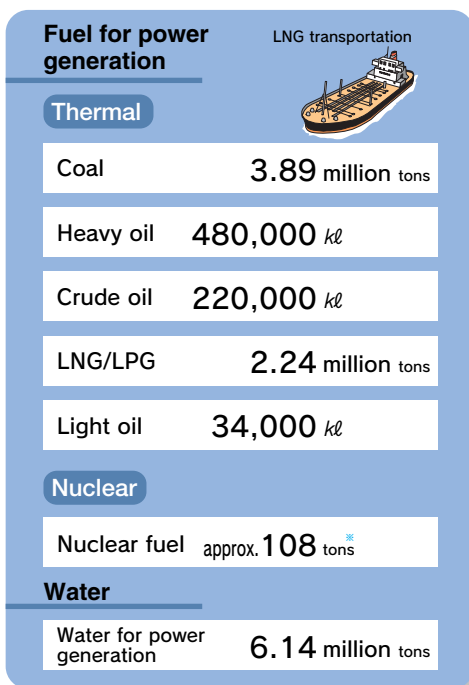


## 2 Environmental Accounting

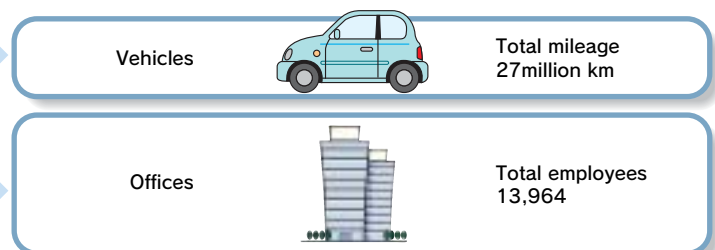
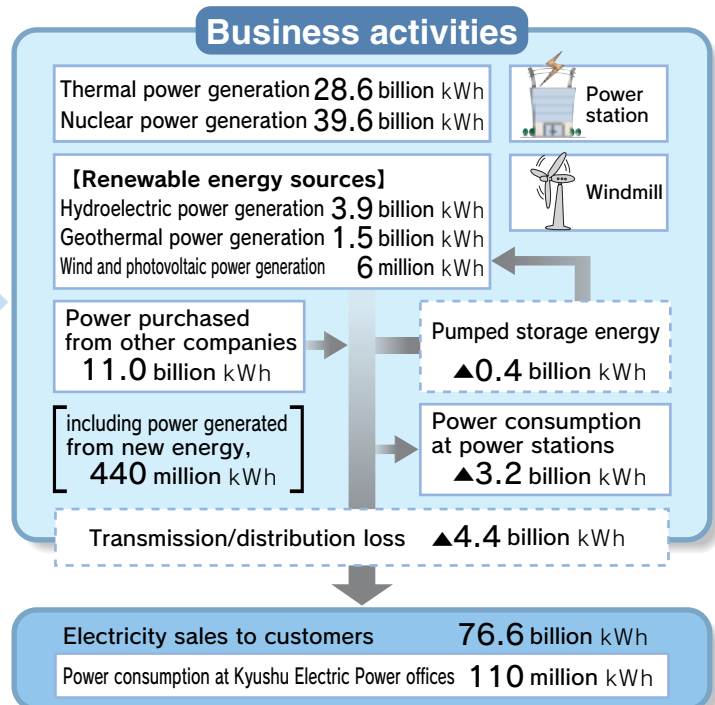
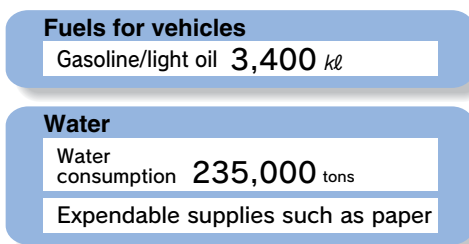
Kyushu Electric Power introduced environmental accounting in Fiscal 2000. The costs and benefits of environmental activities are taken into account in decision making regarding environmental activity deployment, and are disclosed to the public. For Fiscal 2002, changes made during the year are also listed to help in the understanding of the status of the company's activities in addition to the calculation of costs and benefits.

