraps,etc.)	0.11	0.12	0.10	0.33	0.06	
●sludge(Wastewater processing sludge,etc.)	0.73	0.74	0.47	0.34	0.19	
●Demolition debris	0.09	0.11	0.03	0.02	0.03	
●Cinders	0.0	0.0	0.0	0.0	0.0	
●Waste plastic	0.23	0.07	0.09	0.07	0.05	
●Metal scraps	0.10	0.05	0.10	0.55	0.19	
●Other	0.06	0.13	0.14	0.52	0.42	
Industrial waste recycling rate※1	99.8	99.8	99.9	99.7	99.9	%
(Repeated) Ash and gypsum waste recycling rate※1	100	100	100	100	100	%
Low-concentration PCB industrial waste Amount processed※2 (utility pole transformers) Insulating oil	7.7	7.7	7.7	–	–	10,000kL
Low-concentration PCB industrial waste Amount processed※2 (utility pole transformers) Transformer cases	20.6	22.7	about 24	–	–	10,000 units
Total net fresh water consumption※3	7.10	6.76	6.86	6.25	5.35	1,000,000 m^3
River water	0.42	0.40	0.36	0.29	0.36	1,000,000 m^3
Groundwater	0.00	0.00	0.00	0.00	0.00	1,000,000 m^3
Total municipal water supplies	6.68	6.36	6.50	5.96	4.99	1,000,000 m^3
Amount of industrial water used (for power generation)	4.46	4.31	4.53	4.30	3.85	1,000,000 m^3
Amount of service water used (for power generation)	2.22	2.05	1.97	1.66	1.14	1,000,000 m^3
Seawater (desalinated)	2.63	2.45	2.55	2.62	2.63	1,000,000 m^3

※1 Industrial waste recycling rate = [(Industrial waste and other emissions - Amount of landfill disposal) ÷ (Industrial waste and other emissions)]×100
※2 Processing at pole-mounted transformer case recycling center was completed in July 2015.
※3 Excluding desalinated seawater

Environment-related data

○Promotion of environmental protection in local communities

Fiscal year		2013	2014	2015	2016	2017	Unit
SOx emissions※1		7,089	5,635	4,735	3,635	2,734	t
SOx emissions intensity (for KEPCO-generated power)※2		0.062	0.052	0.046	0.037	0.028	g/kWh
SOx emissions intensity (by volume of power from thermal power generation)(for KEPCO-generated power)※3		0.077	0.059	0.055	0.043	0.039	g/kWh
NOx emissions※4		10,013	8,221	7,397	6,528	5,402	t
NOx emissions intensity (for KEPCO-generated power) ※5		0.087	0.076	0.072	0.067	0.055	g/kWh
NOx emissions intensity (by volume of power from thermal power generation)(for KEPCO-generated power)※6		0.108	0.086	0.085	0.077	0.077	g/kWh
Amount of limestone used		87	79	74	77	71	1,000 t
Amount of ammonia used		14	15	14	14	10	1,000 t
COD emissions※7		27	18	21	21	18	t
Revegetation rate※8 (end of fiscal year)	Thermal power plants	37	38	37	37	38	%
	Nuclear power plants	75	74	73	71	68	%
	Electric power offices (substations)	28	28	28	28	28	%
Rate of conversion to underground transmission lines (end of fiscal year)		19.5	17.1	17.3	17.2	17.3	%
Rate of conversion to underground distribution lines (end of fiscal year)		10.1	10.1	10.2	10.2	10.3	%

※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 SOx emissions intensity (for KEPCO-generated power) = SOx emissions amount÷power generated amount (for KEPCO-generated power)
※3 SOx emissions intensity (by volume of power from thermal power generation (for KEPCO-generated power)) = SOx emissions amount÷volume of power from thermal power generation (for KEPCO-generated power)
※4 This is calculated from Sox concentrations in gas emissions (measured values) and gas emission volumes.
※5 NOx emissions intensity (for KEPCO-generated power) = NOx emissions amount÷power generated amount (for KEPCO-generated power)
※6 NOx emissions intensity (by volume of power from thermal power generation (for KEPCO-generated power)) = NOx emissions amount÷volume of power from thermal power generation (for KEPCO-generated power)
※7 This is calculated from analyzed wastewater concentration values.
※8 Revegetation rate = (Business site revegetation area÷Business site total area)×100

