



Daiichi Sankyo Group Environmental Data Book 2017



Position of This Book

The information of this book complements Daiichi Sankyo Group Value Report 2017 and the environmental data on our website. Please see them in addition.

Contents

1 Environmental Management System	P 1
2 Conserving Energy and Combating Global Warming	P 7
3 Effective Use of Resources and Reduction of Environmental Burdens	P 13
4 Reduction of Environmental Risks	P 15
5 Climate Change and Water Risks	P 17
6 Initiatives for Biodiversity Conservation	P 18
7 Environmental Communication	P 20
8 Site Data	P 21
9 ESG Data (Environment)	P 23

Basic Environmental Management Policy

Safeguarding the environment is the foundation of all Group operational management. We pursue environmental management that contributes to a sustainable society and enhances our good corporate citizenship.

We implement the respective items listed below.

1. Confirm the environmental impacts of each business process, from R&D to production, distribution, usage and consumption, and disposal, and reduce environmental loads.
2. Comply strictly with environmental laws and ordinances, regional covenants, and voluntary standards.
3. Construct, operate, evaluate, and enhance an environmental management system.
4. Use resources and energy efficiently, reduce greenhouse gas emissions, and recycle and reduce waste.
5. Protect the environment and respect biodiversity by helping preserve the ecosystem.
6. Address environmental risks.
7. Educate and enlighten about the environment.
8. Communicate with internal and external stakeholders about environmental issues.

1

Environmental Management System

1-1 Our Stance on Environmental Management

Environmental issues such as global warming and extreme weather could be seen as very closely related to our lifestyles and work. We are practicing environmental management on a global scale in accordance with the Daiichi Sankyo Group Corporate Conduct Charter and the Basic Environmental Management Policy. We thereby aim to address such environmental issues through responsible corporate activities.

1-2 Promoting Environmental Management

To appropriately address environmental issues, we regard response to climate change, chemical substances management, water consumption control, waste management, and consideration for biodiversity as our main CSR challenges, while taking into account the societal demand and expectation for environmental conservation as well as the relationship with medium- and long-term business activities. Taking these CSR challenges into consideration, we promote environmental management by following the Fourth Medium-term Environmental Management Policy, which contains our targets for fiscal 2020.

Fourth Medium-Term Environmental Management Policy and Goals (Numerical Targets and Main Activities)

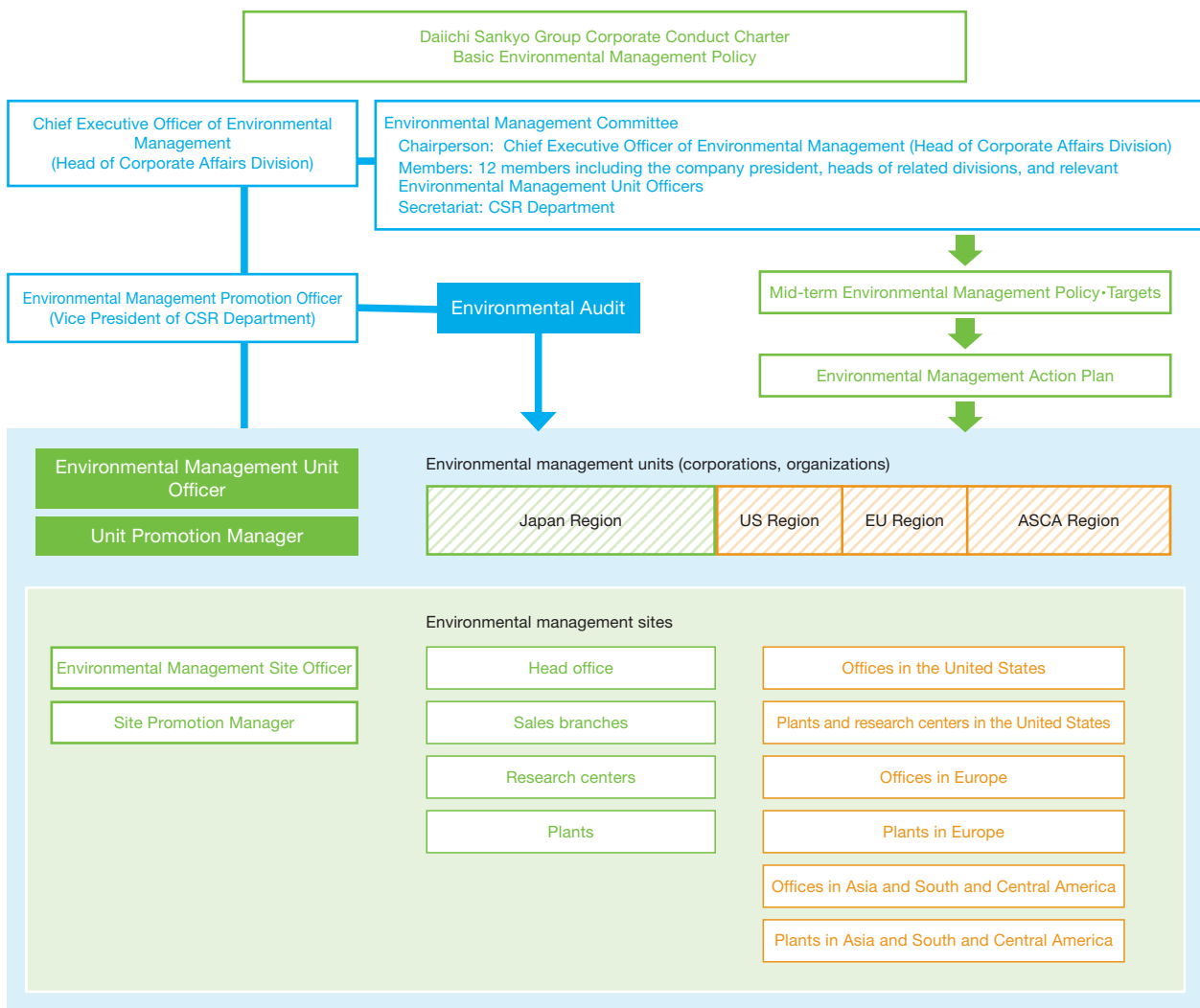
Fourth Medium-Term Environmental Management Policy	Numerical Targets and Main Activities	
Lower the environmental impact of all operations by conserving energy and resources, or reducing greenhouse gas emissions and waste.	Entire group	<ul style="list-style-type: none"> • CO₂ emissions: 5.6% reduction compared to fiscal 2015 • Total waste generated: 5% reduction compared to fiscal 2015 • Water consumption: 5% reduction compared to fiscal 2015 • Recycle waste • Utilize renewable energy
	Group companies in Japan	<ul style="list-style-type: none"> • Maintain 1% or less of the final disposal rate • Office paper consumption: 5% reduction compared to fiscal 2015 • Cooperate with suppliers to reduce environmental burdens
Lower environmental risks by continuously improving our environmental management systems in such areas as environmental compliance, pollution prevention, and chemical substances management.	Entire group	<ul style="list-style-type: none"> • Comply with environment-related laws and regulations through environmental audit and compliance evaluation • Prevent environmental accidents and minimize pollution risks • Identify and continuously reduce pollutant emissions to the atmosphere and waters
	Group companies in Japan	<ul style="list-style-type: none"> • Optimize the environmental management system • Prevent improper waste treatment
Manage the external risks that have the potential to generate a change in business operations, such as climate change and water risks.	Entire group	<ul style="list-style-type: none"> • Identify and address climate change and water risks
Ensure that operations reflect the need to preserve biodiversity and use ecosystem services sustainably.	Entire group	<ul style="list-style-type: none"> • Facilitate environmental conservation activities in cooperation with business partners and pursue procurement that takes environmental burdens and biodiversity into account • Take proper care of the environment around operating sites
	Group companies in Japan	<ul style="list-style-type: none"> • Evaluate environmental impacts by water discharged from plants and research facilities • Identify and minimize environmental burdens by utilizing biodiversity indicators • Contribute to a biodiversity-friendly society
Enhance environmental disclosure, improve the reliability of information, and engage in environmental communications with stakeholders.	Entire group	<ul style="list-style-type: none"> • Improve the reliability of disclosure data through third-party verification • Enhance environmental awareness
	Group companies in Japan	<ul style="list-style-type: none"> • Provide environmental education throughout the entire company and professional education • Communicate with communities, suppliers, NPOs, and other entities

1-3 Environmental Management Promotion System

The head of the Corporate Affairs Division of Daiichi Sankyo serves as the chief executive officer of environmental management and oversees environmental management on a Group basis, while the vice president of the CSR Department promotes environmental management. As for the Group's environmental management promotion system, we have set up environmental management units based on the corporations and internal companies that manage businesses. Each environmental management unit defines environmental management sites as necessary out of consideration for their region and function.

In addition, we have established an Environmental Management Committee chaired by the chief executive officer of environmental management as part of our corporate governance structure. This committee discusses to establish the important matters, such as environmental management policies and so on.

Diagram of the Daiichi Sankyo Group Environmental Management Promotion System



1-4 ISO 14001 Certification

Operating sites with production functions that have high environmental burdens have acquired ISO 14001 certification.

List of ISO 14001 Certified Plants (As of the End of June 2017)

Company	Site	ISO 14001 Acquisition Period
Daiichi Sankyo Propharma Co., Ltd.	Hiratsuka Plant* ¹	November, 2000
	Takatsuki Plant	June, 2001
Daiichi Sankyo Chemical Pharma Co., Ltd.	Onahama Plant	January, 1998
	Tatebayashi Plant* ²	April, 2012
	Odawara Plant	January, 2001
Daiichi Sankyo Brasil Farmacêutica	Alphaville Plant	February, 2012

*1 Includes Daiichi Sankyo, Daiichi Sankyo Chemical Pharma, and Daiichi Sankyo Happiness

*2 Includes Daiichi Sankyo

Furthermore, we established the Daiichi Sankyo Group Environmental Management system in accordance with ISO 14001 for other sites.

1-5 Environmental Supply Chain Management

Main Efforts	Details
Setting of CSR procurement standards	We request our business partners to make efforts based on the CSR procurement standards of our group. The environment-related items in the CSR procurement standards are shown below: (1) Reinforcement of the environmental management system (2) Consideration for product safety (3) Enhancement of green procurement (4) Response to biodiversity conservation
Supplier questionnaires	We carry out a CSR self-check survey every three years to further promote CSR procurement. In fiscal 2016 we held discussions, based on the survey results, with our main business partners to improve CSR procurement. (1) complying with laws and regulations and social norms, (2) promoting sound business operations, (3) taking proper environmental care, (4) securing optimal quality and cost, (5) ensuring stable supply, and (6) handling confidential information properly. Based on the survey results, we are planning to have discussions with our main business partners to improve CSR procurement.
Cooperation with logistics partners	We request our logistics partners to strive to reduce greenhouse gas emissions, such as by sharing the transportation weight and distance data of product transportation, stopping excessive idling on the premises of logistics centers, and practicing eco-driving.
Cooperation for environment audit	Partner companies storing and delivering our products and promotional goods cooperate for the environment audit on environment-related laws and regulations including waste management.