### 1 Business activities, environmental activity benefits and environmental load

#### Resources input



\*Weight of uranium



#### [Ref.: Records for FY 2001]


##### Resource input

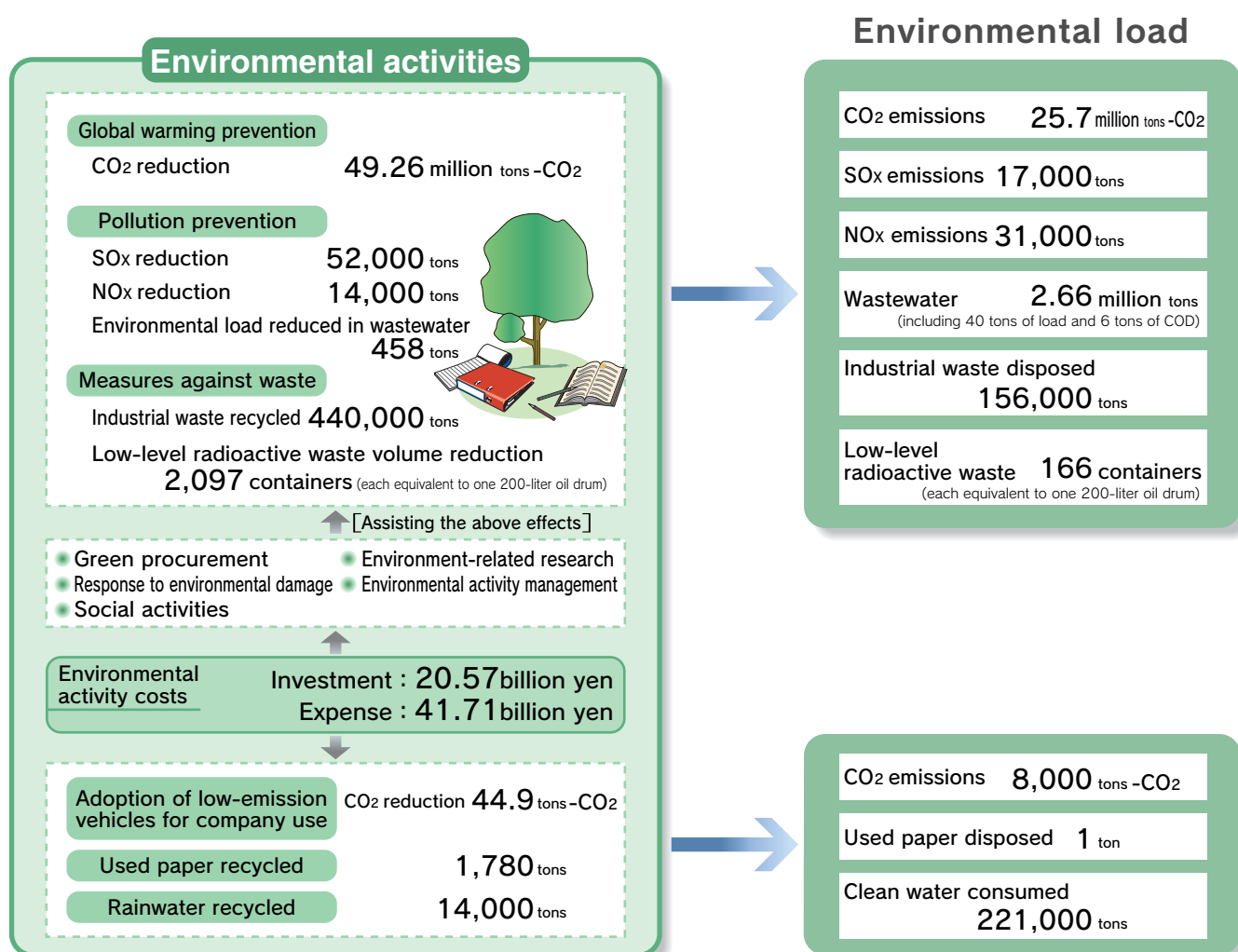
Coal	4.09 million tons
Heavy oil	490,000 kl
Crude oil	220,000 kl
LNG/LPG	2.55 million tons
Light oil	30,000 kl
Nuclear fuel	Approx. 102 tons*
Water for power generation	6.5 million tons
Fuels for vehicles	4,000 kl
Water consumption	—

