Data

Scope of environmental management: All domestic offices of Taisho Pharmaceutical (such as the head office, five branch 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 environmental management. However, the affiliated offices of the branch offices of Taisho Toyama Pharmaceutical Co., Ltd. are not included.

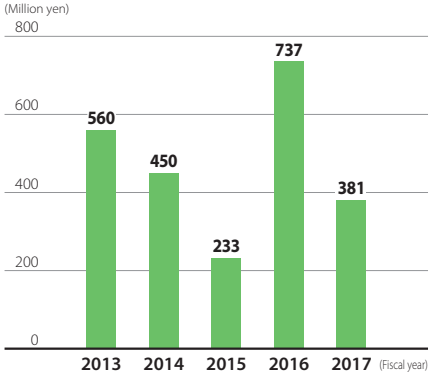
Environmental Accounting

Environmental accounting is based on the calculations according to the Taisho Pharmaceutical Environmental Management Accounting Preparation Procedures (Rev. 2), which is based on Environmental Accounting Guidelines 2005 published by the Ministry of the Environment. [Target period: April 1, 2017 to March 31, 2018]

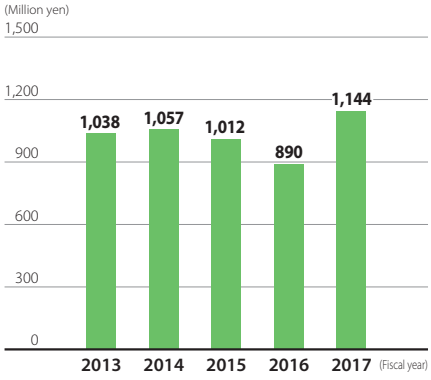
Environmental Conservation Costs

Category		Main initiative	Invested cost (Million yen)	Cost (Million yen)
Costs in the business area			345	885
Breakdown	Pollution control cost	Operation and management of the effluent treatment facility/ Implementation of air pollution preventive measures	18	272
Breakdown	Global environmental conservation cost	Support for energy saving and introduction of energy-saving facilities/ Operation and management of the cogeneration system	323	481
Breakdown	Resource recycling cost	Recycling promotion/Waste treatment	4	132
Up/downstream cost		Outsourcing cost for recommodification of containers and packages/ Waste product treatment	0	213
Management activity cost		Monitoring of environmental loads/ Compliance and operation of ISO 14001	5	23
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
Environmental damage solution cost		Implementation of soil and groundwater pollution measures	31	23
Total			381	1,144

Invested Amounts



Costs



Environmental Conservation Costs

Details of effects			FY2016	FY2017	Reduced volume	Reduction rate (%)
Effects on environmental conservation that correspond to the costs in the business area (Resources)	Total energy input (thousand GJ)		1,254	1,258	(4)	(0.3)
	Breakdown	Power consumption (10,000 kWh)	6,983	6,856	127	1.8
	Breakdown	Usage of city gas (thousand m³)	8,031	7,941	90	1.1
	Breakdown	Usage of Bunker A (kL)	1,224	1,133	91	7.4
	Breakdown	Usage of LPG (m³)	845	778	67	7.9
	Breakdown	Usage of gasoline (kL)	2,136	2,692	(556)	(26.0)
	Breakdown	Usage of light fuel oil (kL)	2,387	2,494	(107)	(4.5)
	Usage of water (thousand m³)		830	769	61	7.3
	Breakdown	Usage of groundwater	549	514	35	6.4
	Breakdown	Usage of tap water (domestic water)	258	237	21	8.1
	Breakdown	Usage of industrial water	18	13	5	27.8
	Breakdown	Usage of greywater (rain water)	5	5	0	0.0
	Transaction volume of specific chemical substances* (tons)		377	369	8	2.1
Effects on environmental conservation that correspond to the costs in the business area (Emissions)	Volume of CO_2 emission (tons)		67,472	66,550	922	1.4
	Breakdown	Emission volume from production and office work activities	55,756	53,804	1,952	3.5
	Breakdown	Emission volume from sales and logistics activities	11,716	12,745	(1,029)	(8.8)
	Total waste volume (tons)		5,743	5,428	315	5.5
	Final landfill disposal volume (tons)		13	12	1	7.7
	Total emission volume (thousand m³)		545	512	33	6.1

