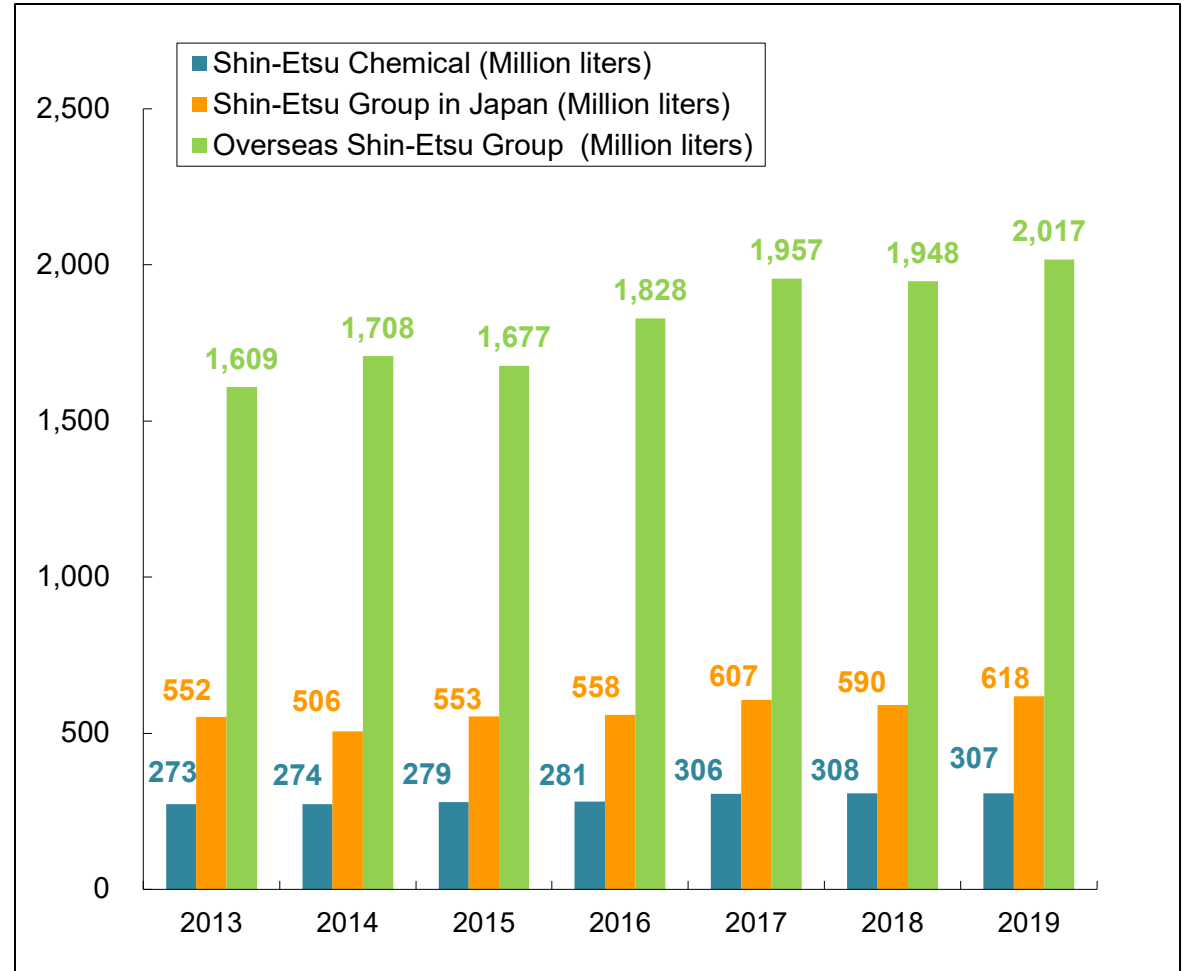
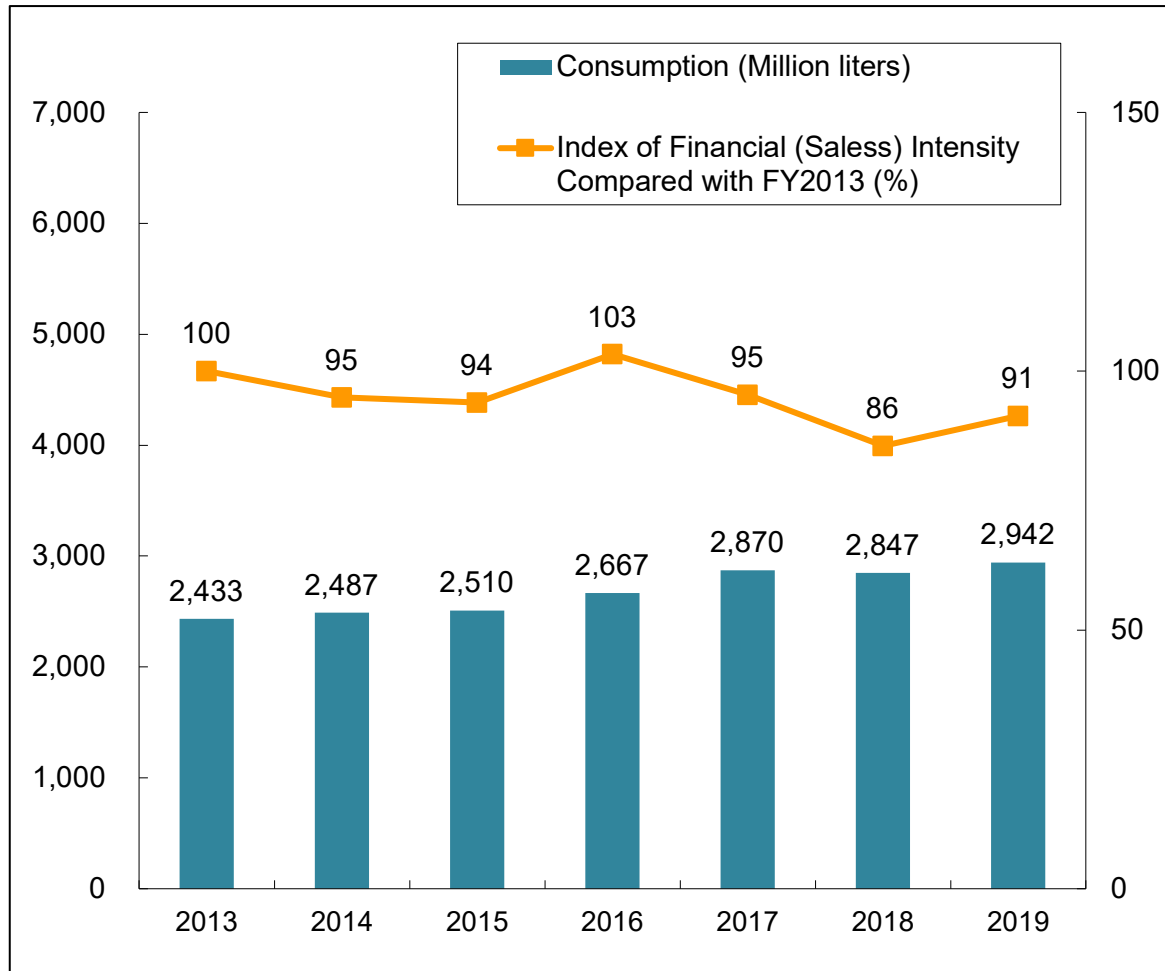


Environmental Data of Shin-Etsu Group

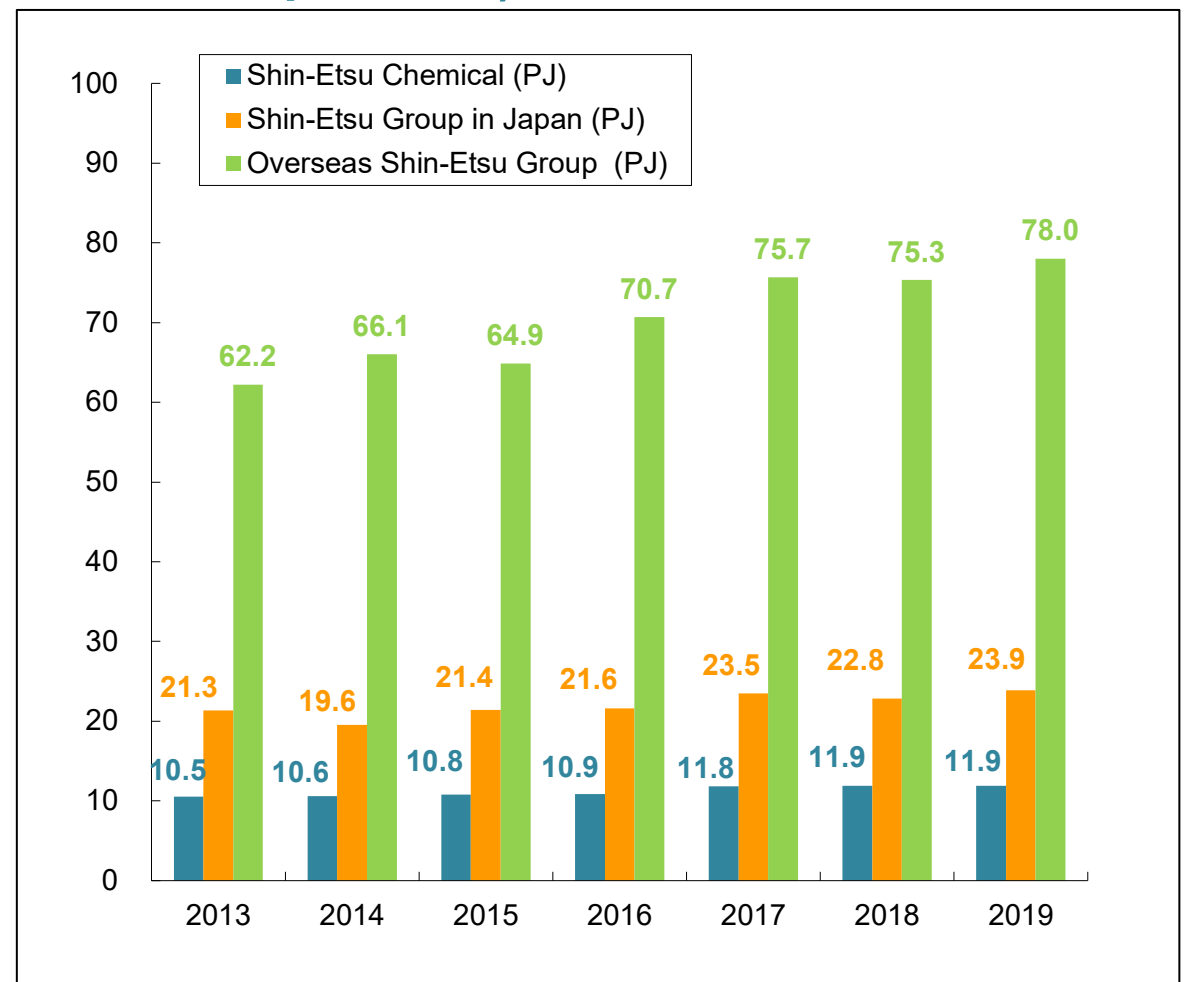
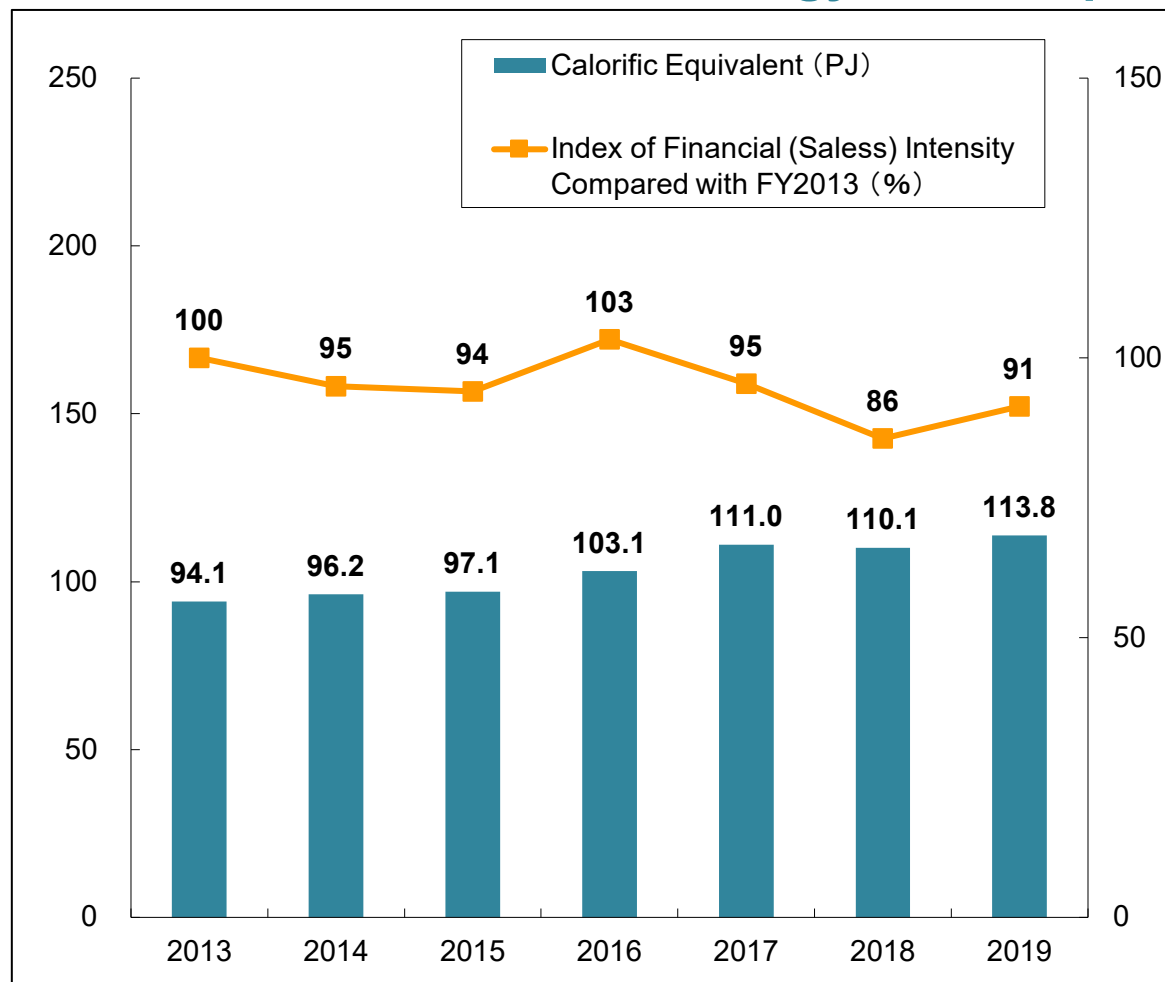
Contents

Energy Consumption, CO ₂ Emissions.....	1
Energy Consumption (Detailed Data).....	2
Greenhouse Gas Emissions.....	3
Water Withdrawals, Amount of Water Recycled, Discharges of Water.....	4
Water Withdrawals by Water Sources.....	5
Discharge of Water Pollutant (COD, BOD, SS).....	6
Emissions of Air Pollution Substances (Soot, NO _x , SO _x).....	7
Amount of Waste Generated, Waste Recycled and Waste for Landfill.....	8
Detailed data of Waste (Amount of Waste Generated, Waste Recycled and Waste for Landfill (Detailed data)).....	9
PRTR Systems	
Total Released Amounts, Total Transferred Amounts, Chloromethane Released Amounts, 1,2-Dichloroethane Released Amounts, Chloroethylene Released Amounts.....	10
Scope 3 Greenhouse Gas Emissions.....	11
The list of covering companies.....	12

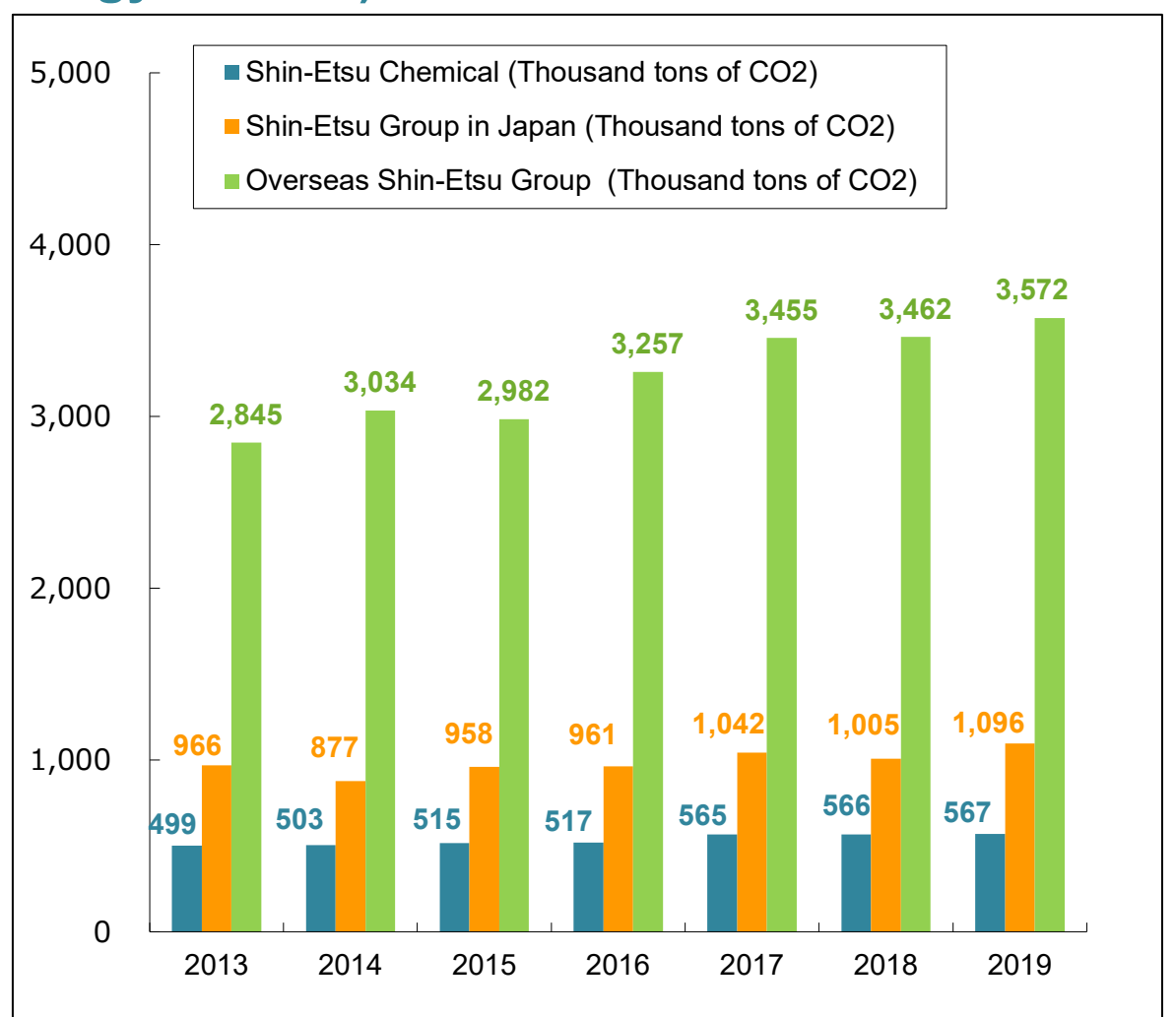
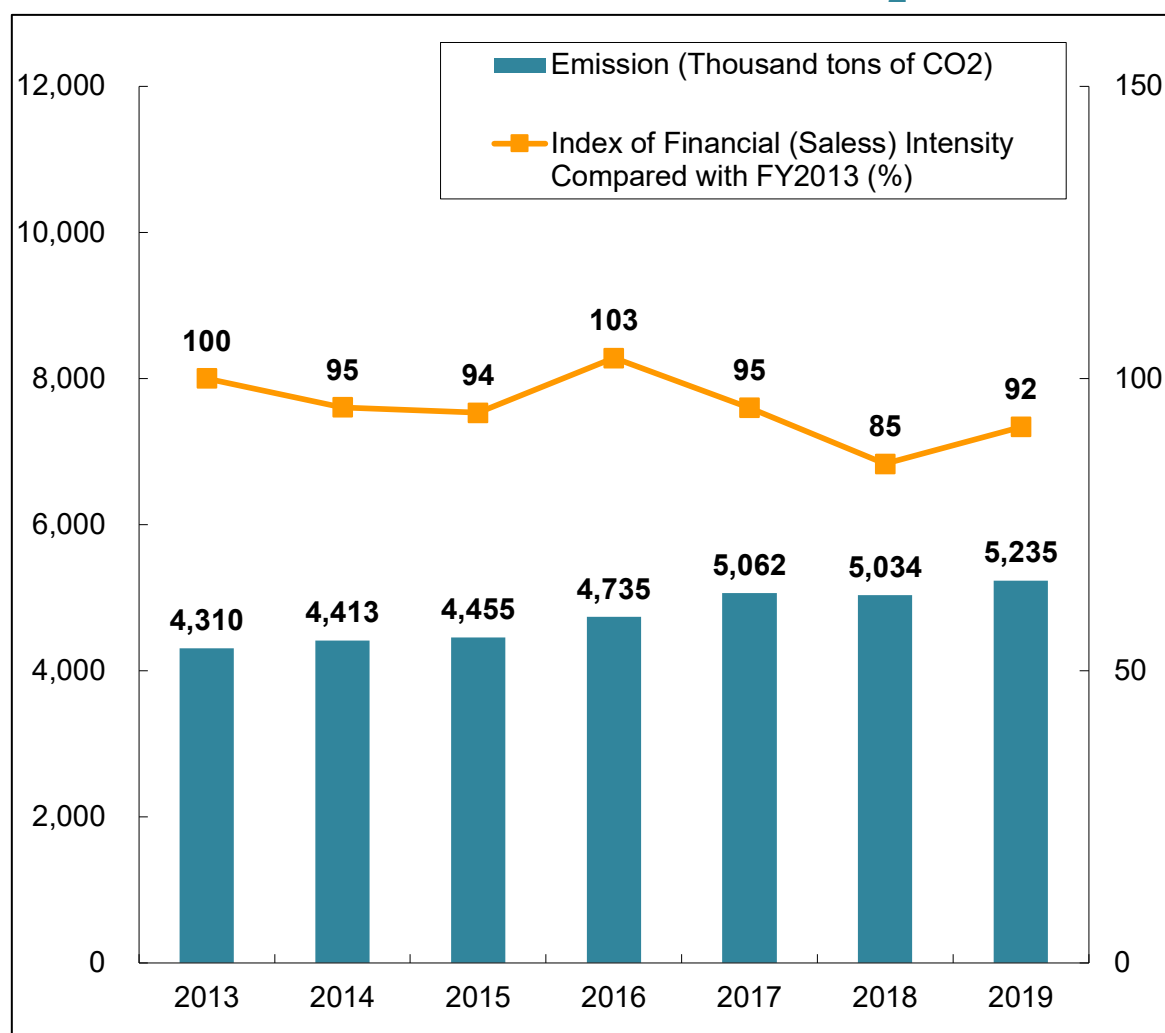
Energy Consumption (Crude Oil Equivalent)