Environment-related data

○Management of chemical substances (PRTR)

Name of targeted chemical substance	Emissions (t/year)				
	2013	2014	2015	2016	2017
2-aminoethanol	0	0	–	–	0
Asbestos (specified)	0	0	0	0	0
Ethylbenzene	6.0	6.2	12	11	3.8
Ferric chloride	0	0	0	0	0
Xylene	12	12	16	17	5.4
HCFC-225	3.6	–	0	–	–
Styrene	2.6	–	2	1.5	–
Dioxins (specified)	0.13 (mg-TEQ/year)	0.28 (mg-TEQ/year)	0.54 (mg-TEQ/year)	0.66 (mg-TEQ/year)	0.29 (mg-TEQ/year)
1,2,4-trimethylbenzene	–	–	0	0	1.9
Toluene	14	12	11	7.2	5.9
Hydrazine	<0.1	<0.1	<0.1	<0.1	<0.1
n-Hexane	8.3	5.9	4.6	0.6	–
Benzenes (specified)	3.3	2.4	1.9	0.8	0.2
Boron compound	0	0	0	0	0
PCB	–	–	–	–	0
Methylnaphthalene	2.8	3.3	3.4	3.2	2.4
Methylenebis (4,1-phenylene) diisocyanate	–	–	–	–	–

Name of targeted chemical substance	Amount moved (t/year)				
	2013	2014	2015	2016	2017
2-aminoethanol	5.6	8.9	–	–	4.1
Asbestos (specified)	2.7	5.1	3.4	1.3	4.7
Ethylbenzene	0	0	0	0	0
Ferric chloride	0	3	0	0	0
Xylene	0	0	<0.1	0	0
HCFC-225	0	–	2.2	–	–
Styrene	0	–	0	0	–
Dioxins (specified)	0.0016 (mg-TEQ/year)	0.0050 (mg-TEQ/年)	0.000079 (mg-TEQ/年)	0.04 (mg-TEQ/年)	1.4 (mg-TEQ/年)
1,2,4-trimethylbenzene	–	–	0	0	0
Toluene	0	0	0	0	0
Hydrazine	<0.1	3.1	3	0.9	2.5
n-Hexane	0	0	0	0	–
Benzenes (specified)	0	0	0	0	0
Boron compound	1.1	6.7	7.3	6.3	8.4
PCB	–	–	–	–	5.3
Methylnaphthalene	0	<0.1	0	0	0
Methylenebis (4,1-phenylene) diisocyanate	–	–	–	–	–

Notes :
- The chart show total values reported in compliance with the PRTR Law
- "0"indicates no emissions or transfers at targeted business site
- "<0.1"indicates less than 0.1 t/year emissions, etc.
- "－" indicates no business sites targeted for totaling
- Significant figures are displayed in two digits