* 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

Economic Effects regarding Environmental Conservation Costs

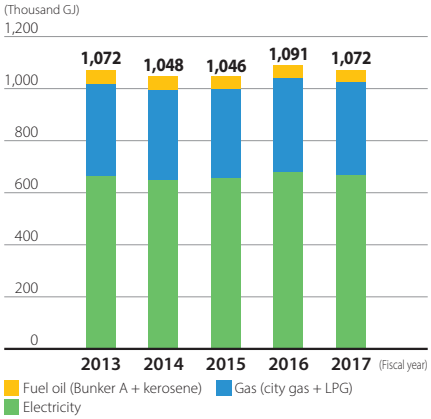
Details of effects		Amount (Million yen)
Revenue	Economic income regarding recycling	1.9
Reduced cost	Reduced cost from energy saving	0.4
Reduced cost	Reduced cost from reduction of product containers	0.0
Total		2.3

Items	Amount (Million yen)
Total invested amount during the relevant period	4,857
Total R&D cost during the relevant period	21,150

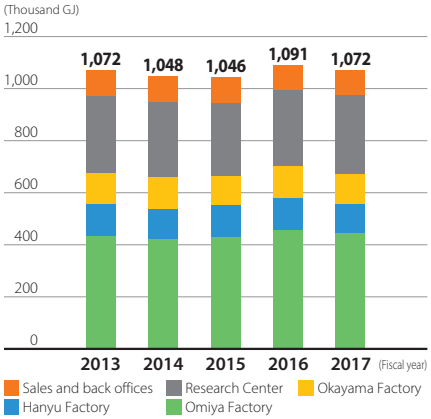
Resource Loading Volume

Energy

Energy Input (by Type)

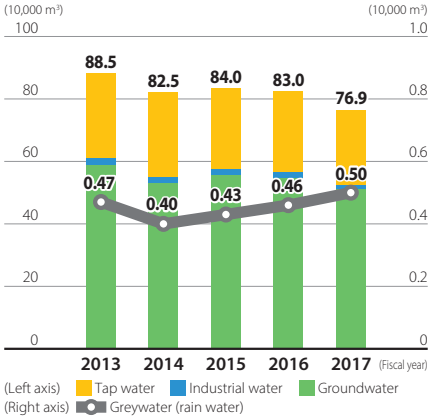


Energy Input (by Office)

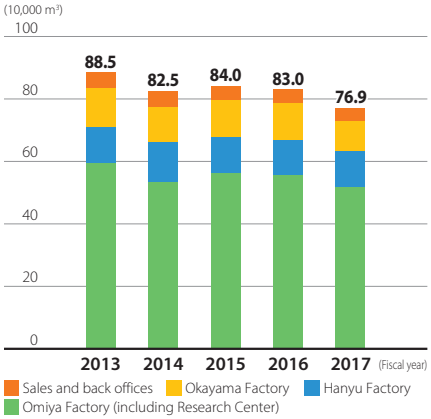


Water

Usage of Water (by Type)

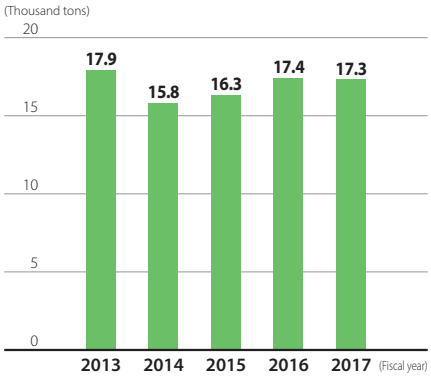


Usage of Water (by Office)

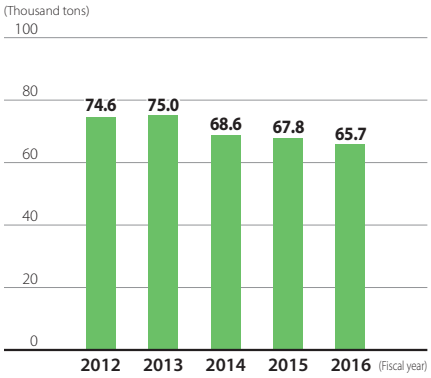


Raw Materials

Usage of Raw Materials

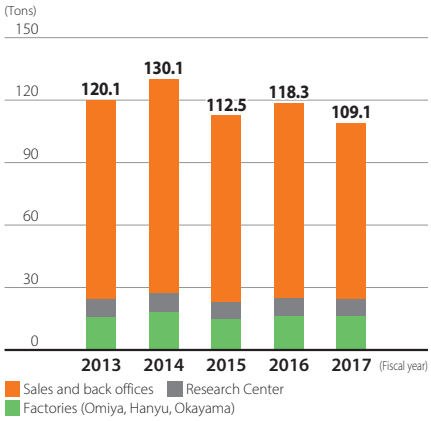


Usage of Materials (Four Materials Specified in the Containers and Packaging Recycling Act)



