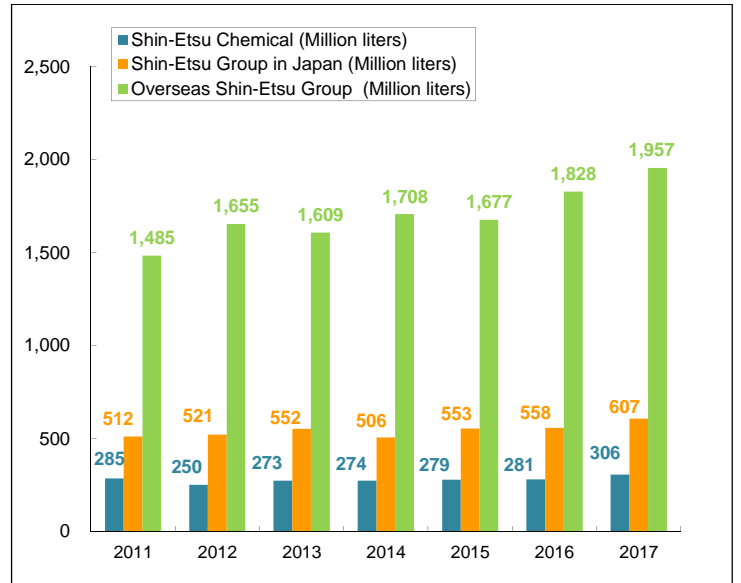
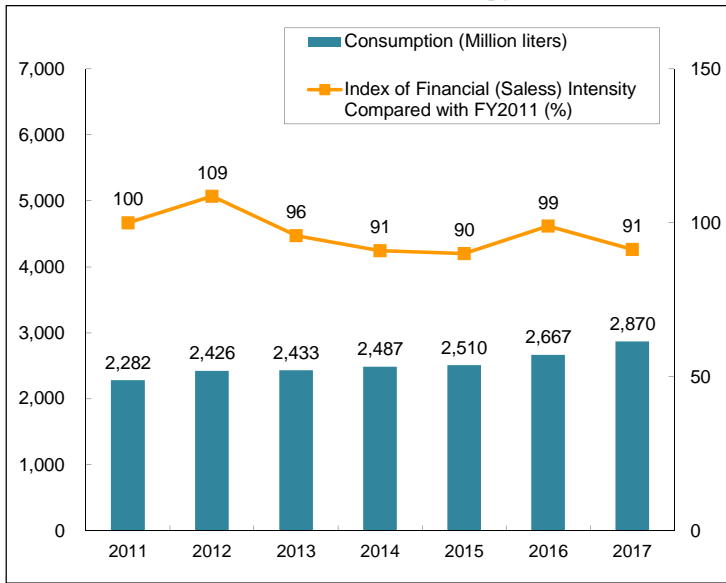


