

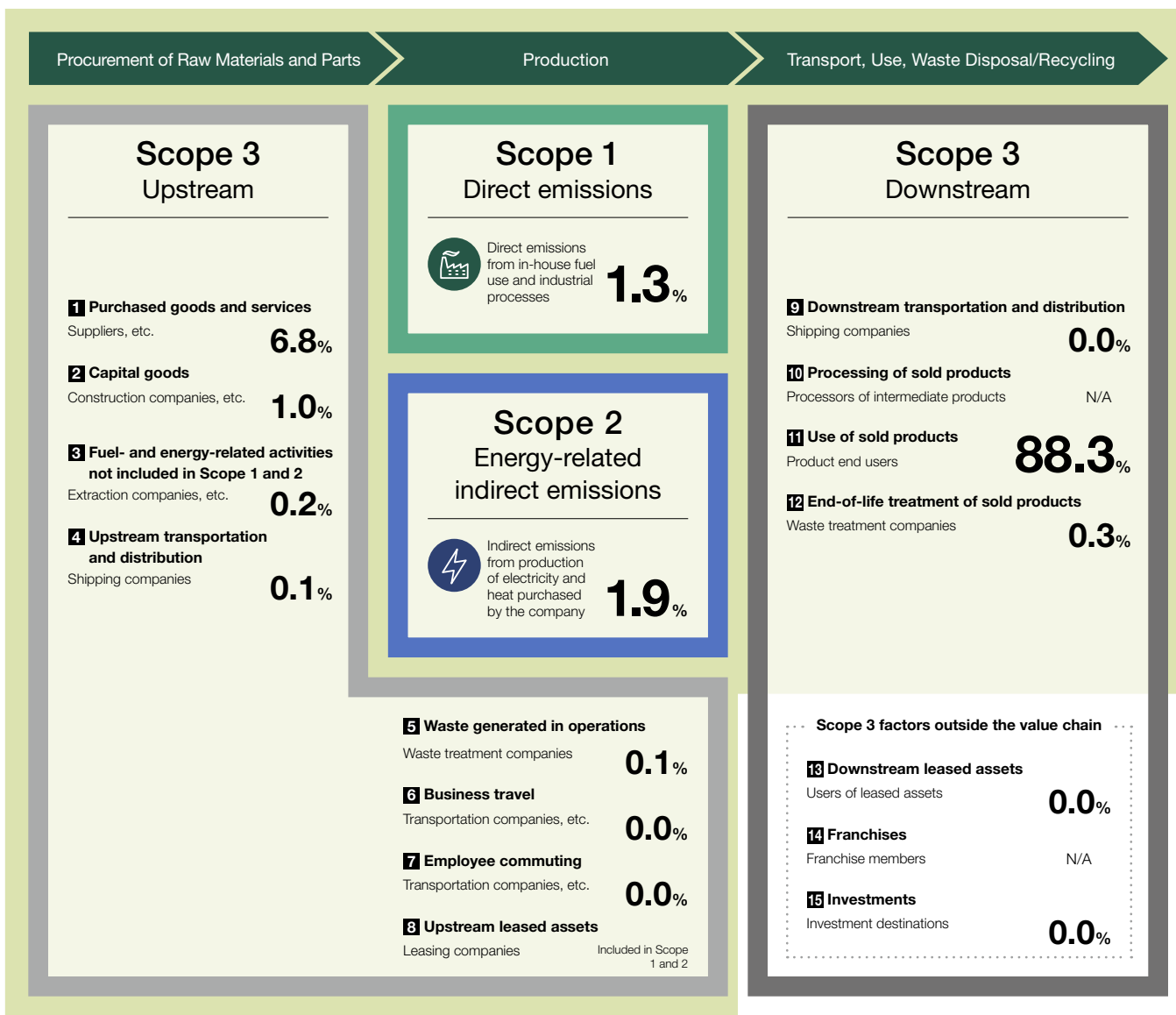
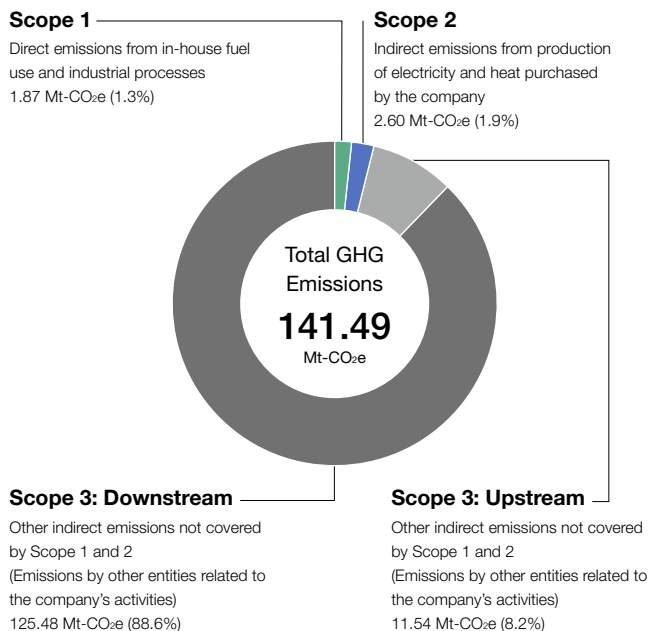
Environmental Data

