Environmental Data of Shin-Etsu Group

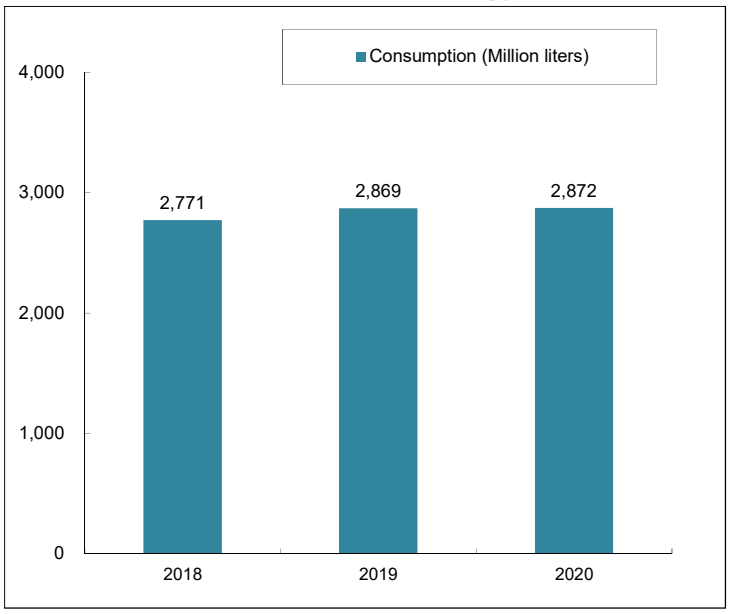
Contents

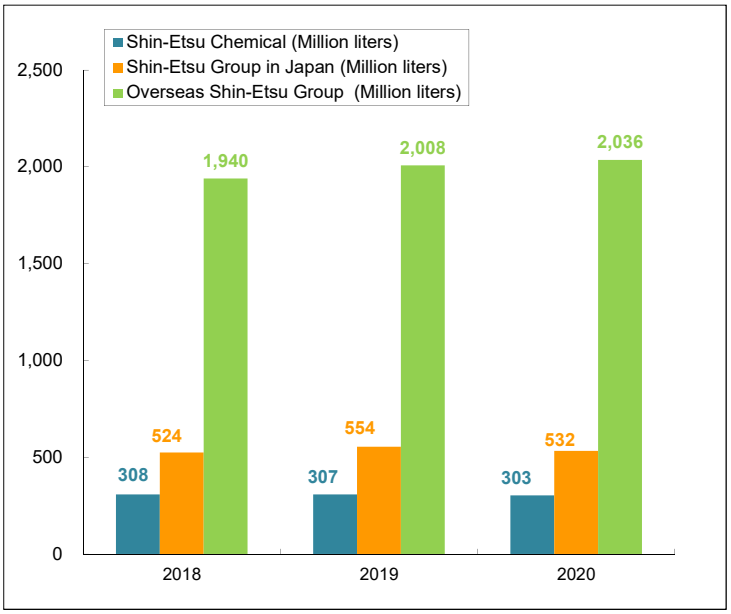
Shin-Etsu Chemical Co., Ltd.

*The scope of organizations included in the accounting has been changed to Shin-Etsu Chemical and 97 consolidated companies, and the figures have been retroactively reported until FY 2018.

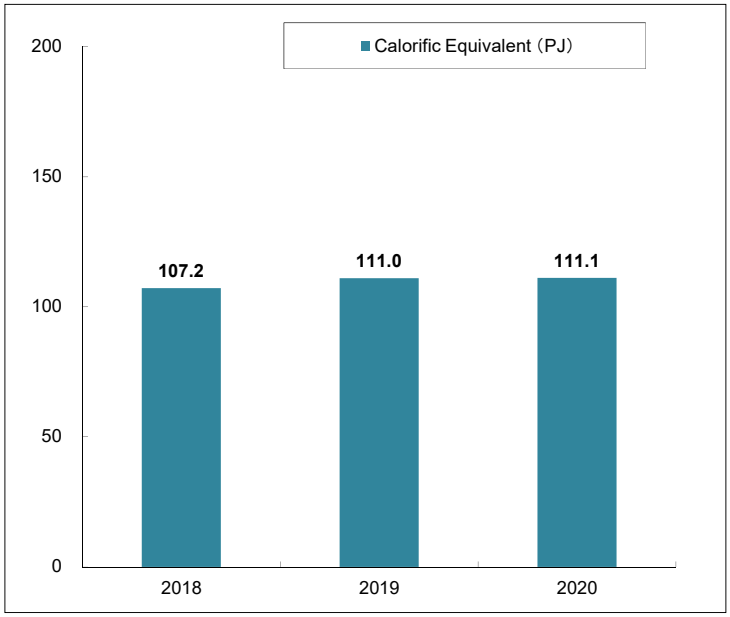
Issued in June 2021

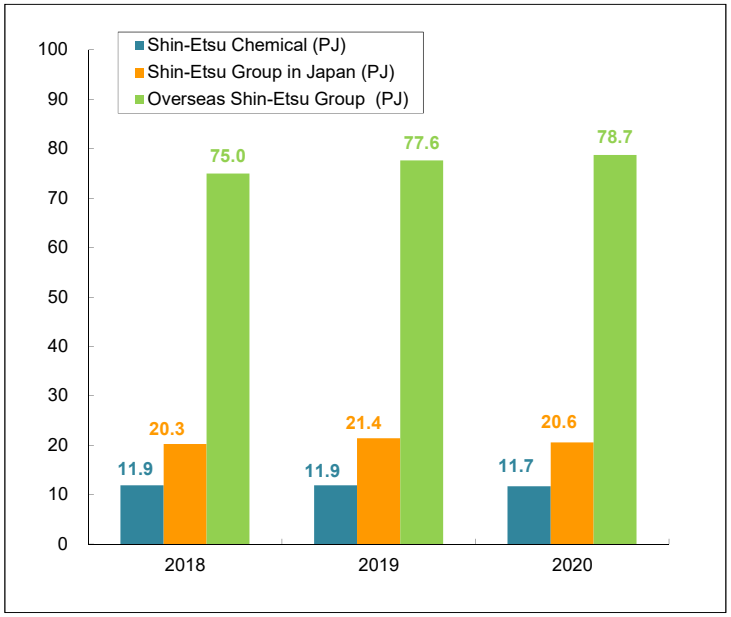
Energy Consumption (Crude Oil Equivalent)



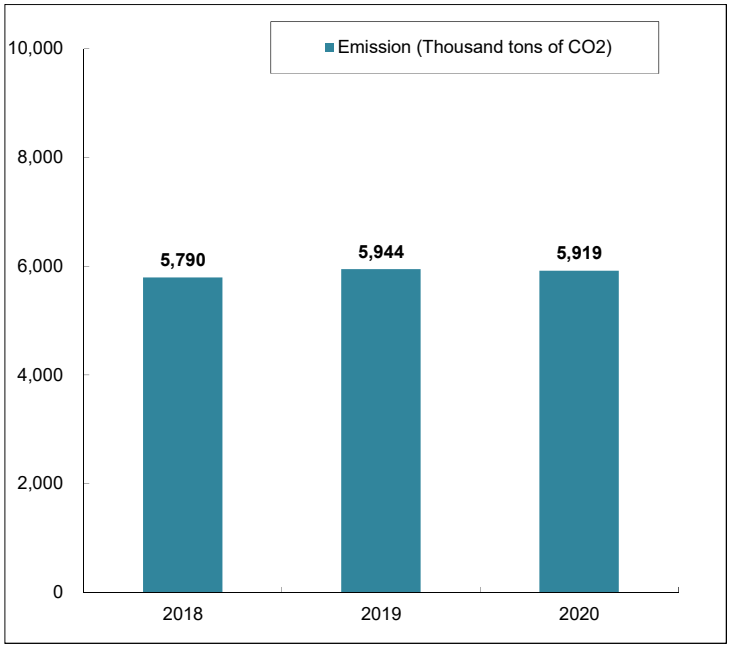


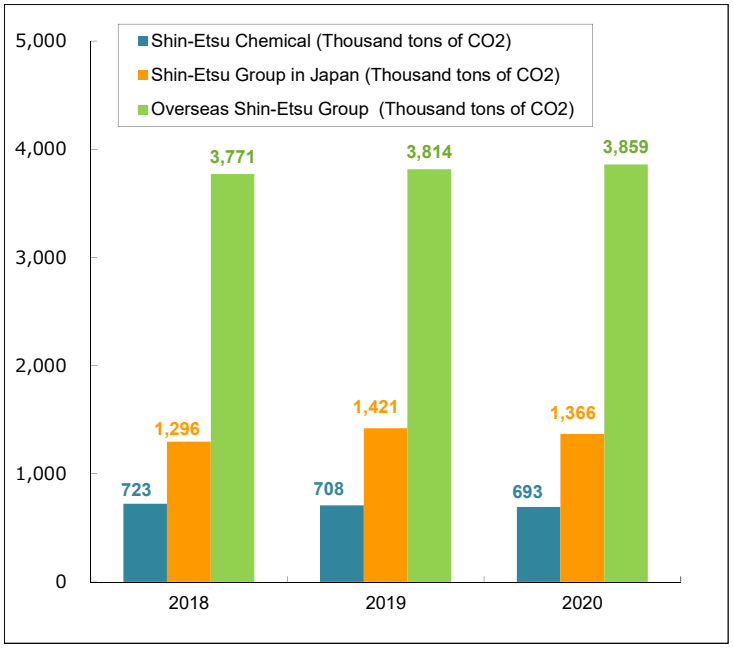
Energy Consumption (Calorific Equivalent)





CO_2 Emissions (Energy Related)





Energy Consumption (Detailed Data)

Energy Consumption (Actual Usage)

