

Data

Scope of environmental management: All domestic offices of Taisho Pharmaceutical (such as the headquarters, five branch offices and their three affiliated offices, five logistics centers, three factories, and the Research Center) and Taisho Toyama Pharmaceutical Co., Ltd., MEJIRO KOSAN Co., Ltd., and Taisho Pharmaceutical Logistics Co., Ltd. out of its group companies are within the scope of the environmental management. However, the affiliated offices of the branch offices of Taisho Toyama Pharmaceutical Co., Ltd. are not included.

Environment Accounting

Environment accounting is based on the calculations according to the Taisho Pharmaceutical Environmental Management Accounting Preparation Procedures (Rev. 2), which is based on the Environmental Accounting Guidelines 2002 published by the Ministry of the Environment. [Target period: April 1, 2016 to March 31, 2017]

Environment Conservation Costs

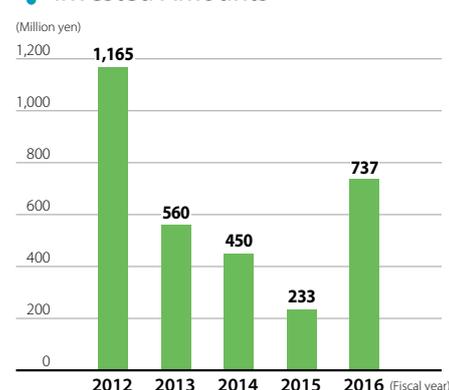
Category		Main initiative	(Million yen)	
			Invested cost	Cost
Costs in the business area			737	689
Breakdown	Pollution control cost	Operation and management of the effluent treatment facility/ Implementation of air pollution preventive measures	190	109
	Global environment conservation cost	Support for energy saving and introduction of energy saving facilities/ Operation and management of the cogeneration system	501	346
	Resource recycling cost	Recycling promotion/Waste treatment	46	234
Up/downstream cost		Outsourcing cost for recommodification of containers and packages/ Waste product treatment	0	168
Management activity cost		Monitoring of environmental loads/Compliance and operation of ISO 14001	0	13
Research and development cost		Research and development for environmentally friendly products/ Purchasing of raw materials for research	0	0
Social activity cost		Activity costs of and donation to industry groups	0	0
Environment damage solution cost		Implementation of soil and groundwater pollution measures	0	20
Total			737	890

Effects on Environment Conservation

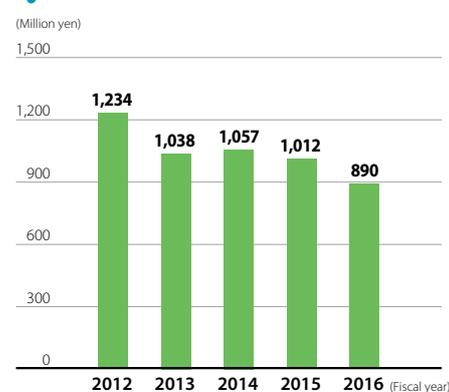
Details of effects		FY2015	FY2016	Reduced volume	Reduction rate (%)
Effects on environment conservation that correspond to the costs in the business area (Resources)	Total energy input (thousand GJ)	1,196	1,254	(58)	(4.8)
	Power consumption (10,000 kWh)	6,738	6,983	(245)	(3.6)
	Usage of city gas (thousand m ³)	7,569	8,031	(462)	(6.1)
	Usage of Bunker A (kL)	1,139	1,224	(85)	(7.5)
	Usage of LPG (m ³)	866	845	21	2.4
	Usage of gasoline (kL)	1,759	2,136	(377)	(21.4)
	Usage of light fuel oil (kL)	2,436	2,387	49	2.0
	Usage of water (thousand m ³)	840	830	10	1.2
	Usage of groundwater	556	549	7	1.3
	Usage of tap water (domestic water)	258	258	0	0.0
Effects on environment conservation that correspond to the costs in the business area (Emissions)	Usage of industry water	22	18	4	18.2
	Usage of medium water (rain water)	4	5	(1)	(25.0)
	Transaction volume of specific chemical substances* (tons)	218	377	(159)	(72.9)
	Volume of CO ₂ emission (tons)	64,693	67,472	(2,779)	(4.3)
	Emission volume from production and office work activities	53,696	55,756	(2,060)	(3.8)
	Emission volume from sales and logistics activities	10,997	11,716	(719)	(6.5)
	Total waste volume (tons)	6,277	5,743	534	8.5
	Final landfill disposal volume (tons)	12	13	(1)	(8.3)
	Total emission volume (thousand m ³)	560	545	15	2.7