Environmental Load Through the Value Chain

Objectives, Activities, and Achievements

Calculation of GHG Emissions Throughout the Value Chain

We calculate greenhouse gas (GHG) emissions throughout the entire value chain in conformance with GHG Protocol standards to more effectively reduce these emissions. As a substantial amount of emissions comes from use of the products we sell, we make an ongoing effort to reduce emissions by enhancing the efficiency and energy-saving features of our products and services during their use.



In-house: Within the scope of the company's organizational boundaries. In principle, the scope of all business activities of the company itself and activities within or controlled by its consolidated subsidiaries.
 Upstream: In principle, activities related to purchased products and services.
 Downstream: In principle, activities related to sold products and services.

GHG Emissions Throughout the Hitachi Value Chain (Hitachi Group)

Category	Description	Calculation Results (Mt-CO ₂ e)
Scope 1^{*1}		
Direct emissions	Direct emissions from in-house fuel use and industrial processes	1.87 (1.3%)
Scope 2^{*2}		
Energy-related indirect emissions	Indirect emissions from production of electricity and heat purchased by the company	2.60 (1.9%)
Scope 3: Upstream (other indirect emissions)		
1 Purchased goods and services	Emissions from the resource extraction stage to the manufacturing stage, including raw materials, parts, supplied products, and sales	9.51 (6.8%)
2 Capital goods	Emissions generated in the construction, manufacture, and shipping of the company's own capital goods, such as equipment, devices, buildings, facilities, and vehicles	1.45 (1.0%)
3 Fuel- and energy-related activities not included in Scope 1 and 2	Emissions from procuring fuel necessary for electricity and other energy production, including resource extraction, production, and shipping	0.24 (0.2%)
4 Upstream transportation and distribution	Emissions from distribution of raw materials, parts, supplied products, and sales prior to delivery of materials to the company, as well as other distribution activities of products for which the company bears the expense	0.10 (0.1%)
5 Waste generated in operations	Emissions from transportation, disposal, and treatment of waste generated in the company's operations	0.11 (0.1%)
6 Business travel	Emissions generated from fuel and electric power used by employees for business travel	0.07 (0.0%)
7 Employee commuting	Emissions generated from fuel and electric power used in employee commuting	0.06 (0.0%)
8 Upstream leased assets	Emissions from the operation of assets leased by the company, excluding those counted in Scope 1 and 2	Included in Scope 1 and 2
Scope 3: Downstream (other indirect emissions)		
9 Downstream transportation and distribution	Emissions from transportation, storage, loading and unloading, and retail sales of products	0.01 (0.0%)
10 Processing of sold products	Emissions by downstream companies during processing of intermediate products	N/A ^{*3}
11 Use of sold products ^{*4}	Emissions from use of products by end users, such as consumers and businesses	125.05 (88.3%)
12 End-of-life treatment of sold products ^{*4}	Emissions from transportation, waste disposal, and treatment of products by end users, such as consumers and businesses	0.31 (0.3%)
13 Downstream leased assets	Emissions from operating assets owned by the reporting company as lessor and leased to other entities	0.03 (0.0%)
14 Franchises	Emissions by franchises under Scope 1 and 2	N/A
15 Investments	Emissions related to management of investments	0.08 (0.0%)
Total		141.49 (100%)

Note: Figures in parentheses are percentages of GHGs emitted throughout the value chain.