1-6 Environmental Auditing

Operating sites Subject to Environment Audit in Fiscal 2016

Daiichi Sankyo	Sales branches
Daiichi Sankyo Propharma	Hiratsuka Plant
Asubio Pharma	Head office and research center
Daiichi Sankyo Europe	Pfaffenhofen Plant (Germany)
Daiichi Sankyo Altkirch	Head office and plant (France)

* There were no findings that might cause serious environmental risks.

1-7 Emergency preparedness and response

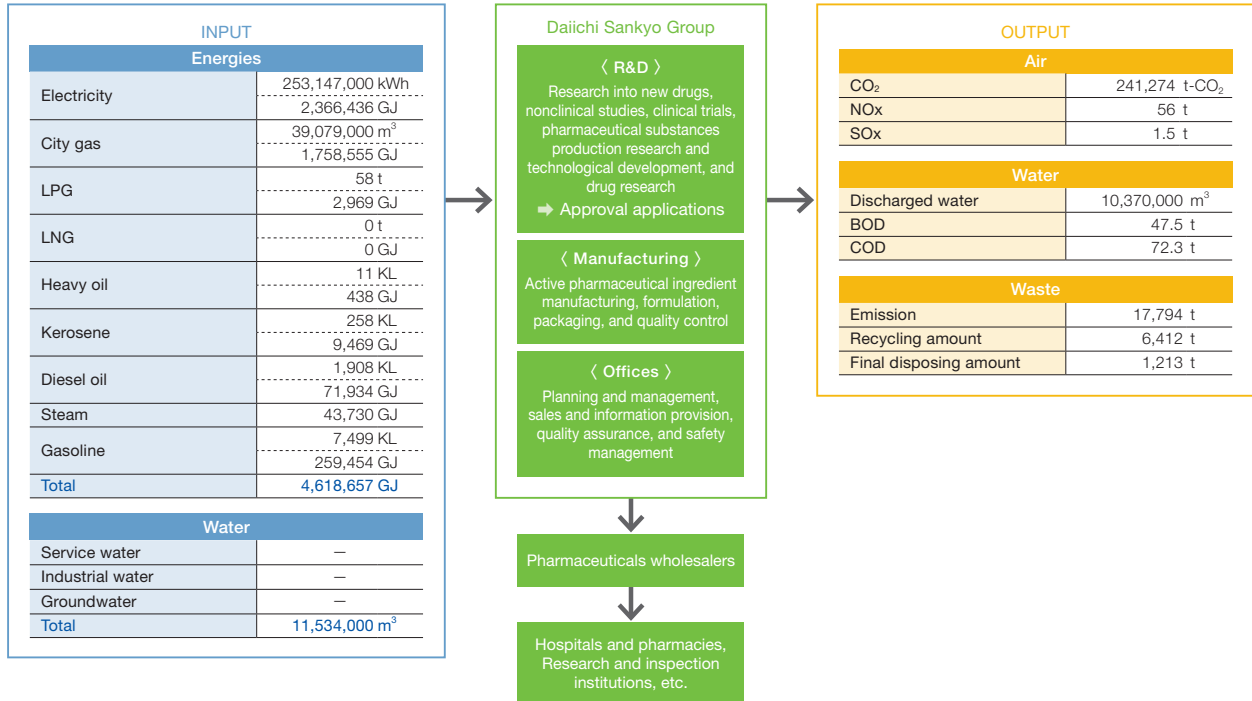
Plants and research facilities with particularly high environmental risks have protocols to prepare for and respond to emergencies, including prevention and mitigation of environmental pollution due to disasters and accidents. They also conduct periodic education and emergency drills while maintaining necessary equipment.

Emergency Drills Conducted (Plants and Research Facilities)

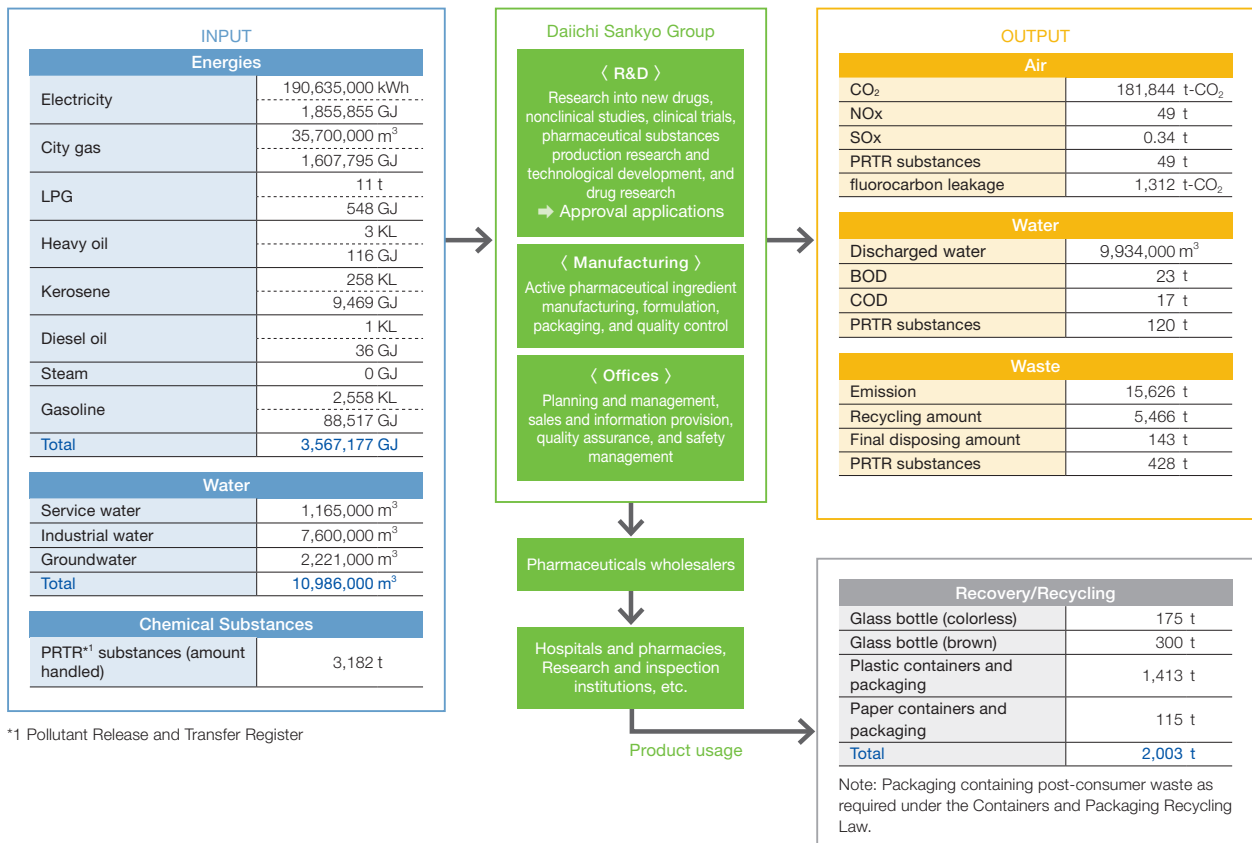
Company	Operating site	Details of Emergency Drills (Possible accidents/incidents)	Number of Emergency Drills	Total Number of Participants
Daiichi Sankyo	Shinagawa R&D Center	Large-scale earthquake and fire	11 drills	1,835
	Kasai R&D Center	Large-scale earthquake and fire	12 drills	1,597
Daiichi Sankyo Propharma	Hiratsuka Plant	Large-scale earthquake, fire, leakage, and emergency report	35 drills	1,536
	Takatsuki Plant	Large-scale earthquake, fire, leakage, and oxygen shortage	20 drills	1,206
Daiichi Sankyo Chemical Pharma	Onahama Plant	Large-scale earthquake, fire, and leakage	21 drills	411
	Tatebayashi Plant	Large-scale earthquake, fire, and leakage	10 drills	432
	Hiratsuka Plant	Large-scale earthquake	1 drills	100
	Odawara Plant	Large-scale earthquake, fire, leakage, and emergency report	72 drills	1,589
Kitasato Daiichi Sankyo Vaccine	Kitamoto Site	Large-scale earthquake and fire	5 drills	1,091
Asubio Pharma		Large-scale earthquake, fire, and flood	6 drills	621

1-8 Business Activity and Environmental Performance

Business Activity and Input/Output (Entire Group)



Business Activity and Input/Output (Group in Japan)



*1 Pollutant Release and Transfer Register

1-9 Environmental Accounting

Environment Conservation Cost (Group in Japan)

Unit: million yen

Environmental Item	FY2015		FY2016	
	Investment	Cost	Investment	Cost
Pollution Prevention Cost	884	183	486	171
Global Environmental Conservation Cost	3,183	649	1,468	622
Resource Circulation Cost	0	415	0	458
Upstream / Downstream Costs	0	56	0	27
Administration Cost	74	880	49	824
R&D Cost	0	33	0	33
Social Activity Cost	0	3	0	3
Environmental Remediation Cost	0	885	0	12
Total	4,140	3,102	2,003	2,148

*Does not include depreciation

Economic Benefit (Group in Japan)

Unit: million yen

	FY2015	FY2016
Value of sales of valuables	32	27

Environmental Conservation Benefit (Group in Japan)

	Unit	FY2015	FY2016	Increase/Decrease Compared to the Previous Year	Increase/Decrease Rate Compared to the Previous Year
Total volume of energy consumed	GJ	3,498,577	3,567,177	68,600	2.0
Water used	1,000m ³	11,868	10,986	△ 882	△ 7.4
PRTR substances used	t	3,686	3,182	△ 504	△ 13.7
CO ₂ emission	t-CO ₂	176,157	176,732	575	0.3
Total volume of waste	t	19,676	20,588	912	4.6
Waste emissions (= Outsourced treating volume)	t	15,675	15,626	△ 49	△ 0.3
Volume of recycled waste	t	5,955	5,466	△ 488	△ 8.2
Final disposing amount of waste	t	91	143	52	56.7
Recycling rate	%	38.0	35.0	—	△ 7.8
Recovered or recycled volume of containers and packages	t	2,039	2,003	△ 36	△ 1.7
SOx emissions	t	0.50	0.34	△ 0.16	△ 31.2
NOx emissions	t	45	49	3	7.6

1-10 Environmental Efficiency (Group in Japan)

Environmental Efficiency Index	Index Definition	FY2012	FY2013	FY2014	FY2015	FY2016
CO ₂	Sales/CO ₂ emissions	100	104	101	111	114
Waste	Sales/Total waste emissions	100	115	170	218	216
Water	Sales/Water consumption	100	114	113	134	150

* The figures as of fiscal 2011 have been set to 100. Higher index shows higher level of efficiency.