* Based on the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Invested Amounts



Costs



Economic Effects regarding Environment Conservation Costs

Details of effects		Amount
Revenue	Economic income regarding recycling	1.8
	Reduced cost by energy saving	2.0
Reduced cost	Reduced cost by reduction of product containers	0.0
	Total	3.8

(Unit: Million yen)

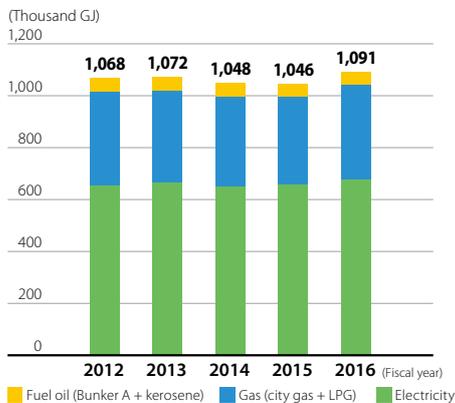
Item	Amount
Total invested amount during the relevant period	7,011
Total R&D cost during the relevant period	21,260

(Unit: Million yen)

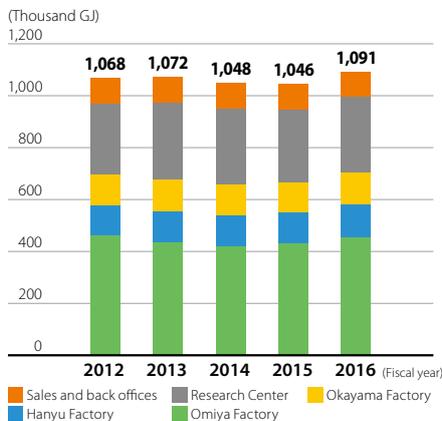
Resource Loading Volume

Energy

Energy input (by type)

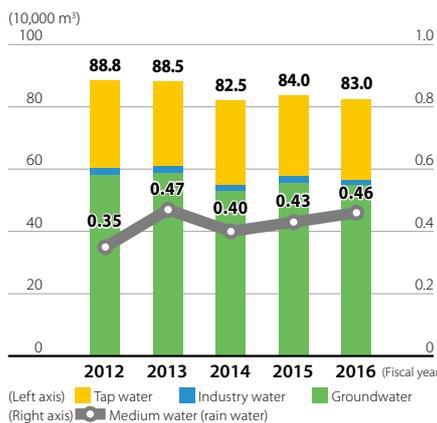


Energy input (by office)

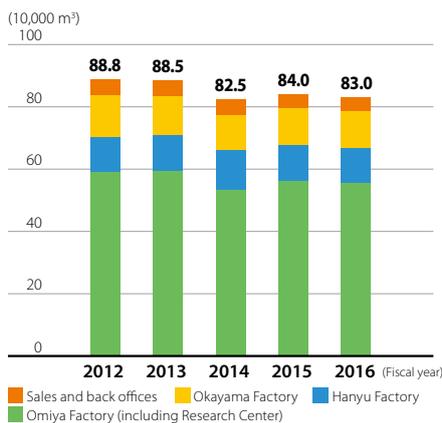


Water

Usage of water (by type)