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	170,000	31	0	1,300	0	0	170,000
2	Chloroform	127	5,400	5.9	0	130	0	0	5,000
3	N, N-Dimethylformamide	232	1,200	0.2	0	29	0	0	1,100
4	Toluene	300	1,500	11	0	2.3	0	0	1,200
5	Normal-hexane	392	4,100	16	0	4.0	0	0	4,000

(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
6	Hydrogen chloride (including hydrochloric acid)	Other specific chemical substances (Item 5)	15,000	15,000	0	0
7	Diethanolamine	Other specific chemical substances (Item 14)	2,200	2,200	0	0
8	Tetrahydrofuran	Other specific chemical substances (Item 24)	110,000	110,000	0	0
9	Methanol	Other specific chemical substances (Item 35)	34,000	34,000	0	0
10	Methyl iodide	Other specific chemical substances (Item 39)	11,000	11,000	0	0
11	Sulfuric acid (including sulfur trioxide)	Other specific chemical substances (Item 41)	590	590	0	0

No. 1 to 5 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)	14,000	14,000	0	0

(Unit: kg)

Emission Volumes

Factors used to calculate the CO_2 emission volume

Electricity: 0.495 $kgCO_2/kWh$

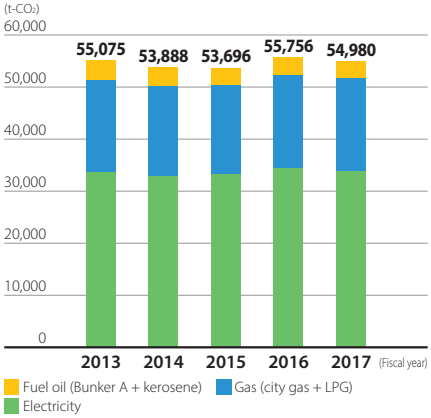
City gas: 2.244 $kgCO_2/Nm^3$; LPG: 2.999 $kgCO_2/kg$; Bunker A: 2.710 $kgCO_2/L$

Kerosene: 2.489 $kgCO_2/L$; Gasoline: 2.322 $kgCO_2/L$; Light fuel oil: 2.585 $kgCO_2/L$

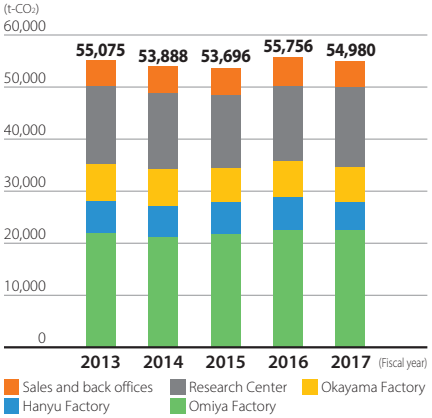
(According to the Guidelines for Calculating CO_2 Emissions Caused by Energy in the Global Warming Countermeasures Planning System and Targeted Emission Volume Transaction System (Revised in March 2017) based on the Ordinance on Global Warming Countermeasure Promotion in Saitama Prefecture)

CO_2

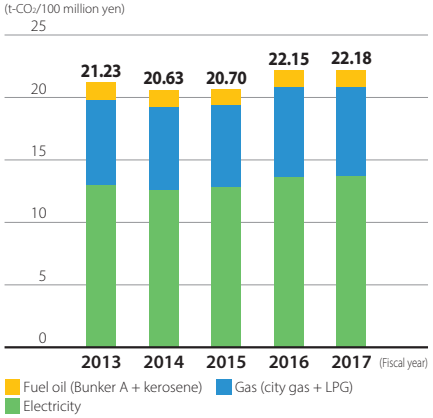
Total Emission Volume— Whole Company (by Energy Type)



Total Emission Volume— Whole Company (by Office)

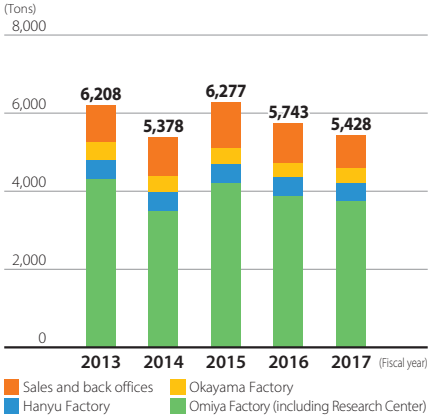


Emission Intensity— Whole Company (by Energy Type)