2 Conserving Energy and Combatting Global Warming

2-1 Our Basic Stance

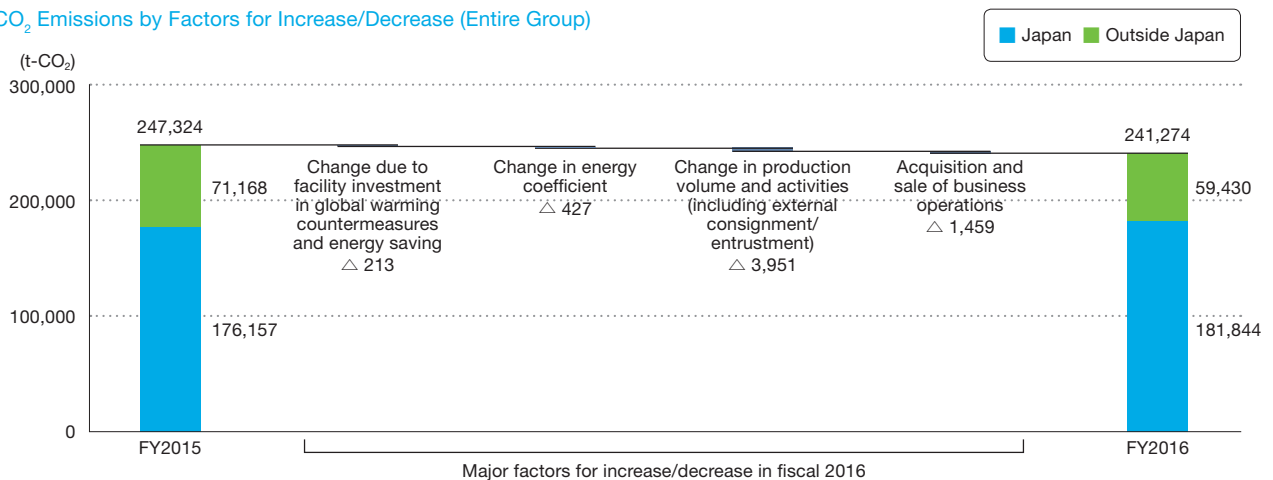
To facilitate responsible corporate activities that address climate change, we have set a CO₂ emissions target for fiscal 2020 the final year of the 5-year business plan of pursuing a 5.6% reduction from fiscal 2015 based on our long-term CO₂ emissions target for fiscal 2030 and the approach of the Science Based Targets initiative (SBT)*.

Possible climate change impacts include tightened controls on CO₂ emissions in accordance with the international framework for greenhouse gas emissions reduction, physical effects such as a rise in average temperature, drought, flood, change in disease structure, and health impacts. The Medium-Term Environmental Management Policy of our group includes "Manage the external risks that have the potential to generate a change in business operations, such as climate change and water risks". By doing so, we facilitate the efforts not only to mitigate the emissions of CO₂ and other substances, but also to adapt to climate change-driven impacts as well as influences that are inevitable in the medium- and long-term.

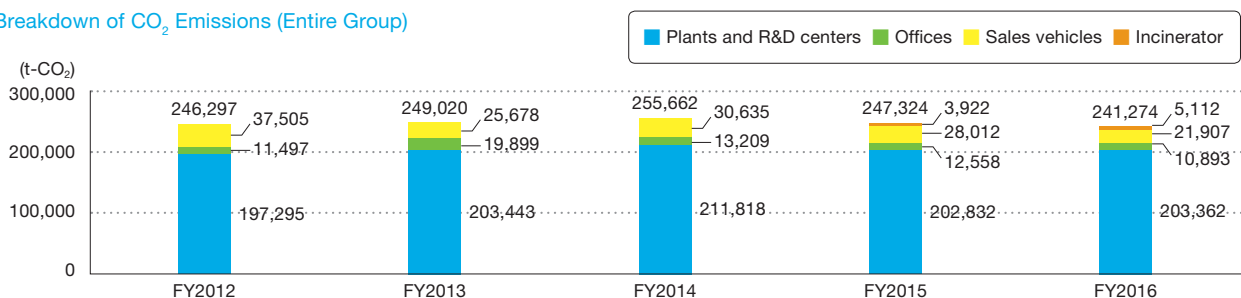
*An international initiative that encourages companies to set CO₂ reduction targets based on scientific evidence in order to help accomplish the goal of the Paris Agreement of keeping the average increase in global temperature below 2°C

2-2 Target and Result of CO₂ Emissions Reduction

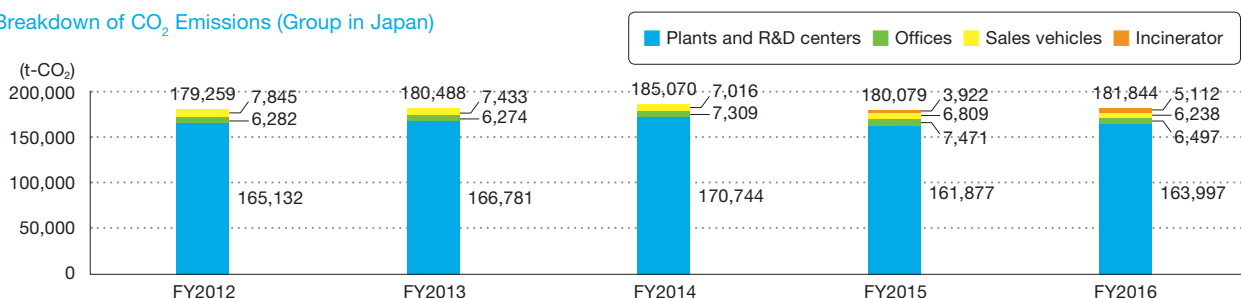
CO₂ Emissions by Factors for Increase/Decrease (Entire Group)



Breakdown of CO₂ Emissions (Entire Group)



Breakdown of CO₂ Emissions (Group in Japan)



2-3 CO₂ Emissions by Scope

Total CO₂ Emissions by Region (Scope 1 and Scope 2)

(t-CO₂)

	SCOPE1	SCOPE2	Total
In Japan	91,662	90,182	181,844
Outside Japan	23,812	35,618	59,430
Total	115,474	125,799	241,274

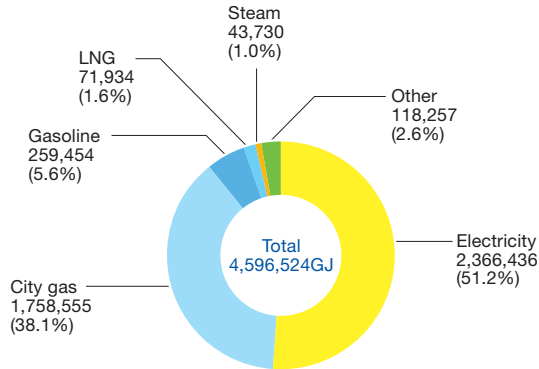
2-4 Supply Chain GHG Emission (Scope 3) (Group in Japan)

Sources	CO ₂ emissions (t-CO ₂) FY2016	CO ₂ emissions (t-CO ₂) FY2015	Increase/Decrease Rate Compared to the Previous Year (%)	Emissions Calculation Methodology	Explanation
Purchased goods and services	515,388	497,843	3.5	The figures are calculated by multiplying the emission basic unit based on guidelines* by the weight or purchase amount of raw materials, ingredients, and stock goods.	Geographic scope is Japan.
Capital goods	44,564	53,541	△ 16.8	It computed based on the amount of money for acquisition of the fixed assets and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry.	Geographic scope is Japan.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	6,748	6,623	1.9	It computed based on the usage of electricity and steam and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry.	Geographic scope is Japan.
Upstream transportation and distribution	9,773	10,569	△ 7.5	In accordance with guidelines*, etc., the figures are calculated with the transportation distance between the logistics centers of our group and the destinations (pharmaceutical wholesalers, etc.) based on the fuel consumption method.	Geographic scope is Japan.
Waste generated in operations	10,071	8,974	△ 12.2	It computed based on the weight of each waste discharged from the plants and R&D center and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry.	Geographic scope is Japan.
Business travel	15,322	15,348	△ 0.2	It computed based on the travel and accommodation expenses and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry. For travel expenses, CO ₂ emission coefficients for aircraft were adopted.	Geographic scope is Japan. The amount of emissions on business trips using company vehicles is included in Scope 1.
Employee commuting	3,283	3,225	1.8	The figures are calculated by multiplying the emission basic unit based on guidelines* by the commutation expenses of public transportation systems used by employees. The amount of emissions from the commuter cars of employees is calculated based on the amount of gasoline used.	Geographic scope is Japan.
Upstream leased assets	—	—	—	—	It is irrelevant because all emissions from the leased assets are counted in Scopes 1 and 2.
Downstream transportation and distribution	16,755	15,231	10.0	The emission basic unit of sales at wholesalers is estimated based on the sales of major pharmaceutical wholesalers and the CO ₂ emissions. The figures are calculated based on the total sales of the pharmaceutical wholesalers and our ratio of the sales volume.	Geographic scope is Japan.
Processing of sold products	—	—	—	—	—
Use of sold products	—	—	—	—	There is no energy use for product use, because of the characteristic of medical supplies. Therefore, it is estimated irrelevant.
End of life treatment of sold products	2,476	2,896	△ 14.5	It computed based on the weight of each materials for the containers of the sold product and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry.	Geographic scope is Japan. Recycling is included.
Downstream leased assets	6,617	7,451	△ 11.2	It computed based on the floor area according to the purpose of using the rented assets and CO ₂ emission coefficients of the guidelines* issued by Ministry of Environment and Ministry of Economy, Trade and Industry.	Geographic scope is Japan.
Franchises	—	—	—	—	Since we have no franchise, it is irrelevant.
Investments	—	—	—	—	—

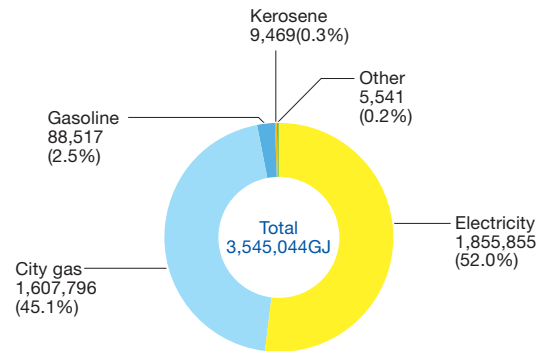
* Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain (Ver. 2.2), Policy on Emissions Unit Values for Accounting of Greenhouse Gas Emissions, etc., by Organizations Throughout the Supply Chain (Ver. 2.2), and the Emissions Unit Value Database (Ver. 2.2)

2-5 Breakdown of Energy Use

Breakdown of Energy Use (Entire Group)



Breakdown of Energy Use (Group in Japan)



2-6 Using Renewable Energy

Renewable Energy Usage and Breakdown

Types of Renewable Energy	Power Supply (MWh)	Remarks
Solar energy generation	36	Electricity generated by solar energy equipment installed in plants and research facilities. Not included in energy consumption.
Hydroelectric power generation	8,708	Purchased by our group companies in Germany.
Biomass power generation	500	Purchased by group companies in Japan. Not subtracted from the amount of emissions in Scope 2.
Biomass heat	5,771	Purchased by our group companies in Germany. Not subtracted from the amount of emissions in Scope 2.
Other renewable energies	1,491	Purchased by group companies in Europe, such as in Spain and Austria.