Energy Consumption (Calorific Equivalent)



CO₂ Emissions (Energy Related)



Energy Consumption (Detailed Data)

Energy Consumption (Actual Usage)

Item	Unit	2013	2014	2015	2016	2017	2018	2019
Purchased Electricity	GWh	7,342	7,195	7,235	7,741	8,437	8,351	8,683
Purchased Steam	Thousand tons	2,073	1,946	1,996	2,202	2,180	2,309	2,268
A-tape Heavy Oil	Thousand liters	1,544	1,065	965	976	1,713	1,082	1,037
C-tape Heavy Oil	Thousand liters	5,803	6,251	5,779	5,906	5,808	6,077	5,871
Kerosene	Thousand liters	6,160	5,588	3,868	3,799	4,233	4,082	4,245
Natural Gas	MNm3	486	577	578	600	635	633	671
Gasoline	Thousand liters	944	969	987	886	893	894	1,771
Light Oil	Thousand liters	2,641	2,314	2,643	2,984	2,437	3,200	3,020
Liquefied Petroleum Gas	Thousand tons	31	25	32	33	34	27	28
Hydrogen	MNm3	38	47	55	59	76	71	-12
Liquefied Natural Gas	tons	62	72	68	54	84	104	66

Energy Consumption (Crude Oil Equivalent)

Item	Unit	2013	2014	2015	2016	2017	2018	2019
Purchased Electricity	ML	1,671.1	1,637.9	1,647.1	1,762.2	1,920.8	1,901.2	1,976.7
Purchased Steam	ML	147.2	138.1	141.7	156.3	154.8	163.9	161.0
A-tape Heavy Oil	ML	1.6	1.1	1.0	1.0	1.7	1.1	1.0
C-tape Heavy Oil	ML	6.3	6.8	6.3	6.4	6.3	6.6	6.4
Kerosene	ML	5.8	5.3	3.7	3.6	4.0	3.9	4.0
Natural Gas	ML	546.2	648.9	649.2	674.8	713.5	711.1	754.8
Gasoline	ML	0.8	0.9	0.9	0.8	0.8	0.8	1.6
Light Oil	ML	2.6	2.3	2.6	2.9	2.4	3.1	2.9
Liquefied Petroleum Gas	ML	41.0	33.3	42.6	43.1	44.5	35.4	36.8
Hydrogen	ML	10.3	12.8	15.0	16.0	20.7	19.3	-3.3
Liquefied Natural Gas	ML	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	ML	2,432.9	2,487.4	2,510.0	2,667.2	2,869.6	2,846.6	2,942.0

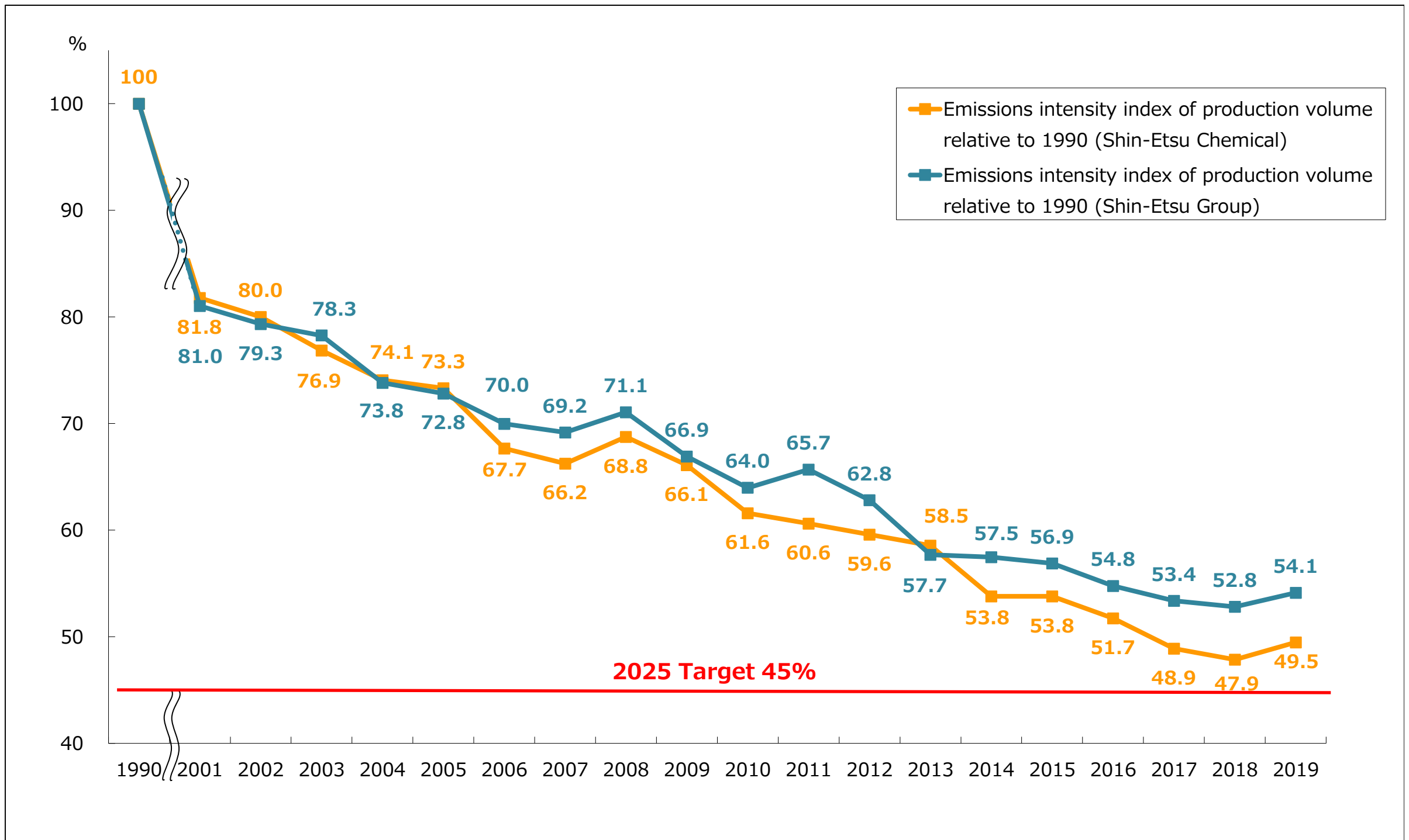
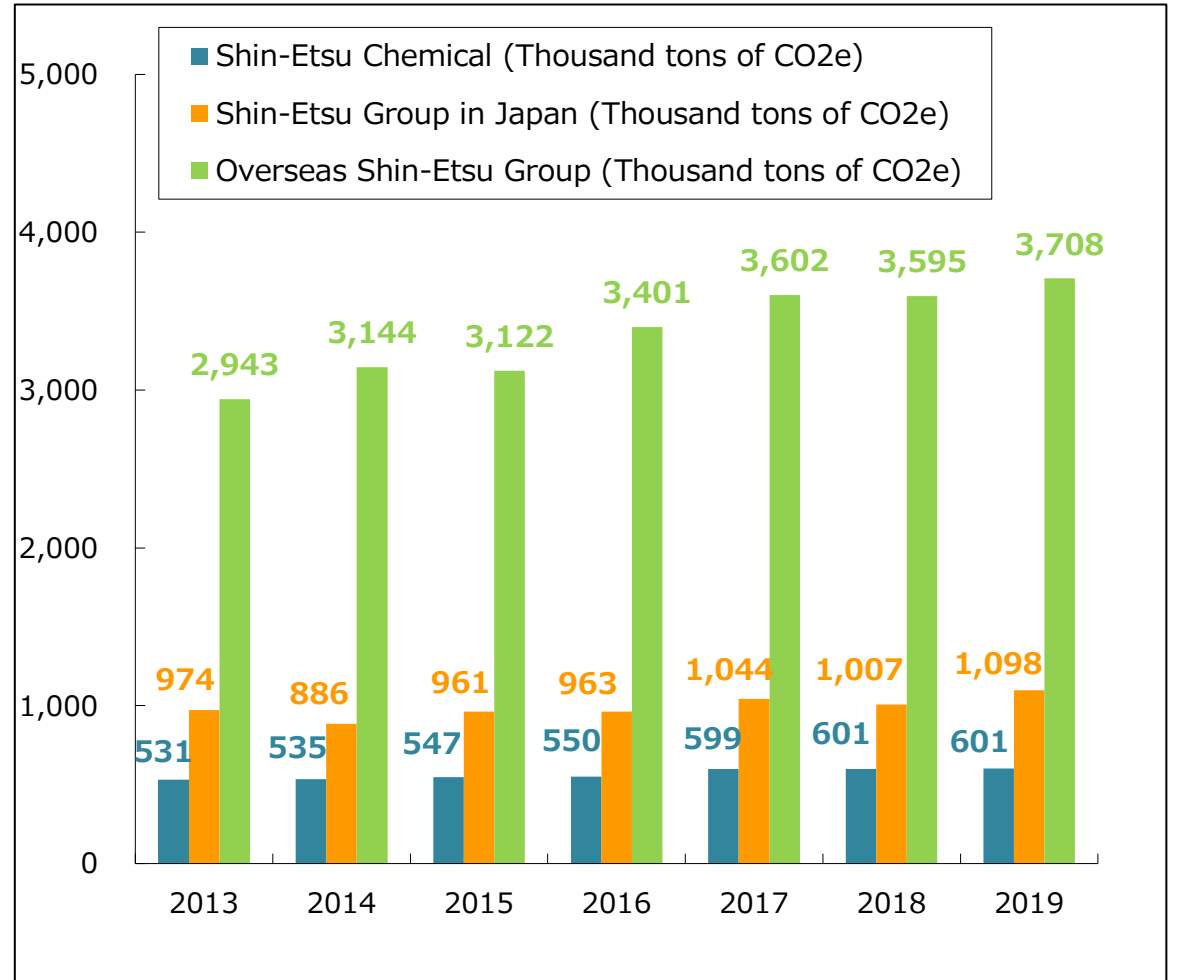
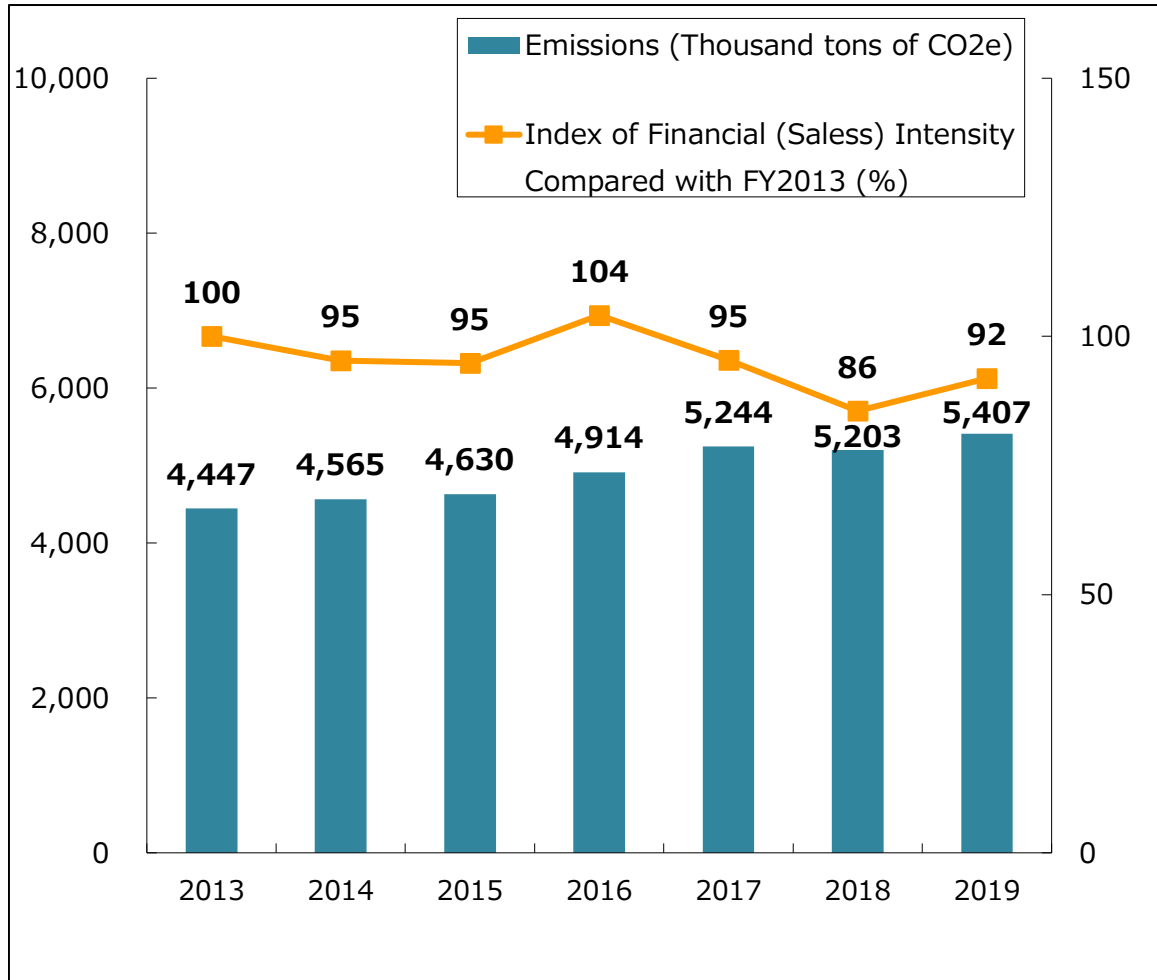
Energy Consumption (Calorific Equivalent)

Item	Unit	2013	2014	2015	2016	2017	2018	2019
Purchased Electricity	TJ	64,670	63,386	63,742	68,195	74,334	73,576	76,497
Purchased Steam	TJ	5,617	5,272	5,408	5,967	5,907	6,257	6,147
A-tape Heavy Oil	TJ	60	42	38	38	67	42	41
C-tape Heavy Oil	TJ	243	262	242	247	243	255	246
Kerosene	TJ	226	205	142	139	155	150	156
Natural Gas	TJ	21,136	25,114	25,123	26,116	27,612	27,518	29,209
Gasoline	TJ	33	34	34	31	31	31	61
Light Oil	TJ	100	87	100	113	92	121	114
Liquefied Petroleum Gas	TJ	1,588	1,288	1,650	1,669	1,724	1,372	1,422
Hydrogen	TJ	399	494	578	619	799	747	-127
Liquefied Natural Gas	TJ	3	4	4	3	5	6	4
Total	TJ	94,075	96,188	97,060	103,137	110,968	110,073	113,769