Item	Unit	2018	2019	2020
Purchased Electricity	GWh	8,066	8,403	8,336
Purchased Steam	Thousand tons	2,309	2,268	2,093
A-tape Heavy Oil	Thousand liters	995	974	1,031
C-tape Heavy Oil	Thousand liters	6,077	5,871	6,184
Kerosene	Thousand liters	3,930	4,091	4,512
Natural Gas	MNm3	626	666	693
Gasoline	Thousand liters	829	1,716	683
Light Oil	Thousand liters	3,156	2,985	2,795
Liquefied Petroleum Gas	Thousand tons	26	27	26
Hydrogen	MNm3	63	-18	-13
Liquefied Natural Gas	tons	104	66	64

Energy Consumption (Crude Oil Equivalent)

Item	Unit	2018	2019	2020
Purchased Electricity	ML	1,836.2	1,913.0	1,897.8
Purchased Steam	ML	163.9	161.0	148.6
A-tape Heavy Oil	ML	1.0	1.0	1.0
C-tape Heavy Oil	ML	6.6	6.4	6.7
Kerosene	ML	3.7	3.9	4.3
Natural Gas	ML	704.1	748.5	778.9
Gasoline	ML	0.7	1.5	0.6
Light Oil	ML	3.1	2.9	2.7
Liquefied Petroleum Gas	ML	34.5	35.9	34.5
Hydrogen	ML	17.1	-4.9	-3.6
Liquefied Natural Gas	ML	0.1	0.1	0.1
Total	ML	2,771.2	2,869.4	2,871.6

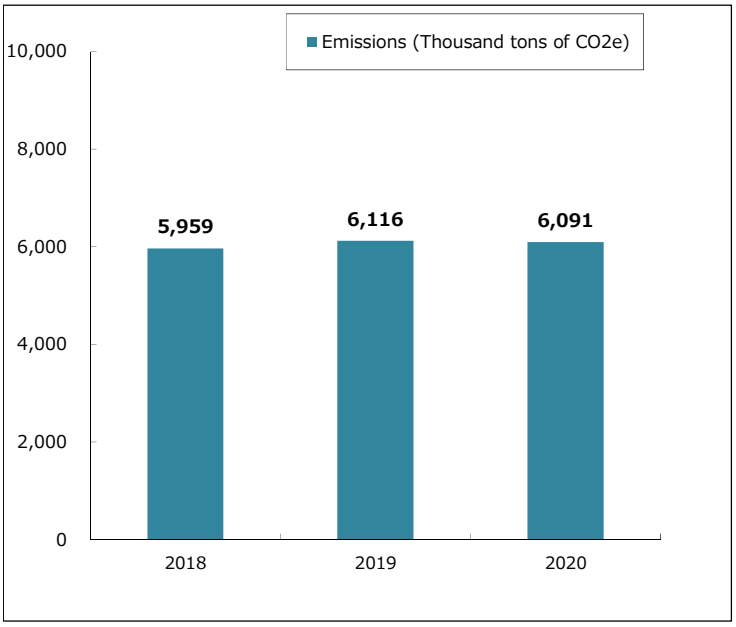
Energy Consumption (Calorific Equivalent)

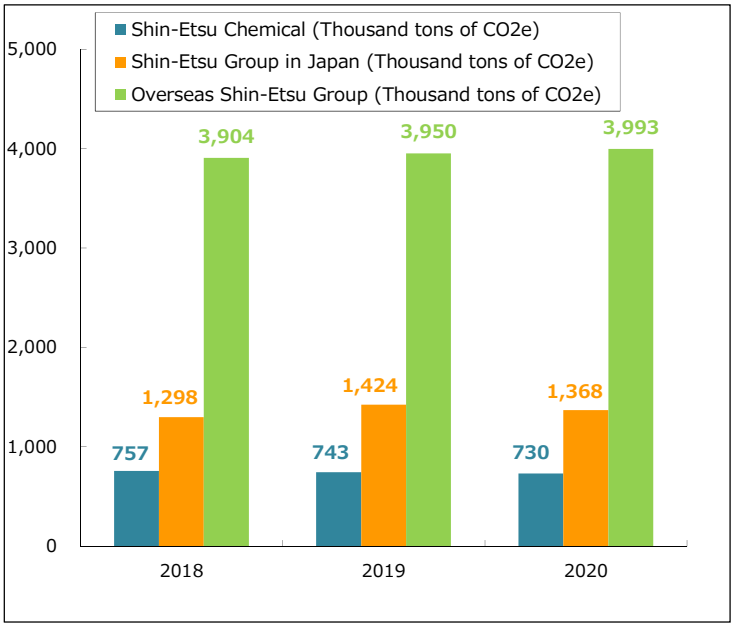
Item	Unit	2018	2019	2020
Purchased Electricity	TJ	71,063	74,033	73,444
Purchased Steam	TJ	6,257	6,146	5,671
A-tape Heavy Oil	TJ	39	38	40
C-tape Heavy Oil	TJ	255	246	259
Kerosene	TJ	144	150	166
Natural Gas	TJ	27,250	28,967	30,144
Gasoline	TJ	29	59	24
Light Oil	TJ	119	113	105
Liquefied Petroleum Gas	TJ	1,335	1,391	1,337
Hydrogen	TJ	660	-188	-140
Liquefied Natural Gas	TJ	6	4	3
Total	TJ	107,156	110,959	111,053

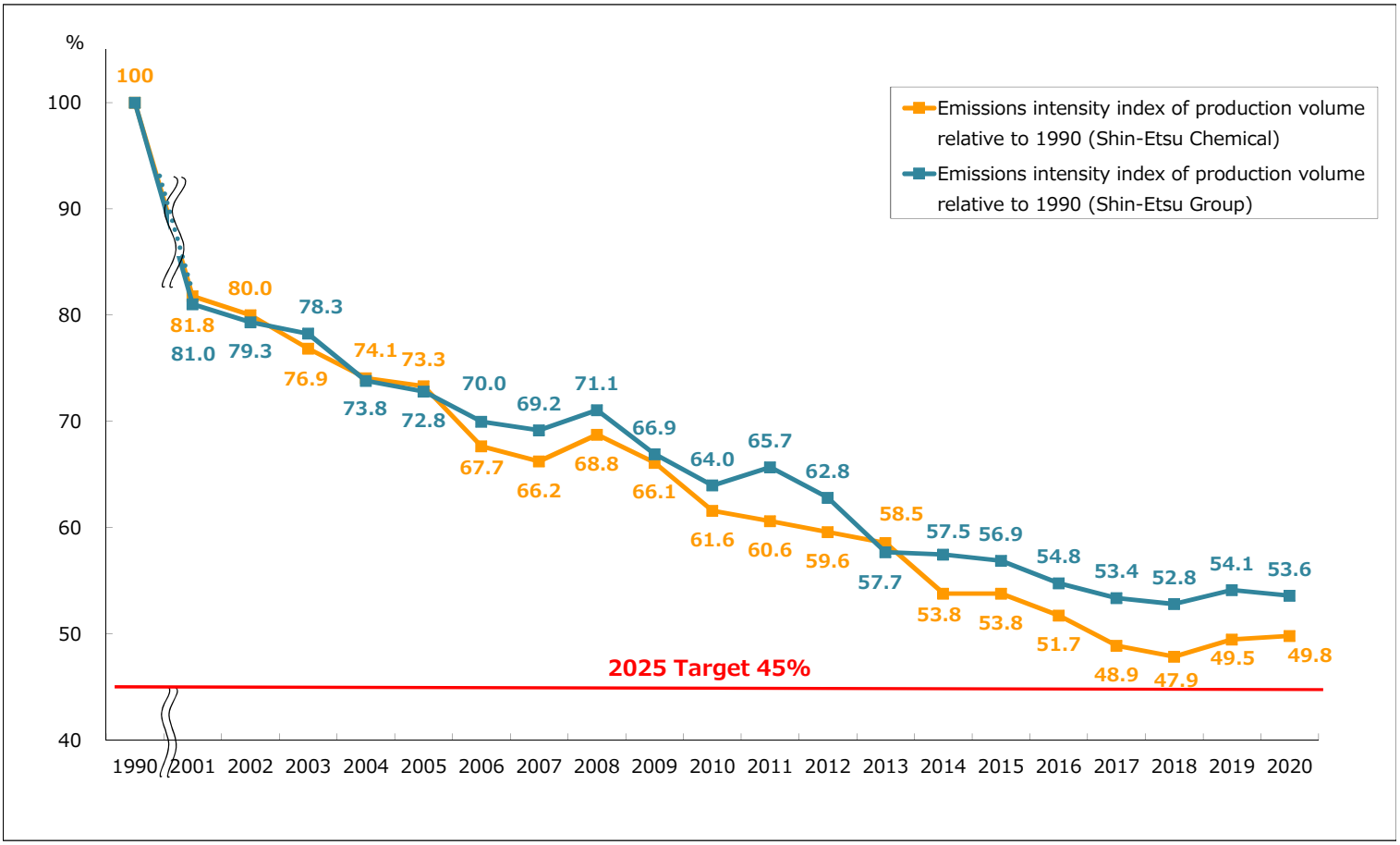
CO_2 Emissions

Item	Unit	2018	2019	2020
Purchased Electricity	Thousand tons of CO2	3,779.3	3,850.0	3,806.8
Purchased Steam	Thousand tons of CO2	500.6	491.8	453.8
A-tape Heavy Oil	Thousand tons of CO2	2.7	2.6	2.8
C-tape Heavy Oil	Thousand tons of CO2	18.2	17.6	18.6
Kerosene	Thousand tons of CO2	9.8	10.2	11.2
Natural Gas	Thousand tons of CO2	1,388.8	1,476.4	1,536.3
Gasoline	Thousand tons of CO2	1.9	4.0	1.6
Light Oil	Thousand tons of CO2	8.2	7.7	7.2
Liquefied Petroleum Gas	Thousand tons of CO2	79.9	83.3	80.0
Hydrogen	Thousand tons of CO2	0.0	0.0	0.0
Liquefied Natural Gas	Thousand tons of CO2	0.3	0.2	0.2
Total	Thousand tons of CO2	5,789.8	5,943.7	5,918.5