Environmental Data of Shin-Etsu Group

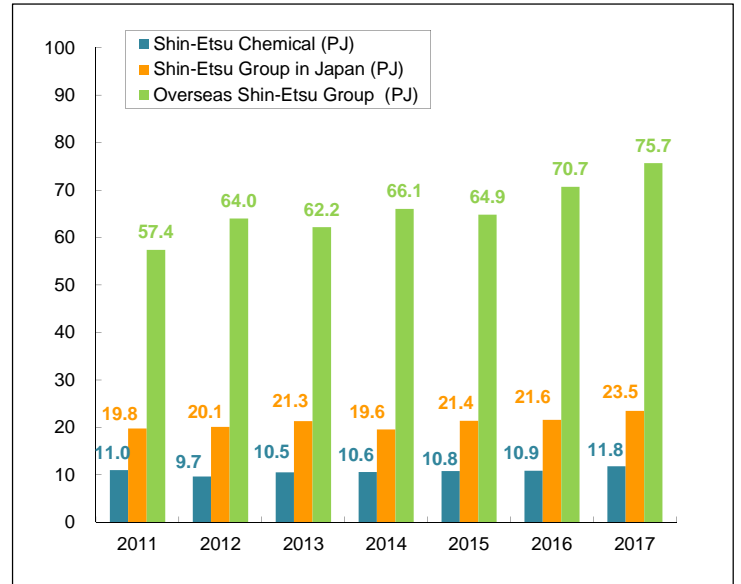
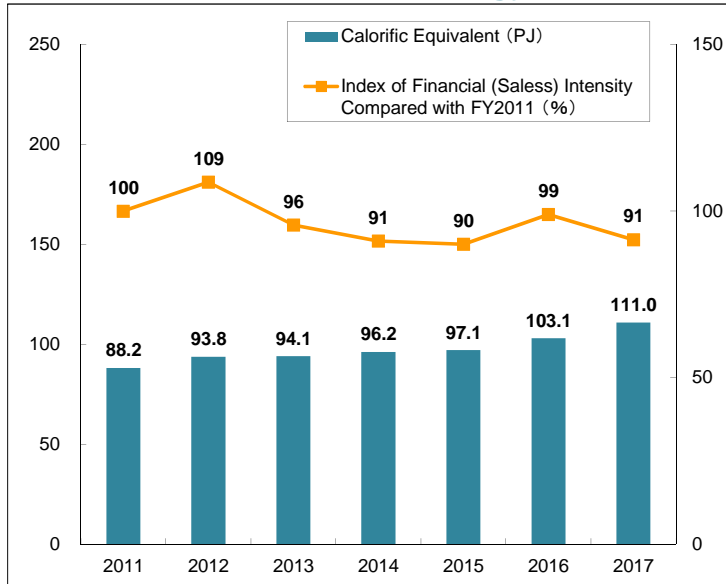
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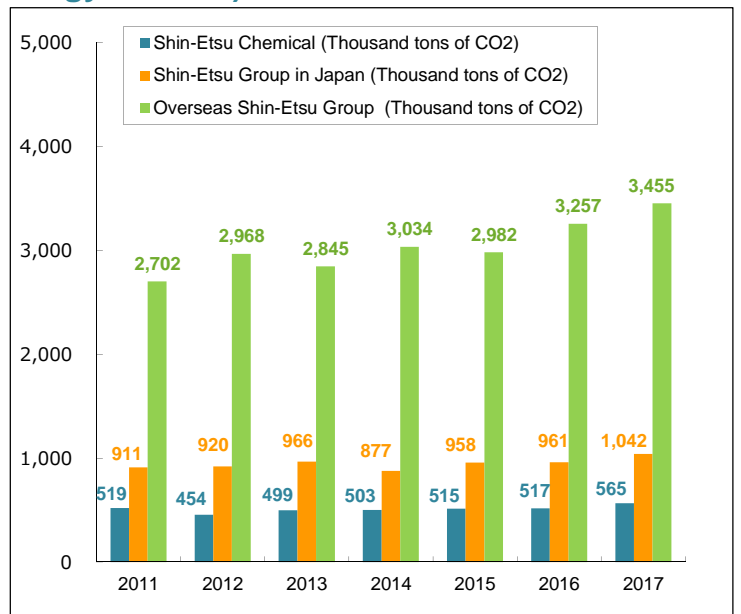
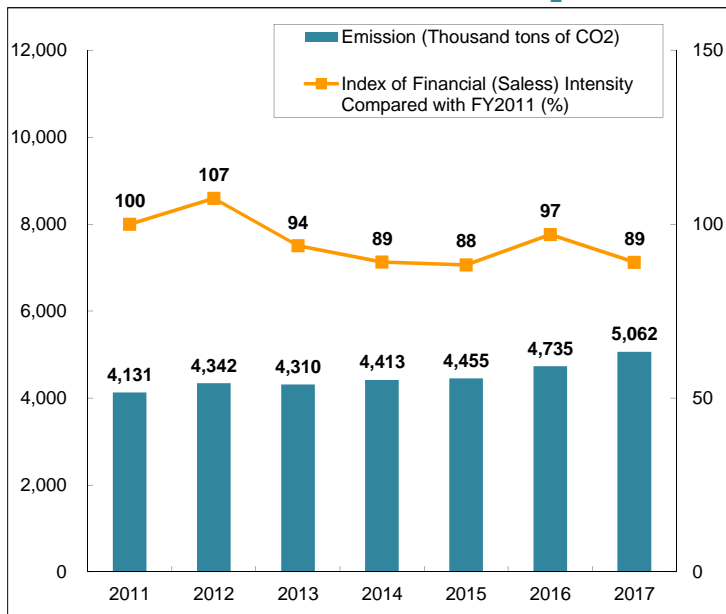
Energy Consumption (Crude Oil Equivalent)



Energy Consumption (Caloric Equivalent)



CO₂ Emissions (Energy Related)