\*Weight of uranium

##### Business activities

Thermal power generation	30.9 billion kWh
Nuclear power generation	36.7 billion kWh
Hydroelectric power generation	3.6 billion kWh
Geothermal power generation	1.5 billion kWh
Wind and photovoltaic power generation	3 million kWh
Power purchased from other companies including power generated from new energy	10.5 billion kWh 0.39 billion kWh
Pumped storage energy	▲0.4 billion kWh
Power consumption at power stations	▲3.3 billion kWh
Transmission/distribution loss	▲4.2 billion kWh
Electricity sales to customers	75.3 billion kWh
Power consumption at Kyushu Electric Power offices	110 million kWh
Total mileage (vehicles)	29 million km
Total employees	14,191

For efficient, effective environmental activity deployment, the environmental accounting system must evolve as a tool for promoting environmental management. It must enable quantitative understanding of the environmental load caused by business activities, the costs and benefits of the environmental activities, as well as a thorough analysis that includes consideration of their relation to business activities. [See Related Information P46](#)  for a detailed view of the environmental accounting system and its use.



#### ■ Environmental activities

CO <sub>2</sub> reduction	47.96 million tons-CO <sub>2</sub>
SO <sub>x</sub> reduction	51,000 tons
NO <sub>x</sub> reduction	14,000 tons
Environmental load reduced in wastewater	538 tons
Industrial waste recycled	460,000 tons
Low-level radioactive waste volume reduction	1,629 containers*
Adoption of low-emission vehicles for company use	14.5 tons-CO <sub>2</sub>
Used paper recycled	895 tons
Rainwater used	—

\*Each equivalent to one 200-liter oil drum

#### ■ Environmental activity costs

Investment	23.27 billion yen
Costs	40.54 billion yen

#### ■ Environmental load

CO <sub>2</sub> emissions	2,660 tons-CO <sub>2</sub>
SO <sub>x</sub> emissions	16,000 tons
NO <sub>x</sub> emissions	31,000 tons
Waste water	3.26 million tons
Load	81 tons
COD	8 tons
Industrial waste disposed	157,000 tons
Low-level radioactive waste	2,155 containers*
CO <sub>2</sub> emissions (vehicle)	10,000 tons-CO <sub>2</sub>
Used paper disposed	Approx.900 ton
Clean water consumed	—

\*Each equivalent to one 200-liter oil drum

## 2 Change in environmental activity costs (Record for FY2001 and 2002)

Unit : 100 million yen (except for those specially indicated)