^{*1} Includes SF₆, PFC, HFC, N₂O, NF₃, and CH₄. The gas and fuel conversion factor is based on the list of emissions and calculation methods published by Japan's Ministry of the Environment.

^{*2} The CO₂ electrical power conversion factor uses the 2005 emission coefficient for Japan published by the International Energy Agency (IEA) in the 2010 edition of *CO₂ Emissions from Fuel Combustion*.

^{*3} Cannot be determined due to insufficient information on processing.

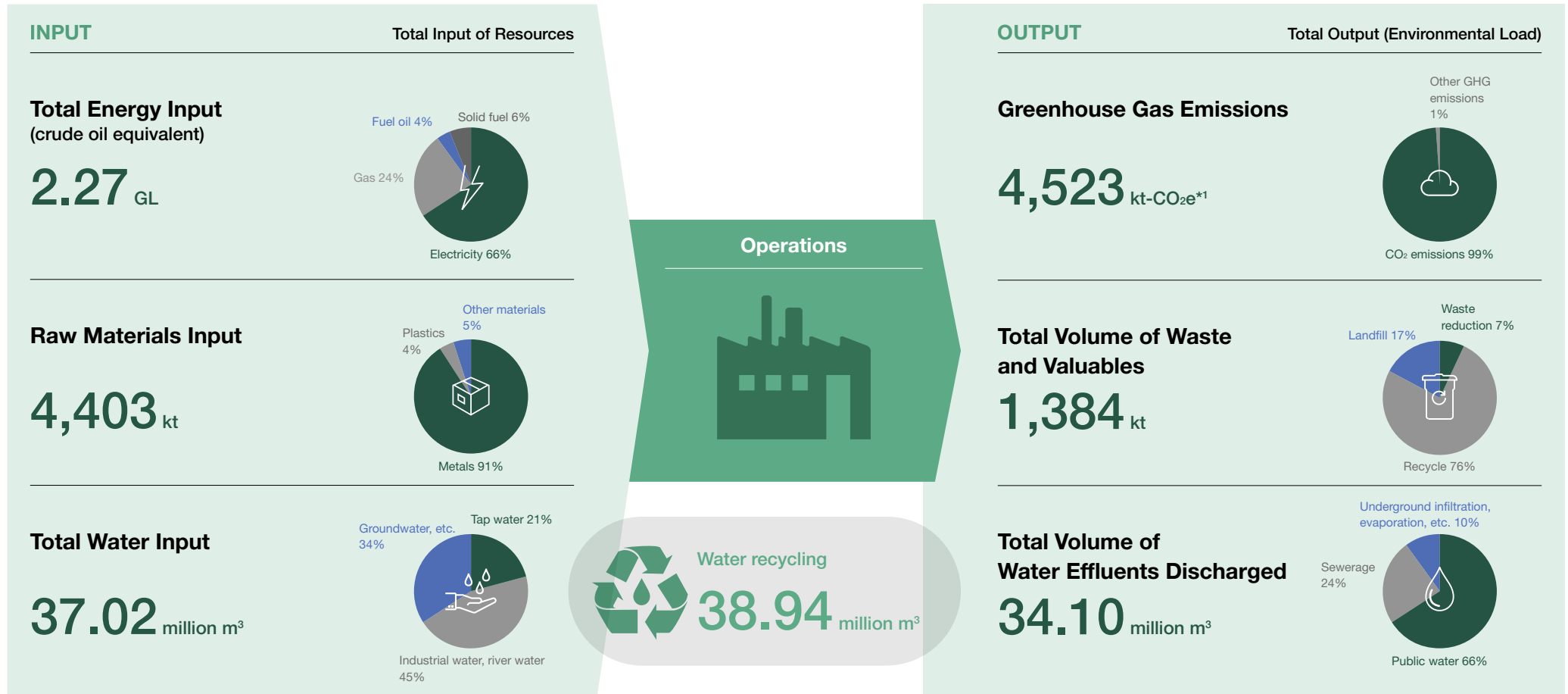
^{*4} CO₂ emissions per unit is based on the Inventory Database for Environmental Analysis (IDEA), developed by the National Institute of Advanced Industrial Science and Technology (AIST) and the Japan Environmental Management Association for Industry (JEMAI).