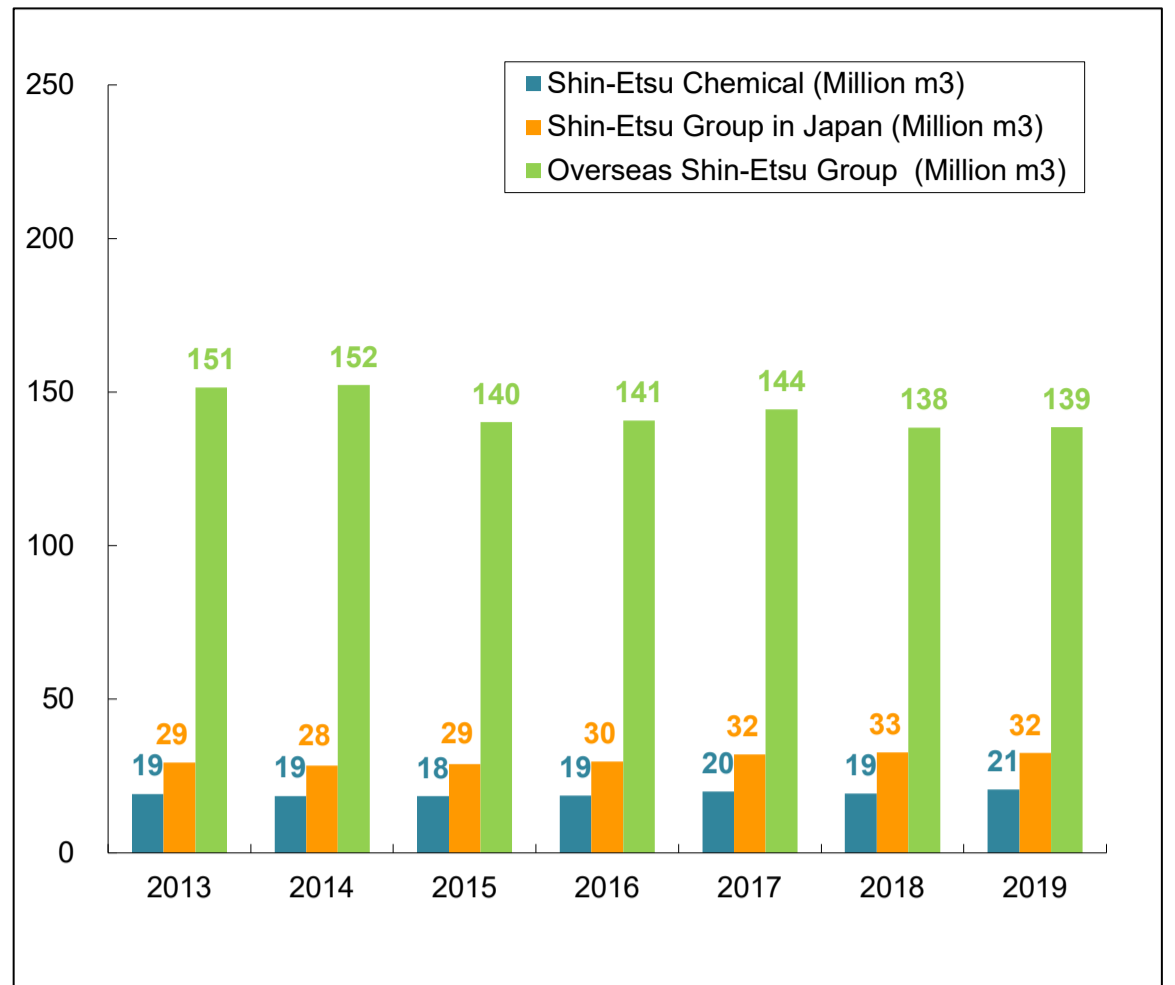
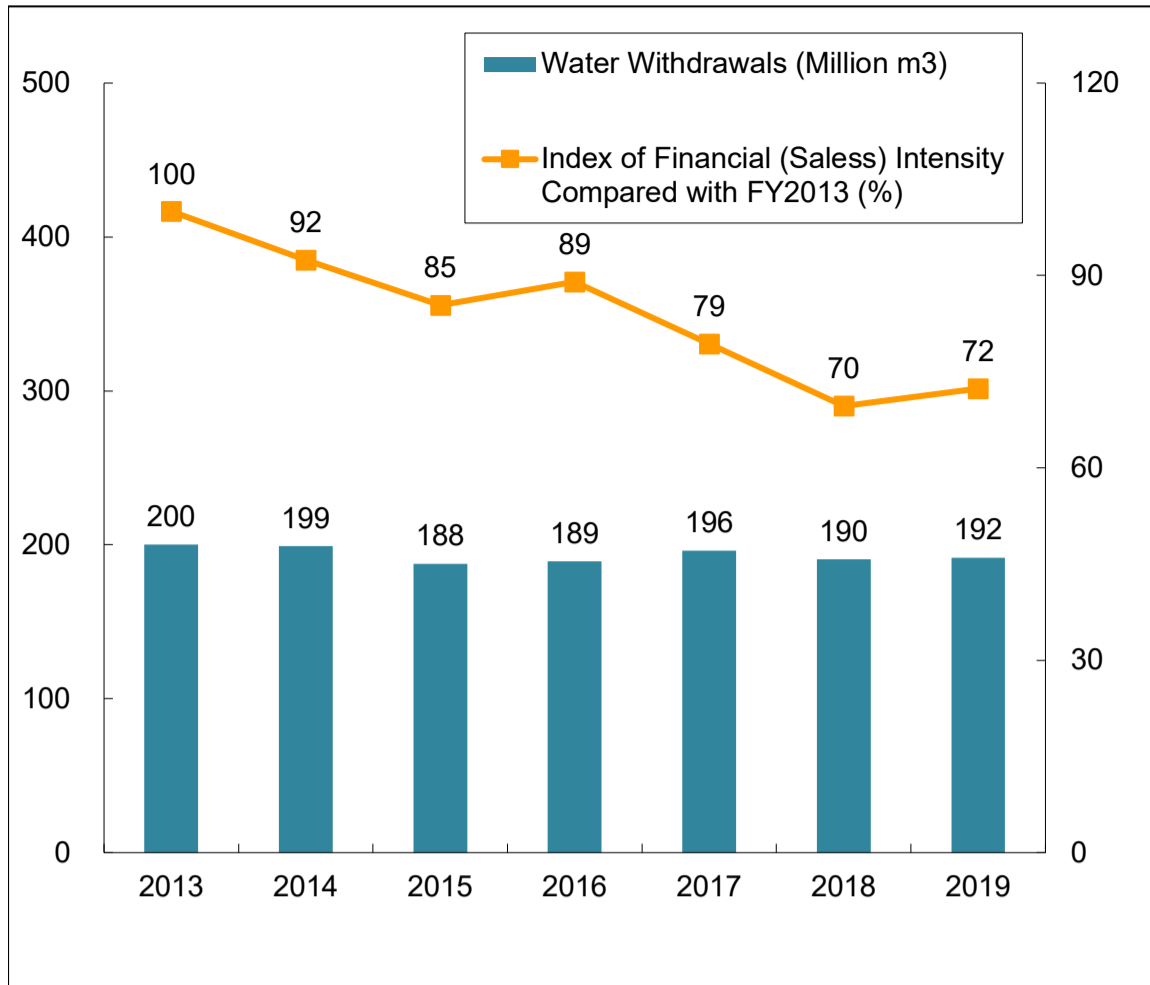
CO₂ Emissions

Item	Unit	2013	2014	2015	2016	2017	2018	2019
Purchased Electricity	Thousand tons of CO ₂	2,642.6	2,590.1	2,604.7	2,786.6	3,037.5	3,006.5	3,125.9
Purchased Steam	Thousand tons of CO ₂	449.4	421.8	432.7	477.4	472.6	500.6	491.8
A-tape Heavy Oil	Thousand tons of CO ₂	4.2	2.9	2.6	2.6	4.6	2.9	2.8
C-tape Heavy Oil	Thousand tons of CO ₂	17.4	18.8	17.3	17.7	17.4	18.2	17.6
Kerosene	Thousand tons of CO ₂	15.3	13.9	9.6	9.5	10.5	10.2	10.6
Natural Gas	Thousand tons of CO ₂	1,077.2	1,280.0	1,280.4	1,331.0	1,407.3	1,402.5	1,488.7
Gasoline	Thousand tons of CO ₂	2.2	2.2	2.3	2.1	2.1	2.1	4.1
Light Oil	Thousand tons of CO ₂	6.8	6.0	6.8	7.7	6.3	8.3	7.8
Liquefied Petroleum Gas	Thousand tons of CO ₂	95.0	77.1	98.8	99.9	103.2	82.1	85.1
Hydrogen	Thousand tons of CO ₂	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquefied Natural Gas	Thousand tons of CO ₂	0.2	0.2	0.2	0.1	0.2	0.3	0.2
Total	Thousand tons of CO₂	4,310.4	4,413.0	4,455.4	4,734.7	5,061.7	5,033.7	5,234.6

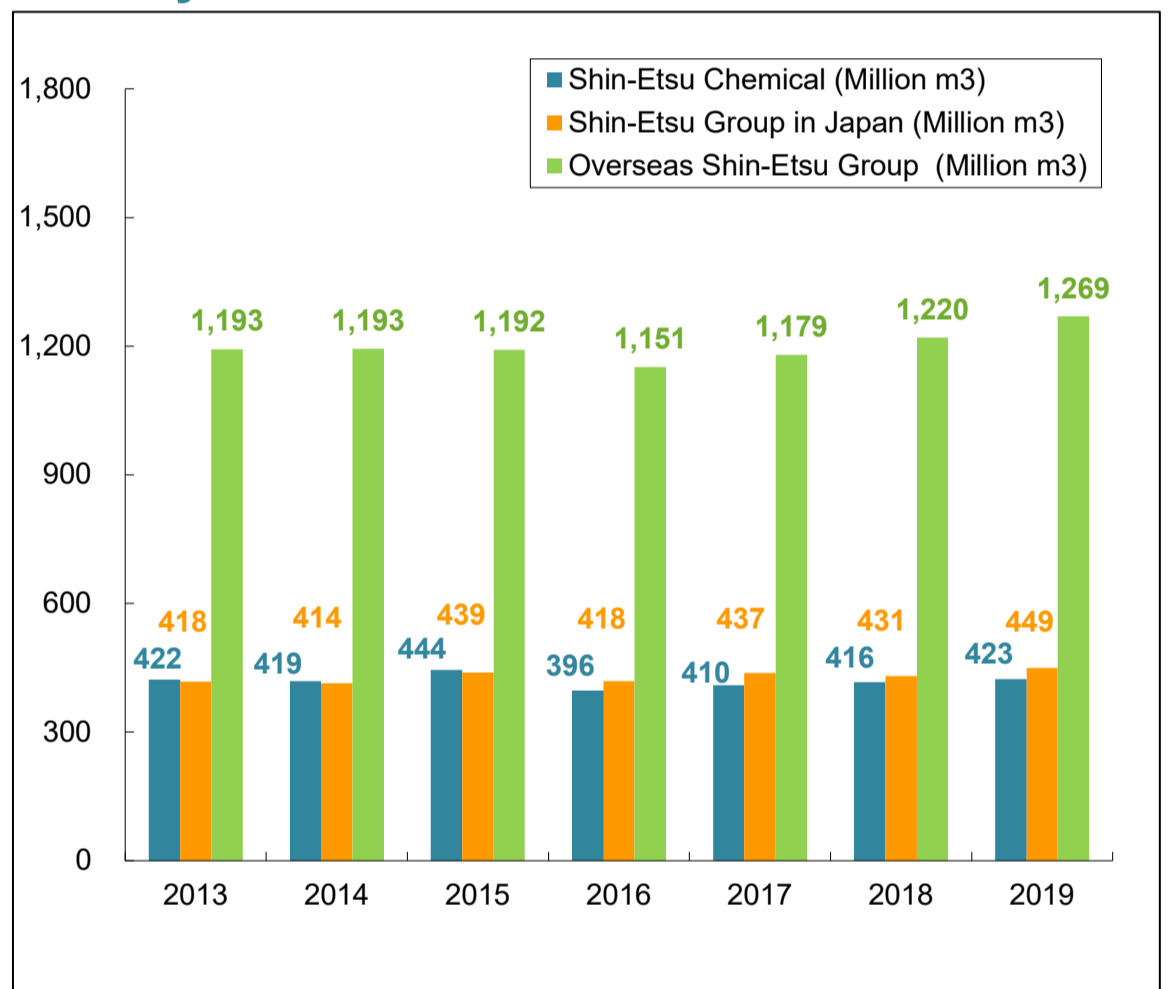
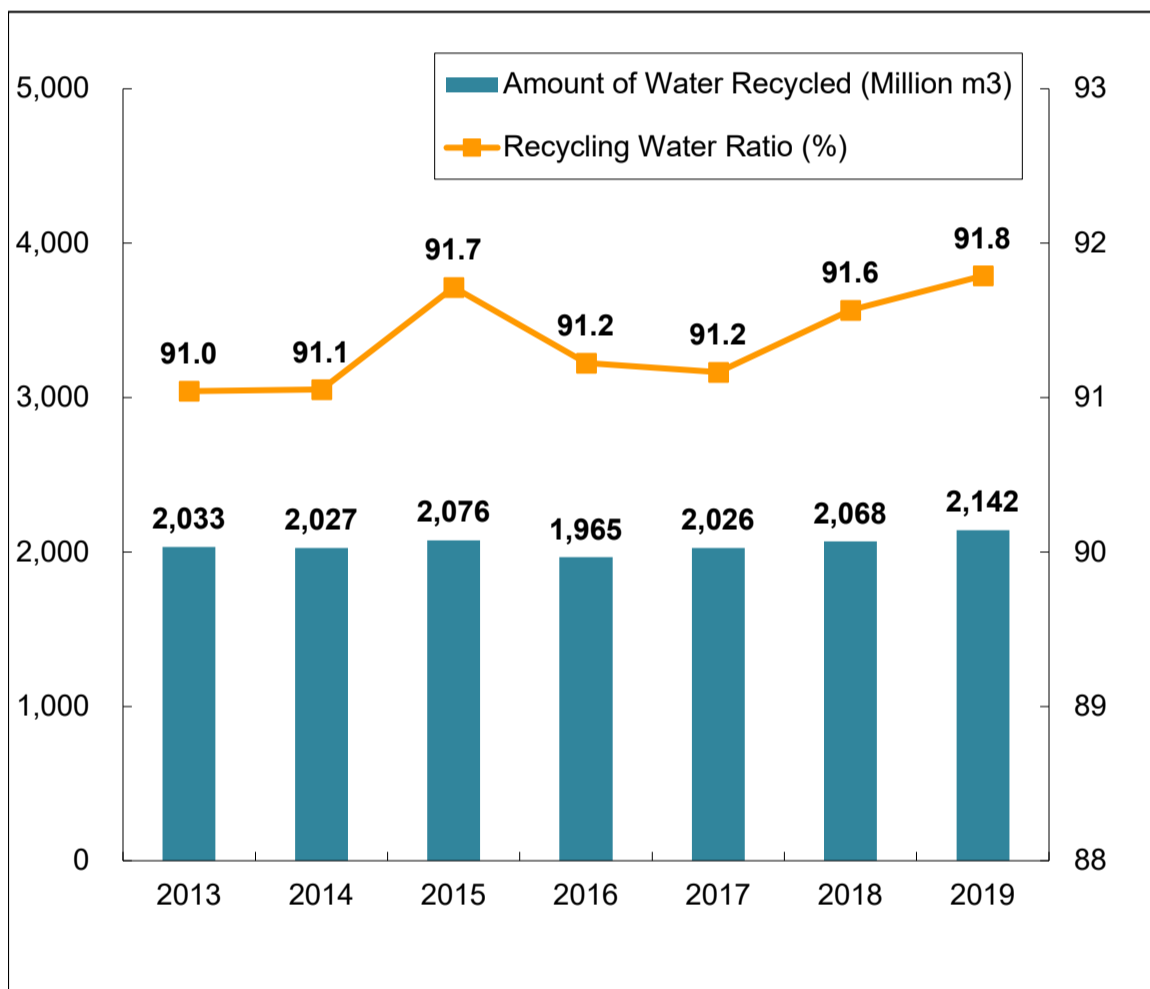
Greenhouse Gas Emissions



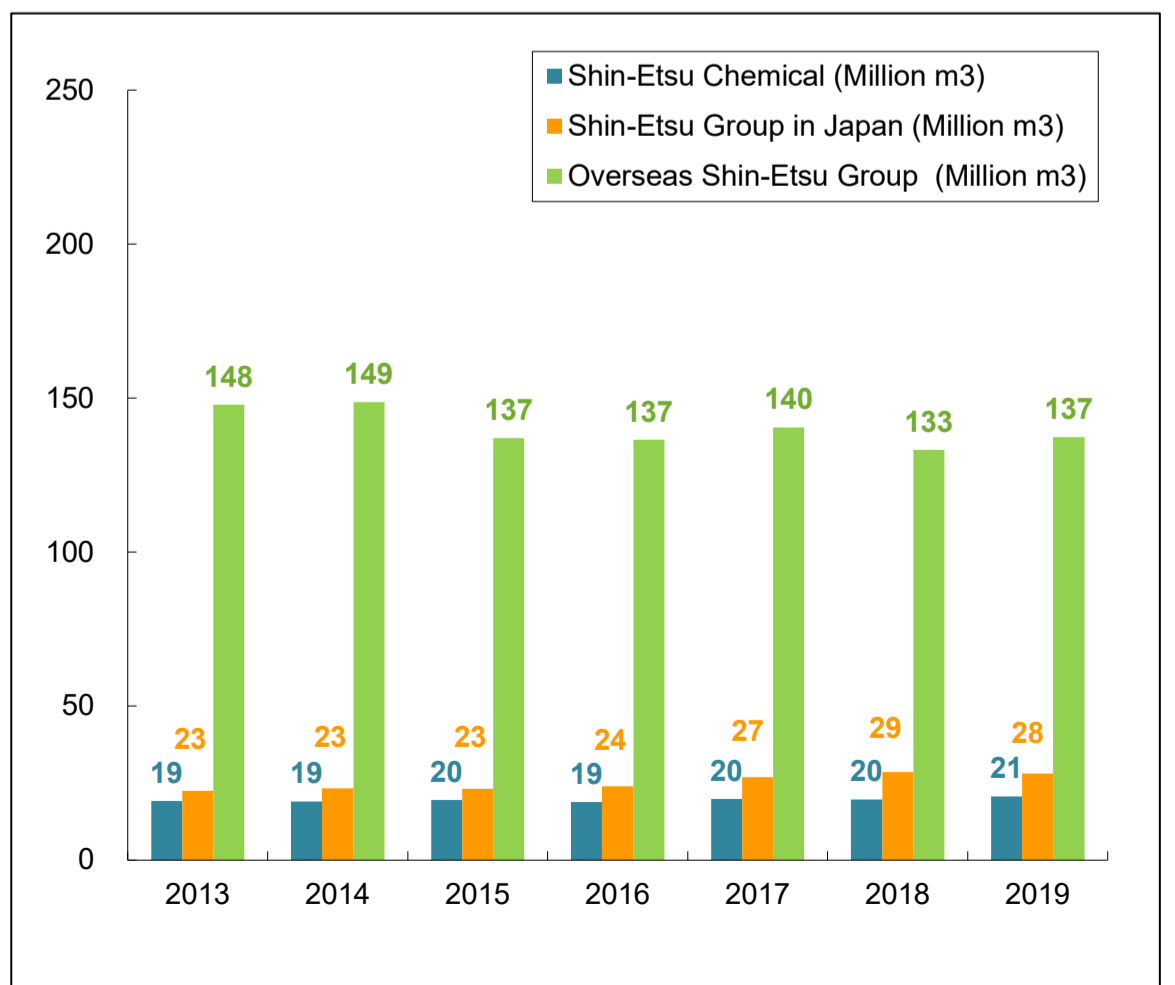
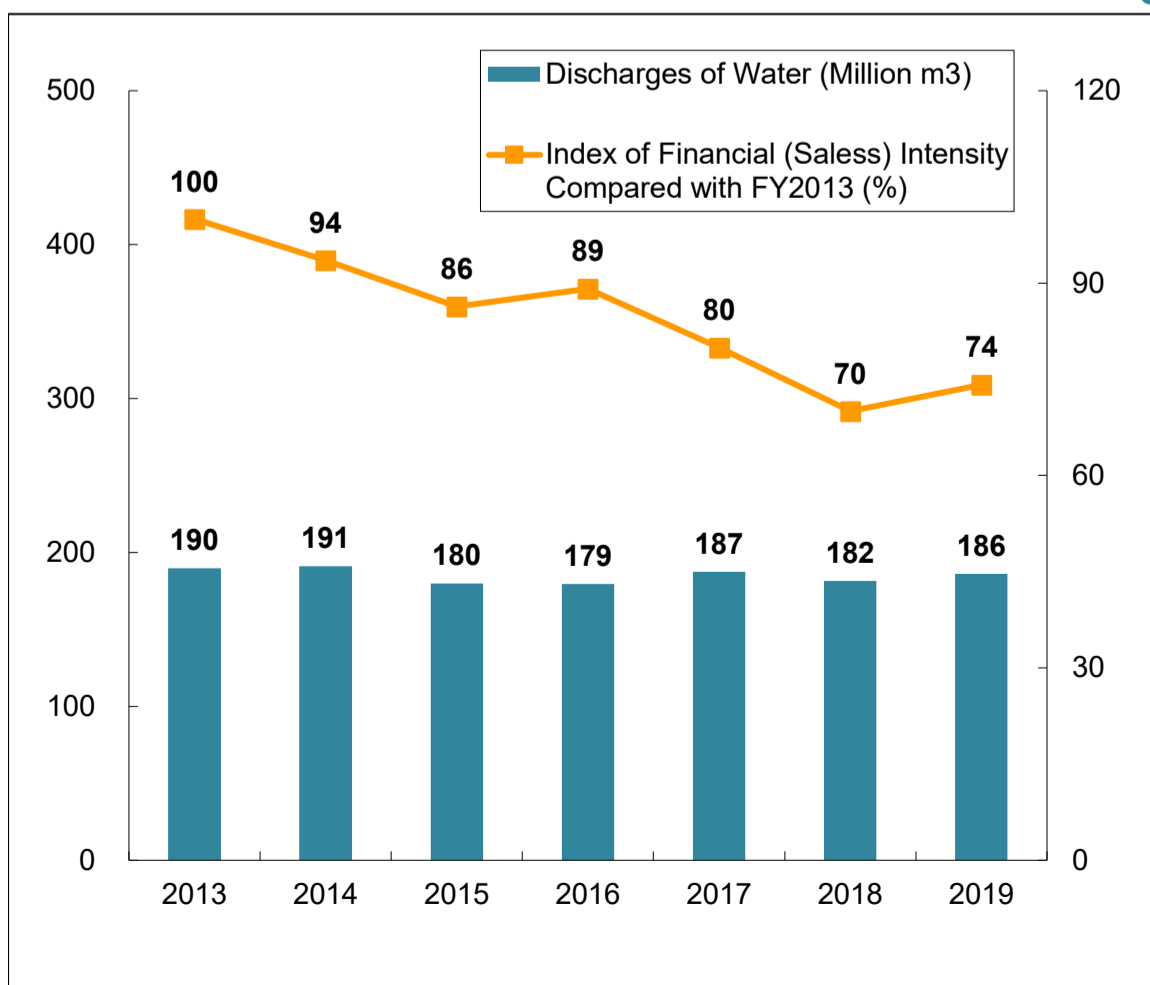
Water Withdrawals