Energy Consumption (Detailed Data)

Energy Consumption (Actual Usage)

Item	Unit	2011	2012	2013	2014	2015	2016	2017
Purchased Electricity	GWh	6,313	6,957	7,341	7,195	7,235	7,741	8,437
Purchased Steam	Thousand tons	2,129	2,059	2,073	1,946	1,996	2,202	2,180
A-tape Heavy Oil	Thousand liters	1,235	1,048	1,544	1,065	965	976	1,713
C-tape Heavy Oil	Thousand liters	15,177	10,074	5,803	6,251	5,779	5,906	5,808
Kerosene	Thousand liters	8,064	6,628	6,160	5,588	3,868	3,799	4,233
Natural Gas	MNm3	555	556	486	577	578	600	635
Gasoline	Thousand liters	871	963	944	969	987	886	893
Light Oil	Thousand liters	2,452	3,026	2,641	2,314	2,643	2,984	2,437
Liquefied Petroleum Gas	Thousand tons	29	32	31	25	32	33	34
Hydrogen	MNm3	9	25	38	47	55	59	76
Liquefied Natural Gas	tons	36	40	62	72	68	54	84

Energy Consumption (Crude Oil Equivalent)

Item	Unit	2011	2012	2013	2014	2015	2016	2017
Purchased Electricity	ML	1,437.0	1,583.8	1,670.8	1,637.9	1,647.1	1,762.2	1,920.8
Purchased Steam	ML	151.2	146.2	147.2	138.1	141.7	156.3	154.8
A-tape Heavy Oil	ML	1.2	1.1	1.6	1.1	1.0	1.0	1.7
C-tape Heavy Oil	ML	16.4	10.9	6.3	6.8	6.3	6.4	6.3
Kerosene	ML	7.6	6.3	5.8	5.3	3.7	3.6	4.0
Natural Gas	ML	623.9	624.8	546.2	648.9	649.2	674.8	713.5
Gasoline	ML	0.8	0.9	0.8	0.9	0.9	0.8	0.8
Light Oil	ML	2.4	2.9	2.6	2.3	2.6	2.9	2.4
Liquefied Petroleum Gas	ML	38.5	42.5	41.0	33.3	42.6	43.1	44.5
Hydrogen	ML	2.4	6.9	10.3	12.8	15.0	16.0	20.7
Liquefied Natural Gas	ML	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	ML	2,281.6	2,426.4	2,432.9	2,487.4	2,510.0	2,667.2	2,869.6