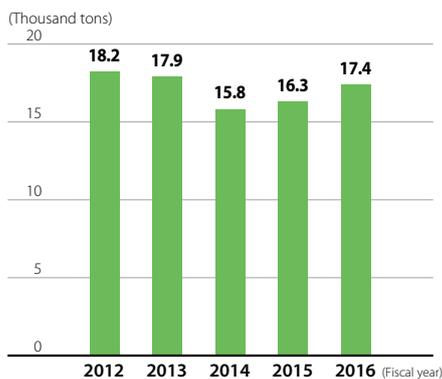


Usage of water (by office)

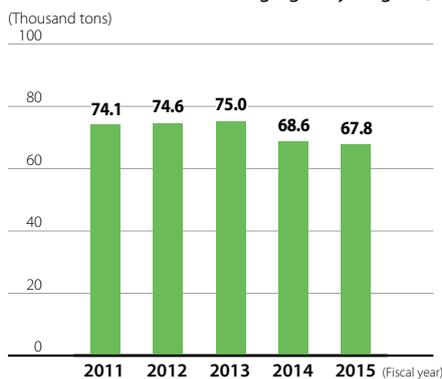


Raw Materials

Usage of raw materials

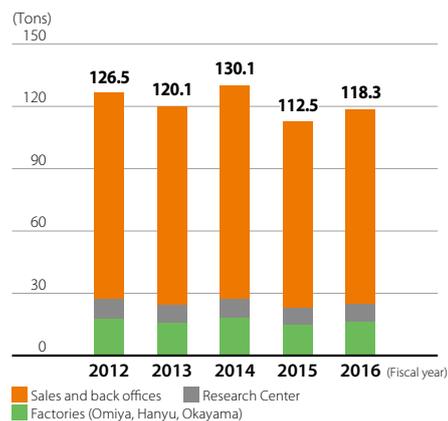


Usage of materials (four materials specified in the Containers and Packaging Recycling Act)



Copier paper

Purchased volume of copier paper



Chemical Substances

Transaction, Release, and Displacement Volumes of Chemical Substances Based on the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof - Omiya Factory (including Research Center)

No.	Chemical substance	Cabinet ordinance No.	Transaction volume	Release volume into the atmosphere	Release volume into public water	Displacement volume into the sewer	Release volume into soil	Decontamination treatment volume	Displacement volume to waste
1	Acetonitrile	013	180,000	34	0	1,500	0	0	180,000
2	Chloroform	127	4,800	5.2	0	88	0	0	4,400
3	Toluene	300	1,500	13	0	1.3	0	0	1,200
4	Normal-hexane	392	3,400	19	0	3.2	0	0	3,300

(Unit: kg)

Transaction Volume of Specific Chemical Substances Based on the Ordinance on Living Environment Conservation in Saitama City (Article 74, Paragraph 2) - Omiya Factory (including Research Center)

No.	Chemical substance	Category of specific chemical substance	Transaction volume	Breakdown of the transaction volume		
				Usage	Produced volume	Transaction volume
5	Hydrogen chloride (including hydrochloric acid)	Other specific chemical substances (Item 5)	15,000	15,000	0	0
6	Diethanolamine	Other specific chemical substances (Item 14)	2,500	2,500	0	0
7	Tetrahydrofuran	Other specific chemical substances (Item 24)	120,000	120,000	0	0
8	Methanol	Other specific chemical substances (Item 35)	36,000	36,000	0	0
9	Methyl iodide	Other specific chemical substances (Item 39)	12,000	12,000	0	0
10	Vitriol oil (including sulfur trioxide)	Other specific chemical substances (Item 41)	510	510	0	0

No. 1 to 4 chemical substances are the same as specified in the notification that is based on the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof.