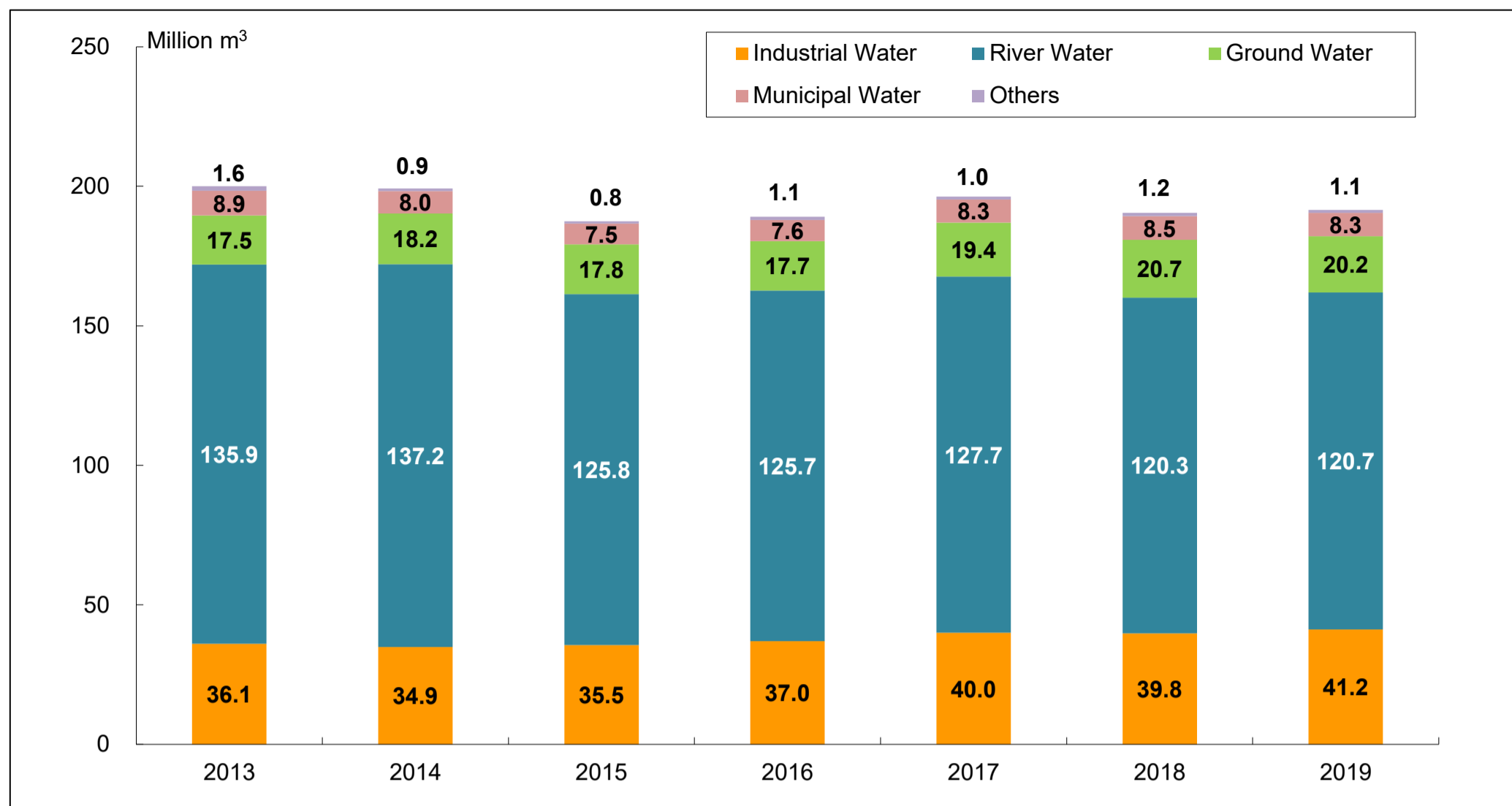
Amount of Water Recycled



Discharges of Water



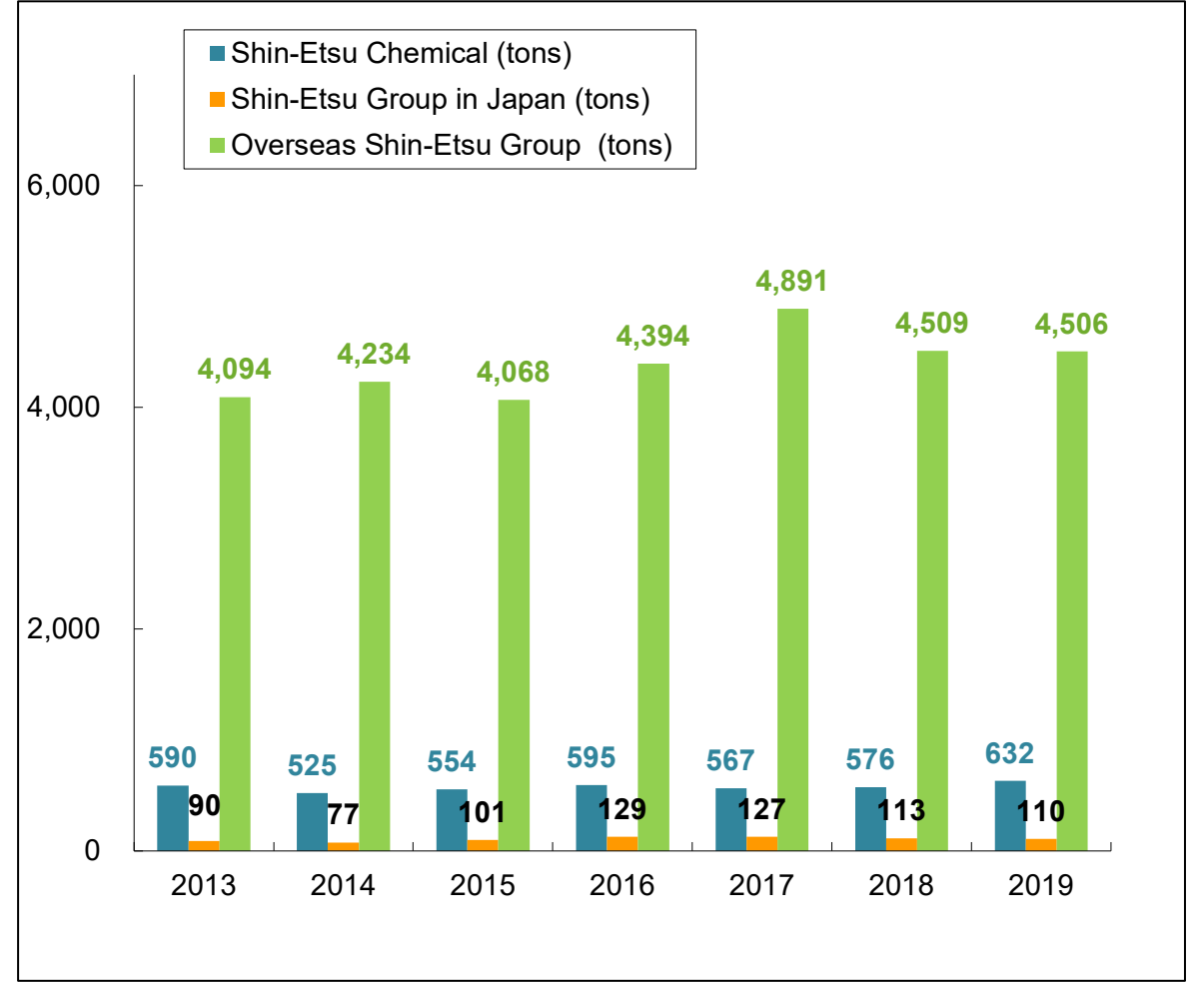
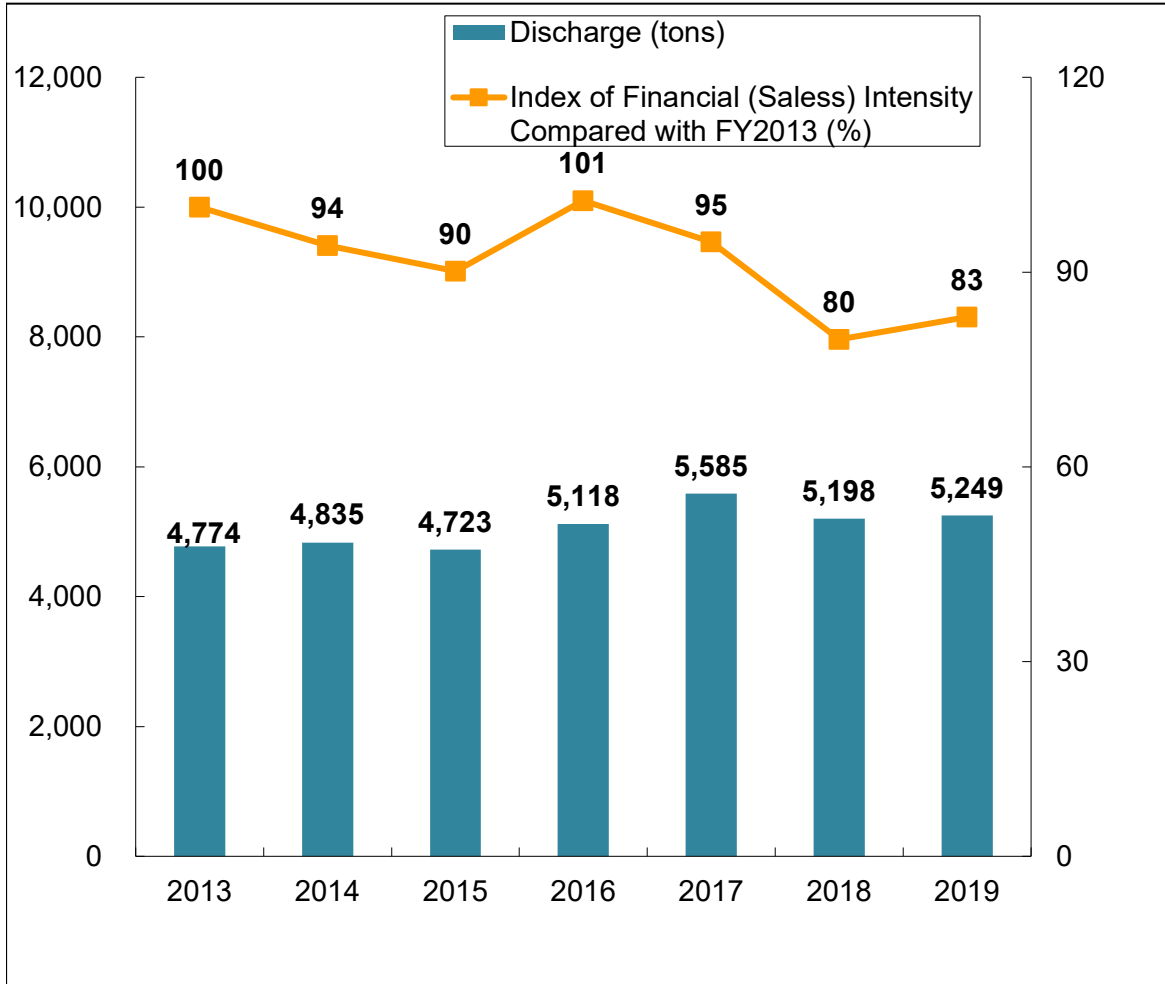
Water Withdrawals by Water Sources



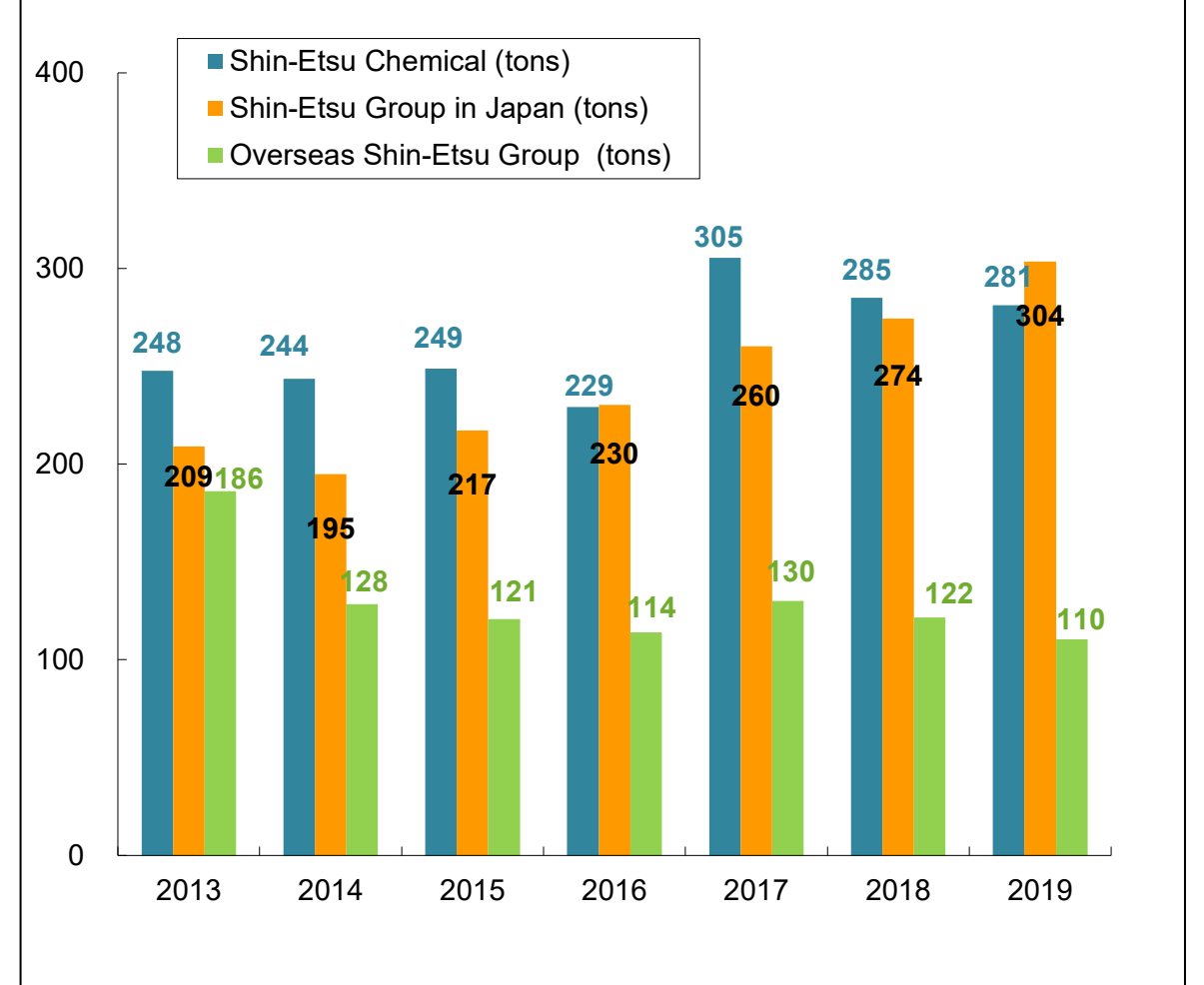
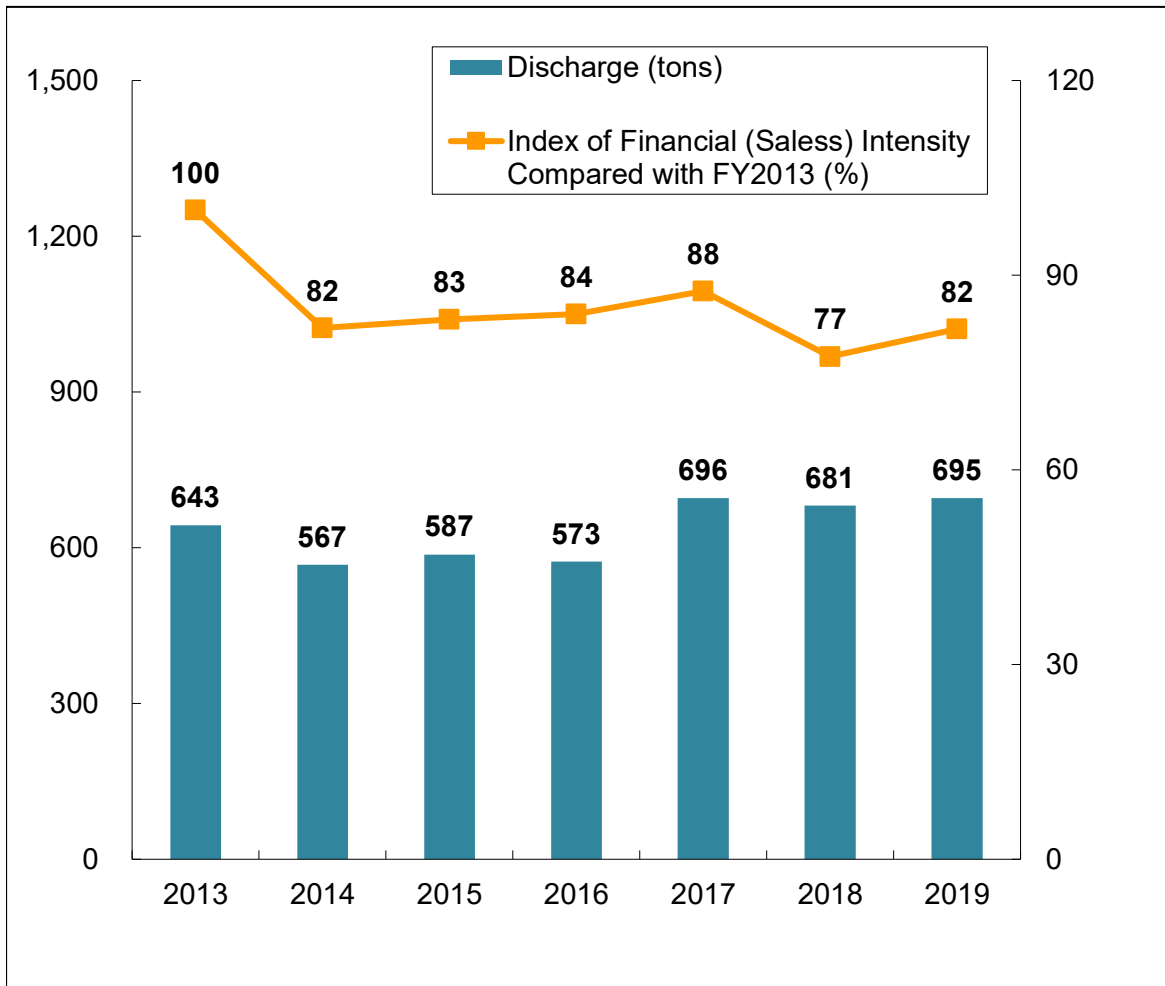
Water Sources	Water Withdrawals (Unit: million m3)						
	2013	2014	2015	2016	2017	2018	2019
Industrial Water	36.1	34.9	35.5	37.0	40.0	39.8	41.2
River Water	135.9	137.2	125.8	125.7	127.7	120.3	120.7
Ground Water	17.5	18.2	17.8	17.7	19.4	20.7	20.2
Municipal Water	8.9	8.0	7.5	7.6	8.3	8.5	8.3
Others	1.6	0.9	0.8	1.1	1.0	1.2	1.1
Total	200.1	199.2	187.5	189.1	196.3	190.5	191.6