Environmental activity category		Main activities	2001		2002	
			Investment	Cost	Investment	Cost
Global environment preservation	Global warming prevention	Installation of power sources with low CO <sub>2</sub> emissions, thermal efficiency improvement at thermal power stations, introduction and support for new energy equipment, contribution to World Bank Prototype Carbon Fund, energy saving (including low-emission vehicles) and SF <sub>6</sub> emission control	6.0	44.3	6.0	49.3
	Ozone layer protection	Measures for Freon and Halon recovery	0.0	0.4	0.0	0.1
Local natural environment preservation	Air pollution prevention	Flue gas treatment (desulfurization, denitrification, particulate reduction equipment) and use of fuel with low sulfur content	93.4	87.2	68.4	82.7
	Water pollution prevention	Waste water treatment, measures against oil leaks and warm wastewater at power plants	14.4	28.3	11.6	28.6
	Noise and vibration prevention	Noise and vibration measures at power plants, substations and transmission facilities	8.8	0.0	15.4	0.7
Resource recycling	Industrial waste	Reduction and recycling of industrial waste	11.9	25.2	11.6	33.7
		Disposal of industrial waste, and PCB storage	13.8	9.3	14.7	4.1
	General waste	Reduction and recycling of general waste	0.5	1.3	1.6	2.8
		Disposal of general waste	0.0	1.8	0.0	6.8
Radioactive waste, and spent nuclear fuel <sup>*1</sup>	Disposal and other treatment of radioactive waste	4.7	67.5	0.4	71.1	
Green procurement		Purchase of office and stationery supplies as a rule (Additional costs incurred from green procurement)	—	—	—	0
Environmental activity management	Environmental activity organization	Costs from environment-related license acquisition, education and training, and for personnel	0.0	0.5	0.0	1.7
	ISO and EMS application and maintenance	ISO14001 and EMS (ISO-based system) acquisition, application and maintenance	0.2	1.1	0.0	2.6
	Environmental load measurement and monitoring	Environmental impact assessment, monitoring and measurement of environmentally burdening substances, and PRTR measurements	2.7	15.9	2.9	16.9
Environment related research	Environmental preservation	Prevention of global warming, improvement of air and water quality and effective use of waste	0.0	3.9	3.0	6.1
	Environmental load control during transmission and distribution	Improvement in thermal efficiency and transmission/distribution loss factor	0.0	0.3	0.0	0.1
Social activities	Greening of sites	Greening, maintenance and management of Kyushu Electric power station sites	7.9	17.7	4.4	13.5
	Maintaining quality townscapes and surroundings	Measures to create harmony with surroundings such as tending to buildings with scenic care and installing underground transmission and distribution lines	68.2	89.4	65.5	85.6
	Environment Month	Environment Month and Kyushu Homeland Forestation Program	0.1	0.8	0.1	0.8
	Supporting local environmental activities	Support for local environmental activities and environmental organizations	0.0	0.3	0.0	0.7
	Environmental information disclosure	Environment Action Report, pamphlet and website preparation	0.0	0.2	0.0	0.4
Response to environmental impairment		Pollution load levy under the Pollution-related Health Damage Compensation Law	0.0	9.7	0.0	8.5
Total			232.7	405.4	205.7	417.1
Reference	Percentage in Kyushu Electric Power total investments and costs		8%	3%	7%	3%
	Total investments		2,979		2,980	
	Total costs		12,902		12,716	

(N.B.) Listed are Kyushu Electric Power's costs in FY 2001 and 2002 and benefits from environmental activities in FY 2002. Figures are rounded, and may not add up to the total.

\*1: The figure does not include allowance for spent nuclear fuel reprocessing (refer to the reference table).

[Reference]

Main activities	2001		2002	
	Investment	Accrued	Investment	Accrued
Allowance for used nuclear fuel reprocessing <sup>*2</sup>	0.0	395.3	0.0	497.6

\*2: With respect to the used nuclear fuel which is stored at year-end, the costs required to reprocess such used nuclear fuel in the future are partially accrued at year-end in accordance with the applicable regulations.

### 3 Environmental activity benefits (Record for FY 2002)

See Related Information [P46](#)  for details of activity benefits calculation.

Environmental activity benefits		Extent of benefits, etc.
CO <sub>2</sub> reduction	Nuclear power generation	32.12 million tons-CO <sub>2</sub> /yr
	LNG power generation	5.72 million tons-CO <sub>2</sub> /yr
	Hydro, geothermal power generation	584 million tons-CO <sub>2</sub> /yr
	New energy power generation and purchase	340,000 tons-CO <sub>2</sub> /yr
	Improvement of facility efficiency	4.76 million tons-CO <sub>2</sub> /yr
	World Bank PCF	—
	Energy saving activities	108 tons-CO <sub>2</sub> /yr
	SF <sub>6</sub> emission reduction <sup>*1</sup>	480,000 tons-CO <sub>2</sub> /yr
	Freon emissions <sup>*2</sup>	0.1 ODP ton/yr
SOx reduction		51,860 tons/yr
NOx reduction		14,232 tons/yr
Particulate reduction		87,954 tons/yr
Environmental load reduced in wastewater		458 tons/yr
Managed properly in conformity with laws and ordinances		
Amount recycled		438,000 tons/yr
Proper final disposal amount		156,000 tons/yr
Used paper recycled		1,780 tons/yr
Used paper properly disposed		1 tons/yr
Volume reduction in low-level radioactive waste		2,097 containers/yr (each equivalent to one 200-liter oil drum)
Amount of used nuclear fuel stored		2,694 assemblies
Green procurement is applied for the purchase of office and stationery supplies as a rule.		
Participants in training and lectures (in-company)		21,262 people/yr
Personnel with environment-related licenses		1,452 people
Offices that acquired ISO certification		6 offices
Offices that introduced EMS		72 offices
No. of monitoring and measurement points	Continuous monitoring and measurement items <sup>*3</sup>	175 items
	Other monitoring and measurement points	22,577 points
Research cases in practical-use phase		3 cases
Total green area		47.10 millionm <sup>2</sup>
No. of buildings with scenic care		181 buildings
No. of steel towers with environmental care		82 units
Length of underground distribution lines <sup>*4</sup>		2,974km
No. of participants at lectures, etc.(outside the company)		2,007 people/yr
No. of trees and saplings planted		143,465/yr
No. of environment organizations supported		41 organizations
No. of reports published		40,000 copies/yr
Website access (environment-related)		198,392 hits/yr
—		—