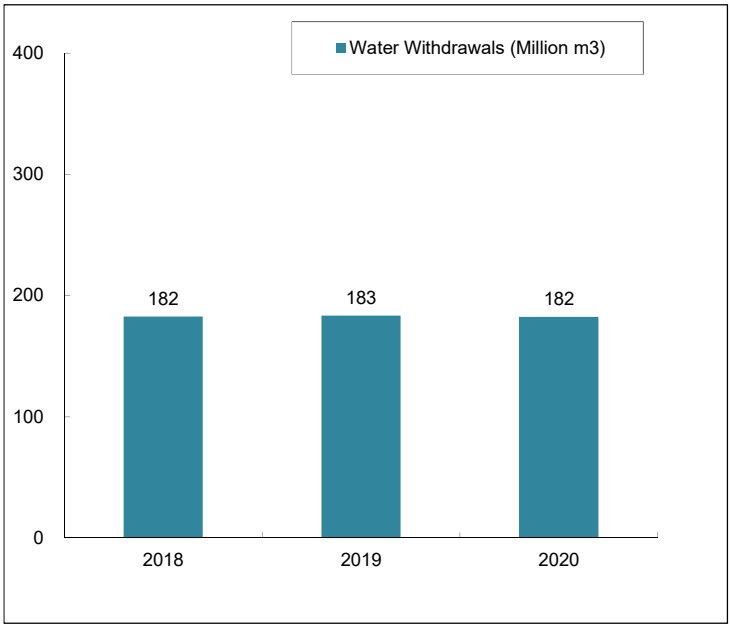
Greenhouse Gas Emissions

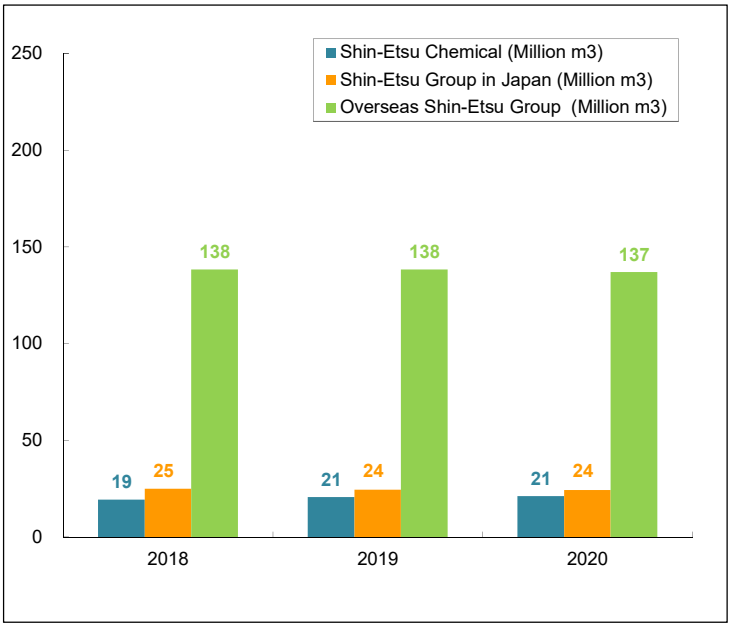




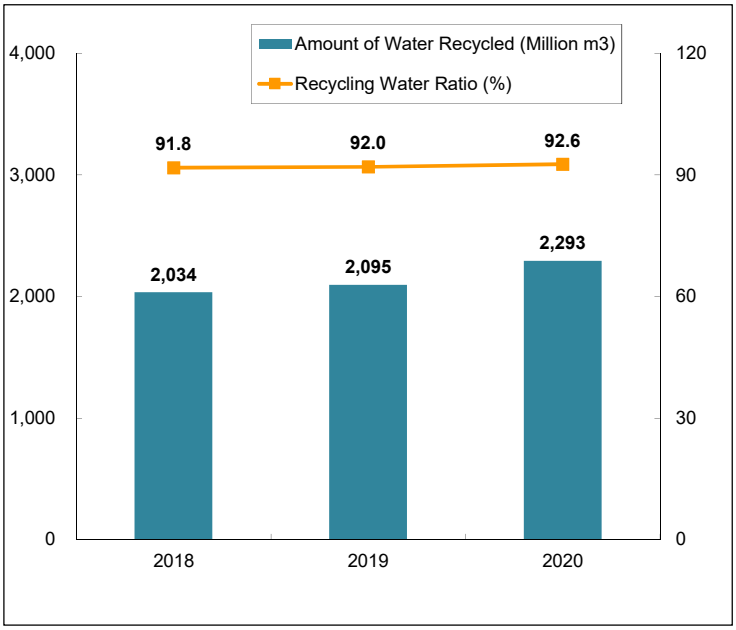


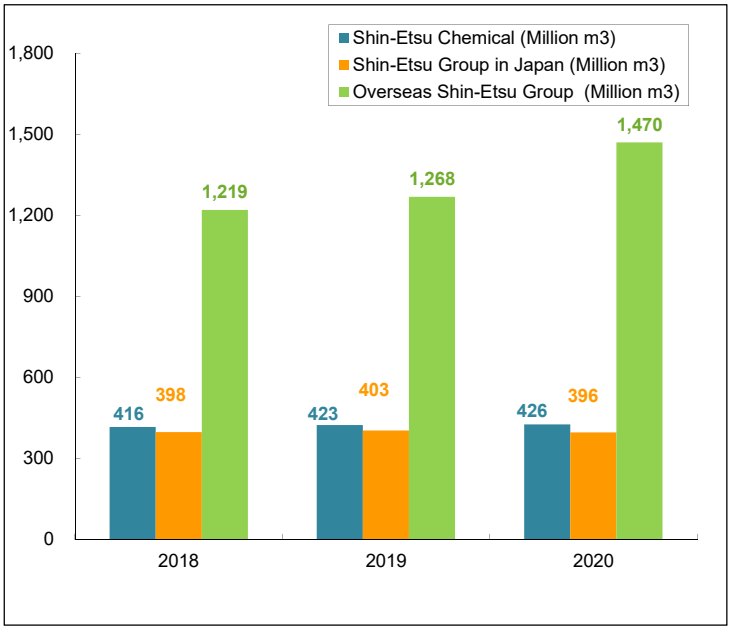
Water Withdrawals



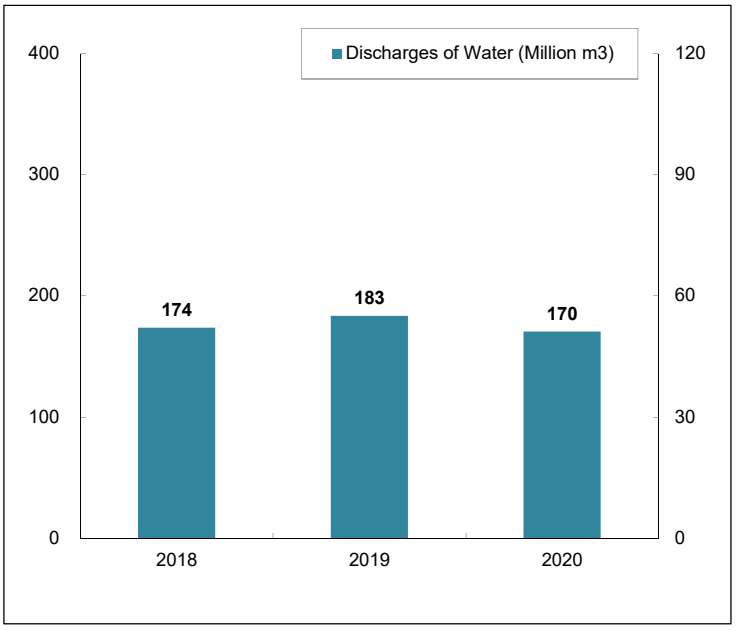


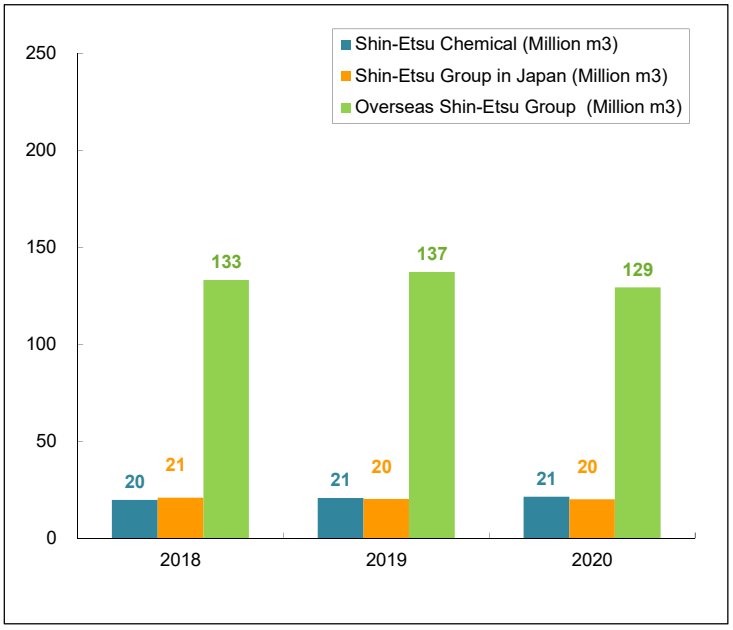
Amount of Water Recycled



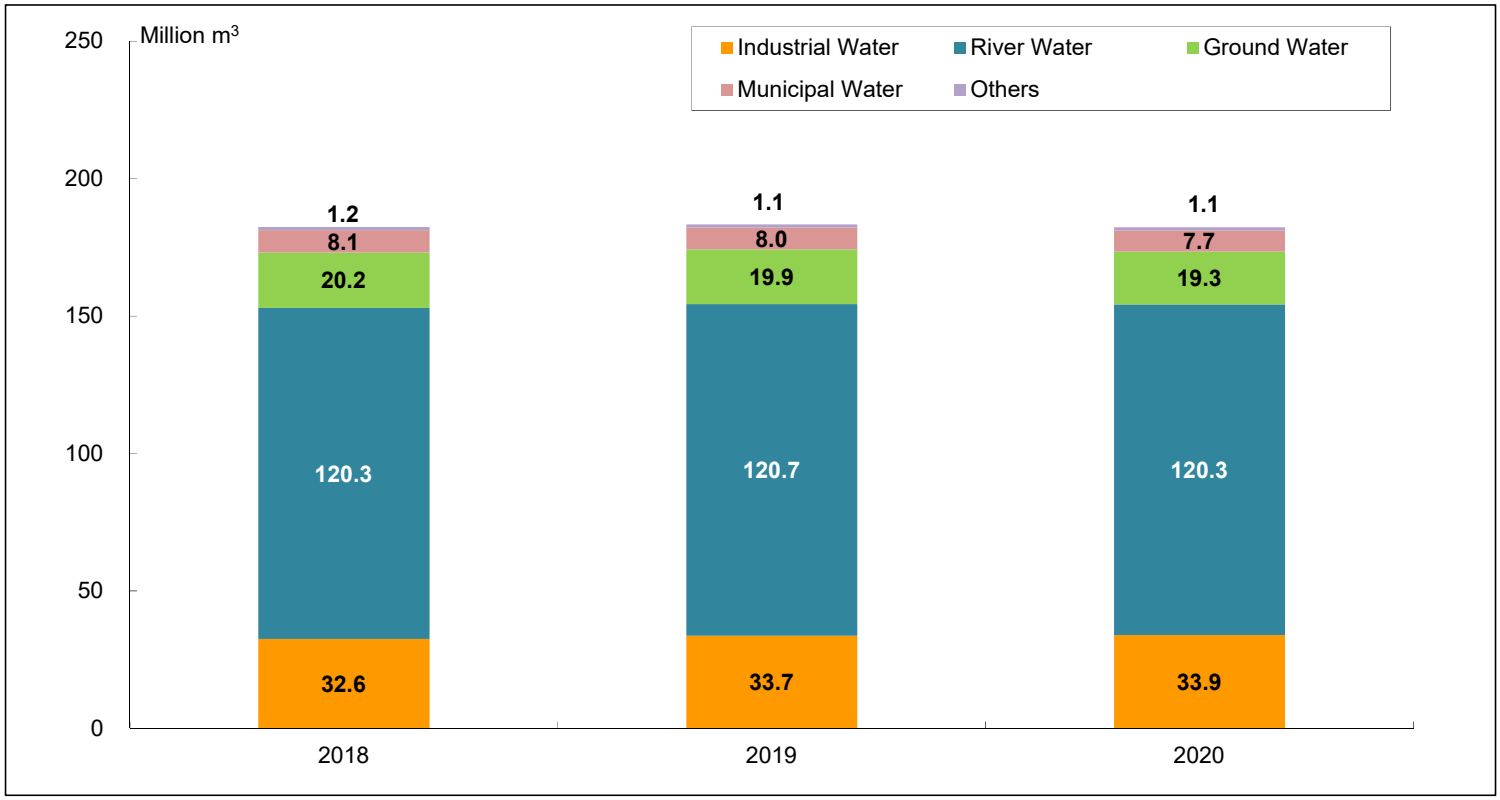