2-7 Emissions Trading

Carbon Offset

Offset Amount	Project Type	Project ID	Certification Standards
30t-CO ₂	Fuel shift from coal	Clean and Efficient Cooking and Heating Project, China [GS949]	Gold Standard

2-8 Supplementary Notes

1 Conversion factors and their sources

The conversion factors used in this data book are as follows:

Conversion factors of the Accounting and Reporting System under the Act on Promotion of Global Warming Countermeasures (the Global Warming Countermeasures Act) are used for the CO₂ conversion factor and the energy conversion factor.

Regarding the countries outside Japan, the factors commonly used in such countries or the factors based on GHG protocol are used in this data book.

List of conversion factors in Japan

Energy Source		Conversion Factor			
		Unit Calorific Value		CO ₂ Emission	
Electricity	General electricity utility (Day time)	9.97	GJ/1,000 kWh	Emission factor for each electric power company in Japan for fiscal 2015	t-CO ₂ /1,000 kWh
	General electricity utility (Night time)	9.28	GJ/1,000 kWh	Emission factor for each electric power company in Japan for fiscal 2015	t-CO ₂ /1,000 kWh
	Other	9.76	GJ/1,000 kWh	Emission factor for each electric power company in Japan for fiscal 2015	t-CO ₂ /1,000 kWh
A-type heavy oil		39.1	GJ/KL	2.71	t-CO ₂ /KL
Diesel oil		37.7	GJ/KL	2.58	t-CO ₂ /KL
Kerosene		36.7	GJ/KL	2.49	t-CO ₂ /KL
LPG		50.8	GJ/t	3.00	t-CO ₂ /t
City gas (13A)		44.8	GJ/1,000 m ³	2.23	t-CO ₂ /1,000 m ³
LNG		54.6	GJ/t	2.70	t-CO ₂ /t
Gasoline		34.6	GJ/KL	2.32	t-CO ₂ /KL
Steam for industry		1.02	GJ/GJ	0.060	t-CO ₂ /GJ

2 Emissions not subject to accounting

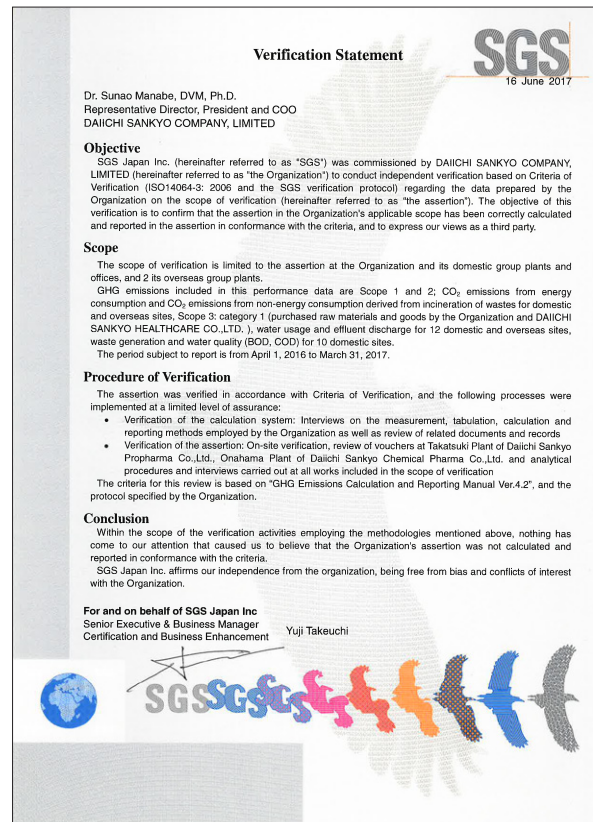
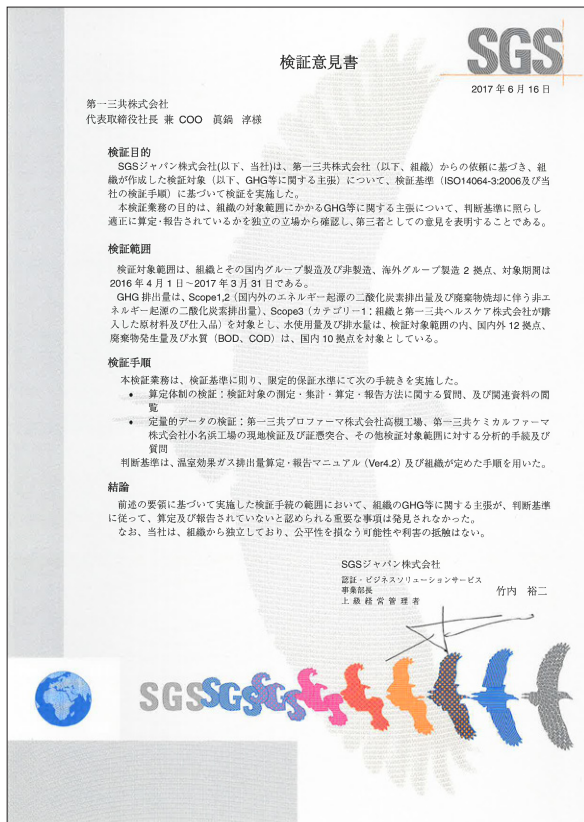
The emission data does not include emissions in Scope 1 or Scope 2 from small offices outside Japan, and it also does not include emissions of GHGs other than CO₂, as they are small in quantity.

3 GHG emissions from sold products

Any use of sold products will not help reduce GHS emissions.

4 Third-party verification

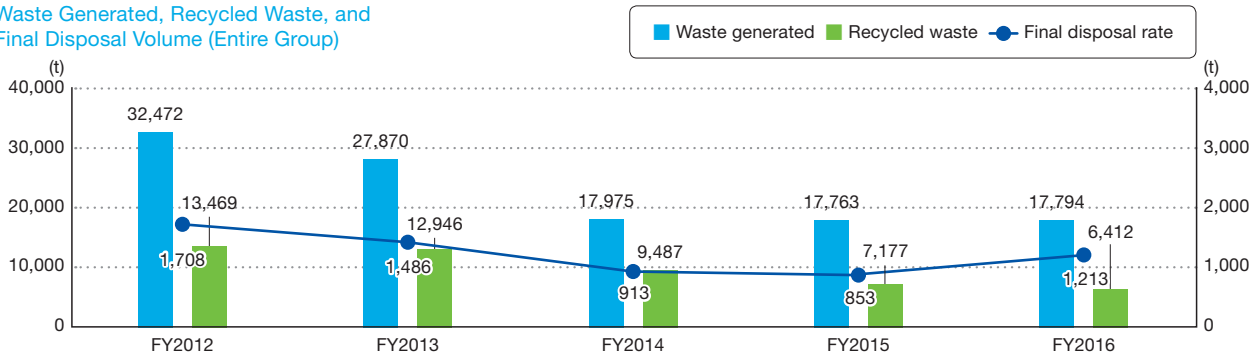
An external examining organization conducted inspections covering the Daiichi Sankyo Group's production and nonproduction sites in Japan and two production sites overseas. We received verification on GHG emissions for Scopes 1 and 2 (direct CO₂ emissions from energy use and indirect CO₂ emissions from waste incineration at sites in Japan and overseas) and Scope 3 (Category 1: raw materials and goods purchased by Daiichi Sankyo Co., Ltd. and Daiichi Sankyo Healthcare Co., Ltd.) on water use and water discharge for 12 sites in Japan and overseas and on waste and water quality (BOD, COD) for 10 sites in Japan. (Verification period: April 1, 2016 to March 31, 2017)



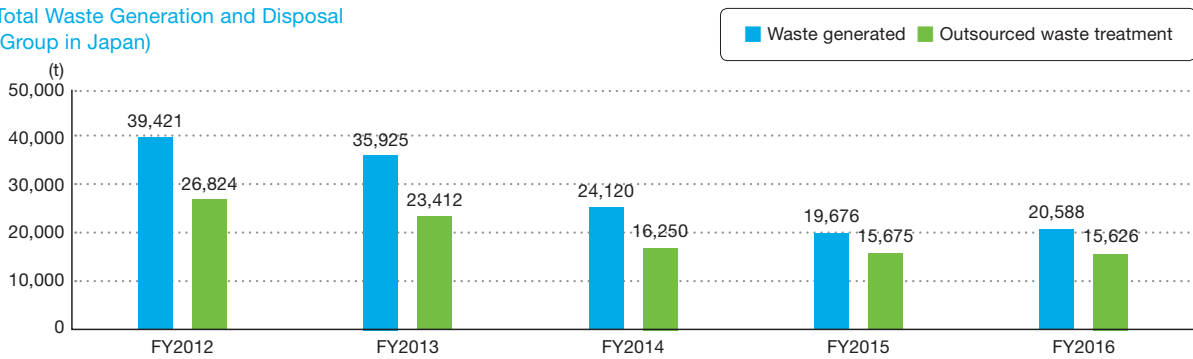
3 Effective Use of Resources and Reduction of Environmental Burdens

3-1 Waste Reduction Targets and Achievements

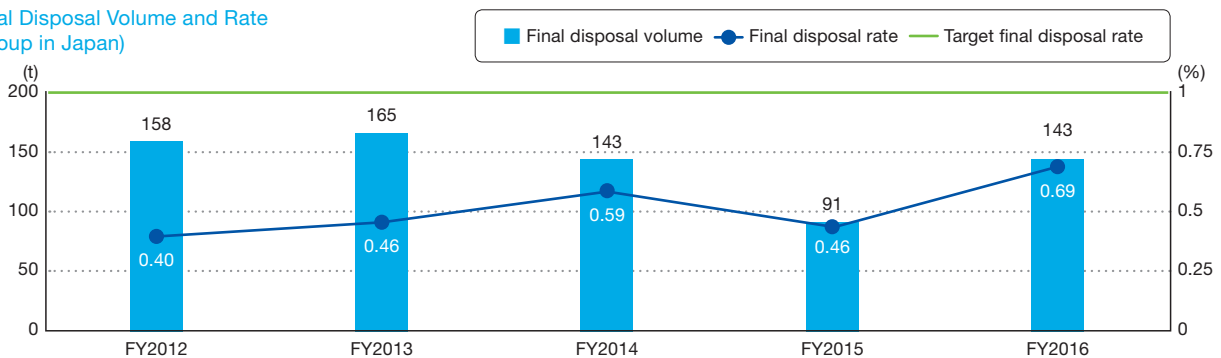
Waste Generated, Recycled Waste, and Final Disposal Volume (Entire Group)