Discharge of Water Pollutant

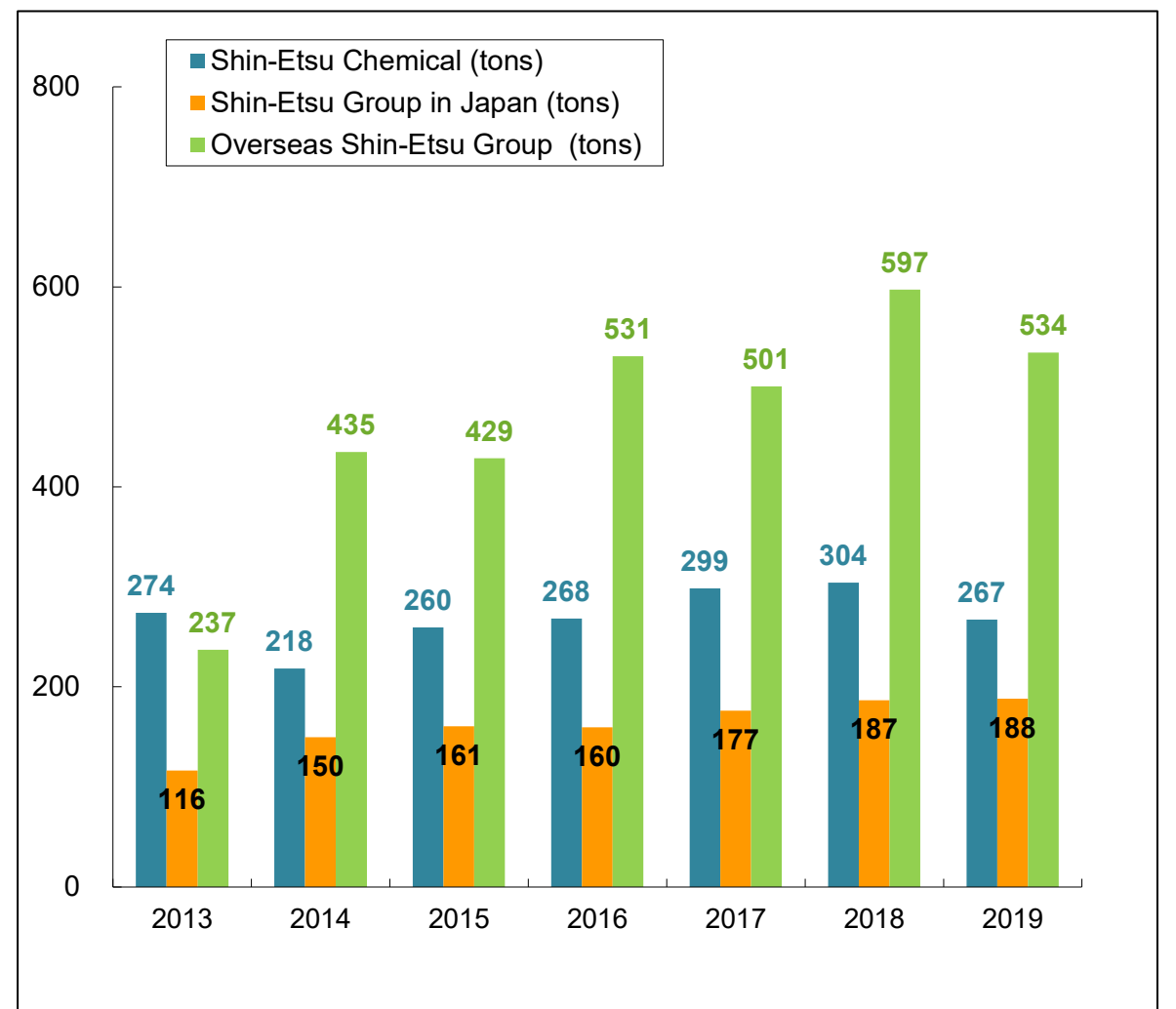
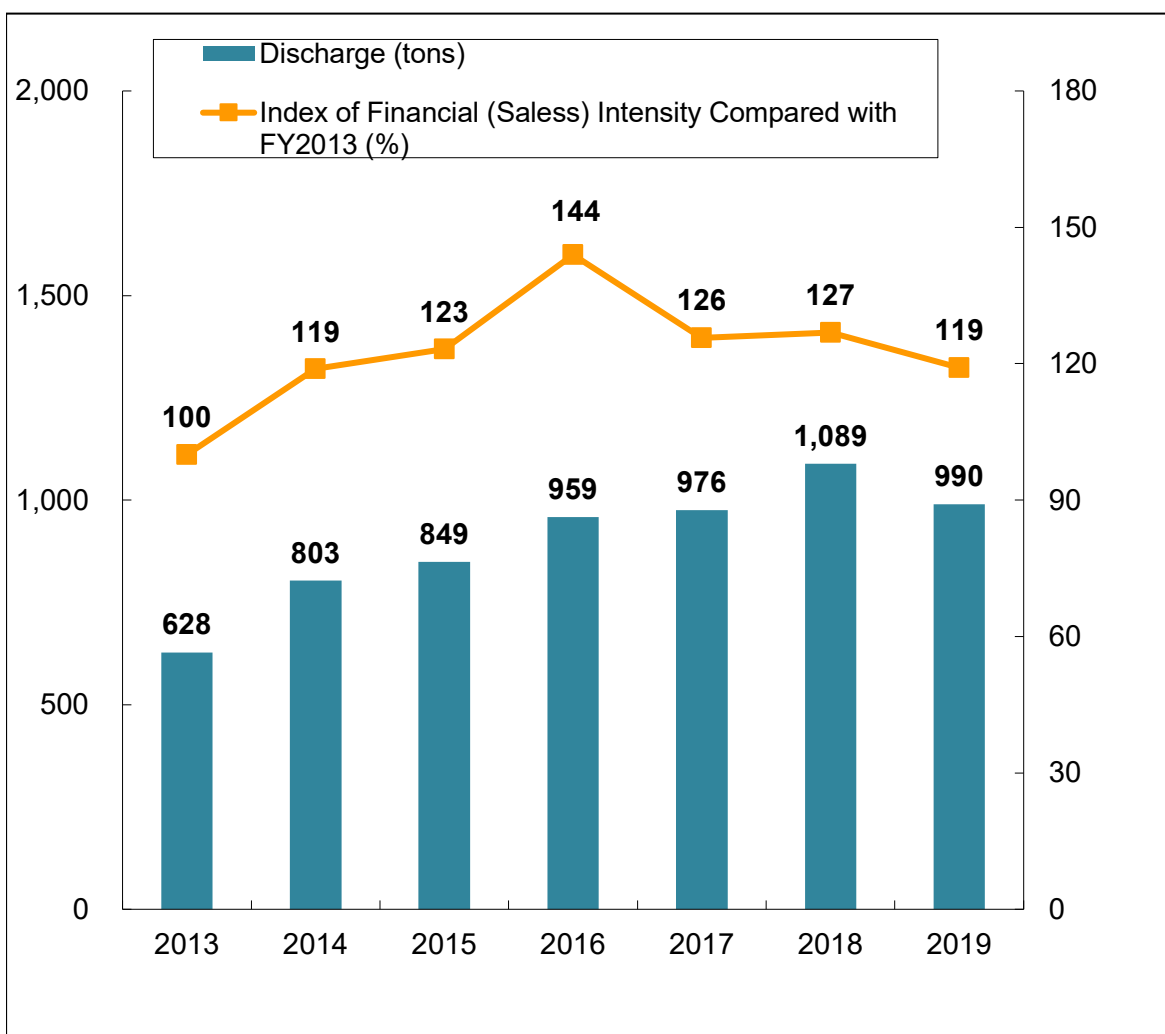
COD



BOD

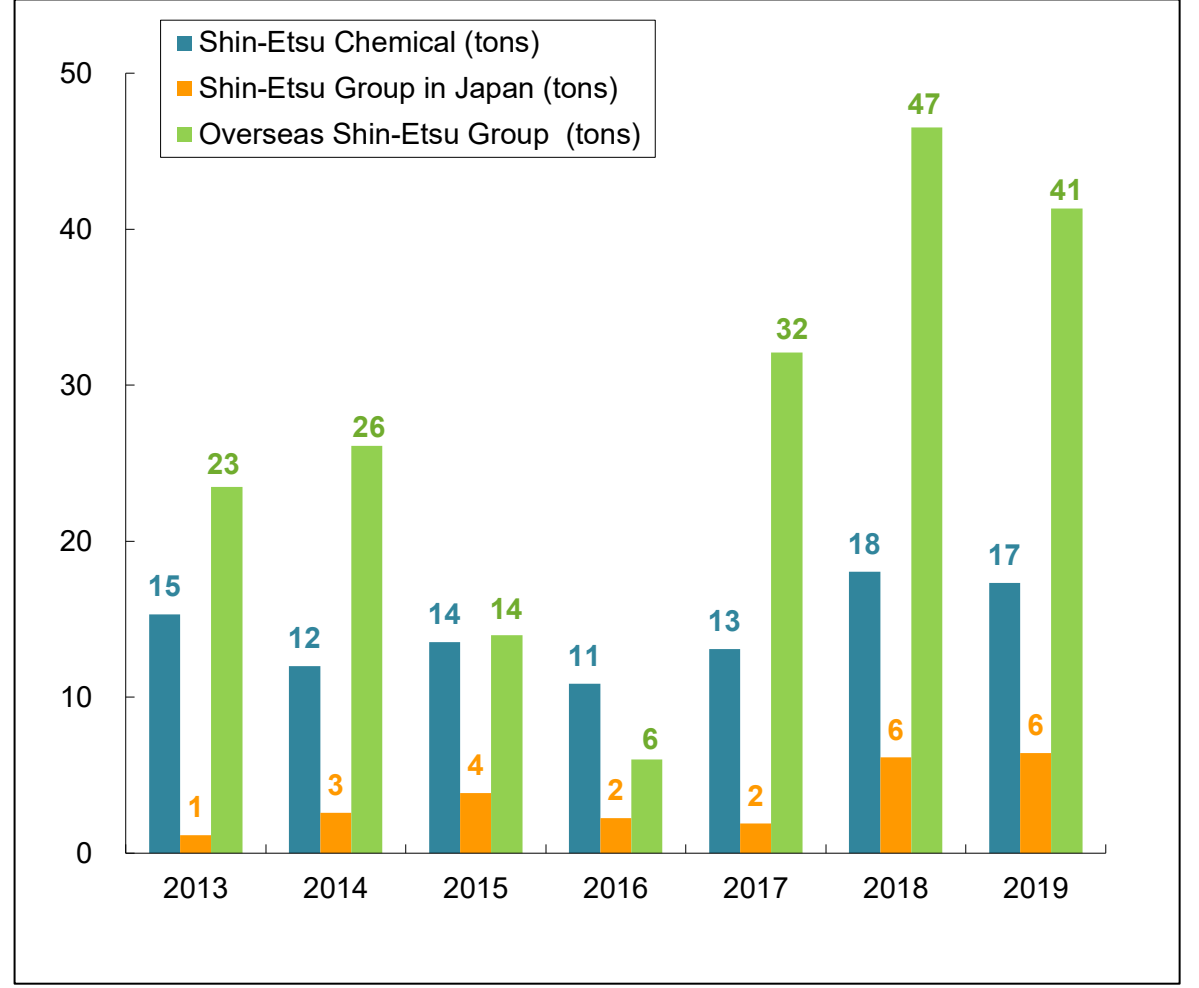
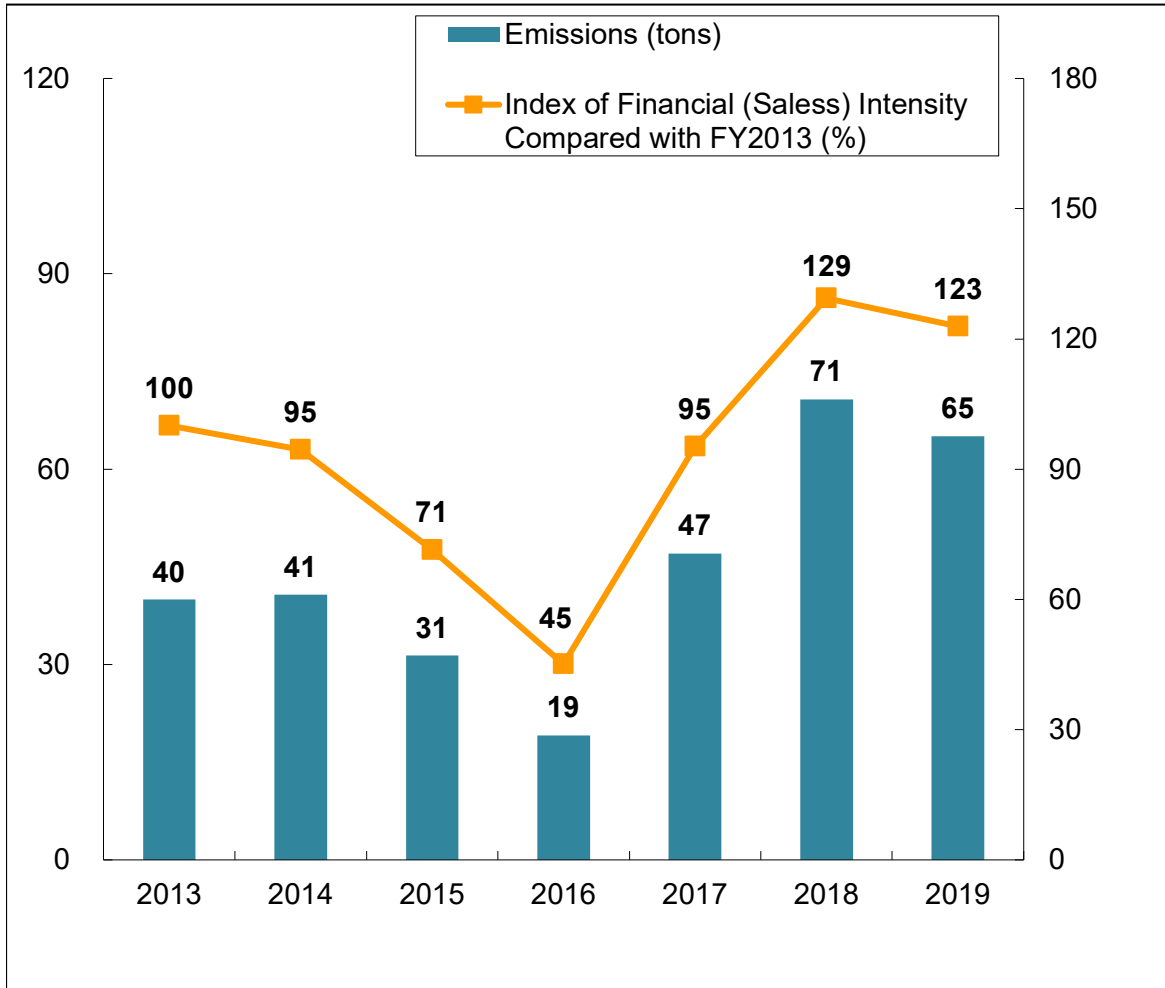