Discharges of Water





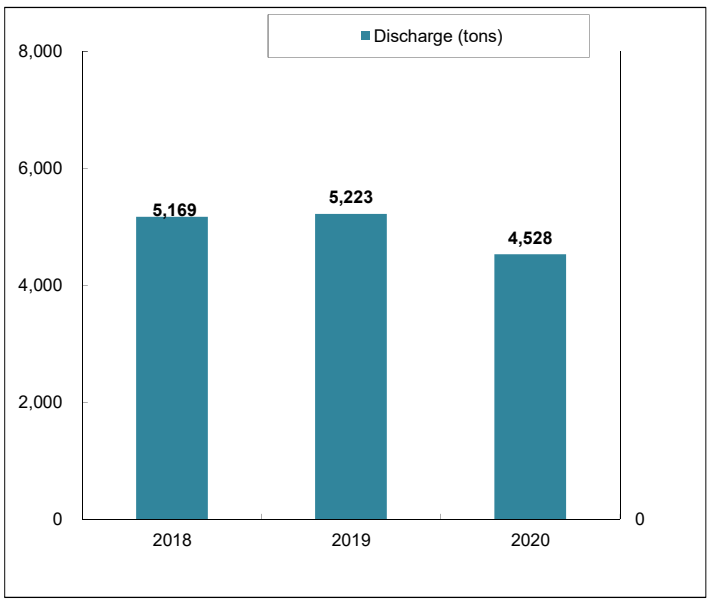
Water Withdrawals by Water Sources

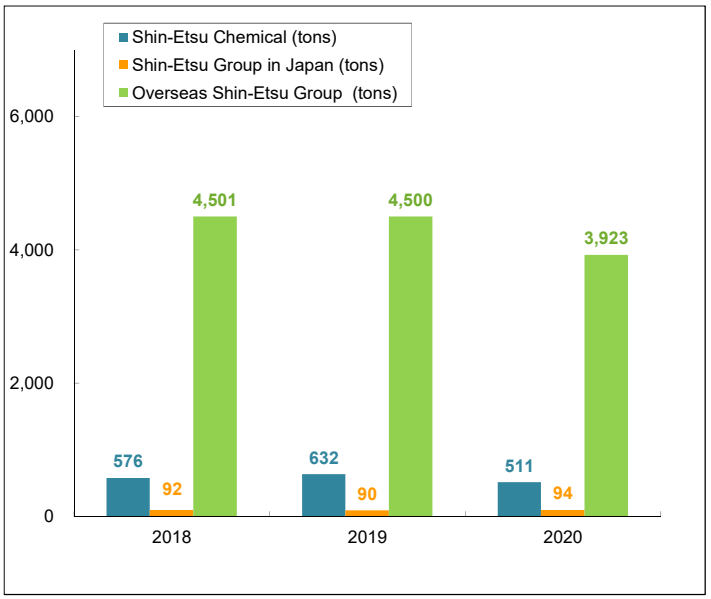


Water Sources	Water Withdrawals （Unit: million m3）		
	2018	2019	2020
Industrial Water	32.6	33.7	33.9
River Water	120.3	120.7	120.3
Ground Water	20.2	19.9	19.3
Municipal Water	8.1	8.0	7.7
Others	1.2	1.1	1.1
Total	182.4	183.4	182.3