(Unit: kg)

Transaction Volume of Specific Chemical Substances Based on the Ordinance on Living Environment Conservation in Saitama Prefecture - Hanyu Factory

No.	Chemical substance	Category of specific chemical substance	Transaction volume	Breakdown of the transaction volume		
				Usage	Produced volume	Transaction volume
1	Hydrogen chloride (including hydrochloric acid)	Other specific chemical substances (Item 5)	1,500	1,500	0	0

(Unit: kg)

Emission Volumes

Factors used to calculate the CO₂ emission volume

Electricity: 0.495 kgCO₂/kWh

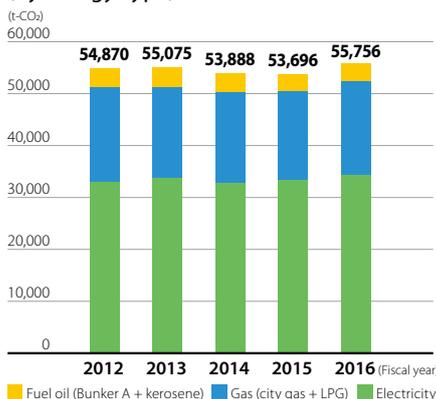
City gas: 2.244 kgCO₂/Nm³; LPG: 2.999 kgCO₂/kg; Bunker A: 2.710 kgCO₂/L;

Kerosene: 2.489 kgCO₂/L; Gasoline: 2.322 kgCO₂/L; Light fuel oil: 2.585 kgCO₂/L

(According to the Guidelines for Calculating CO₂ Emissions Caused by Energy in the Global Warming Countermeasures Planning System and Targeted Emission Volume Transaction System (Revised in September 2015) based on the Ordinance on Global Warming Countermeasure Promotion in Saitama Prefecture)

CO₂

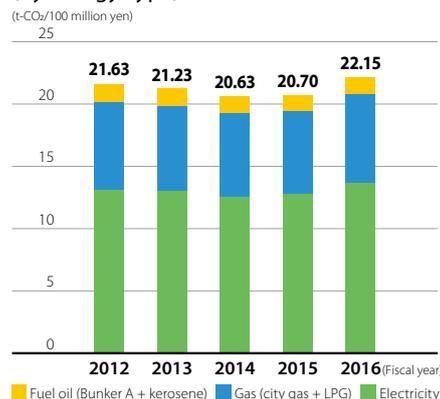
Total Emission Volume - Whole Company (by Energy Type)



Total Emission Volume - Whole Company (by Office)

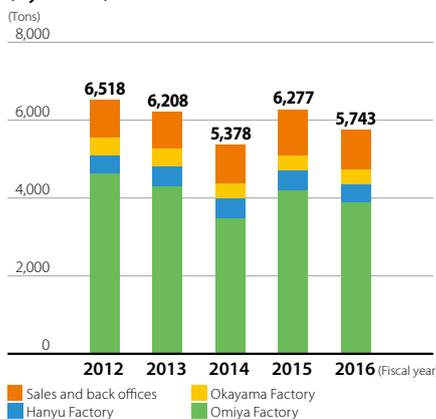


Emission Intensity - Whole Company (by Energy Type)

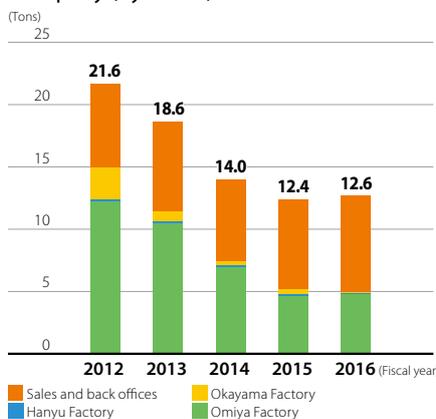


Waste (Omiya Factory including Research Center)

Total Emission Volume - Whole Company (by Office)

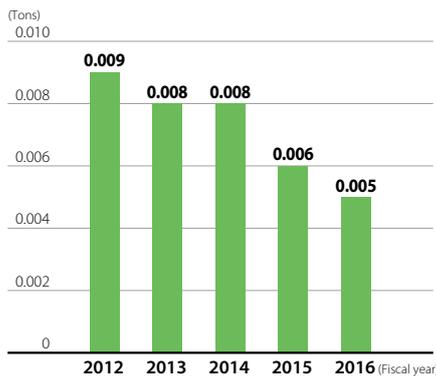


Final Landfill Disposal Volume - Whole Company (by Office)