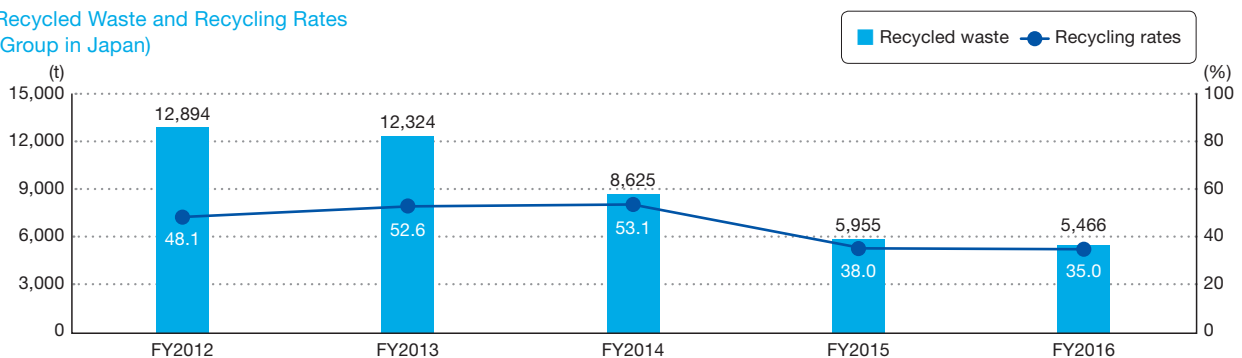
Total Waste Generation and Disposal (Group in Japan)



Final Disposal Volume and Rate (Group in Japan)



Recycled Waste and Recycling Rates (Group in Japan)

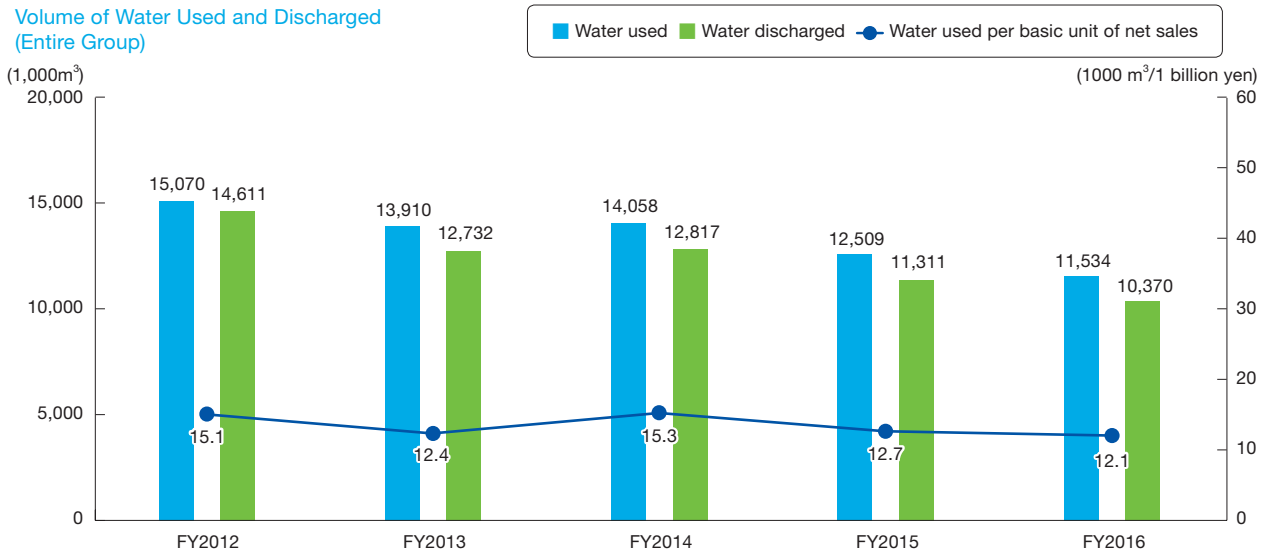


3-2 Efforts to Reduce Waste

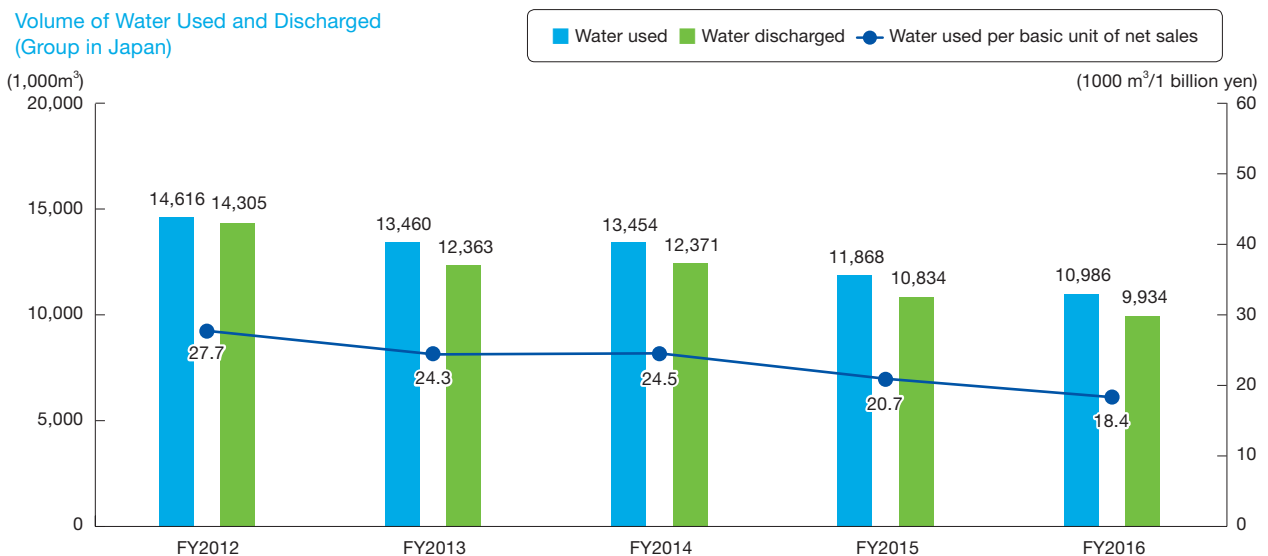
Name of Operating site, etc.	Main Efforts
Operating sites, branches, etc.	Reduce office paper consumption in operating sites
Headquarters, R&D centers, etc.	Promote reuse efforts in operating sites
Plants, etc.	Reuse collected organic solvents
Cooperation between plants/research facilities and waste disposal contractors	Promote recycling

3-3 Appropriate Use of Water Resources

Volume of Water Used and Discharged (Entire Group)



Volume of Water Used and Discharged (Group in Japan)

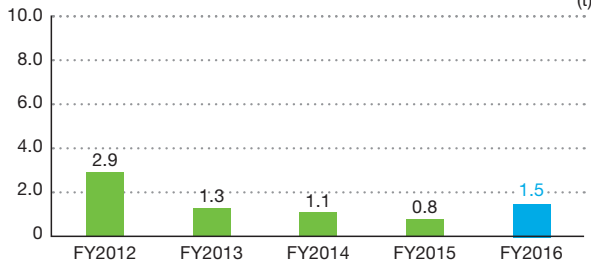


4

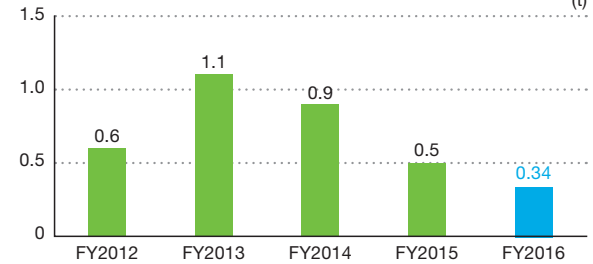
Reduction of Environmental Risks

4-1 Preventing Air and Water Pollution

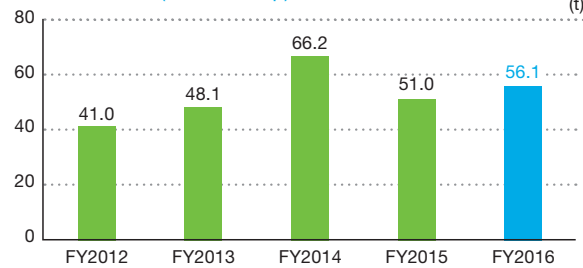
SOx Emissions (Entire Group)



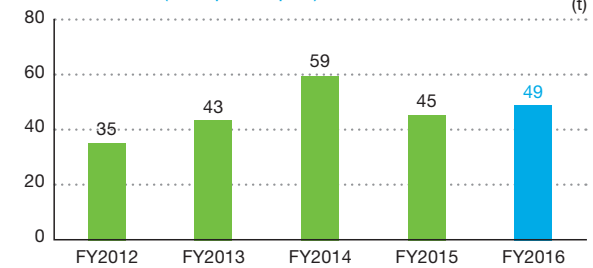
SOx Emissions (Group in Japan)



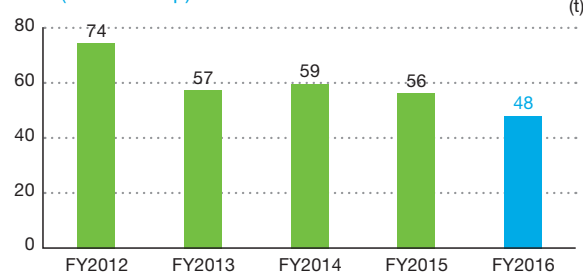
NOx Emissions (Entire Group)



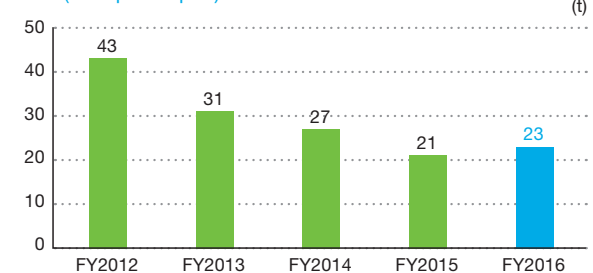
NOx Emissions (Group in Japan)



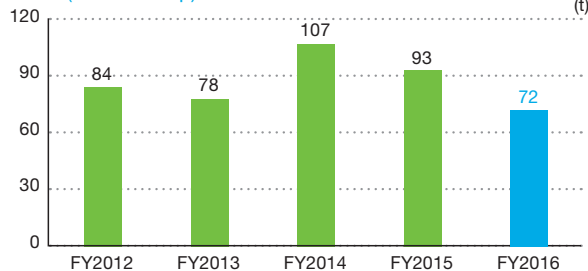
BOD (Entire Group)



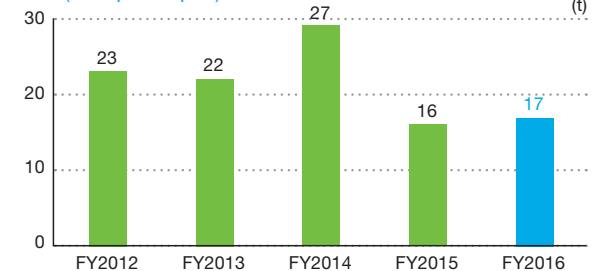
BOD (Group in Japan)



COD (Entire Group)



COD (Group in Japan)



4-2 Preventing Soil and Groundwater Contamination and its Countermeasures

Progress of Measures for Soil Purification

Office	Overview
Shinagawa R&D Center (Shinagawa-ku, Tokyo)	We performed a soil investigation associated with the construction of new research facilities according to Tokyo municipal ordinance. As a result, contamination was found in a part of soil. Thus we performed purification work appropriately on discussion with the governmental offices.
Takatsuki Plant Daiichi Sankyo Propharma Co., Ltd. (Takatsuki, Osaka)	We continue to perform groundwater monitoring and to take countermeasures after purification work of soil contaminated with VOC* and arsenic in 2004.