SS

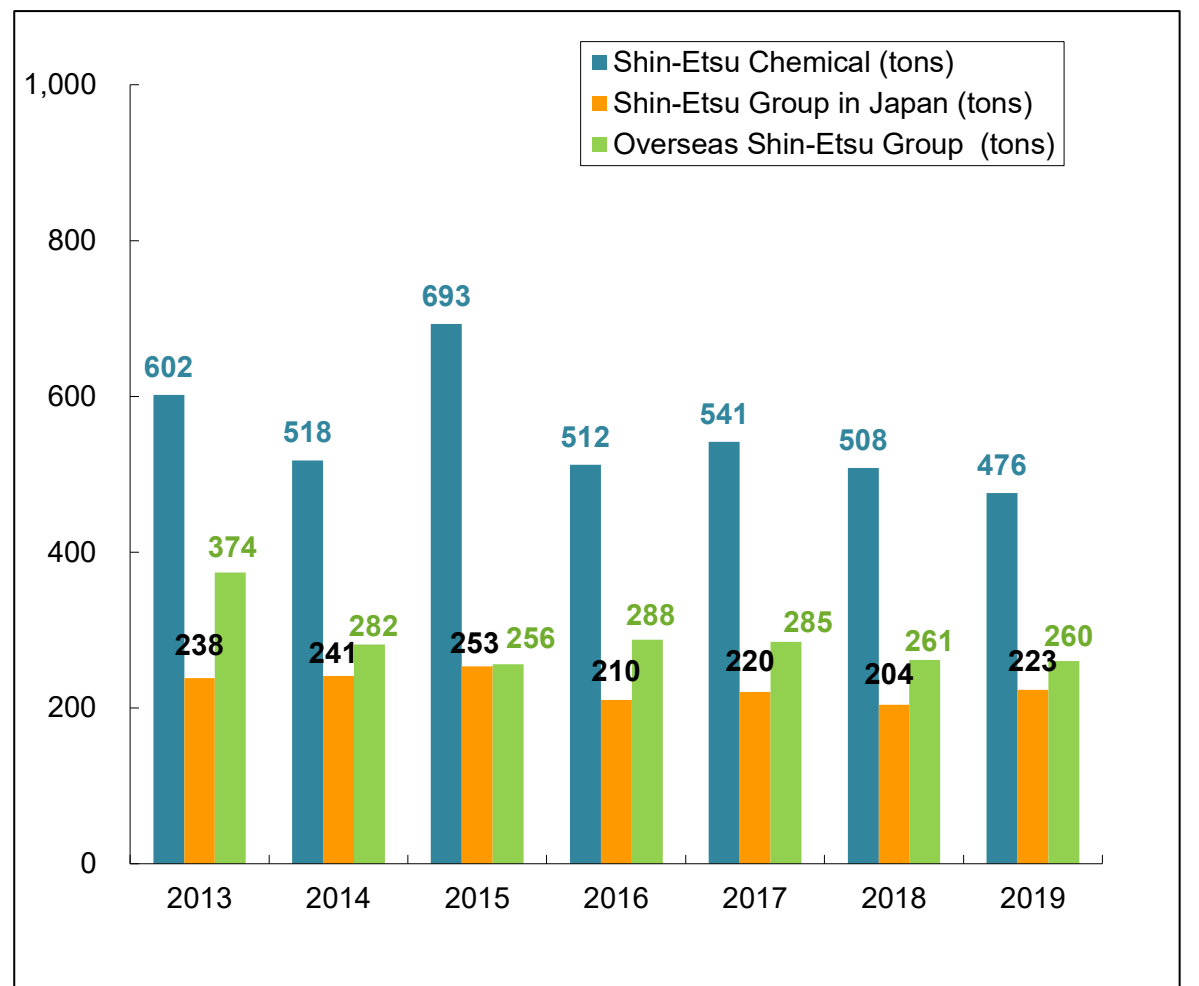
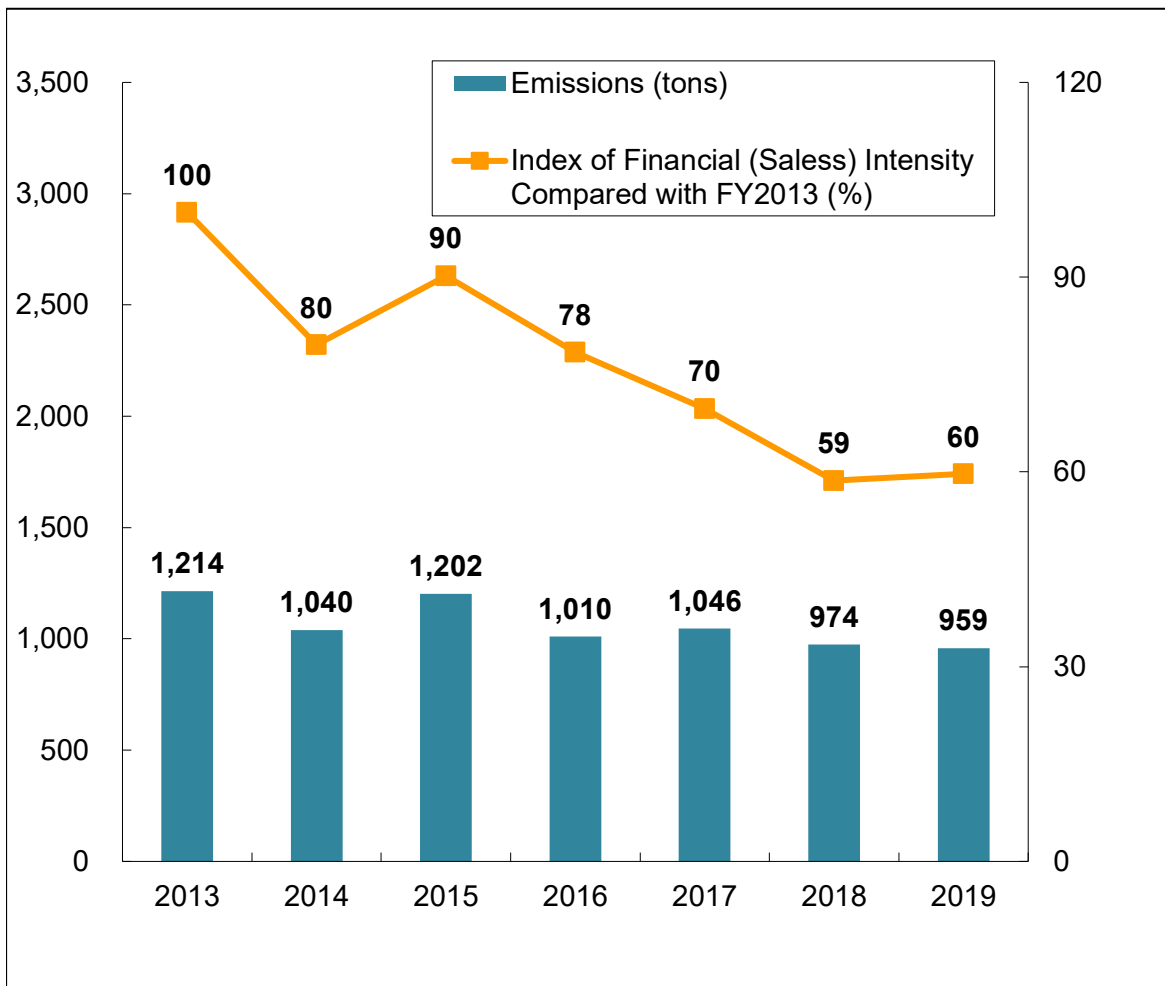


Emissions of Air Pollution Substances

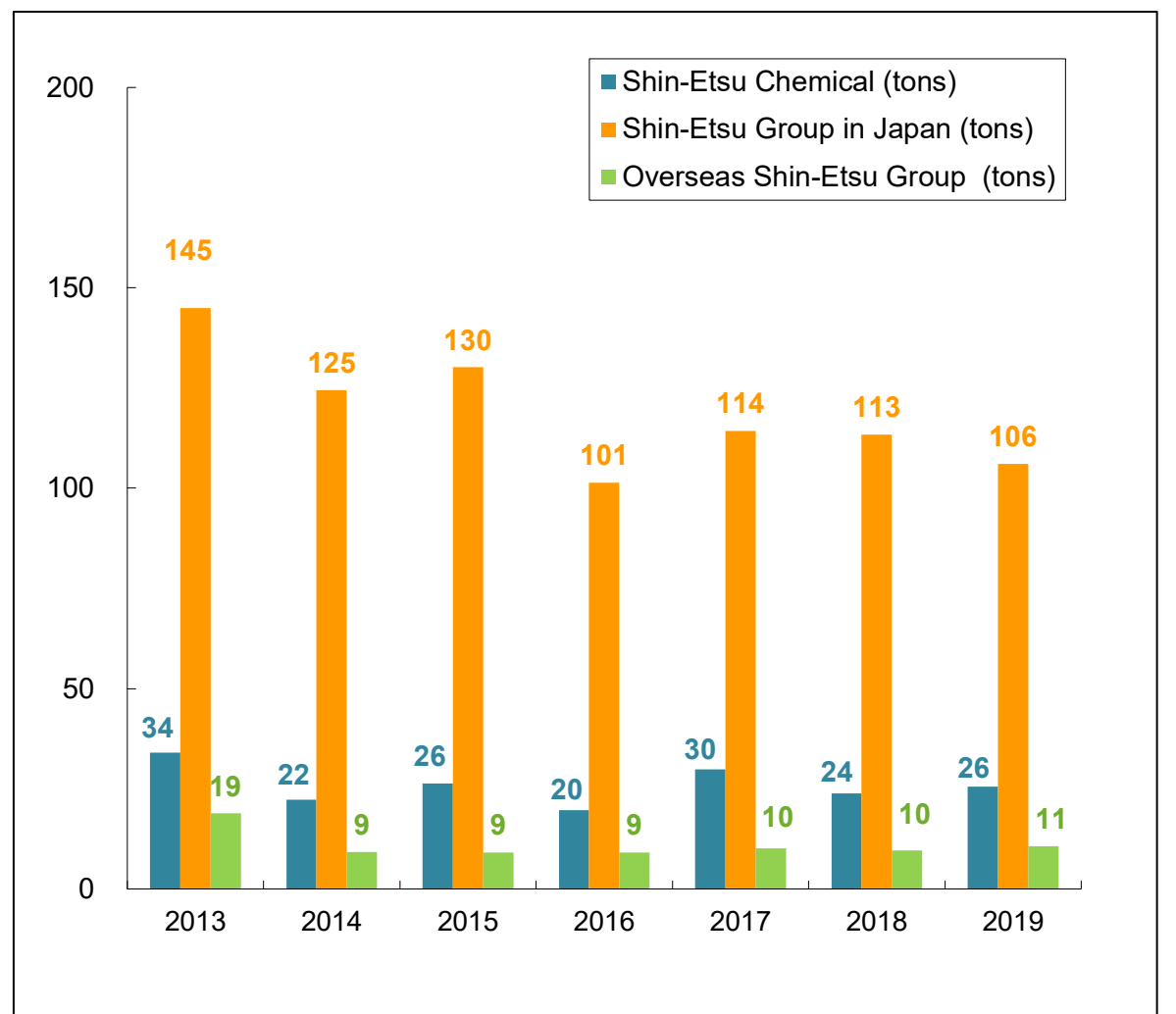
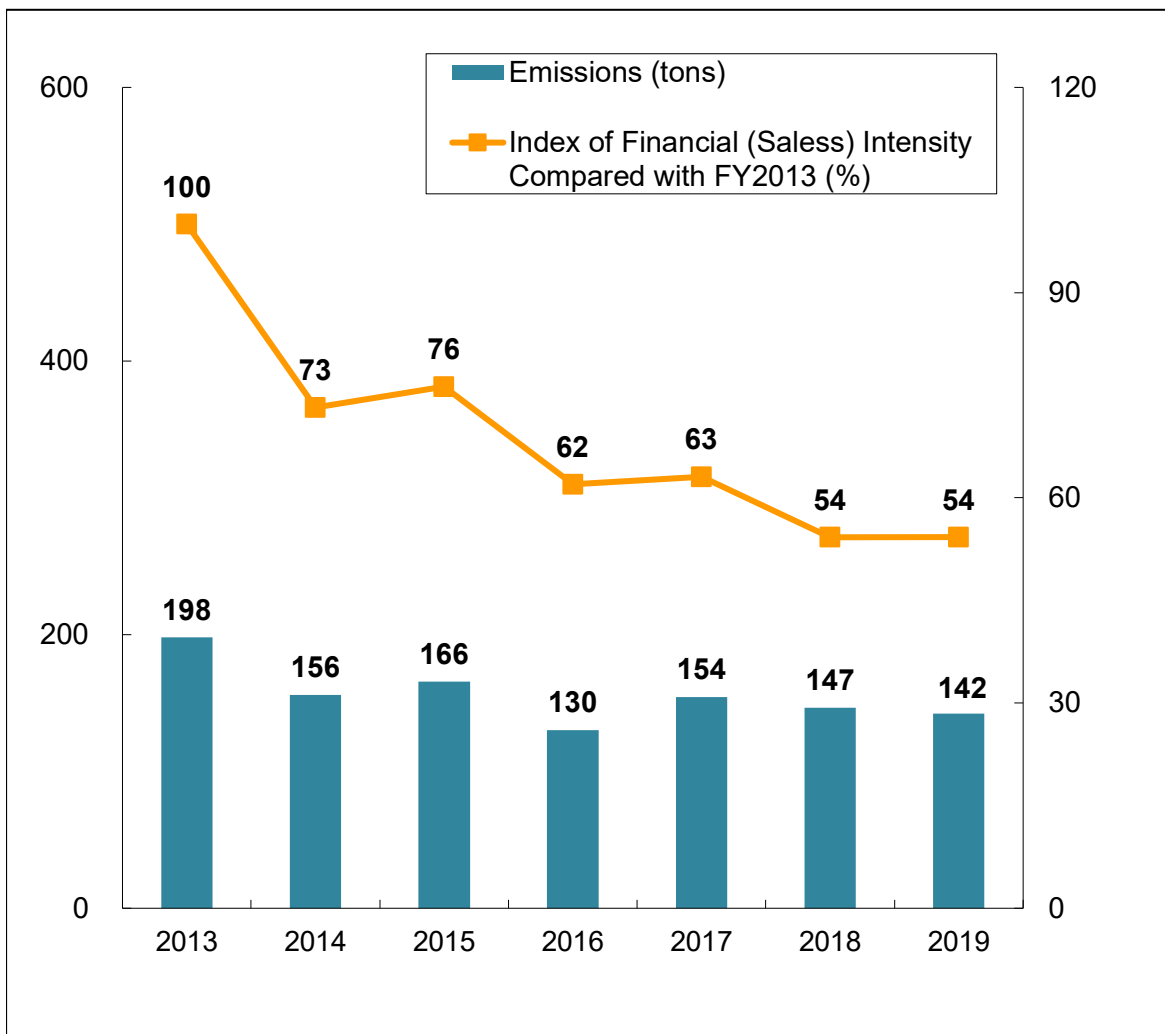
Soot



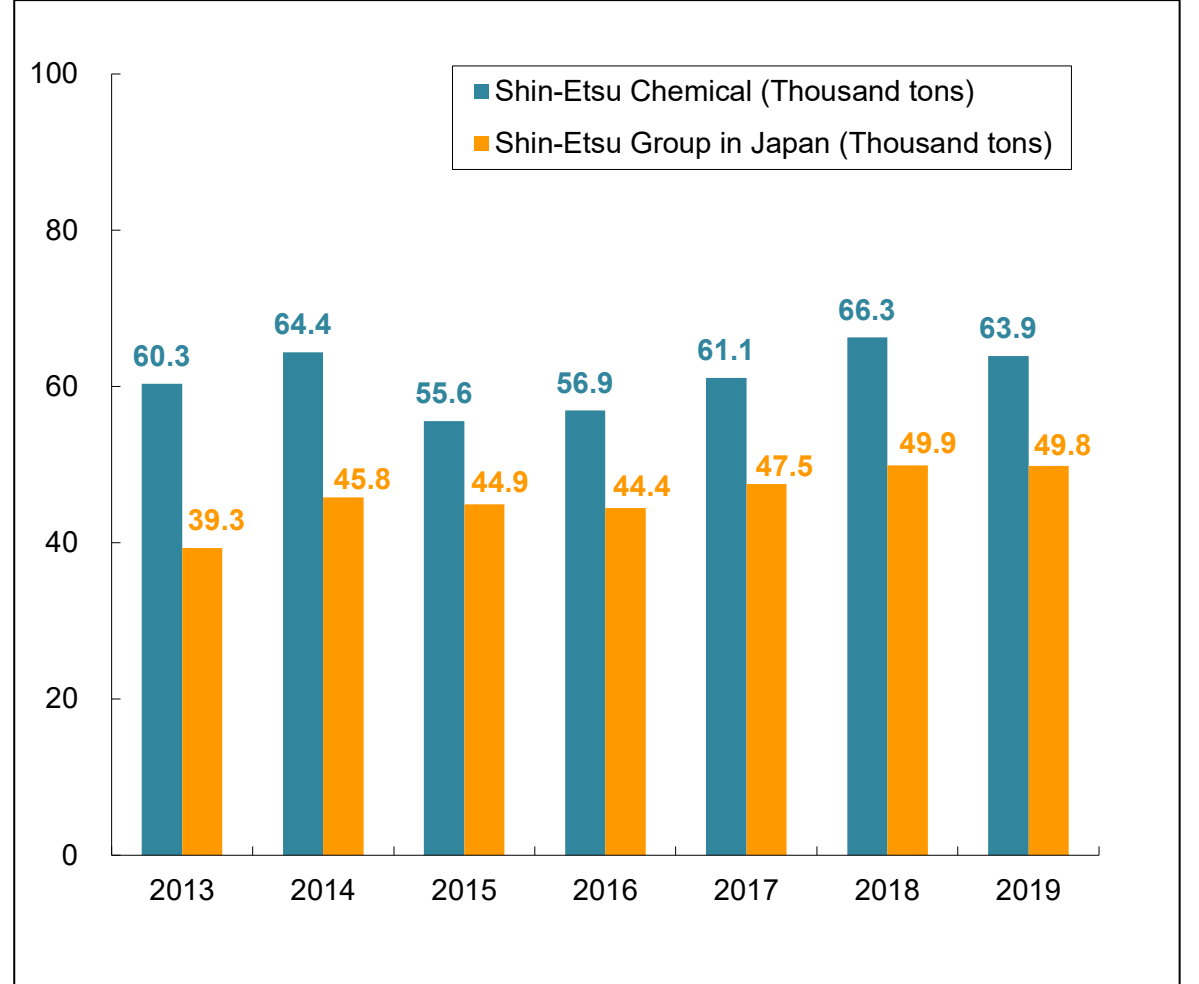
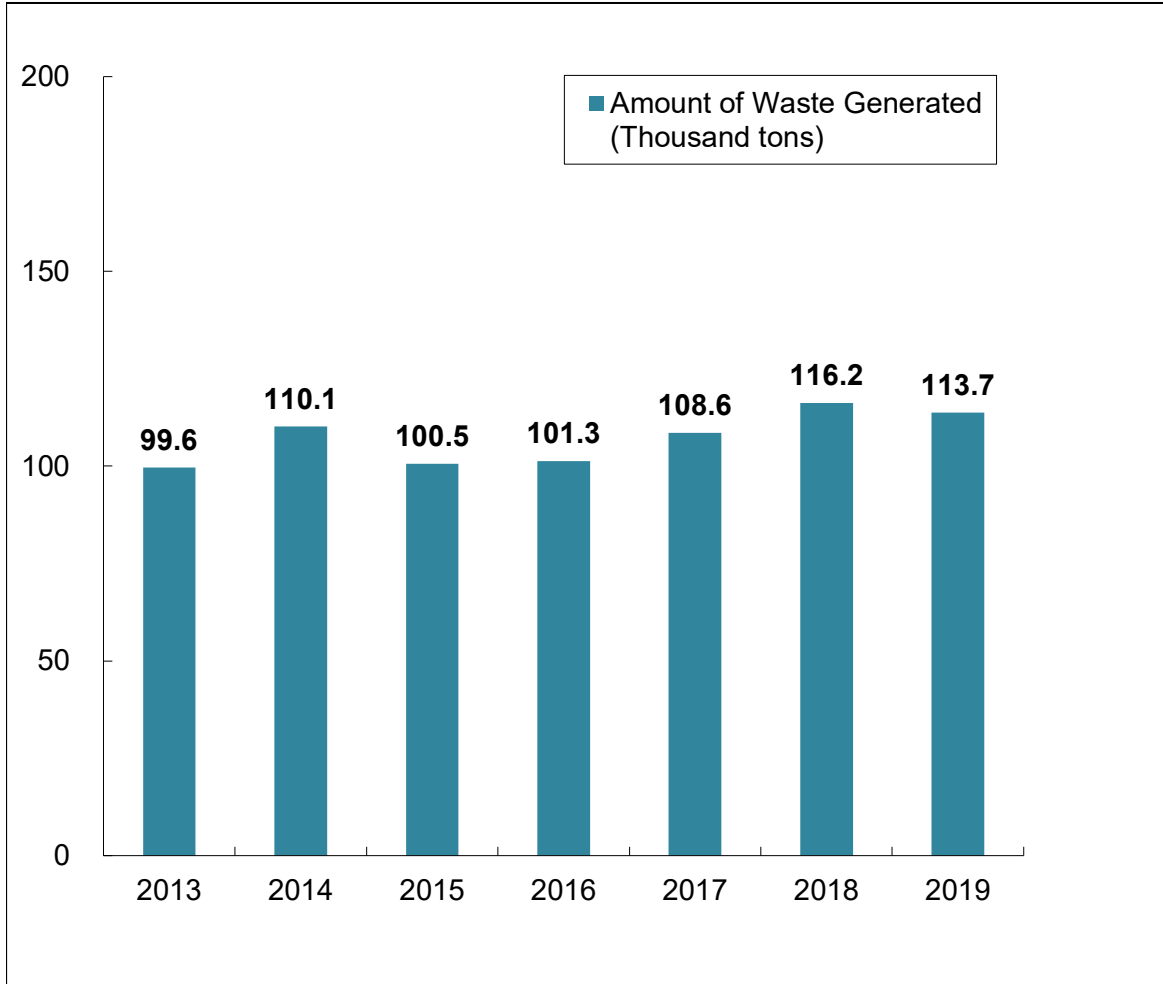
NOx