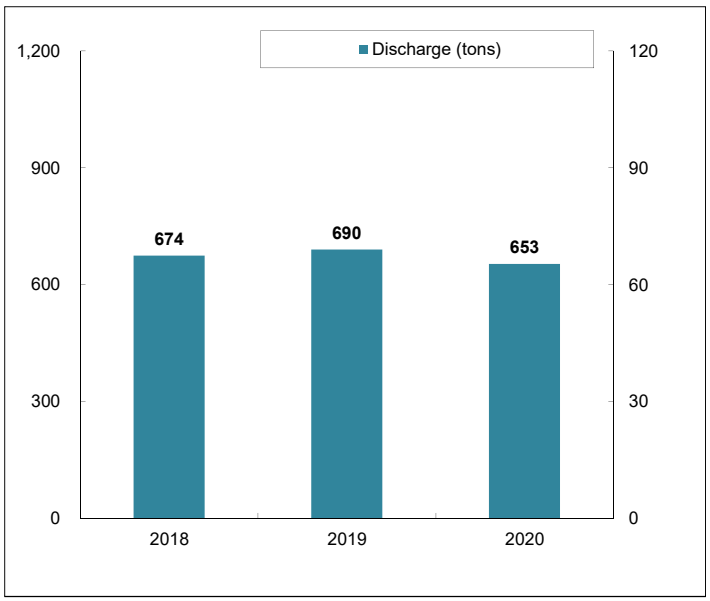
Discharge of Water Pollutant

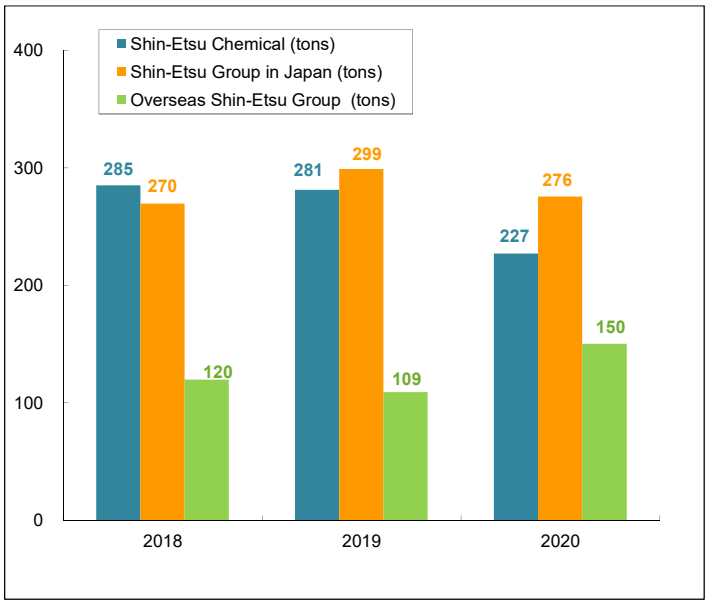
COD





BOD





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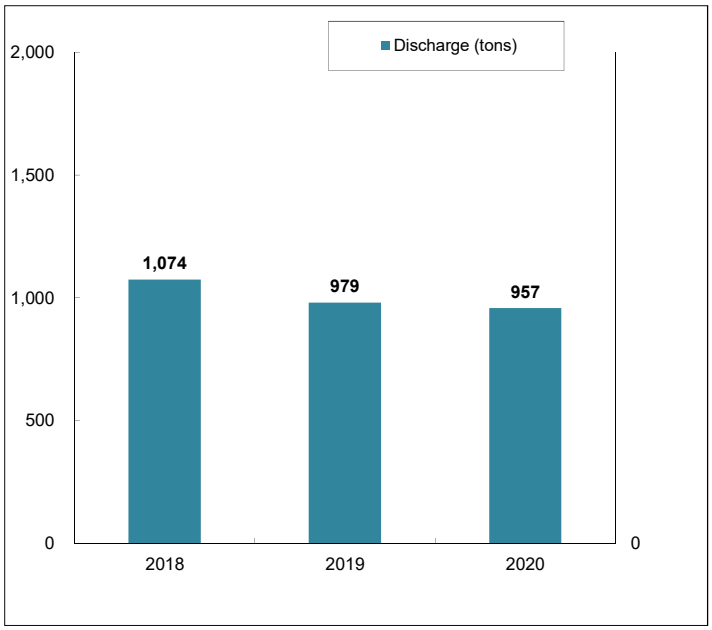
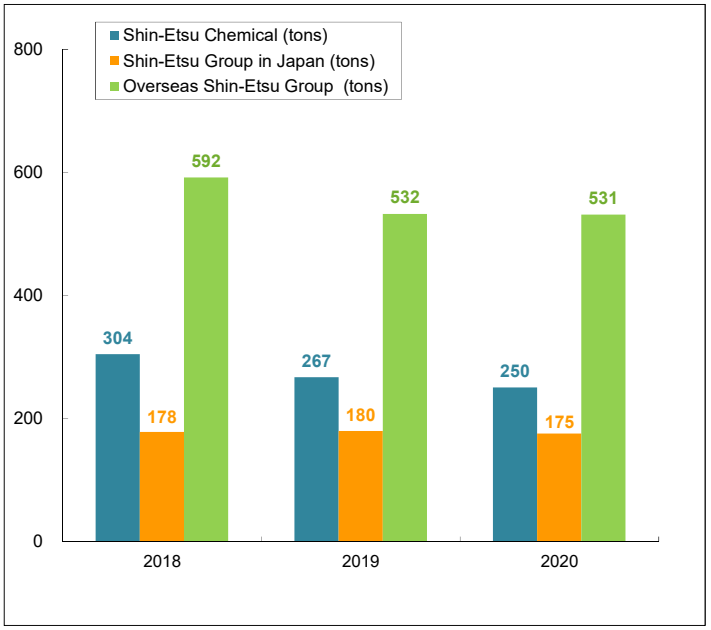
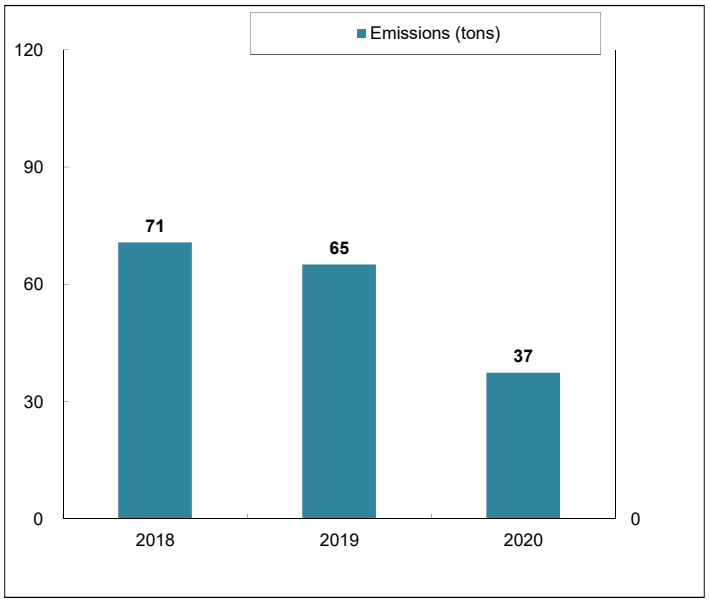
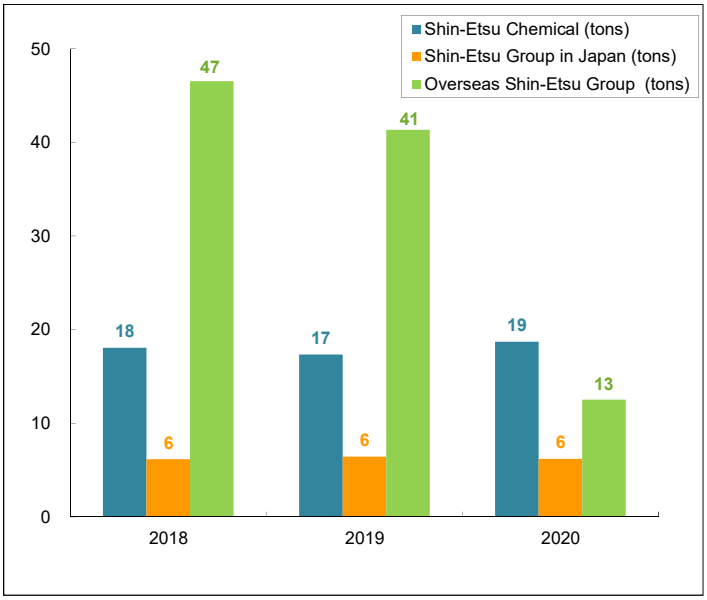