Environmental Load from Operations

Objectives, Activities, and Achievements

Data on Environmental Load from Operations (Hitachi Group, FY 2018)

The data below shows the resource inputs and the environmental load for Hitachi Group operations in fiscal 2018.



*1 CO₂e: CO₂ equivalent.

[Click here for detailed information.](#)

Detailed Data on Resource Input and Environmental Load Output

Total Input of Resources

Total resources input from Hitachi Group operations.



Total Energy Input

Energy consumption: (crude oil equivalent) 2.27 GL

		FY 2017	FY 2018		
Renewable energy	Electricity	3.1 GWh (11.2 TJ)	7.1 GWh (25.6 TJ)		
Non-renewable energy	Electricity	6,020 GWh (21.7 PJ)	6,021 GWh (21.7 PJ)		
		For heating	130 GWh (0.5 PJ)	128 GWh (0.5 PJ)	
		For cooling	277 GWh (1.0 PJ)	273 GWh (1.0 PJ)	
		To generate steam	644 t (1.5 TJ)	648 t (1.5 TJ)	
	Gas	Natural gas	0.19 Gm ³ (8.6 PJ)	0.18 Gm ³ (8.0 PJ)	
			For heating	18.4 Mm ³ (0.8 PJ)	18.6 Mm ³ (0.8 PJ)
			For cooling	10.3 Mm ³ (0.5 PJ)	10.5 Mm ³ (0.5 PJ)
			To generate steam	560 kt (1.3 PJ)	567 kt (1.3 PJ)
		LPG, LNG, etc.	269 kt (14.5 PJ)	251 kt (13.5 PJ)	
		Fuel oil (heavy oil, kerosene, etc.)	117 ML (4.5 PJ)	87 ML (3.4 PJ)	
	Solid fuel (coke)	179 kt (5.3 PJ)	189 kt (5.5 PJ)		



Raw Materials Input

Materials: 4,403 kt

		FY 2017	FY 2018	
Materials	Metals	3,388 kt	4,031 kt	
		New materials	1,571 kt	1,624 kt
		Recycled materials, etc.	1,817 kt	2,407 kt
	Plastics	151 kt	165 kt	
		New materials	150 kt	163 kt
		Recycled materials, etc.	1 kt	2 kt
	Other materials	258 kt	207 kt	
New materials		250 kt	201 kt	
	Recycled materials, etc.	8 kt	6 kt	
Chemicals	PRTR substances* ¹ handled	205 kt	189 kt	
	Ozone-depleting substances handled	77 t	130 t	
	Greenhouse gas substances handled	5,656 t	5,640 t	

*1 PRTR substances: The 462 chemicals designated in Japan's Pollutant Release and Transfer Register (PRTR) Law.



Total Water Input

Water use: 37.02 million m³

		FY 2017	FY 2018
Water provided by municipality or other sources	Tap water	7.40 million m ³	7.61 million m ³
	Industrial water, river water	17.46 million m ³	16.63 million m ³
Groundwater		13.56 million m ³	12.74 million m ³
Rain water		0.02 million m ³	0.01 million m ³
Recycled water (recycled from the wastewater of other organizations)		0.10 million m ³	0.03 million m ³

Total Output of Environmental Load

Environmental load output from Hitachi Group operations.