*Volatile Organic Compounds

4-3 Prevention of Noise, Vibration, and Offensive Odor

We conduct appropriate measures and continuous monitoring to comply with the laws and regulations related to noise, vibration, and offensive odor.

4-4 Usage Reduction and Emission/Transfer Control of Chemical Substances

Emission/Transfer Chemical Substances (Group in Japan)

(Unit: metric ton; mg-TEQ for dioxins)

Substance (Annual handling amount of 1 or more metric tons)	Handling Amount	Emission (except for emission into soil)		Transfer Amount		
		Air	Public Water	Sewage	Out of Offices (Recycling)	Out of Offices (Other)
Sodium azide	30.9	0.0	0.0	0.0	0.0	0.0
Acetonitrile	862.0	3.7	0.0	120.0	222.4	232.1
Ferric chloride	11.1	0.0	0.0	0.0	0.0	0.0
Chloroform	23.9	1.0	0.0	0.0	16.0	6.9
Chloromethane	49.2	3.3	0.0	0.0	0.0	0.0
Dichloromethane (Also known as methylene chloride)	15.5	1.0	0.0	0.0	0.0	14.5
N,N-Dimethylacetamide	117.1	0.2	0.0	0.0	7.0	22.4
Dimethylamine	0.0	0.0	0.0	0.0	0.0	0.0
N,N-Dimethylformamide	296.9	0.0	0.0	0.0	34.6	2.0
Triethylamine	10.7	0.1	0.0	0.0	0.0	11.0
Toluene	1,710.6	37.9	0.0	0.0	980.8	119.7
N-hexane	21.5	1.9	0.0	0.0	0.0	19.5
Cyanamide	32.0	0.0	0.0	0.0	32.0	0.0
Total	3,182	49.0	0.0	120.0	1,292.8	428.0
Dioxins	—	0.100	0.042	0.000	0.000	0.000

PCB Usage

Types of PCBs	Quantity
Capacitors	3 units
Fluorescent lamp ballasts, etc.	—

PCB Storage

Types of PCBs	Quantity		
	Heavy PCB	Light PCB	Total
Capacitors	2,218 units	—	2,218 units
Fluorescent lamp ballasts, etc.	2,932 units	—	2,932 units
PCB-containing oil	23 units	—	23 units
PCB-adhering materials	7 units	—	7 units
Other polluted products	9 units	—	9 units

*We sorted and measured the PCB-contaminated materials and registered the packaging information with the Japan Environmental Storage & Safety Corporation (JESCO), thereby switching to detailed quantitative management of high-concentration PCBs. We have already completed disposal of low-concentration PCBs.

5 Climate Change and Water Risks

5-1 Climate Change Risks

Climate Change Risks That Have the Potential to Affect Our Business

Risk Driver		Description	Potential Impact
Risks driven by changes in regulation	Cap and trade schemes	If it is subject to the greenhouse gas cap and trade scheme, an emissions credit must be purchased when the required reduction volume is not satisfied.	Increased operational cost
	International agreements	If regulations in each country are strengthened in accordance with the ratification of the Paris Agreement, necessary measures must be taken to ensure compliance with the regulations.	Increased operational cost
Risks that are driven by change in physical climate parameters	Change in highest and lowest temperatures	Temperature control costs will rise at research facilities and plants of our group.	Increased operational cost
	Increase in the number of typhoons, etc.	An increase in the number of localized torrential rainfall and large-scale typhoons will hamper the supply chain of our group's business operations.	Increased operational cost
	Change in disease structure, etc.	A change in disease structure, etc. due to climate change will cause quantitative and qualitative impact to the humanitarian assistance activities of our group, including providing access to medical care and pharmaceutical products.	Increased operational cost
Reputation-driven risks	Evaluation by external stakeholders	Evaluation by external stakeholders on our group's efforts to mitigate and adapt climate change will adversely affect our stock price.	Drop in our stock price (market valuation)

Climate Change Opportunities that Have the Potential to Affect Our Business

Opportunity Driver		Description	Potential Impact
Opportunities that are driven by changes in regulation	Emission reporting obligations	Energy costs will be reduced by taking various measures to mitigate greenhouse gases and energy.	Reduced operational costs
	Cap and trade schemes	Appropriate response to the emissions trading scheme will provide scheme-based incentives.	Reduced operational costs
Opportunity that are driven by changes in physical climate parameters	Change in disease structure	Development and sales of pharmaceutical products in response to an increased number of tropical infectious diseases or regional changes in disease patterns will augment revenue.	New products/business services
	Increase in the number of floods	Taking appropriate measures against flood damage in plants will ensure stable supply of products.	Increase in demand for existing products
Reputation-driven opportunities	Evaluation by external stakeholders	Evaluation by external stakeholders of our group's efforts to mitigate and adapt to climate change will positively affect our stock price.	Increased stock price (market valuation)

5-2 Water Risk

We carry out comprehensive risk evaluations based on the results of analysis of local water risks using the WWF-DEG Water Risk Filter and the survey results on water risks due to plants and research facilities.

The evaluations indicate that the operating sites with the highest water risks among our group are two plants in China, one in Brazil, and one research facility in India. Water withdraw restrictions and other strengthened regulations are considered to be major risk factors.

Volume of Water Used at the Offices at the Highest Water Risk in Group

	Volume of Water Used (Withdrawn)	Volume of Water Discharged	Volume of Water Actual Used
FY2016	256,000m ³	179,000m ³	77,000m ³

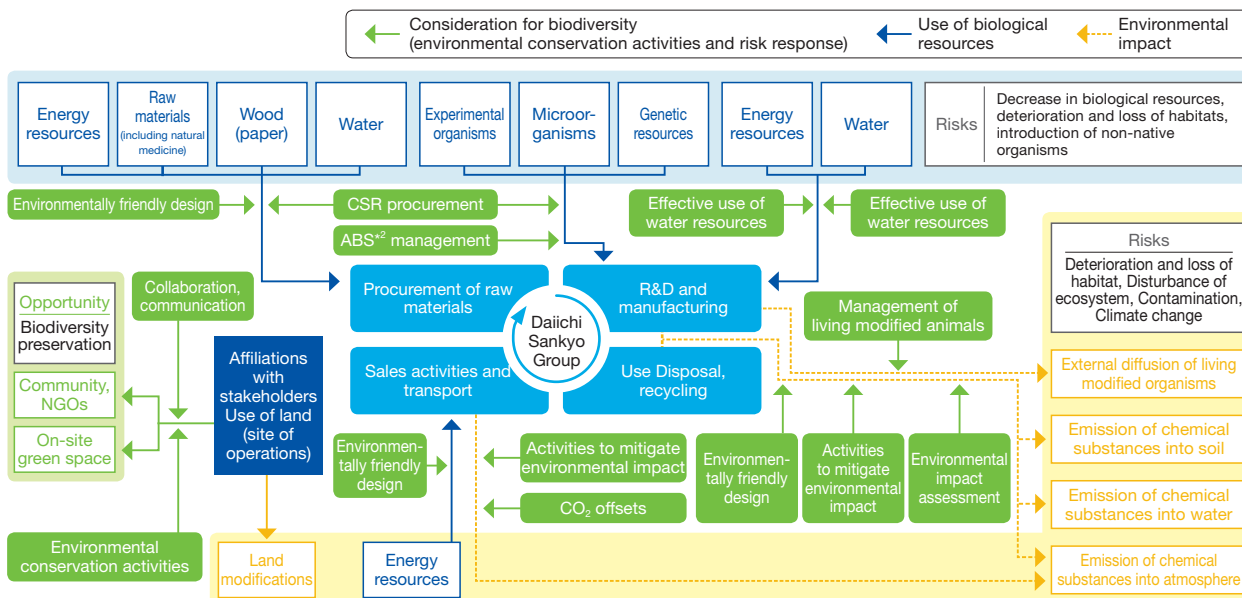
6 Initiatives for Biodiversity Conservation

6-1 Our Basic Stance

Basic Biodiversity Principles and Action Guidelines

Basic Policy	
<ul style="list-style-type: none"> Our Basic Environmental Management Policy states that, "Safeguarding the environment is the bedrock of all Group operational management." We have therefore acted to prevent pollution and global warming and contribute to recycling. Through our initiatives, we have used biological resources properly to minimize the impacts of our operations on biodiversity and have sustainably reduced chemical and other discharges. We will continue striving to preserve biodiversity and respect the principles of the Convention on Biological Diversity by adhering to the following Biodiversity Action Guidelines, thereby enhancing social sustainability. 	
Action Guidance	
1. Actively promote to address biodiversity conservation in all business activity	<ul style="list-style-type: none"> Under take ongoing endeavors to avoid or reduce operational impacts on biodiversity, devoting particular attention to lowering the environmental burdens of air and water emissions and wastes.
2. Identify the biodiversity impacts of ecosystem services, using those services sustainably	<ul style="list-style-type: none"> Recognize the operational importance of ecosystem services while understanding and minimizing their impacts on biodiversity, using those services sustainably.
3. Use genetically modified organisms responsibly	<ul style="list-style-type: none"> Maintain biosafety by continuing to responsibly use genetically modified organisms in drug discovery and production in keeping with the Cartagena Protocol on Biosafety and national laws and ordinances.
4. Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization	<ul style="list-style-type: none"> Comply with the Convention on Biological Diversity, the Bonn Guidelines, and other relevant rules to access and utilize genetic resources of the provider countries appropriately and to share benefits arising from their utilization in a fair and equitable manner.
5. Communicate with stakeholders and improve in-house awareness	<ul style="list-style-type: none"> Foster biodiversity preservation by communicating and liaising better with public and private entities. Educate employees to better understand how operations affect biodiversity and encourage internal and external efforts to safeguard biodiversity.