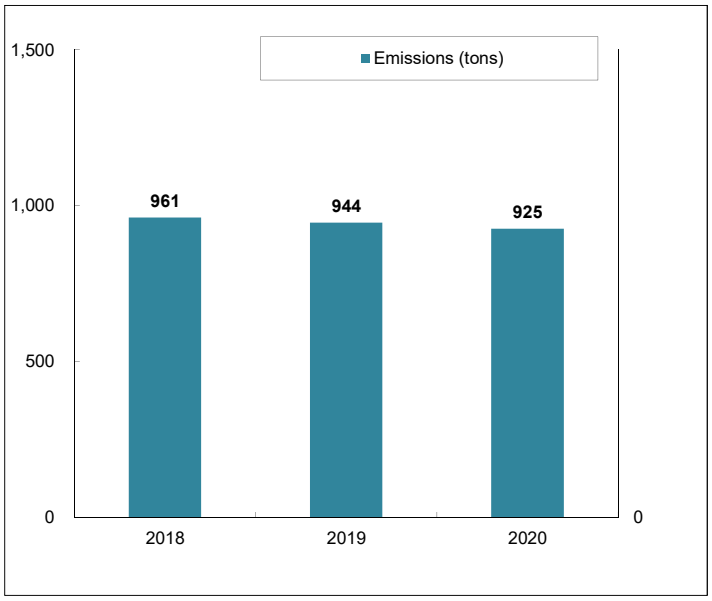
Emissions of Air Pollution Substances

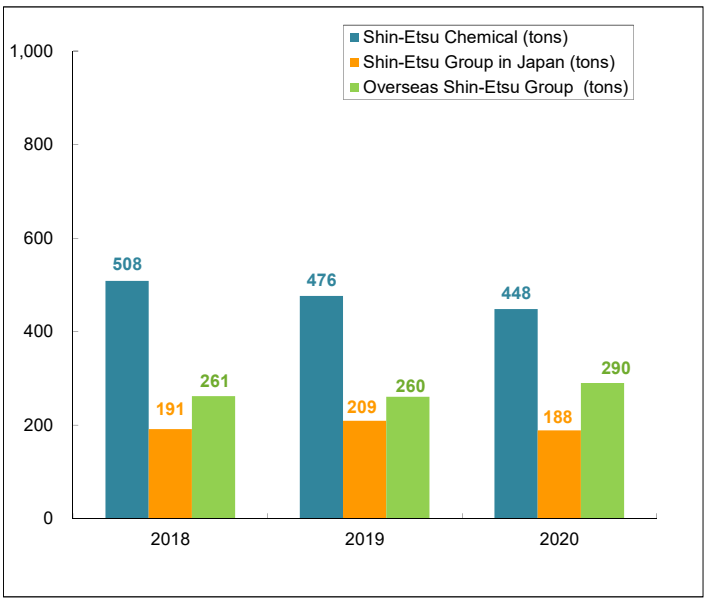
Soot





NOx





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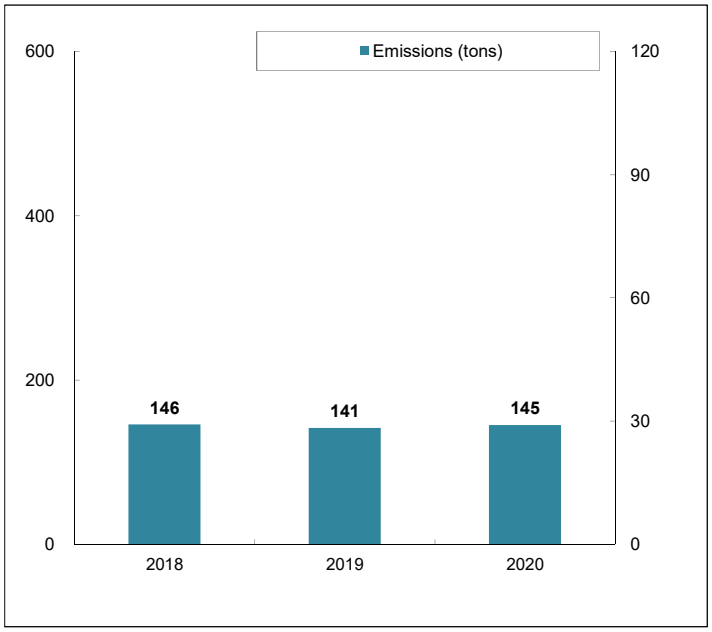
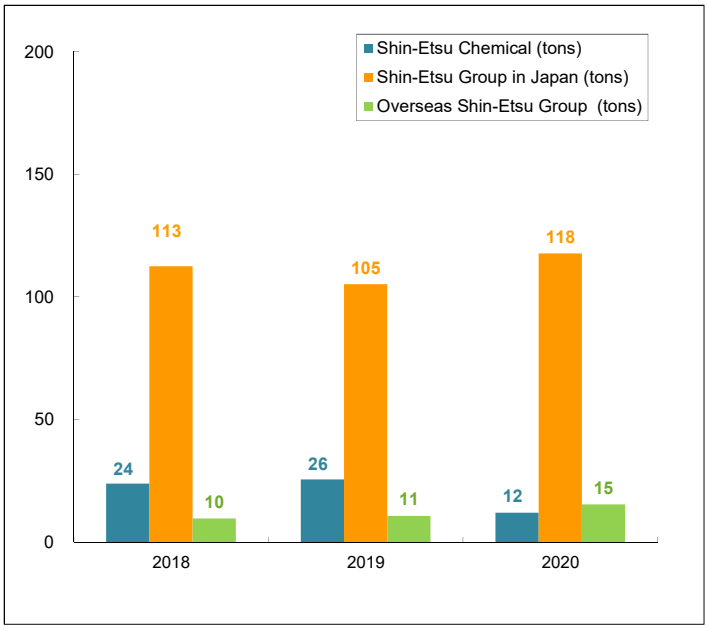
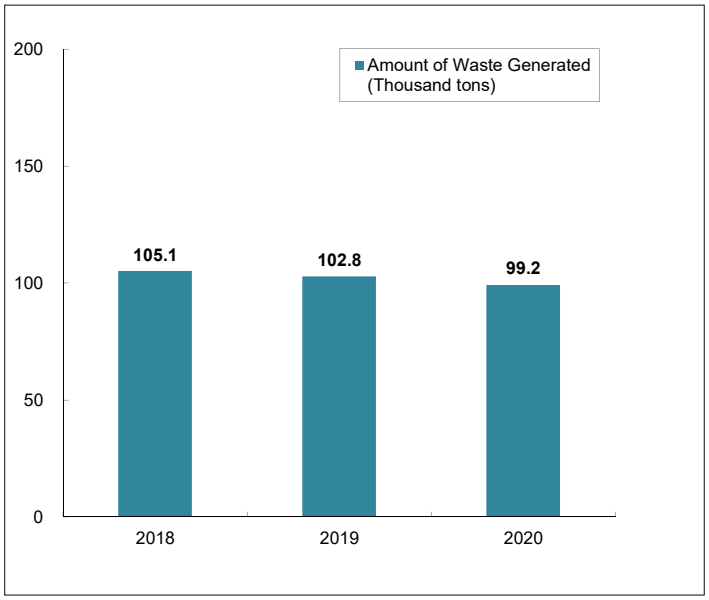
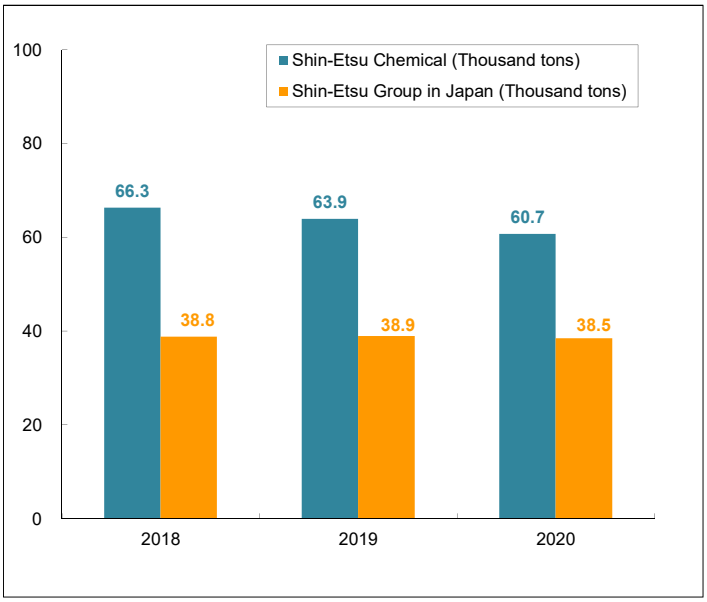


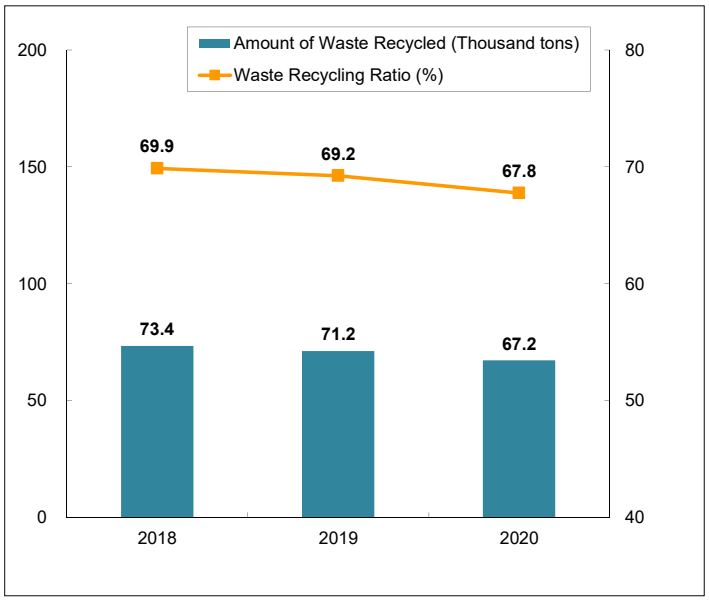


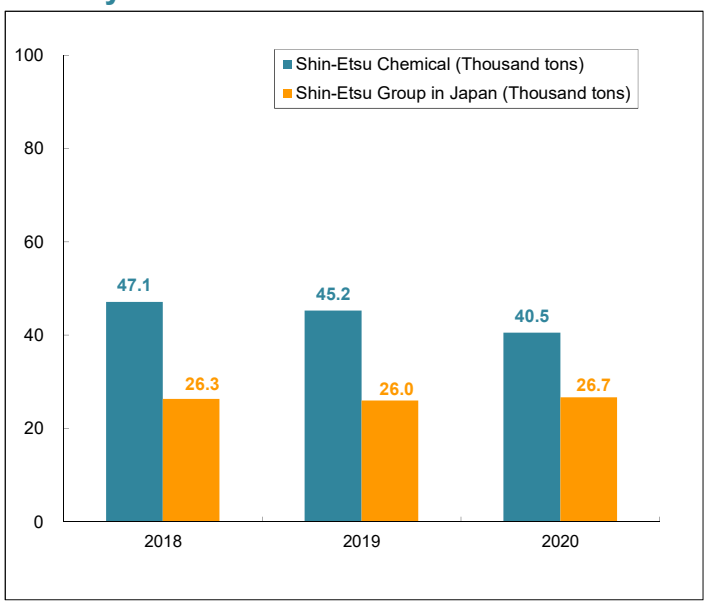
Amount of Waste Generated



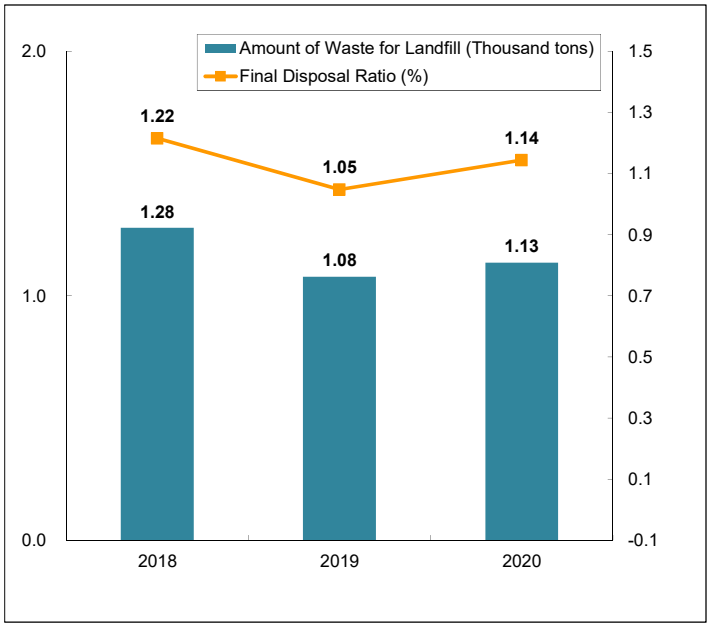


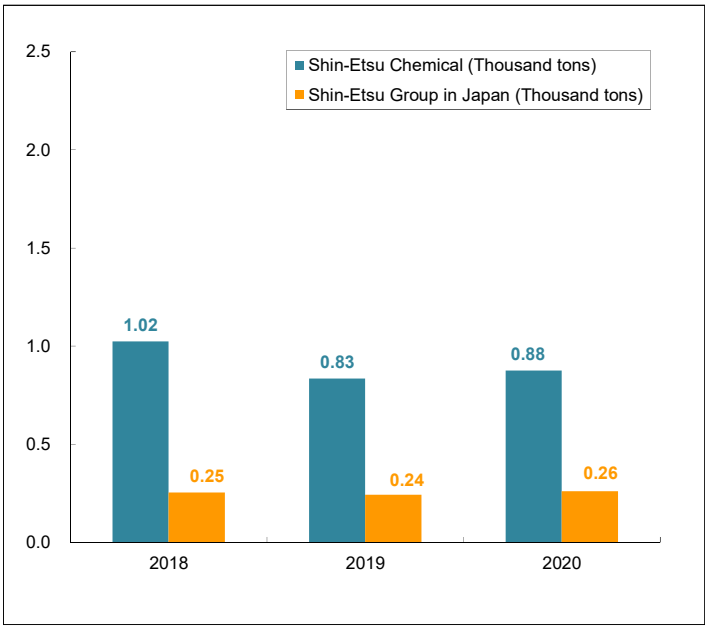
Amount of Waste Recycled





Amount of Waste for Landfill





*The figures are aggregated only for Shin-Etsu Chemical and consolidated in Japan because waste standards differ from country to country.