Environment-related data

○Radioactive substances, radioactive waste

Fiscal year			2013	2014	2015	2016	2017	Unit
Gaseous waste	Evaluated dose values for the public in the vicinity of power plants (inert gases)	Mihama Nuclear Power Station	N.D.	N.D.	N.D.	<0.001	N.D.	Millisieverts※1
		Takahama Nuclear Power Station	N.D.	<0.001	<0.001	N.D.	N.D.	
		Ohi Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
	Evaluated dose values for the public in the vicinity of power plants (iodine)	Mihama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	Millisieverts※1
		Takahama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
		Ohi Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
Liquid waste	Evaluated dose values for the public in the vicinity of power plants	Mihama Nuclear Power Station	<0.001	<0.001	<0.001	<0.001	<0.001	Millisieverts※1
		Takahama Nuclear Power Station	<0.001	<0.001	<0.001	<0.001	<0.001	
		Ohi Nuclear Power Station	<0.001	<0.001	<0.001	<0.001	<0.001	
Radioactive gaseous waste discharged (inert gas)		Mihama Nuclear Power Station	N.D.	N.D.	N.D.	2.7E+9	N.D.	Becquerel※2
		Takahama Nuclear Power Station	N.D.	2.3E+08	2.5E+08	N.D.	N.D.	
		Ohi Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
Radioactive gaseous waste discharged (iodine)		Mihama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	Becquerel※2
		Takahama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
		Ohi Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
Radioactive gaseous waste discharged (excluding tritium)		Mihama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	Becquerel※2
		Takahama Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
		Ohi Nuclear Power Station	N.D.	N.D.	N.D.	N.D.	N.D.	
Radioactive solid nuclear waste generated (200-L drums)※4			12,372	15,756	14,318	13,750	15,863	Equivalent in drums
	Mihama Nuclear Power Station		4,299	4,888	4,978	4,302	5,000	
	Takahama Nuclear Power Station		3,649	6,368	4,471	5,002	5,722	
	Ohi Nuclear Power Station		4,424	4,500	4,869	4,446	5,141	
Radioactive solid nuclear waste shrinkage (200-L drums)※5			13,972	18,082	20,298	16,348	14,412	Equivalent in drums
	Mihama Nuclear Power Station		4,085	5,710	6,583	4,514	5,424	
	Takahama Nuclear Power Station		4,893	6,152	7,402	6,984	4,354	
	Ohi Nuclear Power Station		4,994	6,220	6,313	4,850	4,634	
Amount of solid radioactive waste generated-amount of solid radioactive waste reduced (200-L drum can equivalent)※6			-1,600	-2,326	-5,980	-2,598	1,451	Equivalent in drums
	Mihama Nuclear Power Station		214	-822	-1,605	-212	-424	
	Takahama Nuclear Power Station		-1,244	216	-2,931	-1,982	1,368	
	Ohi Nuclear Power Station		-570	-1,720	-1,444	-404	507	
Radioactive solid nuclear waste cumulative amount stored (200-L drums)※7、8			107,061	104,735	98,756	96,159	97,610	Equivalent in drums
	Mihama Nuclear Power Station		28,313	27,491	25,887	25,675	25,251	
	Takahama Nuclear Power Station		46,616	46,832	43,901	41,919	43,287	
	Ohi Nuclear Power Station		32,132	30,412	28,968	28,565	29,072	

*1 Millisieverts (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 This is the amount of solid low-level radioactive waste produced in the fiscal year.
*5 This is the total of amount of solid waste with low-level radioactivity reduced through incineration, for example, and transported out of facilities in the fiscal year.
*6 This is 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.

Environmental protection records at thermal power plants ①

Item				Sakaiko Power Station	Tanagawa No. 2 Power Station	Nanko Power Station	Miyazu Energy Research Center	Kansai International Airport Energy Center	Maizuru Power Station
Main fuel				L	Heavy/crude oil	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	–	Stopped	–	187
		Amount emitted daily (t/d)	Agreed value	10.1	9.3	–	–	–	–
			Actual value	–	Stopped	–	Stopped	–	–
		Amount emitted annually (t/y)	Agreed value	940	3,020	–	$492\times10^3m^3N$	–	$1523\times10^3m^3N$
			Actual value	–	Stopped	–	Stopped	–	$829\times10^3m^3N$
	Nitrogen oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	625	–	255	–	–	–
			Agreed value	–	–	–	58	–	244
			Actual value	50	Stopped	35	Stopped	–	218
		Amount emitted daily (t/d)	Agreed value	7.7	7.2	1.8	–	–	–
			Actual value	2.0	Stopped	1.3	–	–	–
		Amount emitted annually (t/y)	Agreed value	1,420	2,100	400	$244\times10^3m^3N$	–	$1457\times10^3m^3N$
			Actual value	590	Stopped	212	Stopped	–	$1420\times10^3m^3N$
	Soot particles	Emission concentration (g/m3N)	Air Pollution Control Law	0.04	0.07	0.03	0.05	0.05	0.1
			Agreed value	0.02	0.02	Not emitted	0.014	–	0.01
			Actual value	<0.002	Stopped	–	Stopped	–	0.005
Water quality related	Hydrogen ion concentration index		Water pollution laws and regulations	No.1 drain outlet: 5.8~8.6 / No.2 drain outlet: 5.8~8.6	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	5.8~8.6	5.8~8.6
			Actual value	7.9 / 7.5	Stopped	–	7	–	6.5~7.2
	Chemical oxygen demand	Highest concentration (mg/L)	Water pollution laws and regulations	12 / 160	160	–	160	–	160
			Agreed value	–	15	–	15	–	15
			Actual value	2 / 2	Stopped	–	7	–	6
		Pollution load amount (kg/d)	Water pollution laws and regulations	388.4	55	–	–	–	–
			Agreed value	–	14	–	20.8	–	22
			Actual value	28.2	Stopped	–	0.1	–	5
	Amount of suspended solids	Highest concentration (mg/L)	Water pollution laws and regulations	50	90	600※2	200	–	200
			Agreed value	–	20	–	20	–	15
			Actual value	<5	Stopped	19	1	–	2
	Amount of inclusion of normal hexane extractable substances	Highest concentration (mg/L)	Water pollution laws and regulations	2	3	4※2	5	–	5
			Agreed value	–	1	–	1	–	1
			Actual value	<1	Stopped	<1	<0.5	–	<1