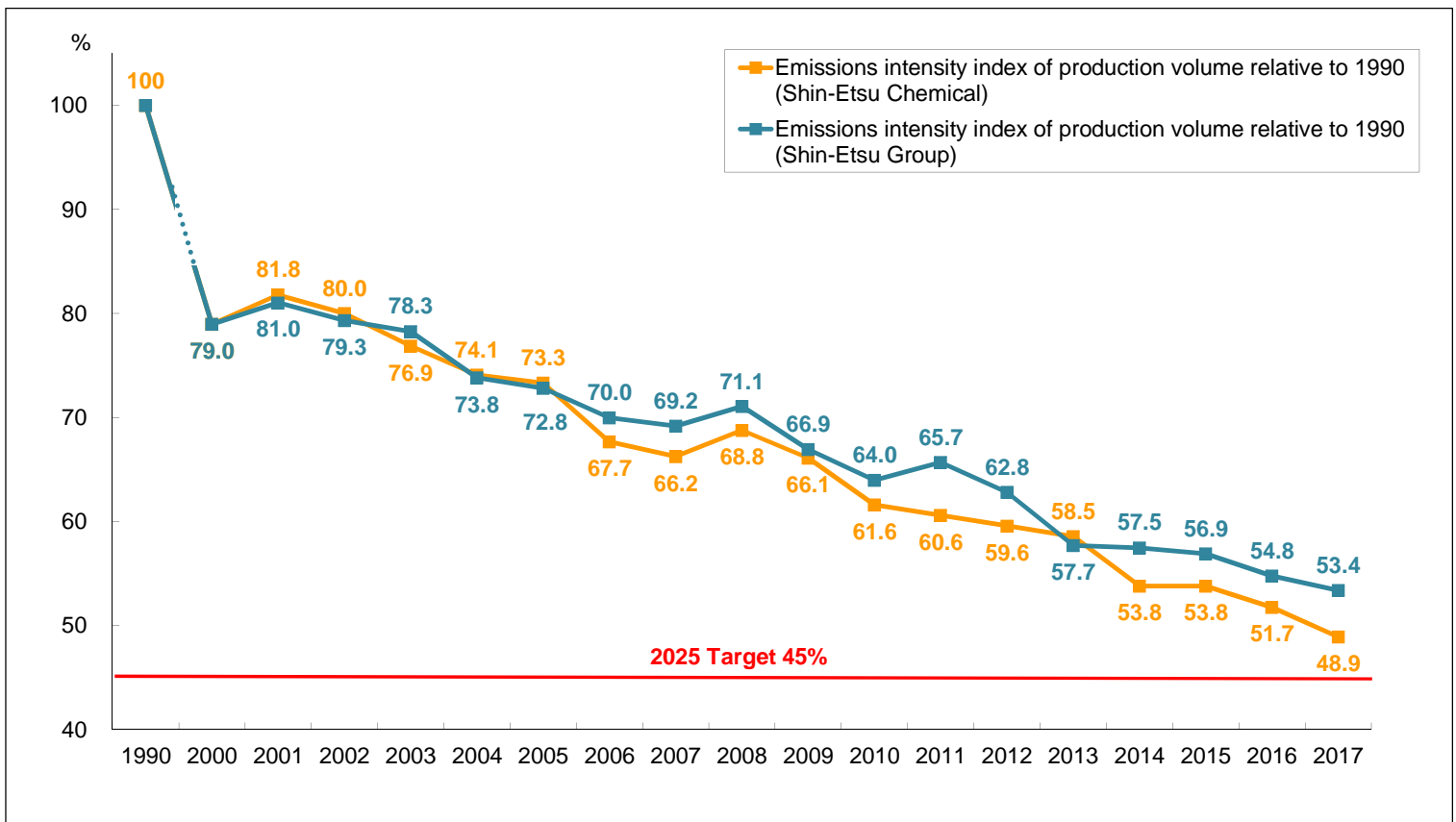
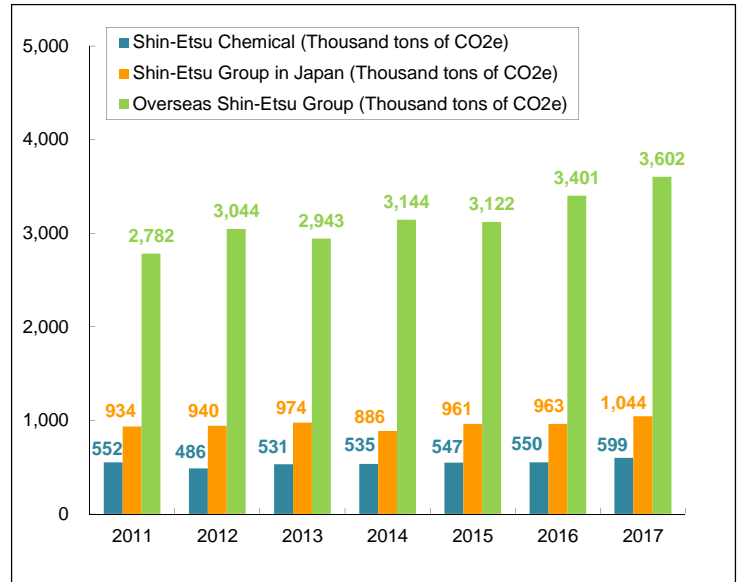
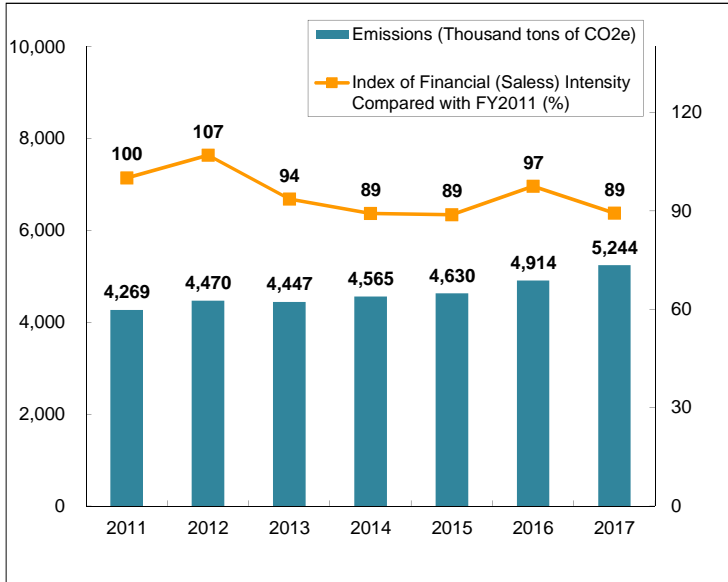
Energy Consumption (Calorific Equivalent)