Detailed data of Waste

Amount of Waste Generated

Item	Unit	2018	2019	2020
Sluge	tons	42,852	42,633	42,465
Waste Oil	tons	16,618	18,447	18,257
Waste Acid	tons	5,631	5,757	5,277
Waste Alkaline	tons	23,823	20,934	19,180
Waste Plastic	tons	6,851	6,879	6,025
Waste Paper	tons	2,102	1,998	1,918
Waste Wood	tons	912	1,211	1,111
Metal Scraps	tons	5,545	4,340	4,238
Glassl Scraps	tons	363	345	373
Others	tons	373	274	311
Total	tons	105,073	102,817	99,155

Amount of Waste Recycled

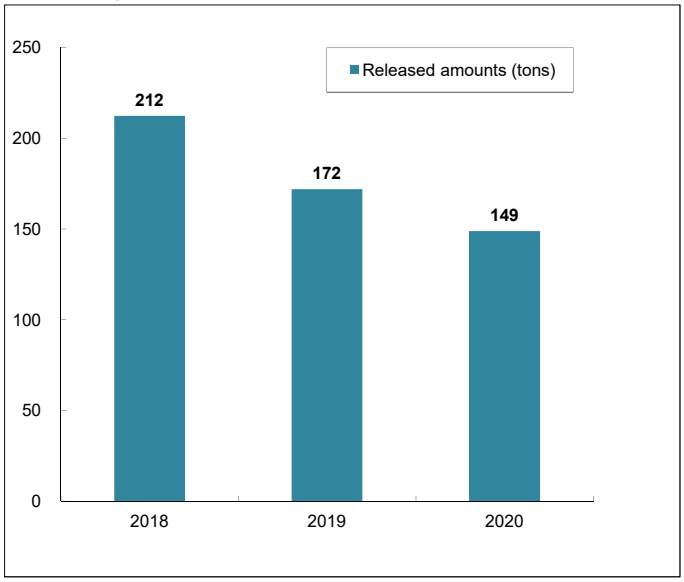
Item	Unit	2018	2019	2020
Sluge	tons	26,836	27,099	28,164
Waste Oil	tons	4,659	6,469	5,122
Waste Acid	tons	4,791	4,746	4,110
Waste Alkaline	tons	22,724	19,654	17,647
Waste Plastic	tons	6,328	6,411	5,537
Waste Paper	tons	1,583	1,500	1,404
Waste Wood	tons	608	732	693
Metal Scraps	tons	5,489	4,295	4,211
Glassl Scraps	tons	254	202	204
Others	tons	135	78	93
Total	tons	73,407	71,185	67,185

Amount of Waste for Landfill

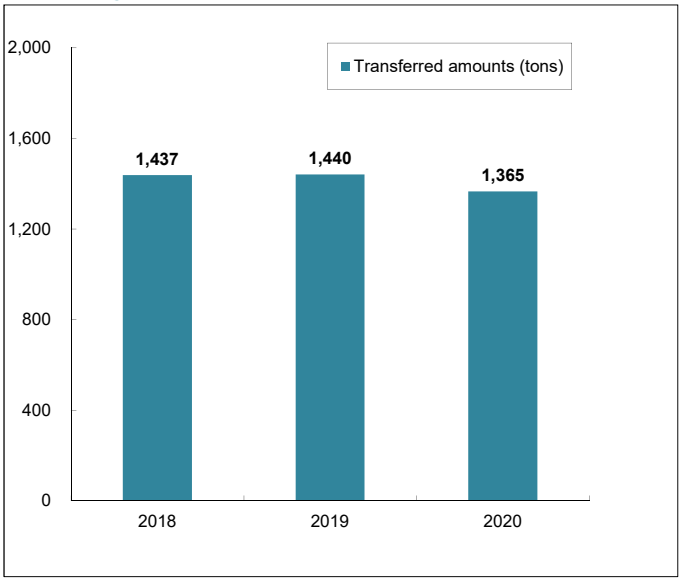
Item	Unit	2018	2019	2020
Sluge	tons	919	734	739
Waste Oil	tons	16	12	6
Waste Acid	tons	0	11	23
Waste Alkaline	tons	19	6	8
Waste Plastic	tons	116	92	115
Waste Paper	tons	24	29	13
Waste Wood	tons	2	1	1
Metal Scraps	tons	25	18	4
Glassl Scraps	tons	96	135	161
Others	tons	62	40	66
Total	tons	1,277	1,077	1,134

*The figures are aggregated only for Shin-Etsu Chemical and consolidated in Japan because waste standards differ from country to country.

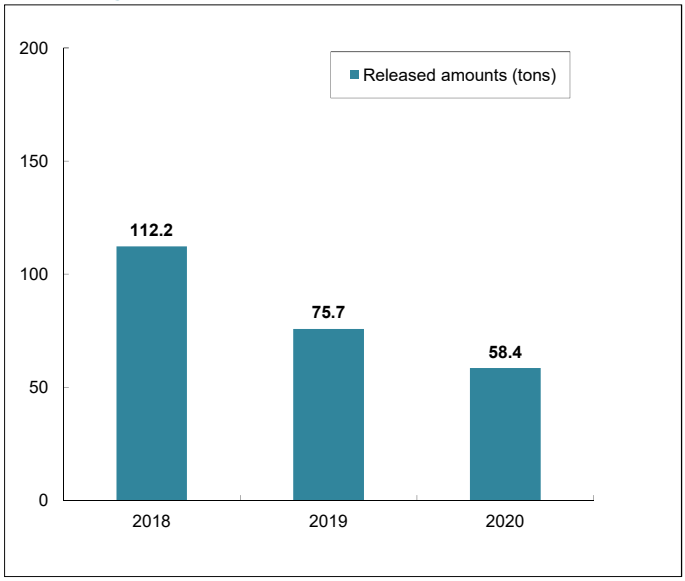
PRTR System Total Released Amounts



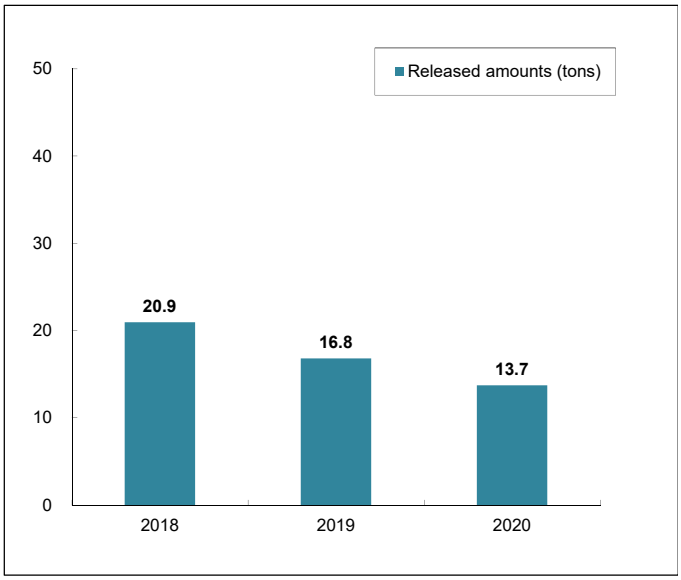
PRTR System Total Transferred Amounts



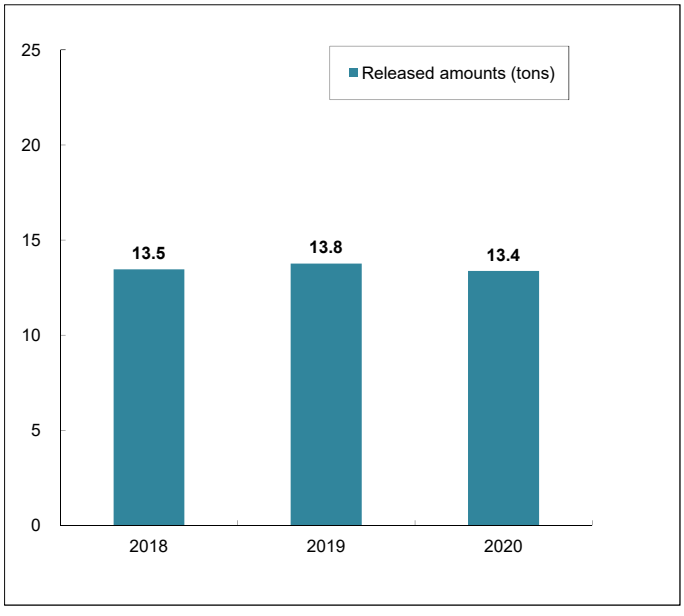
PRTR System Chloromethane Released Amounts