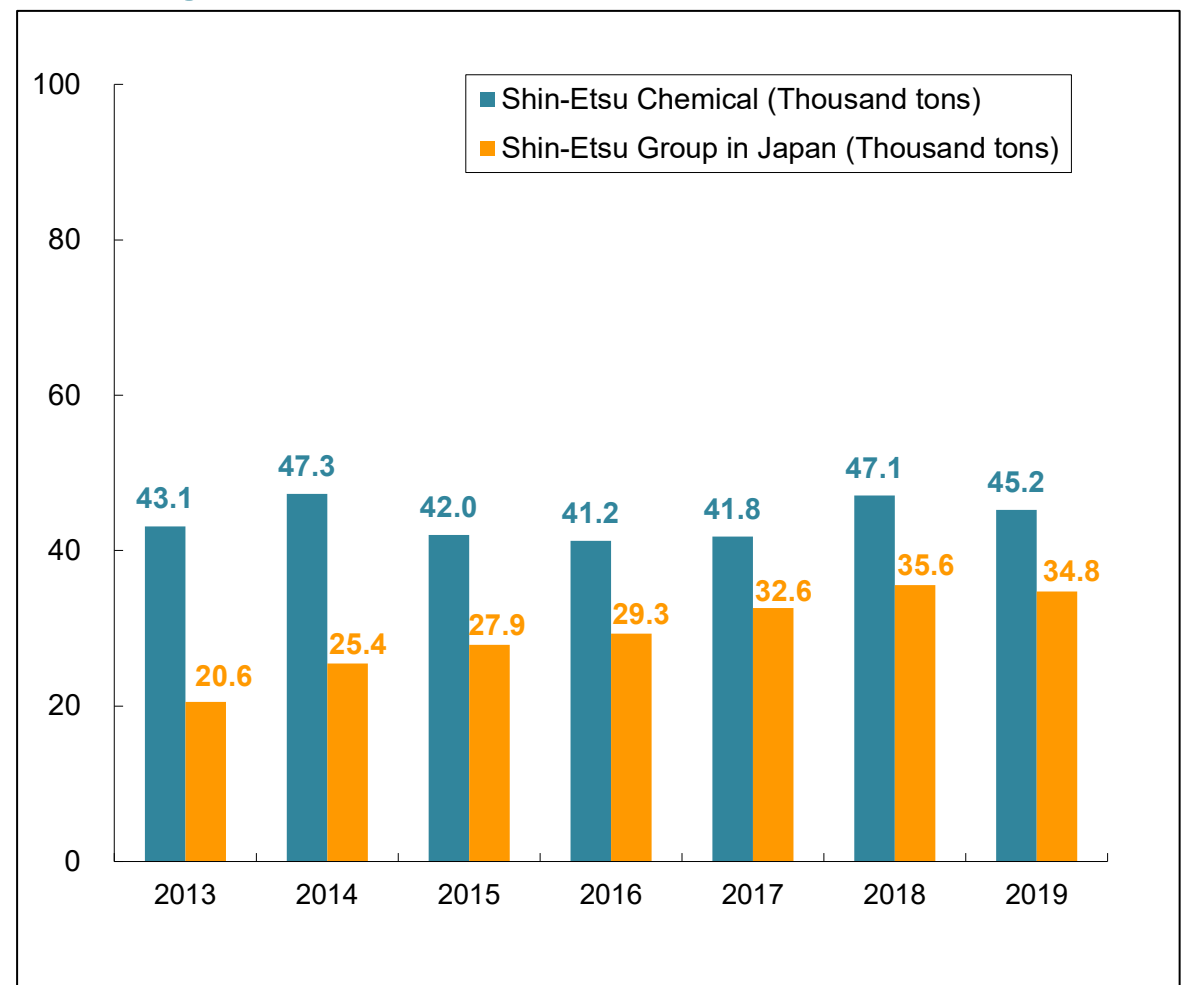
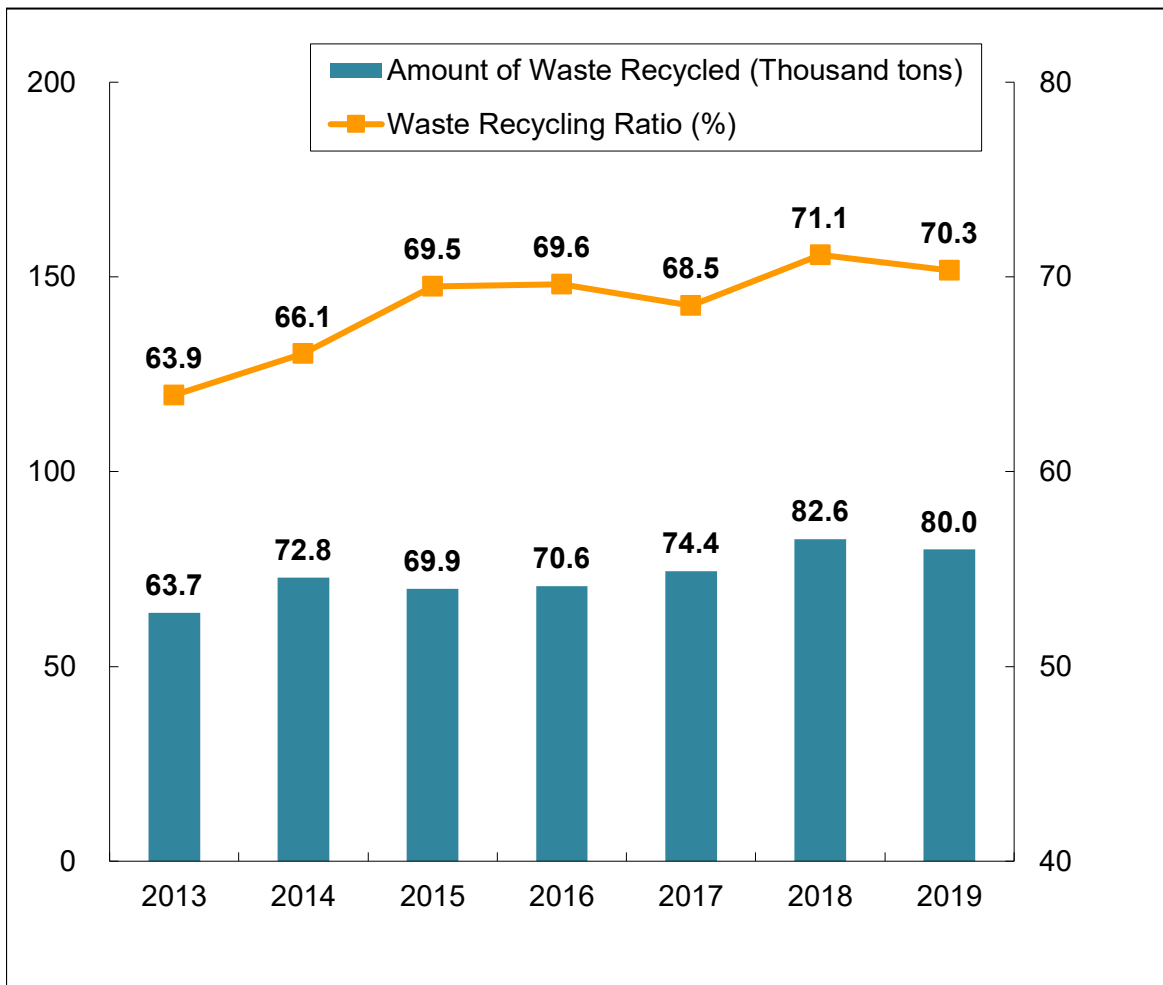
SOx



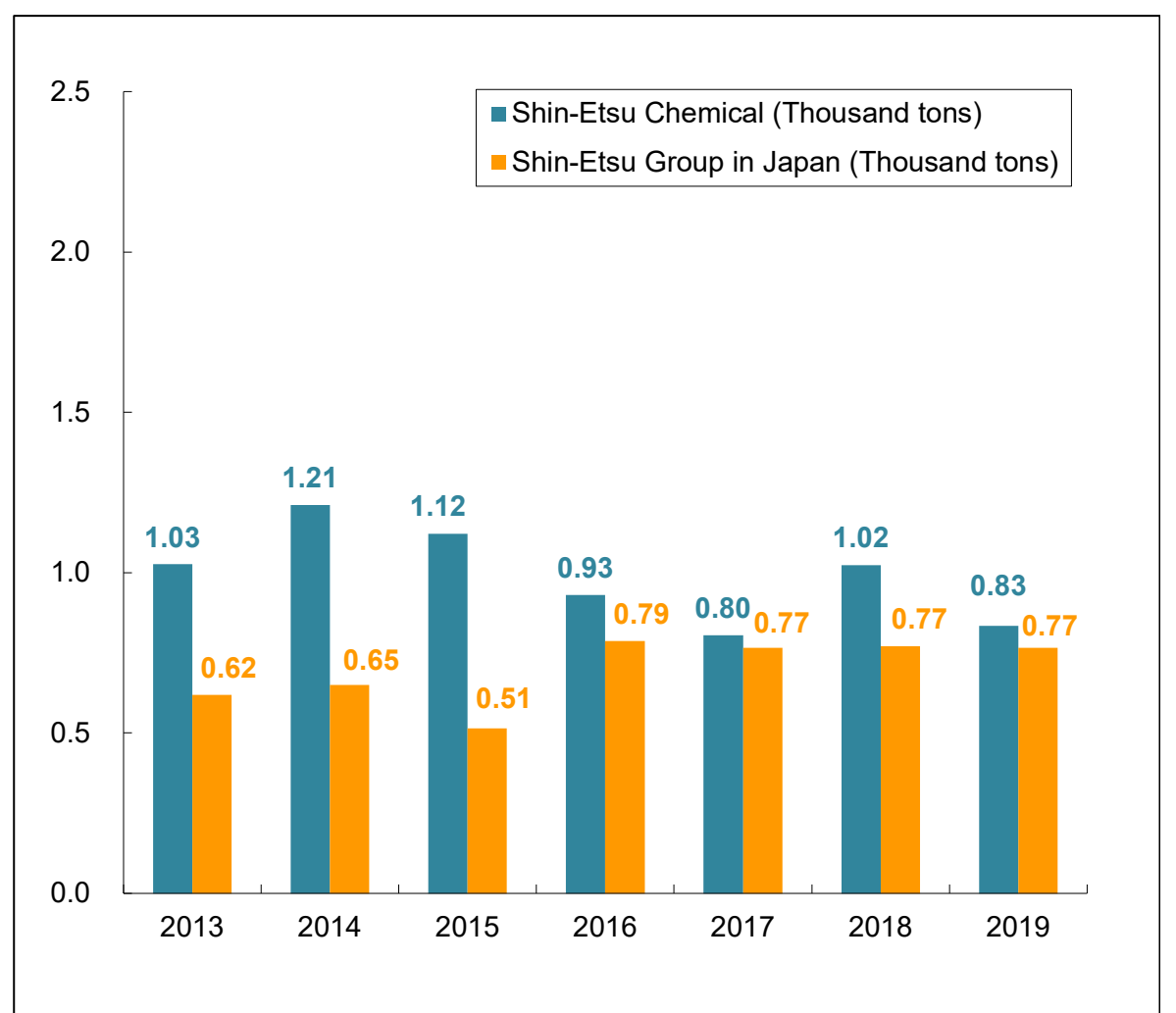
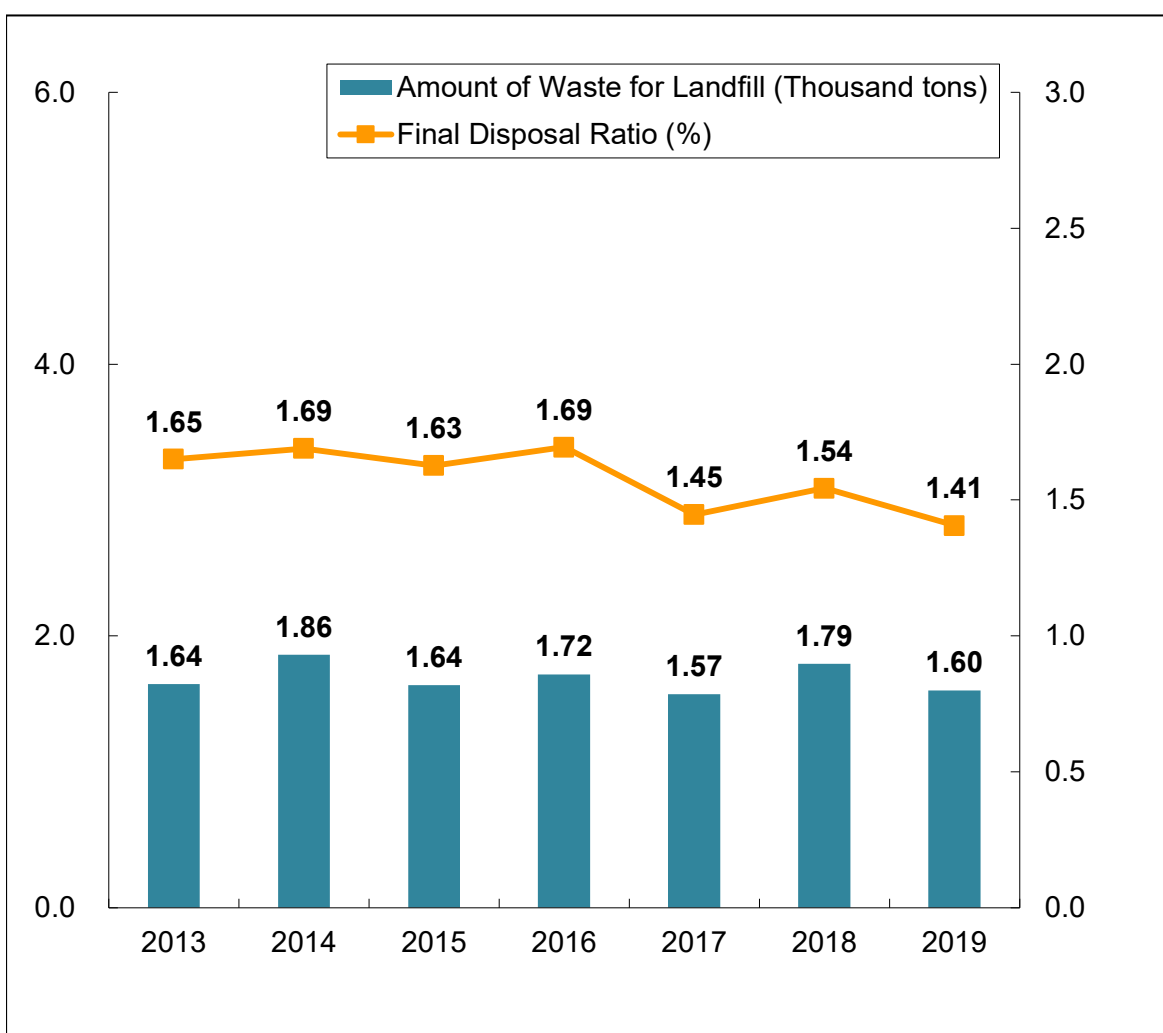
Amount of Waste Generated



Amount of Waste Recycled



Amount of Waste for Landfill



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

Detailed data of Waste

Amount of Waste Generated

Item	Unit	2013	2014	2015	2016	2017	2018	2019
Sluge	tons	29,219	31,695	41,002	41,462	45,503	45,683	45,094
Waste Oil	tons	23,829	24,499	13,263	17,183	17,754	18,716	20,764
Waste Acid	tons	9,834	8,740	5,417	4,666	5,028	6,081	6,243
Waste Alkaline	tons	21,210	28,548	24,925	21,546	22,763	25,390	22,909
Waste Plastic	tons	7,916	8,023	7,878	7,808	7,621	9,503	9,675
Waste Paper	tons	2,018	2,115	1,807	2,102	2,118	2,165	2,059
Waste Wood	tons	734	702	649	698	897	1,062	1,315
Metal Scraps	tons	3,622	4,641	4,495	4,496	5,257	5,904	4,541
Glassl Scraps	tons	833	754	767	982	1,152	1,266	838
Others	tons	429	431	338	390	473	389	289
Total	tons	99,644	110,148	100,540	101,333	108,567	116,181	113,726

Amount of Waste Recycled

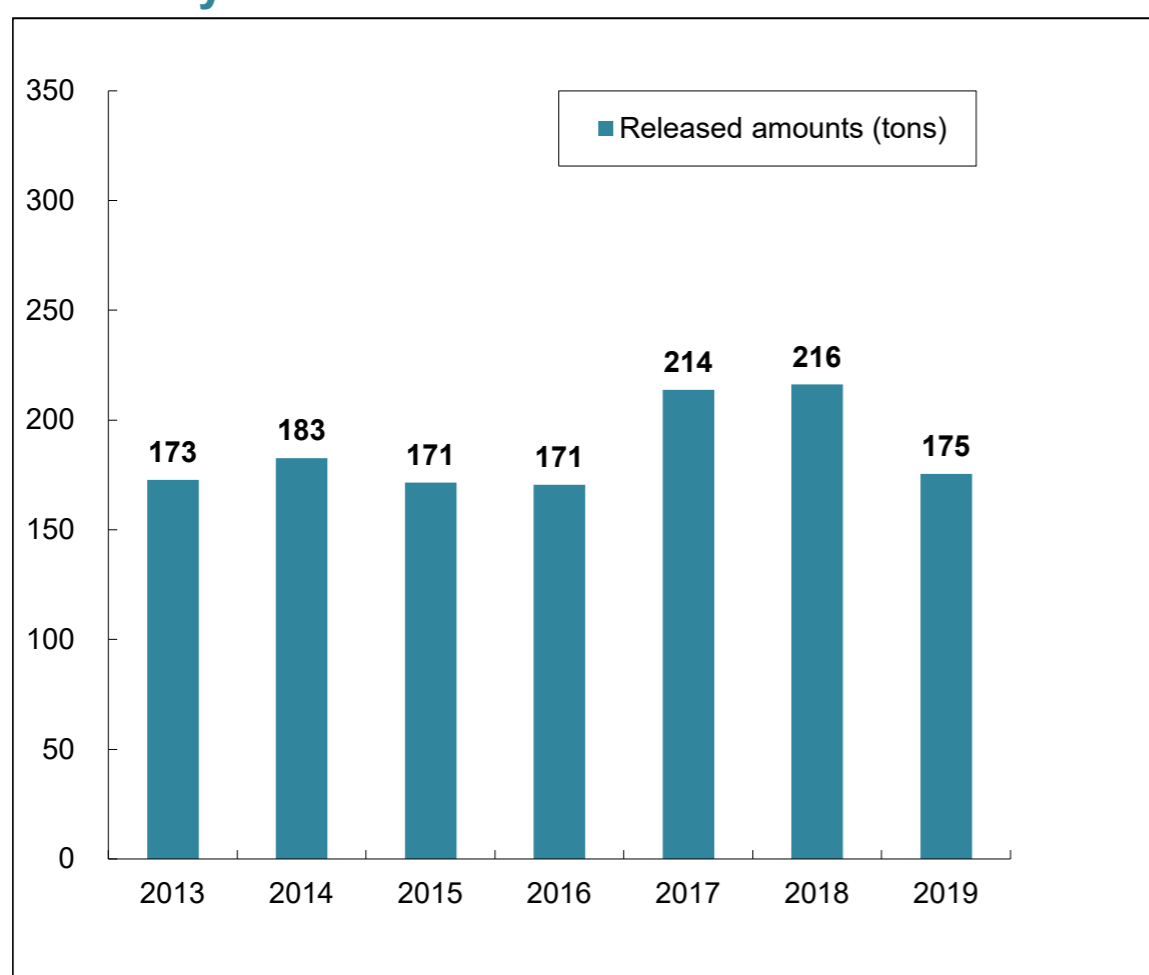
Item	Unit	2013	2014	2015	2016	2017	2018	2019
Sluge	tons	15,672	17,658	20,917	25,000	28,353	29,206	29,141
Waste Oil	tons	5,636	6,029	6,355	7,514	5,401	6,653	8,681
Waste Acid	tons	8,550	7,447	4,371	3,408	4,017	4,868	4,814
Waste Alkaline	tons	20,168	26,912	23,882	20,047	21,128	23,762	20,758
Waste Plastic	tons	7,280	7,394	7,417	7,305	7,114	8,925	9,166
Waste Paper	tons	1,405	1,506	1,321	1,419	1,633	1,638	1,553
Waste Wood	tons	606	575	503	554	586	693	793
Metal Scraps	tons	3,572	4,569	4,439	4,393	5,084	5,744	4,465
Glassl Scraps	tons	589	477	513	720	887	988	541
Others	tons	227	187	162	200	207	165	92
Total	tons	63,704	72,753	69,880	70,560	74,410	82,643	80,003