Item	Unit	2011	2012	2013	2014	2015	2016	2017
Purchased Electricity	TJ	55,613	61,293	64,661	63,386	63,742	68,195	74,334
Purchased Steam	TJ	5,769	5,580	5,617	5,272	5,408	5,967	5,907
A-tape Heavy Oil	TJ	48	41	60	42	38	38	67
C-tape Heavy Oil	TJ	636	422	243	262	242	247	243
Kerosene	TJ	296	243	226	205	142	139	155
Natural Gas	TJ	24,146	24,180	21,136	25,114	25,123	26,116	27,612
Gasoline	TJ	30	33	33	34	34	31	31
Light Oil	TJ	92	114	100	87	100	113	92
Liquefied Petroleum Gas	TJ	1,491	1,646	1,588	1,288	1,650	1,669	1,724
Hydrogen	TJ	93	267	399	494	578	619	799
Liquefied Natural Gas	TJ	2	2	3	4	4	3	5
Total	TJ	88,217	93,822	94,075	96,188	97,060	103,137	110,968

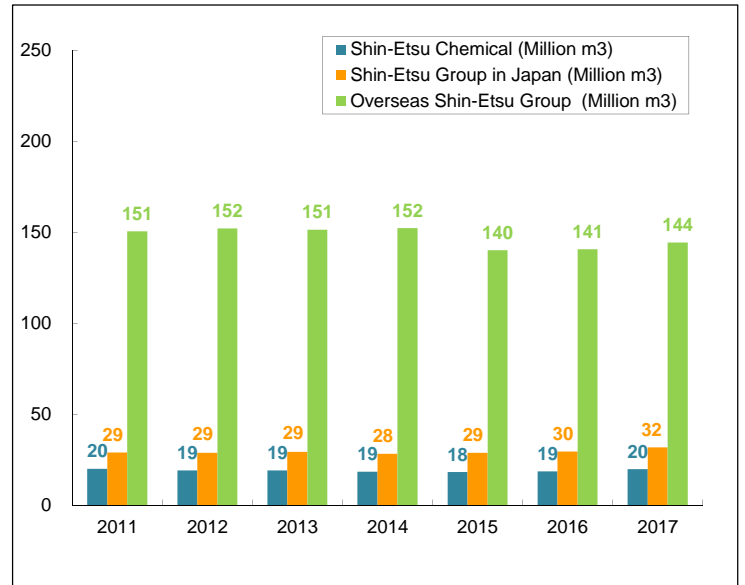
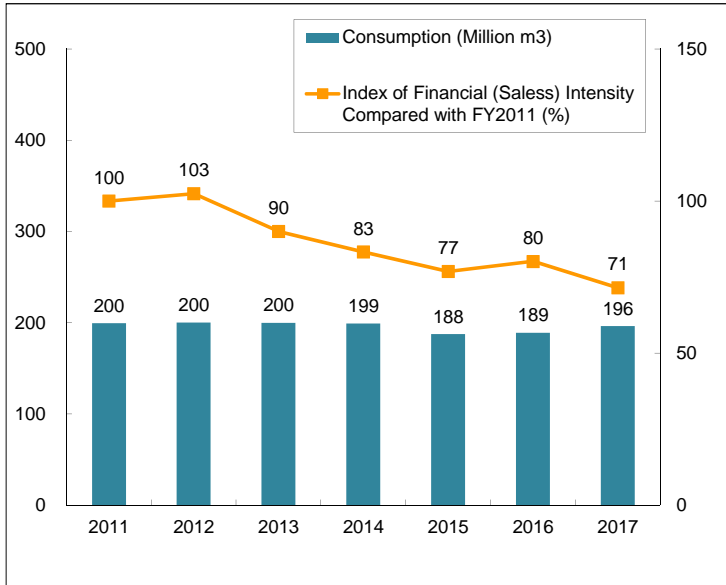
CO₂ Emissions