Emission into the Atmosphere

Chloroform - Production Division

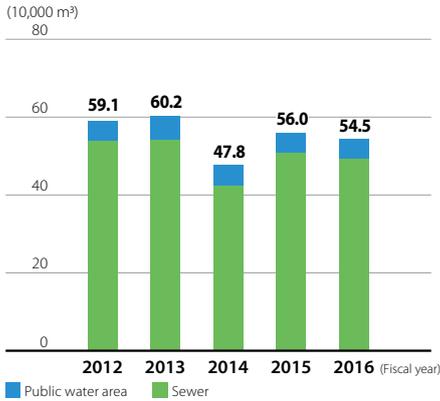


NO_x and SO_x Emission Volumes - Production and Research

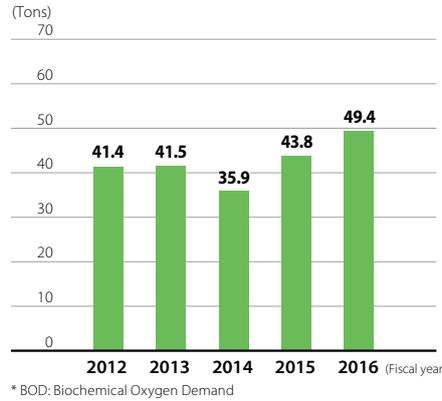


Water Quality

Total Emission Volume - Whole Company



BOD* Emission Volume - Production and Research



* BOD: Biochemical Oxygen Demand

PCB Waste

PCB Waste and PCB Devices in Use

	Storage	Devices in use
Reagent	6.6 g	—
Low-pressure capacitor	2 devices	—
High-pressure capacitor	—	—
Fluorescent ballast	1,287 devices	—
Mercury lamp ballast	9 devices	—
High-pressure transformer	—	11 devices (low density)

Data Associated with Sales and Transport

Conversion factors used to calculate CO₂ and NO_x emission volumes from the usages of gasoline and light fuel oil

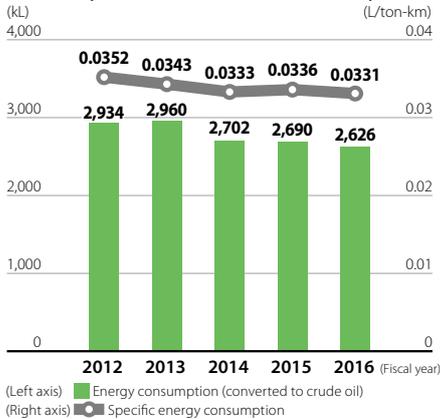
[CO₂ emission volume] Gasoline: 2.322 kgCO₂/L; Light fuel oil: 2.585 kgCO₂/L

(According to the Guidelines for Calculating CO₂ Emissions Caused by Energy in the Global Warming Countermeasures Planning System and Targeted Emission Volume Transaction System (Revised in September 2015) based on the Ordinance on Global Warming Countermeasure Promotion in Saitama Prefecture)

[NO_x emission volume] Gasoline: 8.2 kg/kL; Light fuel oil: 18.3 kg/kL

(According to the Environmental Activity Evaluation Program (Eco-Action 21), March 2001)

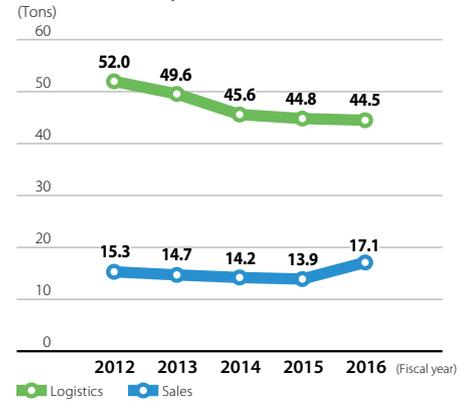
Energy Consumption and Specific Energy Consumption Associated with Transport



CO₂ Emission Volume Associated with Sales and Transport, etc.