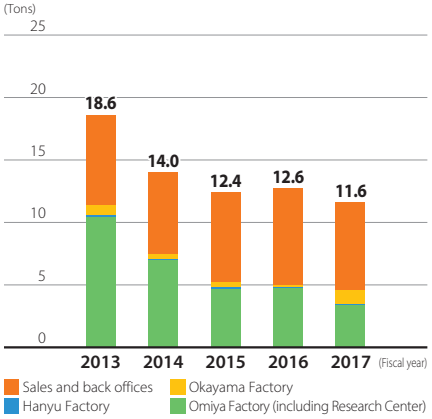


Waste

Total Emission Volume— Whole Company (by Office)

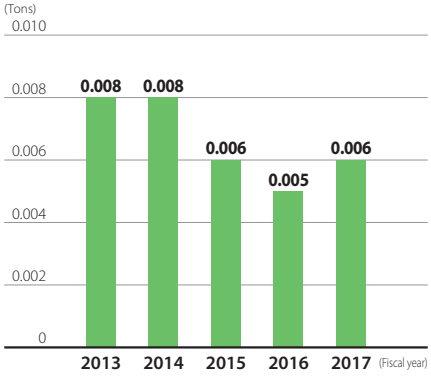


Final Landfill Disposal Volume— Whole Company (by Office)

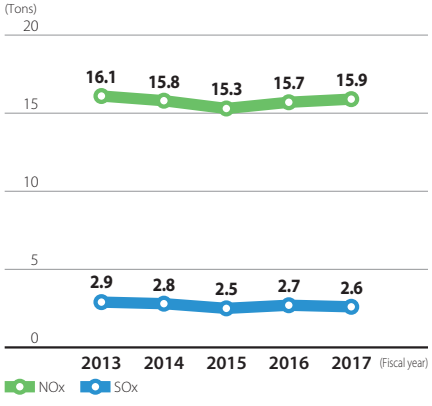


Emission into the Atmosphere

Chloroform— Production Division

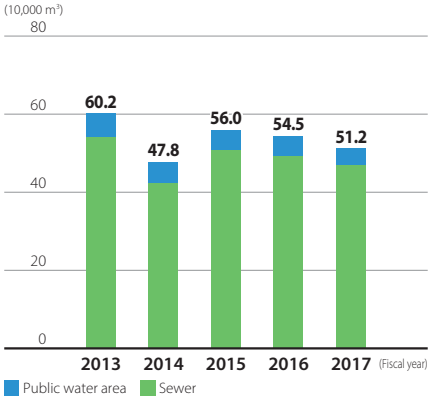


NOx and SOx Emission Volumes— Production and Research

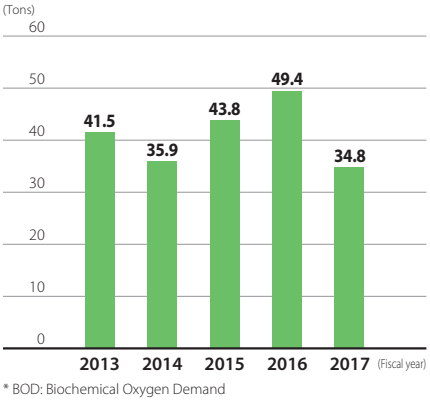


Water Quality

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)

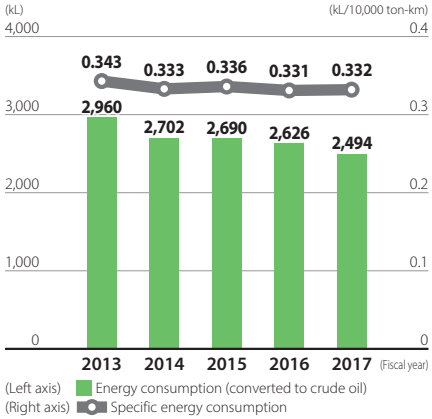
Data Associated with Sales and Transport

Conversion factors used to calculate CO_2 and NOx emission volumes from the usages of gasoline and light fuel oil

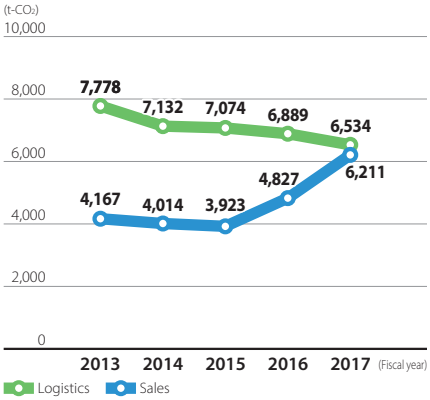
[CO_2 emission volume] Gasoline: 2.322 kgCO_2/L; Light fuel oil: 2.585 kgCO_2/L
(According to the Guidelines for Calculating CO_2 Emissions Caused by Energy in the Global Warming Countermeasures Planning System and Targeted Emission Volume Transaction System (Revised in March 2017) based on the Ordinance on Global Warming Countermeasure Promotion in Saitama Prefecture)