PRTR System 1,2-Dichloroethane Released Amounts

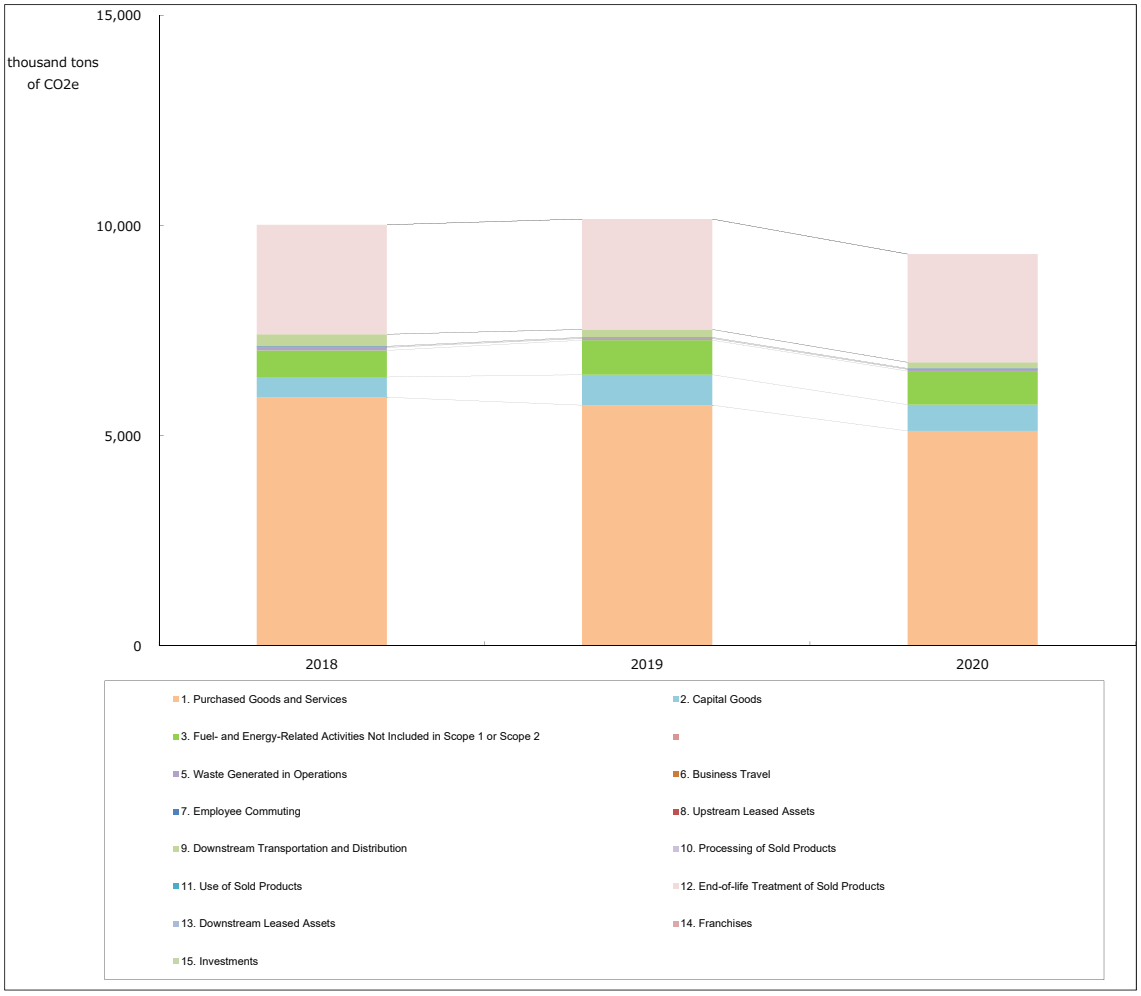


PRTR System Chloroethylene Released Amounts



*The figures are aggregated only for Shin-Etsu Chemical and group consolidated in Japan in accordance with the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof and the PRTR.

Scope 3 Greenhouse Gas Emissions



Unit: thousand tons of CO2e

	Category	Category definition	Amount of activity	2018	2019	2020
Upstream of Supply Chain	1. Purchased Goods and Services	Emissions from activities leading up to the production of raw materials and parts, purchased products, and sales materials	Volume of raw materials purchased	5,918	5,731	5,117
	2. Capital Goods	Emissions from the construction and manufacture of the company's capital goods	Increase in property, plant and equipment and intangible assets	481	723	625
	3. Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	Emissions associated with the extraction, production, and transportation of purchased fuel and the fuel used when purchased electricity is generated	Total amount of energy purchased	633	821	799
	4. Upstream Transportation and Distribution	①Emissions associated with logistics from suppliers of products and services purchased in the fiscal year covered by the report to the company.	Weight of purchased raw materials and the transportation distance of raw materials	1,007	930	882
		②Emissions associated with logistics services other than ① purchased in the fiscal year covered by the report (Emissions associated with logistics that the company born costs)	Product transport volume and distance(at the company's expense)			
	5. Waste Generated in Operations	Emissions from the transport and treatment of waste generated in-house	Amount of Waste by Type	69	40	40
	6. Business Travel	Emissions from employee business trips	Total number of days traveled by type	11	8	2
	7. Employee Commuting	Emissions due to transfer when employees commute to the office	Commuting expenses such as commuter pass expenses	21	20	21
	8. Upstream Leased Assets	Emissions from the operation of leased assets leased by the company	Exclusion from calculation[1]	—	—	—
Downstream of Supply Chain	9. Downstream Transportation and Distribution	Emissions associated with the distribution of products sold by the company to final consumers (not borne by the company)	Volume and Distance of Product Transportation (at the customer's expense)	286	188	146
	10. Processing of Sold Products	Emissions from the processing of intermediate products by businesses	Non-applicable[2]	—	—	—
	11. Use of Sold Products	Emissions from the use of products by users (consumers and businesses)	Non-applicable[3]	—	—	—
	12. End-of-life Treatment of Sold Products	Emissions from the disposal of products by users (consumers and businesses)	Volume of products	2,604	2,628	2,576
	13. Downstream Leased Assets	Emissions from the operation of leased assets	Non-applicable[4]	—	—	—
	14. Franchises	Emissions by franchisees	Non-applicable[5]	—	—	—
	15. Investments	Emissions associated with the operation of investments	Non-applicable[6]	—	—	—
Total				11,030	11,089	10,208

※After reviewing the calculation targets and methods with reference to the Ministry of the Environment, the Ministry of Economy, Trade and Industry's Basic Guidelines on the Calculation of Greenhouse Gas Emissions through the Supply Chain (Version 2.3), and WBCSD's Guidance on the Calculation and Reporting of Corporate GHG Emissions in the Chemicals Sector Value Chain, Category 10 was not included, and the calculation methods for Categories 1, 4, 6, and 12 were changed.

[Reason for exclusion of calculation and non-applicability]

[1]The Group covers leasing of non-production bases overseas, but does not cover it due to the small amount

[2]Application of WBCSD's Chemical Sector Guidelines: "Chemical companies are not required to report Category 10 emissions due to the difficulty of obtaining reliable figures due to the diverse use and client mix."

[3]Application of WBCSD Guidelines for the Chemicals Division: "If an end-user of a chemical is unknown, a chemical company should not include indirect use phase emissions in its inventory."

[4]We do not have any assets leased to other companies.

[5]We are not a franchised entity.

[6]There is no investment for profit.

The list of covering companies

Japan
Shin-Etsu Chemical Co., Ltd.
Shin-Etsu Handotai Co., Ltd.
Shin-Etsu Polymer Co., Ltd.
Shin-Etsu Astech Co., Ltd.
Naoetsu Electronics Co., Ltd.
Shin-Etsu Engineering Co., Ltd.
Nagano Electronics Industrial Co., Ltd.
Shin-Etsu Finetech Co., Ltd.
JAPAN VAM & POVAL CO., LTD.
Nissin Chemical Industry Co., Ltd.
Nihon Resin Co., Ltd.
Naoetsu Precision Co., Ltd.
Skyward Information System Co., Ltd.
Shinano Electric Refining Co., Ltd.
Fukui Environmental Analysis Center Co., Ltd.
Shin-Etsu Film Co., Ltd.
Shin-Etsu Technology Service Co. Ltd.
Naoetsu Sangyo Co., Ltd.
Shin ken Integrated Facilities Co.,Ltd
Saitama Shinkoh Mold Co., Ltd.
Shinkoh Mold Co., Ltd.
Shin-Etsu Magnet Co., Ltd.
Human Creat Co., Ltd.
Kashima Chlorine and Alkali Co., Ltd.
Kashima Vinyl Chloride Monomer Co., Ltd.

Overseas
Shintech Inc.
Shin-Etsu Handotai America Inc.
S.E.H. Malaysia Sdn. Bhd.
Shin-Etsu Handotai Europe Ltd.
Shin-Etsu PVC B.V.
S-E Inc.
Shin-Etsu Electronics Materials Singapore Pte. Ltd.
Shin-Etsu Handotai Taiwan Co., Ltd.
Shin-Etsu Silicone International Trading (Shanghai) Co., Ltd.
Shin-Etsu Magnetics Philippines Inc.
CIRES, S.A.
Shin-Etsu Singapore Pte. Ltd.
Shin-Etsu Silicone Korea Co., Ltd.
Shin-Etsu Silicones (Thailand) Ltd.
Shin-Etsu (Malaysia) Sdn. Bhd.
Shin-Etsu MicroSi, Inc.
Shin-Etsu Silicone Taiwan Co., Ltd.
Shin-Etsu Silicones of America Inc.
Shin-Etsu Silicones Europe B.V.
Shin-Etsu Opto Electronic Co., Ltd.
Shin-Etsu Polymer (Malaysia) Sdn. Bhd.
Shin-Etsu Polymer Europe B.V.
Shin-Etsu International Europe B.V.
Shin-Etsu Polymer America, Inc.
Shin-Etsu Polymer India Pvt. Ltd.
P.T. Shin-Etsu Polymer Indonesia
Shin-Etsu Polymer Singapore Pte. Ltd.
Shin-Etsu Polymer Shanghai Co., Ltd.
Shin-Etsu Polymer Hong Kong Co., Ltd.
Shin-Etsu Polymer Hungary Kft.
Shin-Etsu Polymer Thailand Ltd.
Dongguan Shin-Etsu Polymer Co., Ltd.
Suzhou Shin-Etsu Polymer Co., Ltd.
S.E.H. (Shah Alam) Sdn. Bhd.
Shin-Etsu Handotai Singapore Pte.Ltd.
Simcoa Operations Pty. Ltd.
SE Tylose USA, Inc.
K-Bin INC.
Shin-Etsu Silicone (Nantong) Co., Ltd.
Shin-Etsu (Jiangsu) Optical Preform Co., Ltd.
Asia Silicones Monomer Ltd.
Shin-Etsu Magnetic Materials Vietnam Co,. Ltd.
Shin-Etsu Electronics Materials Taiwan Co., Ltd.
Shin-Etsu YOFC (Hubei) Optical Preform Co., Ltd.
Zhejiang Shin-Etsu High-Tech Chemical Co., Ltd.
Others (28 companies)