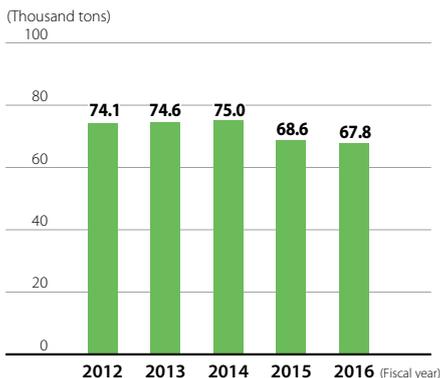


NO_x Emission Volume Associated with Sales and Transport



Data Associated with the Containers and Packaging Recycling Act

Total weight of specific containers and packaging



Data by Office

✿ Measurement Results of Regulated Items in FY2016

Omiya Factory (including Research Center)

Regulated item		Reference value	Actual value
Atmosphere	NOx	Once-through boiler	53.8 to 95.2 ppm
		Water-tube boiler	Less than 130 ppm
		Suction-type cool and warm water generator	Less than 150 ppm
		Gas turbine	Less than 70 ppm
Water quality	Industry sewage	Hydrogen-ion concentration (pH)	More than 5 and less than 9
		Biochemical oxygen demand	Less than 600 mg/L
		Floating substance volume	Less than 600 mg/L
		Nitrogen content	Less than 240 mg/L
		Phosphorus content	Less than 32 mg/L

Hanyu Factory

Regulated item		Reference value	Actual value
Atmosphere	NOx	Once-through boiler	29.0 to 35.0 ppm
		Dust	—
Water quality	Industry sewage	Hydrogen-ion concentration (pH)	5.8 or more and 8.6 or less
		Biochemical oxygen demand	Less than 5 mg/L
		Floating substance volume	Less than 10 mg/L
		Nitrogen content	Less than 25 mg/L
		Phosphorus content	Less than 3 mg/L

Okayama Factory

Regulated item		Reference value	Actual value
Atmosphere	NOx	Once-through boiler	64 to 79 ppm
		Dust	0.001 to 0.003 g/m ³ N
Water quality	Industry sewage	Hydrogen-ion concentration (pH)	More than 5 and less than 9
		Biochemical oxygen demand	Less than 600 mg/L
		Floating substance volume	Less than 600 mg/L
		Nitrogen content	Less than 240 mg/L
		Phosphorus content	Less than 32 mg/L

Data on Overseas Manufacturing Subsidiaries (Reference)

		PT. Taisho Pharmaceutical Indonesia Tbk	Hoepharm Holdings Sdn. Bhd.	Taisho Co., Ltd. Shanghai	Taisho Pharmaceutical (M) SDN. BHD.	Taisho Vietnam Co., Ltd.	Compañía Internacional de Comercio, S.A.P.I. de C.V. (CICSA)
Energy consumption	Electricity (kWh)	2,810,819	2,612,864	810,990	527,414	499,800	1,340,640
	Heavy fuel oil (kL)	—	—	—	—	—	16
	Light fuel oil (kL)	1.4	—	189	—	1	12
	LPG (m ³)	177	—	—	—	10	12
	City gas (m ³)	161,119	—	—	52,033	463	—
Waste volume	Recycled volume (tons)	—	—	26	—	15	24
	Incineration disposal volume (tons)	16	46	—	—	1	69
	Landfill disposal volume (tons)	15	—	19	2	0	250
Sewage water quality	Chemical oxygen demand (mg/L)	11 to 227	13 to 184	—	0 to 12	5 to 130	—
	Biochemical oxygen demand (mg/L)	7 to 63	2 to 44	—	2 to 15	3 to 28	200