Amount of Waste for Landfill

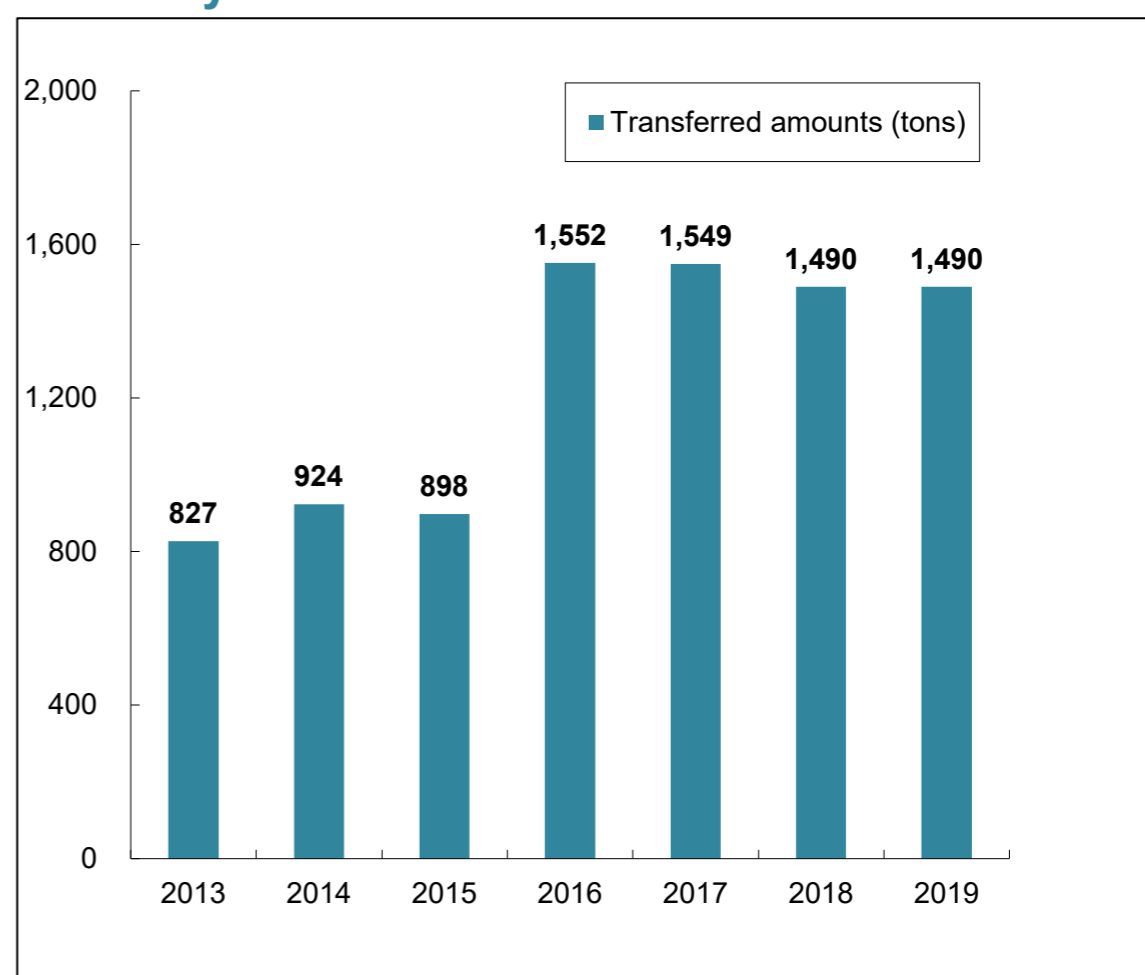
Item	Unit	2013	2014	2015	2016	2017	2018	2019
Sluge	tons	1,000	1,165	1,119	1,163	1,077	1,171	994
Waste Oil	tons	19	19	17	18	18	23	18
Waste Acid	tons	16	15	15	16	11	16	45
Waste Alkaline	tons	80	66	32	53	33	53	44
Waste Plastic	tons	170	188	154	135	103	152	119
Waste Paper	tons	59	49	20	32	28	25	31
Waste Wood	tons	3	4	2	2	1	2	1
Metal Scraps	tons	7	2	4	11	13	25	18
Glassl Scraps	tons	241	254	238	242	247	259	289
Others	tons	50	101	35	45	39	68	40
Total	tons	1,645	1,861	1,636	1,717	1,570	1,793	1,600

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

PRTR System Total Released Amounts



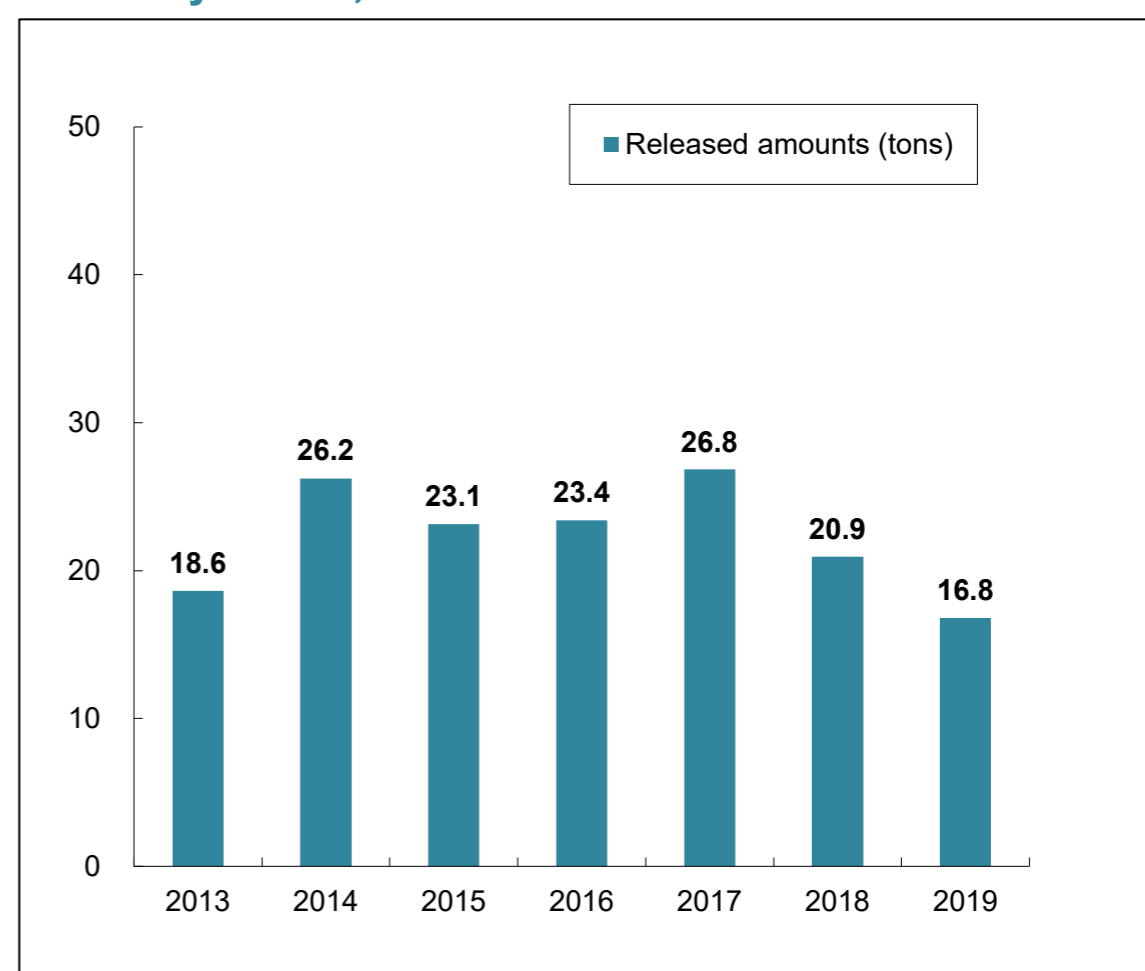
PRTR System Total Transferred Amounts



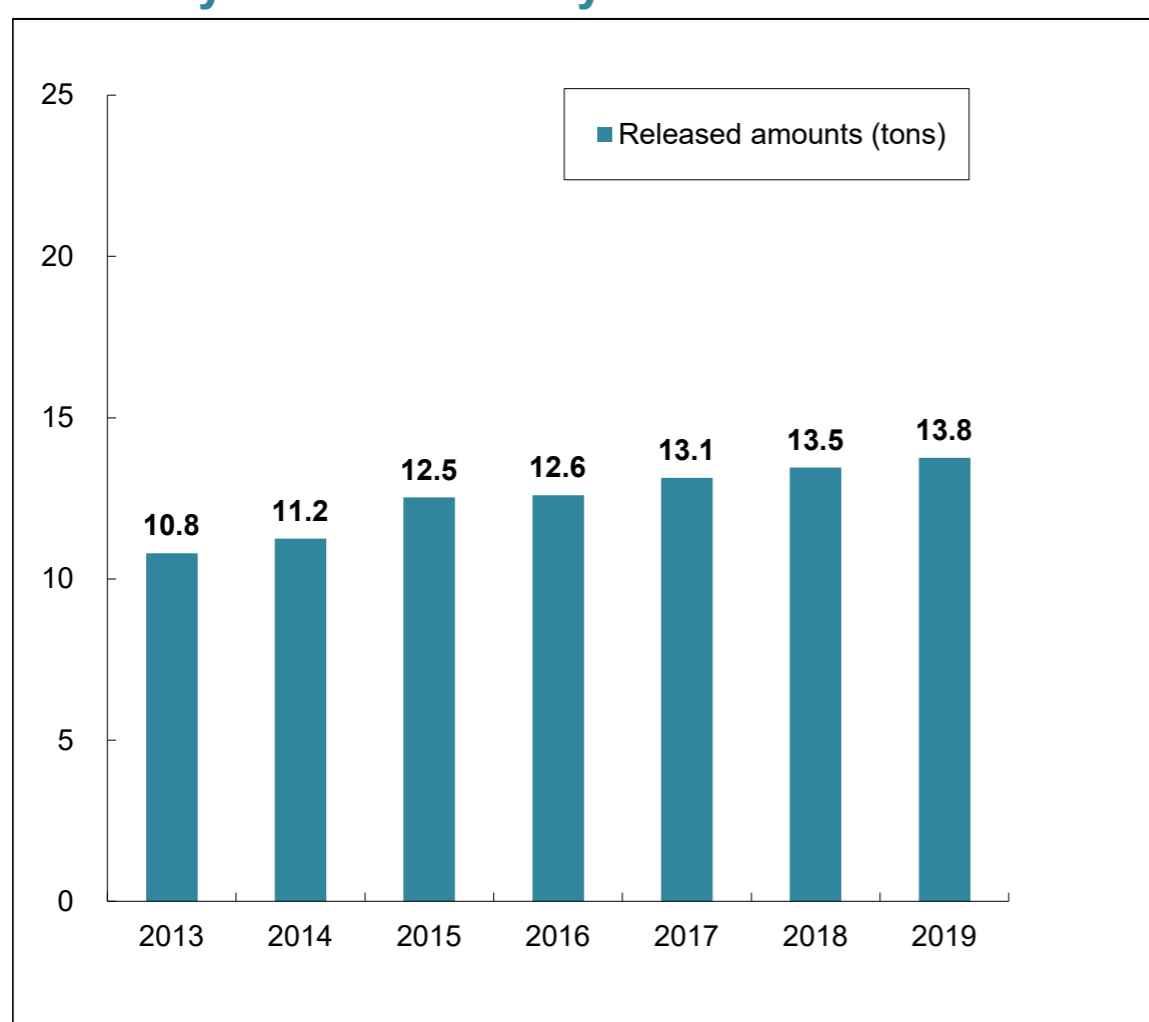
PRTR System Chloromethane Released Amounts



PRTR System 1,2-Dichloroethane Released Amounts

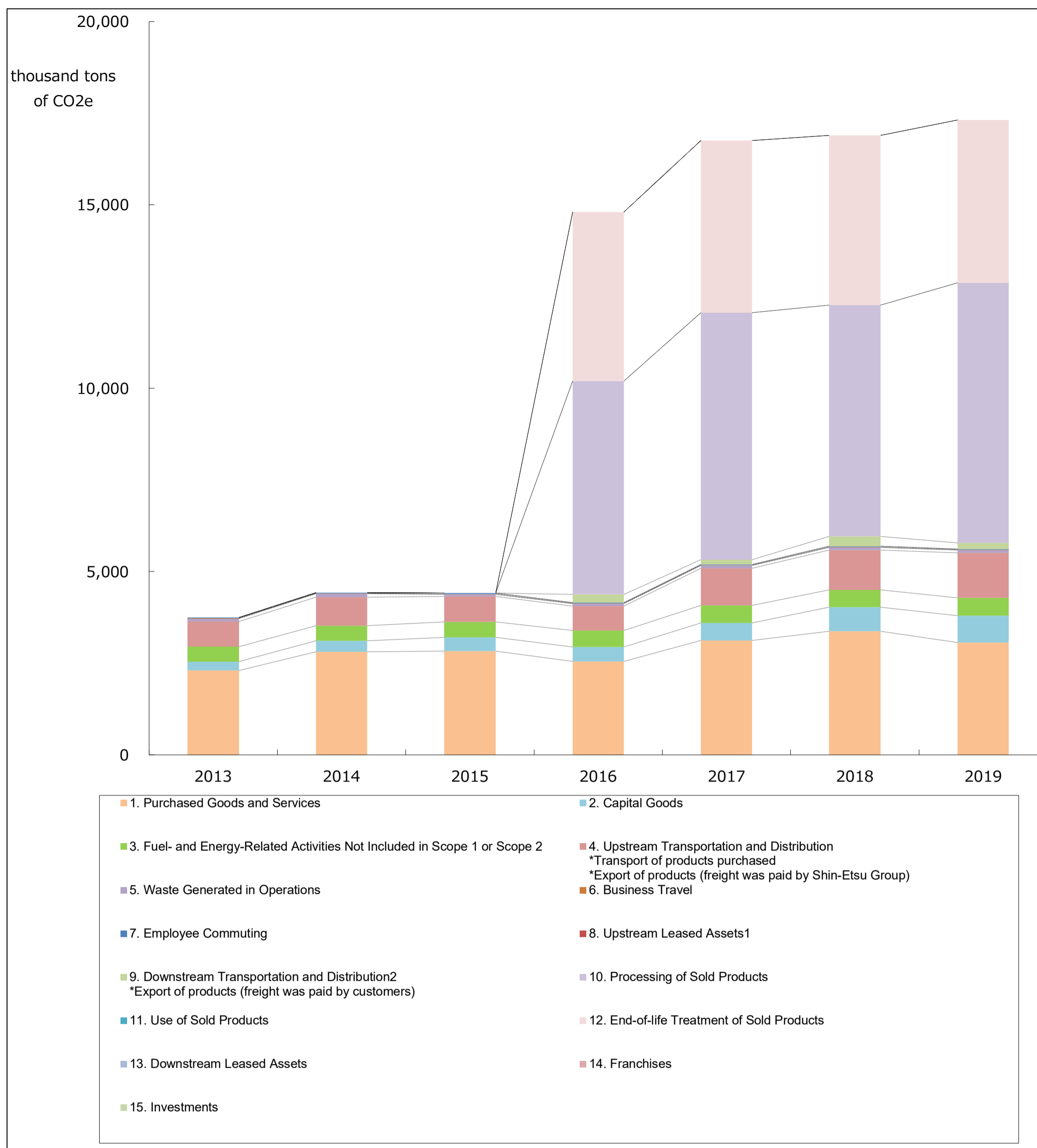


PRTR System Chloroethylene Released Amounts



*The figures are aggregated only for Shin-Etsu Chemical and group companies 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		2013	2014	2015	2016	2017	2018	2019
Upstream of Supply Chain	1. Purchased Goods and Services	2,301	2,813	2,834	2,545	3,121	3,371	3,069
	2. Capital Goods	243	300	368	398	481	657	723
	3. Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	406	415	420	445	478	472	490
	4. Upstream Transportation and Distribution *Transport of products purchased *Export of products (freight was paid by Shin-Etsu Group)	686	775	700	671	1,008	1,086	1,225
	5. Waste Generated in Operations	79.8	88	52	61	72	71	76
	6. Business Travel	10.3	11	13	11	10	11	9
	7. Employee Commuting	19.9	22	22	24	22	24	25
	8. Upstream Leased Assets ¹	—	—	—	—	—	—	—
Downstream of Supply Chain	9. Downstream Transportation and Distribution ² *Export of products (freight was paid by customers)	—	—	—	220	132	266	163
	10. Processing of Sold Products	—	—	—	5,818	6,734	6,305	7,094
	11. Use of Sold Products	—	—	—	—	—	—	—
	12. End-of-life Treatment of Sold Products	—	—	—	4,610	4,696	4,629	4,441
	13. Downstream Leased Assets	—	—	—	—	—	—	—
	14. Franchises	—	—	—	—	—	—	—
	15. Investments	—	—	—	—	—	—	—
Total	3,745	4,426	4,409	14,803	16,754	16,892	17,315	

¹ Category 8 covers rental expense of our overseas non-manufacturing bases. However, it is extremely little, so Category 8 has been eliminated from calculations from FY2013.

² The emissions of export of products (freight was paid by Shin-Etsu Group) that was calculated as pertaining to Category 9 for FY 2012 has been included in Category 4 from FY2013 on reconsidering the contents of Category 9.

*Since fiscal 2016, the Group started disclosing the green gas emissions in the downstream of supply chain. This move has considerably increased the total green gas emissions in the Group's Scope 3.

※From FY 2016, we have disclosed emissions from downstream in the supply chain.

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.
Shin-Etsu Engineering Co., Ltd.
Nagano Electronics Industrial Co., Ltd.
Naoetsu Electronics 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.
Mimasu Semiconductor Industry Co., Ltd.
Shin-Etsu Quartz Co., Ltd.
Adomatechs Co., Ltd.
Tatsuno Chemical Industries Inc.
Yamagata Shin-Etsu Quartz Co., Ltd.
Fukui Shin-Etsu Quartz Co., Ltd.
Shinmujiko Co., Ltd.
Shin-Etsu Silica Co.,Ltd.
Shin-Etsu Kikou Co.,Ltd.
Industrial Information Center Co.,Ltd.
Naoetsu Acetylene Limited
Shin-Etsu Sogo-Kensetsu Co.,Ltd.
Kashima Services Co.,Ltd.
Others (11 companies)

Overseas
Shintech Inc.
S.E.H. Malaysia Sdn. Bhd.
Shin-Etsu Handotai America Inc.
Shin-Etsu PVC B.V.
SE Tylose GmbH & Co.KG
Shin-Etsu Handotai Taiwan Co., Ltd.
Simcoa Operations Pty. Ltd.
Shin-Etsu Silicones (Thailand) Ltd.
Asia Silicones Monomer Ltd.
Shin-Etsu Handotai Europe Ltd.
S-E Inc.
Shin-Etsu Electronics Materials Singapore Pte. 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 (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.
SE Tylose USA, Inc.
K-Bin INC.
Shin-Etsu Silicone (Nantong) Co., Ltd.
Shin-Etsu (Jiangsu) Optical Preform Co., Ltd.
Shin-Etsu Magnetic Materials Vietnam Co., Ltd.
Shin-Etsu Electronics Materials Taiwan Co., Ltd.
Shin-Etsu YOFC (Hubei) Optical Preform Co., Ltd.
Shin-Etsu do Brasil Representação de Produtos Químicos Ltda.
Zhejiang Shin-Etsu High-Tech Chemical Co., Ltd.
Shin-Etsu Technology (Suzhou) Co., Ltd.
Shin-Etsu (Changting) Technology Co., Ltd.
Shin-Etsu Magnetics (Thailand) Ltd.
Biocontrol Pty. Ltd.
Shin-Etsu Electronics Materials Vietnam Co., Ltd.
Others (23 companies)