[NOx 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)

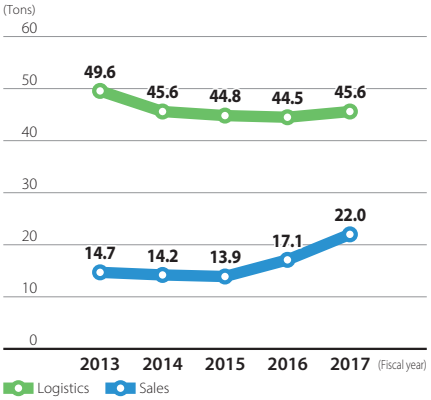
Energy Consumption and Specific Energy Consumption Associated with Transport



CO_2 Emission Volume Associated with Sales and Transport, etc.

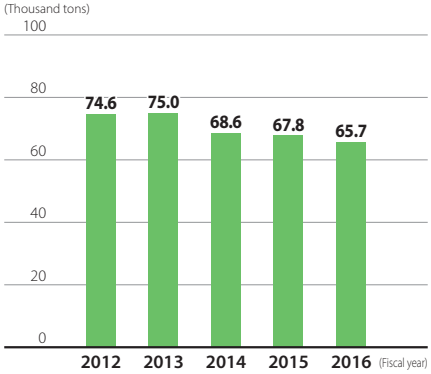


NOx Emission Volume Associated with Sales and Transport



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 FY2017

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	73.0 to 94.2 ppm
		Suction-type cool and warm water generator	Less than 150 ppm	15.9 to 31.4 ppm
		Gas turbine	Less than 70 ppm	25.3 to 28.1 ppm
Water quality	Hydrogen-ion concentration (pH)	Industrial sewage	More than 5 and less than 9	6.4 to 8.1
	Biochemical oxygen demand		Less than 600 mg/L	1 to 326 mg/L
	Suspended solids		Less than 600 mg/L	1 to 108 mg/L
	Nitrogen		Less than 240 mg/L	1.2 to 5.1 mg/L
	Phosphorus		Less than 32 mg/L	0.1 to 0.6 mg/L

Hanyu Factory

Regulated item			Reference value	Actual value
Atmosphere	NOx	Once-through boiler	—	33 to 45 ppm
	Dust		—	—
Water quality	Hydrogen-ion concentration (pH)	Industrial sewage	5.8 or more and 8.6 or less	7.1 to 7.5
	Biochemical oxygen demand		Less than 5 mg/L	Less than 2 mg/L
	Suspended solids		Less than 10 mg/L	Less than 2 mg/L
	Nitrogen		Less than 25 mg/L	0.9 to 2.4 mg/L
	Phosphorus		Less than 3 mg/L	Less than 0.1 mg/L

Okayama Factory

Regulated item			Reference value	Actual value
Atmosphere	NOx	Once-through boiler	—	49 to 100 ppm
	Dust		—	0.001 to 0.100 g/m^{3}N
Water quality	Hydrogen-ion concentration (pH)	Industrial sewage	More than 5 and less than 9	5.8 to 6.6
	Biochemical oxygen demand		Less than 600 mg/L	31 to 250 mg/L
	Suspended solids		Less than 600 mg/L	0.9 to 16.0 mg/L
	Nitrogen		Less than 240 mg/L	—
	Phosphorus		Less than 32 mg/L	—

Data on Overseas Manufacturing Subsidiaries (Reference)

		PT. Taisho Pharmaceutical Indonesia Tbk	Hoepharma 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)	2,787,551	2,943,571	830,440	612,042	602,502	1,226,140
	Heavy fuel oil (kL)	—	—	—	—	—	—
	Light fuel oil (kL)	0.8	—	203	—	1	418
	LPG (m^3)	—	—	—	—	7	12
	City gas (m^3)	116,609	—	—	78,345	376	—
Waste volume	Recycled volume (tons)	—	—	10	—	17	5
	Incineration disposal volume (tons)	—	78	1	—	—	47
	Landfill disposal volume (tons)	70	—	40	—	—	702
Sewage water quality	Chemical oxygen demand (mg/L)	16 to 237	29 to 107	13 to 470	4 to 165	4 to 16	—
	Biochemical oxygen demand (mg/L)	10 to 95	7 to 29	—	4 to 14	3 to 8	200