Greenhouse Gas Emissions

Greenhouse gases: 4,523 kt-CO₂e

		FY 2017	FY 2018
CO ₂ emissions		4,663 kt-CO ₂	4,470 kt-CO ₂
Other GHGs	SF ₆ (sulfur hexafluoride)	40 kt-CO ₂ e	35 kt-CO ₂ e
	PFCs (perfluorocarbons)	4 kt-CO ₂ e	5 kt-CO ₂ e
	HFCs (hydrofluorocarbons)	7 kt-CO ₂ e	3 kt-CO ₂ e
	N ₂ O, NF ₃ , CH ₄ (dinitrogen monoxide, nitrogen trifluoride, methane)	1 kt-CO ₂ e	3 kt-CO ₂ e
	CO ₂ from non-energy sources	3 kt-CO ₂	7 kt-CO ₂

Notes:

- The CO₂ electrical power conversion factor uses the 2005 emission coefficient for Japan published by the International Energy Agency (IEA) in the 2010 edition of *CO₂ Emissions from Fuel Combustion*.
- The gas and fuel oil conversion factor is based on the list of emissions and calculation methods published by Japan's Ministry of the Environment.



Total Volume of Waste and Valuables

Waste and valuables generation: 1,384 kt Nonhazardous: 1,348 kt (hazardous*1: 36 kt)

		FY 2017	FY 2018
Waste reduction		83 kt (9.0)	94 kt (5.6)
Recycling	Reuse	1 kt (0.4)	1 kt (0.0)
	Materials recycled	1,038 kt (20.2)	1,044 kt (25.6)
	Thermal recovery	11 kt (1.4)	13 kt (1.4)
Landfill		223 kt (5.2)	232 kt (3.7)
Chemicals	PRTR substances discharged or transferred	4.2 kt	4.1 kt
	SO _x (sulfur oxides)	107 kNm ^{3*2}	96 kNm ^{3*2}
	NO _x (nitrogen oxides)	469 kNm ³	452 kNm ³
	Ozone-depleting substances emitted (CFC-11, etc.)	1 t (0 t-ODP ^{*3})	1 t (0 t-ODP ^{*3})

*1 Waste materials that pose a threat to human health or the living environment. We dispose of all such materials in accordance with the laws and regulations of each country and region.

*2 Includes SO_x generated by a materials company that became a consolidated member of the Hitachi Group in fiscal 2016.

*3 ODP (ozone depletion potential): A coefficient indicating the extent to which a chemical compound may cause ozone depletion relative to the depletion for CFC-11 (trichlorofluoromethane, ODP = 1.0). The emissions factor uses the ODP and global warming potential of Japan's Ministry of the Environment.



Total Volume of Water Effluents Discharged

Water effluents discharged: 34.10 million m³

		FY 2017	FY 2018
Public water		23.12 million m ³	22.44 million m ³
Sewerage		8.62 million m ³	8.18 million m ³
Underground infiltration, evaporation, etc.		3.39 million m ³	3.48 million m ³
Water quality	BOD (biochemical oxygen demand)	392 t	390 t
	COD (chemical oxygen demand)	617 t	1,701 t