Map of Corporate Activities and Biodiversity¹



¹ Prepared with reference to the "Map of Corporate Activities and Biodiversity" developed by the Japan Business Initiative for Conservation and Sustainable Use of Biodiversity (JBIB)

² Access to genetic resources and benefit sharing

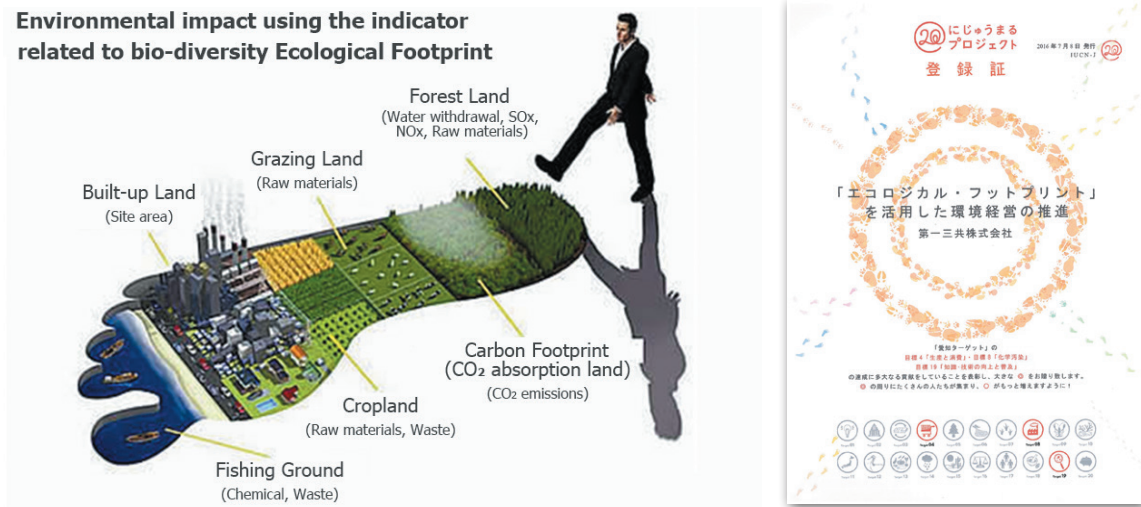
6-2 Initiatives for Biodiversity Conservation

● Assessment of the biodiversity indicator called ecological footprint

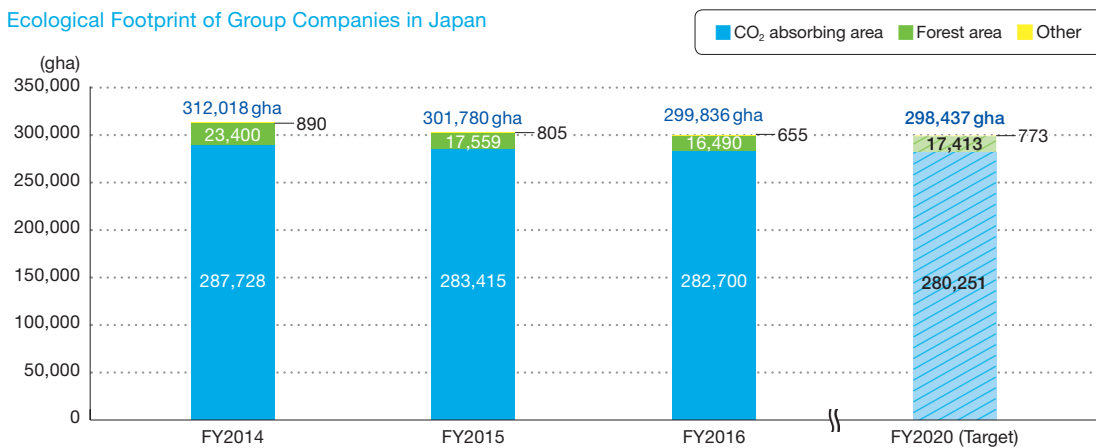
We have been assessing our ecological footprint (EF), an indicator of biodiversity, jointly with experts from the NGO Global Footprint Network since fiscal 2014 to examine all environmental impacts resulting from the business activities of group companies in Japan. Moreover, we are using the assessed EF as a comprehensive indicator of environmental impacts, including those related to biodiversity, by checking and monitoring long-term changes in the relationship between the group's reduction of environmental impacts and its biodiversity conservation (trade-off).

In addition, assessing EF has been recognized as an action for achieving the Aichi Target (20 targets) that was adopted at COP10 (the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity, in Nagoya) and registered on the Nijyu-Maru Project as well.

Environmental impact using the indicator related to bio-diversity Ecological Footprint



Ecological Footprint of Group Companies in Japan



● Implementation of WET testing

In fiscal 2016, WET test*s were conducted as environmental impact assessments to examine water discharged from all plants and research facilities in Japan, confirming that the discharged water has no serious impact on river ecosystems.

*A testing method that utilizes the biological responses of fish, Daphnia, and seaweed to determine the whole toxicity of discharged water.

7 Environmental Communication

7-1 Main Efforts

Efforts	Details
Briefing on ISO 14001 multi-site certification	Theme: ISO 14001 multi-site certification and the EMS basic document Date: July 14, 2016 Number of participants: 25
Training for internal audit staff	Theme: ISO 14001 internal audit staff training course and ISO 14001:2015 transition course Period: January to March 2017 Total number of participants: 180
Environmental e-learning	Theme: Basic knowledge of environmental problems and climate change Period: June 6 to July 8, 2016 Number of participants : Japan: 9,139 (target: 9,336; participation rate: 97.9%) Overseas: 4,134
Environmental Art Contest	Image category: 333 works from group companies in Japan and 203 works from group companies outside Japan Senryu and slogan category: 710 works from group companies in Japan and 34 works from group companies outside Japan
COOL CHOICE Program (Name changed from Eco Action Program)	Period: June 27 to September 2, 2016 Enrollment: 1,120 people
Posters for raising environmental awareness	411 posters displayed in 140 operating sites in and outside Japan

7-2 Environment-related Awards

Daiichi Sankyo Co. Ltd.	FY2016 Kanto Bureau of Economy, Trade and Industry Director-General's Award for Excellence in Plant Energy Management
Shinagawa R&D Center, Daiichi Sankyo Co. Ltd.	Corporate Award in the Shinagawa Ward Environmental Conservation Activity Awards

8 Site Data

Business Activity and Input/Output in fiscal 2016 (Group in Japan: Plants and R&D Centers)

INPUT		Unit	Shinagawa	Kasai	PP Hiratsuka ⁽¹⁾	PP Takatsuki ⁽¹⁾	CP Onahama ⁽²⁾
Energies	Electricity	1,000 kWh	24,933	18,062	35,683	14,263	12,748
		GJ	241,541	174,968	347,681	138,186	127,095
	City gas	1,000m ²	2,021	3,964	9,945	6,103	2,505
		GJ	87,093	170,863	428,617	263,038	107,971
	LPG	t	0	0	0	0	1
		GJ	0	0	2	5	65
	LNG	t	0	0	0	0	0
		GJ	0	0	0	0	0
	Heavy oil	KL	0	0	0	0	0
		GJ	10	0	0	0	0
	Kerosene	KL	0	0	0	0	0
		GJ	0	0	0	0	0
	Diesel oil	KL	0	0	0	0	0
		GJ	0	0	0	0	0
	Steam	GJ	0	0	0	0	0
Gasoline	KL	1	0	1	1	1	
	GJ	37	0	50	38	20	
Diesel	KL	0	0	2	1	0	
	GJ	0	0	88	24	5	
	Total	GJ	328,681	345,831	777,338	401,731	235,156
Water	Service water	1,000m ³	123	134	368	19	103
	Industrial water	1,000m ³	0	0	0	1,011	6,541
	Groundwater	1,000m ³	33	0	1	0	0
	Total	1,000m³	157	134	369	1,031	6,644
Chemical substances	PRTR substances (amounts handled)	t	25	21	86	0	142

OUTPUT		Unit	Shinagawa	Kasai	PP Hiratsuka ⁽¹⁾	PP Takatsuki ⁽¹⁾	CP Onahama ⁽²⁾
Air pollution	CO ₂	t-CO ₂	17,978	16,808	36,704	18,156	12,439
	NOx	t	2	3	14	5	2
	SOx	t	0	0	0	0	0
	PRTR substances	t	2	2	1	0	0
Water pollution	Water discharged	1,000m ³	102	58	254	891	3,218
	BOD	t	3	1	5	1	7
	COD	t	0	0	0	4	10
	PRTR substances	t	0	0	0	0	0
Waste	Emission	t	479	261	2,345	316	913
	Recycling amount	t	347	213	438	310	461
	Final disposing amount	t	4	1	0	0	4
	PRTR substances	t	23	20	85	0	141

(1) PP: Daiichi Sankyo Propharma

(2) CP: Daiichi Sankyo Chemical Pharma

Business Activity and Input/Output in fiscal 2016 (Group in Japan: Plants and R&D Centers)

INPUT		Unit	CP Ttebayashi ⁽²⁾	CP Hiratsuka ⁽²⁾	CP Odawara ⁽²⁾	ASB ⁽³⁾	KDSV ⁽⁴⁾
Energies	Electricity	1,000 kWh	3,097	3,460	12,725	5,996	46,008
		GJ	29,474	33,705	123,741	58,312	446,162
	City gas	1,000m ²	2,462	273	1,925	1,206	6,505
		GJ	106,121	11,779	82,988	51,991	280,350
	LPG	t	2	1	0	0	0
		GJ	102	48	5	0	0
	LNG	t	0	0	0	0	0
		GJ	0	0	0	0	0
	Heavy oil	KL	0	0	0	0	3
		GJ	0	0	0	0	106
	Kerosene	KL	0	0	0	0	258
		GJ	0	0	0	0	9,469
	Diesel oil	KL	0	0	1	0	0
		GJ	0	2	34	0	0
Steam	GJ	0	0	0	0	0	
Gasoline	KL	0	0	0	0	0	
	GJ	2	2	7	0	0	
Diesel	KL	0	0	1	0	0	
	GJ	0	0	48	0	0	
Total	GJ	135,699	45,994	207,117	110,302	736,086	
Water	Service water	1,000m ³	34	26	36	34	288
	Industrial water	1,000m ³	47	0	0	0	0
	Groundwater	1,000m ³	0	108	2,079	0	0
	Total	1,000m³	81	134	2,115	34	288
Chemical substances	PRTR substances (amounts handled)	t	4	1,919	969	7	11