\*1:SF<sub>6</sub> emission reduction is converted to the weight of CO<sub>2</sub> using the global warming potential for SF<sub>6</sub> (23,900). The amount of reduction includes that attained by equipment overhaul and dismantlement.

\*2:The emissions reduction for Freon is converted into a relative value taking ozone depletion potential (ODP) per unit weight of CFC-11 as 1.

\*3:Items for continuous monitoring and measurement, which was included in the "No. of monitoring and measurement locations" for the FY 2001 Report, are calculated separately.

\*4:The unit was changed from "distance" (used in the FY2001 Report) to "length" to reflect the status of installation more precisely by showing the total length of power lines.

### FY 2002 calculation results

The environmental activity investments and costs for Fiscal 2002 totaled 20.57 billion yen and 41.71 billion yen, respectively. Compared to Fiscal 2001, the investments decreased by 2.7 billion yen, while the costs increased by 1.17 billion yen, mainly resulting from the following factors:

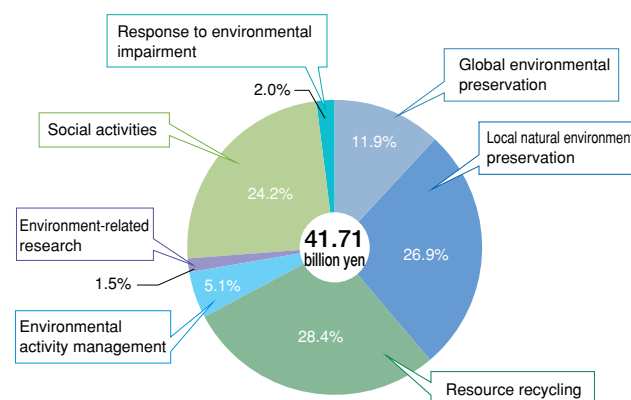
#### ◇Investments

Capital investment was reduced from Fiscal 2001 following the completion of air pollution prevention facilities installation at Unit 2 of Reihoku Thermal Power Station in Fiscal 2002.

#### ◇Costs

Costs for dealing with industrial and general waste increased due to the addition of the following costs: depreciation cost of the facilities for effective use of coal ash at Reihoku and Karita Power Stations; incinerator removal costs as a measure against dioxin emissions.

### ■ Environmental activity costs component ratio (FY 2002)



### 4 Economic effects from environmental activities

Among the environmental activities, the real economic effects that lead to savings and income are shown below:

Unit:100 million yen

Environmental activity category	Main activities	Quantity of benefits	
Global environmental preservation	Global warming prevention	Fuel cost savings from improvement of thermal efficiency, the transmission/distribution loss factor, and introduction of energy-saving, fuel-efficient vehicles	219.6
Resource recycling	Waste measures	Income from sale of unneeded supplies	2.1
	Waste reduction	Final disposal cost savings from recycling	22.3
Savings in statutory charges	Pollution load levy savings from SOx emission reduction	24.0	
Total		268.0	