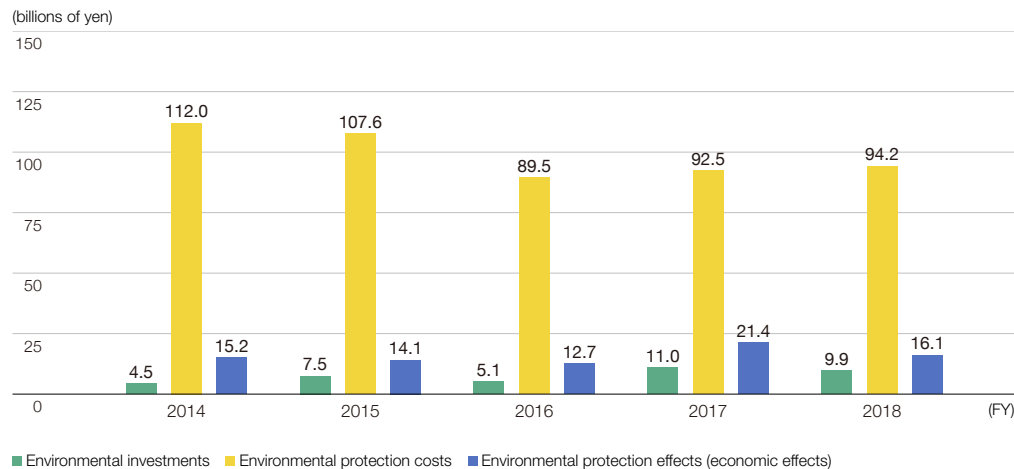
Environmental Accounting

Objectives, Activities, and Achievements

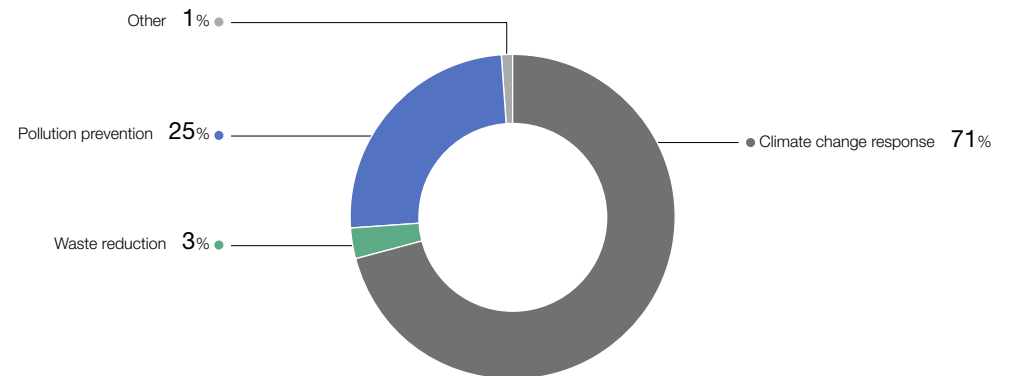
Hitachi discloses environmental accounting data based on a set of environmental accounting procedures conforming to the Japanese Ministry of the Environment's Environmental Accounting Guidelines. We use the environmental accounting data to raise the efficiency of our environmental investments and activities, more effectively allocating management resources to our ongoing environmental efforts.

Achievements

Environmental Investments, Environmental Protection Costs, and Economic Effects (Hitachi Group)



Fiscal 2018 Environmental Investments by Countermeasure (Hitachi Group)



Environmental Data

Environmental Investments

(billions of yen)

Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Total investment	4.46	7.50	5.12	10.99	9.86

Environmental Protection Costs

(billions of yen)

Item	Description	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Expenses						
Business area	Maintenance costs for equipment with low environmental load, depreciation, etc.*1	26.90	24.22	19.19	22.17	23.57
Upstream/downstream	Green procurement expenses, recovery and recycling of products and packaging, recycling expenses	1.09	0.97	0.63	0.72	0.68
Administration	Labor costs for environmental management, implementation and maintenance of environmental management system	6.47	5.97	5.12	5.69	6.72
Research and development	R&D to reduce environmental burden caused by products and production processes, product design expenses	76.12	75.71	63.13	62.55	61.86
Social activities	Planting, beautification, and other environmental improvement expenses	0.36	0.45	1.21	1.00	0.93
Environmental remediation	Environmental mitigation costs, contributions, and charges	1.03	0.27	0.22	0.33	0.40
Total		111.97	107.59	89.50	92.46	94.16

*1 Equipment depreciation costs are calculated using the straight-line method over five years.

Environmental Protection Effects

• **Economic Effects*1**

(billions of yen)

Item	Major FY 2018 Activities	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Net income effects	Recovering value from waste by sorting and recycling	7.54	7.27	4.96	6.90	8.35
Reduced expenses effects	Installing high-efficiency equipment (lighting, power supply)	7.65	6.78	7.77	14.54	7.70
Total		15.19	14.05	12.73	21.44	16.05

*1 Economic effects include:

- Net income effects: Benefits with real incomes, including incomes from the sale of resalable materials and incomes from environmental technology patents.
- Reduced expenses effects: Reduction in electricity, waste treatment, and other expenses through environmental load reduction activities.

• **Physical Effects*1**

(million kWh)

Item	Major FY 2018 Activities	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Reduction in energy used during production	Installing LED lighting, upgrading air-conditioning equipment, etc.	68	59	51	41	55

*1 Physical effects refer to the annual amount of reduction in electricity consumption due to measures invested in during each fiscal year.

Environmental Liability

We have appropriated 7.2 billion yen in expenses for the disposal of PCB-containing waste and 1.5 billion yen to clean up contaminated soil as the amounts that we can reasonably project as of March 2019 as future environmental liabilities.