OUTPUT		Unit	CP Ttebayashi ⁽²⁾	CP Hiratsuka ⁽²⁾	CP Odawara ⁽²⁾	ASB ⁽³⁾	KDSV ⁽⁴⁾
Air pollution	CO ₂	t-CO ₂	6,626	2,296	10,345	5,523	37,120
	NOx	t	18	0	3	0	0
	SOx	t	0	0	0	0	0
	PRTR substances	t	0	41	3	1	0
Water pollution	Water discharged	1,000m ³	58	125	2,125	22	206
	BOD	t	0	2	2	0	0
	COD	t	0	0	1	0	1
	PRTR substances	t	0	120	0	0	0
Waste	Emission	t	145	6,392	3,763	58	954
	Recycling amount	t	132	3,171	11	57	325
	Final disposing amount	t	0	56	77	0	0
	PRTR substances	t	4	1,322	122	6	0

(2) CP: Daiichi Sankyo Chemical Pharma

(3) ASB: Asubio Pharma

(4) KDSV: Kitasato Daiichi Sankyo Vaccine

ESG Data (Environment)

Goal Reference	Classification	Breakdown	Scope	Unit	FY2012	FY2013	FY2014	FY2015	FY2016	
CO ₂	Energy-originated CO ₂ emissions	Sales vehicles *1	Outside Japan	t-CO ₂	29,660	18,245	23,619	21,204	15,669	
			In Japan	t-CO ₂	7,845	7,433	7,016	6,809	6,238	
			Entire group	t-CO ₂	37,505	25,678	30,635	28,012	21,907	
		Offices	Outside Japan	t-CO ₂	5,215	13,625	5,900	5,087	4,396	
			In Japan	t-CO ₂	6,282	6,274	7,309	7,471	6,497	
			Entire group	t-CO ₂	11,497	19,899	13,209	12,558	10,893	
		Plants and R&D centers	Outside Japan	t-CO ₂	32,163	36,662	41,074	40,955	39,365	
			In Japan	t-CO ₂	165,132	166,781	170,744	161,877	163,997	
			Entire group	t-CO ₂	197,295	203,443	211,818	202,832	203,362	
		Total	Outside Japan	t-CO ₂	67,038	68,532	70,593	67,246	59,430	
			In Japan	t-CO ₂	179,259	180,488	185,070	176,157	176,732	
			Entire group	t-CO ₂	246,297	249,020	255,662	243,402	236,162	
	Non-energy oriented CO ₂ emissions	Incinerator	Entire group	t-CO ₂				3,922	5,112	
	Total of CO ₂ emissions	Total	Entire group	t-CO ₂	246,297	249,020	255,662	247,324	241,274	
	CO ₂ emissions by Greenhouse Gas Protocol	Scope 1	Outside Japan	t-CO ₂	37,602	37,520	33,165	30,199	23,812	
			In Japan	t-CO ₂	92,678	98,444	90,795	88,967	91,662	
			Total	t-CO ₂	130,279	135,964	123,960	119,165	115,474	
		Scope 2	Outside Japan	t-CO ₂	29,436	31,012	37,428	37,047	35,618	
			In Japan	t-CO ₂	86,582	82,044	94,274	91,112	90,182	
			Total	t-CO ₂	116,018	113,056	131,702	128,159	125,799	
		Scope 3	In Japan	t-CO ₂	643,017	695,335	635,434	621,701	630,996	
		Scopes 1 + 2 + 3	Total in Japan	t-CO ₂	822,276	875,823	820,504	801,780	872,270	
		Emissions by group site in Japan	Shinagawa	In Japan	t-CO ₂	17,535	15,290	19,655	18,406	17,978
			Kasai	In Japan	t-CO ₂	17,708	17,920	17,761	17,184	16,808
			Fukuroi *2	In Japan	t-CO ₂	4,956	1,326			
			Daiichi Sankyo Propharma (Hiratsuka)*3	In Japan	t-CO ₂	43,229	38,907	41,337	38,036	36,704
	Daiichi Sankyo Propharma (Takatsuki)*4		In Japan	t-CO ₂	17,100	19,006	20,072	19,024	18,156	
Daiichi Sankyo Chemical Pharma (Onahama)	In Japan		t-CO ₂	14,636	11,610	11,774	7,641	12,439		
Daiichi Sankyo Chemical Pharma (Tatebayashi)*5	In Japan		t-CO ₂	6,245	6,373	7,068	6,446	6,626		
Daiichi Sankyo Chemical Pharma (Hiratsuka)	In Japan		t-CO ₂	5,047	4,055	2,353	3,464	2,296		
Daiichi Sankyo Chemical Pharma (Odawara)	In Japan		t-CO ₂	3,462	9,652	8,969	8,191	10,345		
Daiichi Sankyo Propharma (Odawara)*6	In Japan		t-CO ₂	5,375						
Asubio Pharma (Kobe)	In Japan		t-CO ₂	5,450	5,733	5,987	5,897	5,523		
Kitasato Daiichi Sankyo Vaccine	In Japan		t-CO ₂	17,896	30,845	29,209	37,587	37,120		
Energy	Electricity	In Japan	1,000kWh	187,561	188,971	184,002	187,102	190,635		
			GJ	1,836,188	1,850,214	1,803,212	1,821,193	1,855,855		
	City gas	In Japan	1,000m ³	32,217	36,660	33,932	33,176	35,700		
			GJ	1,449,759	1,649,705	1,526,948	1,492,942	1,607,796		
	LPG	In Japan	t	21	18	14	10	11		
			GJ	1,052	889	717	529	548		
	LNG	In Japan	t	2,944	2,357	2,307	1,361	0		
			GJ	160,748	128,709	125,986	74,330	0		
	Heavy oil	In Japan	KL	1	2	0	0	3		
			GJ	23	92	15	10	116		
	Kerosene	In Japan	KL	1,040	886	726	208	258		
			GJ	38,161	32,520	26,652	7,635	9,469		
	Diesel oil	In Japan	KL	3	3	3	2	1		
			GJ	120	116	95	89	36		
	Steam	In Japan	GJ	28,892,539	31,387,370	25,516,186	0	0		
	Gasoline (Plants and R&D centers)	In Japan	KL	8	6	6	5	5		
			GJ	267	220	214	186	156		
	Gasoline (Sales vehicles)	In Japan	KL	3,382	3,204	2,920	2,935	2,554		
GJ			117,002	110,855	101,039	101,557	88,361			
Total	In Japan	GJ	3,659,268	3,805,502	3,609,892	3,498,577	3,567,177			

Goal Reference	Classification	Breakdown	Scope	Unit	FY2012	FY2013	FY2014	FY2015	FY2016
Energy	Energy consumption by the entire group	Electricity	Entire group	GJ	2,334,599	2,365,396	2,370,592	2,439,421	2,366,436
		City gas	Entire group	GJ	1,597,064	1,862,323	1,709,822	1,655,966	1,758,555
		LPG	Entire group	GJ	3,898	5,379	3,325	3,040	2,969
		LNG	Entire group	GJ	161,151	128,709	125,986	74,330	0
		Heavy oil	Entire group	GJ	4,690	92	15	401	438
		Kerosene	Entire group	GJ	38,161	32,520	26,652	7,635	9,469
		Diesel oil	Entire group	GJ	2,034	2,355	2,708	2,900	71,934
		Steam	Entire group	GJ	28,893	31,387	87,023	49,750	43,730
		Gasoline	Entire group	GJ	563,312	405,366	451,214	376,938	259,454
		Total	Entire group	GJ	4,683,680	4,905,186	4,748,243	4,664,152	4,618,657
Water resources	Water used		Outside Japan	1,000m ³	454	450	603	641	547
			In Japan	1,000m ³	14,616	13,460	13,454	11,868	10,986
			Total	1,000m ³	15,070	13,910	14,058	12,509	11,534
	Water discharged		Outside Japan	1,000m ³	306	369	447	477	436
			In Japan	1,000m ³	14,305	12,363	12,371	10,834	9,934
			Total	1,000m ³	14,611	12,732	12,817	11,311	10,370
Water pollution	BOD		Entire group	t	74	57	59	56	48
	COD		Entire group	t	84	78	107	93	72
Waste	Waste generated		In Japan	t	39,421	35,925	24,120	19,676	20,588
	Outsourced waste treatment		In Japan	t	26,824	23,412	16,250	15,675	15,626
	Recycled waste		In Japan	t	12,894	12,324	8,625	5,955	5,466
	Recycling rates		In Japan	%	48.1	52.6	53.1	38.0	35.0
	Final disposal volume		In Japan	t	158	165	143	91	143
	Final disposal rate		In Japan	%	0.40	0.46	0.59	0.46	0.69
	Amount of office paper consumed		In Japan	10,000 pieces	7,581	7,305	5,950	5,469	5,355
Air pollution	SOx		Outside Japan	t	2.2	0.2	0.3	0.3	1.2
			In Japan	t	0.6	1.1	0.9	0.5	0.3
			Total	t	2.9	1.3	1.1	0.8	1.5
	NOx		Outside Japan	t	6	5	7	5	7
			In Japan	t	35	43	59	45	49
			Total	t	41	48	66	51	56
PRTR substances	Amounts handled		In Japan	t	6,087	6,249	2,726	3,686	3,182
	Amounts discharged and transferred (Air)		In Japan	t	113	109	37	83	49
	Amounts discharged and transferred (Water)		In Japan	t	3	4	4	0	0
	Amounts discharged and transferred (Sewer)		In Japan	t	48	48	23	120	120
	Amounts discharged and transferred (Water + sewer)		In Japan	t	51	0	27	87	120
	Amounts discharged and transferred (Waste)		In Japan	t	2,495	1,958	594	667	428
Containers	Containers, packing materials, and recycle quantity (required amount of recycled products) DS (self-assessment) + DSHC (simplified assessment)	Glass bottle (colorless)	In Japan	t	188	207	202	158	175
		Glass bottle (brown)	In Japan	t	454	567	474	386	300
		Plastic containers and packaging	In Japan	t	1,678	1,419	1,557	1,436	1,413
		Paper containers and packaging	In Japan	t	60	30	30	59	115
		Total	In Japan	t	2,380	2,222	2,263	2,039	2,003
Management	Acquisition of ISO 14001 certification		Outside Japan	Sites	6	8	1	1	1
			In Japan	Sites	8	7	7	6	6
			Total	Sites	14	15	8	7	7

*1: CO₂ emissions from sales vehicles for FY2012 were entirely offset through a carbon offset auto leasing contract.

*2: Includes the data by the end of September, 2013

*3: Includes Daiichi Sankyo Co., Ltd., Daiichi Sankyo Chemical Pharma Co., Ltd., and Daiichi Sankyo Happiness Co., Ltd

*4: Includes Daiichi Sankyo Logistics Co., Ltd.

*5: Includes Daiichi Sankyo Co., Ltd.

*6: The data of Daiichi Sankyo Propharma (Odawara) is integrated into the data of Daiichi Sankyo Chemical Pharma (Odawara).

*There were no fines, etc. with respect to the environment.



DAIICHI SANKYO CO., LTD

CSR Department

October, 2017

This book is published on the website of Daiichi Sankyo.