※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				Kainan Power Station	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	Heavy/crude oil	LNG	LNG	LNG/ Heavy/crude oil	Heavy/crude oil
Air quality related	Sulfur oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	646	6,510※3	126	582	2,757※3	2,158※3
			Agreed value	310	184	–	–	165	180
			Actual value	91	130	–	–	44	50
		Amount emitted daily (t/d)	Agreed value	–	–	–	–	–	–
			Actual value	–	–	–	–	–	–
		Amount emitted annually (t/y)	Agreed value	$1,760\times10^3m^3N$	$970\times10^3m^3N$	–	–	$885\times10^3m^3N$	$650\times10^3m^3N$
			Actual value	$55\times10^3m^3N$	$46\times10^3m^3N$	–	–	$14\times10^3m^3N$	$15\times10^3m^3N$
	Nitrogen oxide	Amount emitted hourly (m3N/h)	Air Pollution Control Law (total amount regulation)	–	–	–	–	–	–
			Agreed value	370	110	123.5	463	85	94
			Actual value	44	75	55.0	105	69	66
		Amount emitted daily (t/d)	Agreed value	–	–	–	–	–	–
			Actual value	–	–	–	–	–	–
		Amount emitted annually (t/y)	Agreed value	$1,970\times10^3m^3N$	$560\times10^3m^3N$	$701\times10^3m^3N$	$2,263\times10^3m^3N$	$390\times10^3m^3N$	$340\times10^3m^3N$
			Actual value	$23\times10^3m^3N$	$32\times10^3m^3N$	$178\times10^3m^3N$	$478\times10^3m^3N$	$80\times10^3m^3N$	$35\times10^3m^3N$
	Soot particles	Emission concentration (g/m3N)	Air Pollution Control Law	0.07	0.07	0.05	0.05	0.07	0.05
			Agreed value	0.02	0.01	–	–	0.015	0.015
			Actual value	0.001	0.005	–	–	0.003	0.003
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	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	6.0~8.0	6.3~7.9	6.7~7.6	7.1~7.8	6.7~7.3	6.5~7.9
	Chemical oxygen demand	Highest concentration (mg/L)	Water pollution laws and regulations	10	–	70	70	70	70
			Agreed value	10	10	15	15	15	15
			Actual value	5	7	4	3	3	3
		Pollution load amount (kg/d)	Water pollution laws and regulations	187.7	–	38.8	173.9	67.8	85.5
			Agreed value	50	36.8	15.2	35	18	22.4
			Actual value	7.9	11.4	3.5	11.5	2.3	4.6
	Amount of suspended solids	Highest concentration (mg/L)	Water pollution laws and regulations	40	–	90	90	90	90
			Agreed value	20	20	20	20	20	20
			Actual value	6	3	1	2	2	<1
	Amount of inclusion of normal hexane extractable substances	Highest concentration (mg/L)	Water pollution laws and regulations	2	–	5	5	5	5
			Agreed value	2	1	1	1	1	1
			Actual value	<0.1	0.2	<0.1	<0.1	0.4	<0.5

※3 Regulated K value