Item	Unit	2011年	2012年	2013年	2014年	2015年	2016年	2017年
Purchased Electricity	Thousand tons of CO ₂	2,272.5	2,504.6	2,642.2	2,590.1	2,604.7	2,786.6	3,037.5
Purchased Steam	Thousand tons of CO ₂	461.6	446.4	449.4	421.8	432.7	477.4	472.6
A-tape Heavy Oil	Thousand tons of CO ₂	3.3	2.8	4.2	2.9	2.6	2.6	4.6
C-tape Heavy Oil	Thousand tons of CO ₂	45.6	30.2	17.4	18.8	17.3	17.7	17.4
Kerosene	Thousand tons of CO ₂	20.1	16.5	15.3	13.9	9.6	9.5	10.5
Natural Gas	Thousand tons of CO ₂	1,230.6	1,232.4	1,077.2	1,280.0	1,280.4	1,331.0	1,407.3
Gasoline	Thousand tons of CO ₂	2.0	2.2	2.2	2.2	2.3	2.1	2.1
Light Oil	Thousand tons of CO ₂	6.3	7.8	6.8	6.0	6.8	7.7	6.3
Liquefied Petroleum Gas	Thousand tons of CO ₂	89.2	98.5	95.0	77.1	98.8	99.9	103.2
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	0.1	0.1	0.2	0.2	0.2	0.1	0.2
Total	Thousand tons of CO ₂	4,131.4	4,341.7	4,310.4	4,413.0	4,455.4	4,734.7	5,061.7

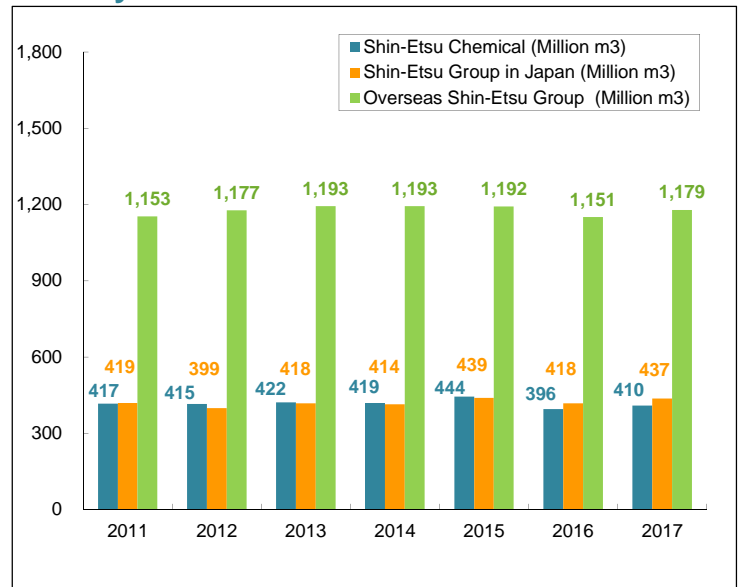
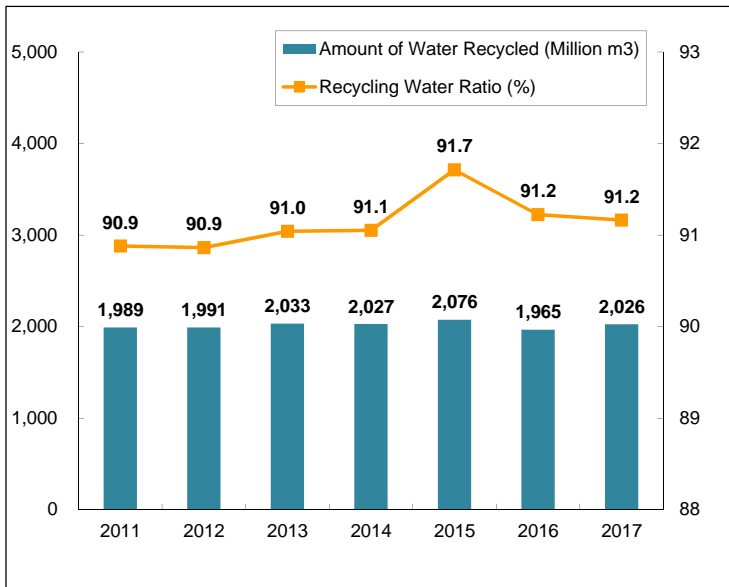
Greenhouse Gas Emissions



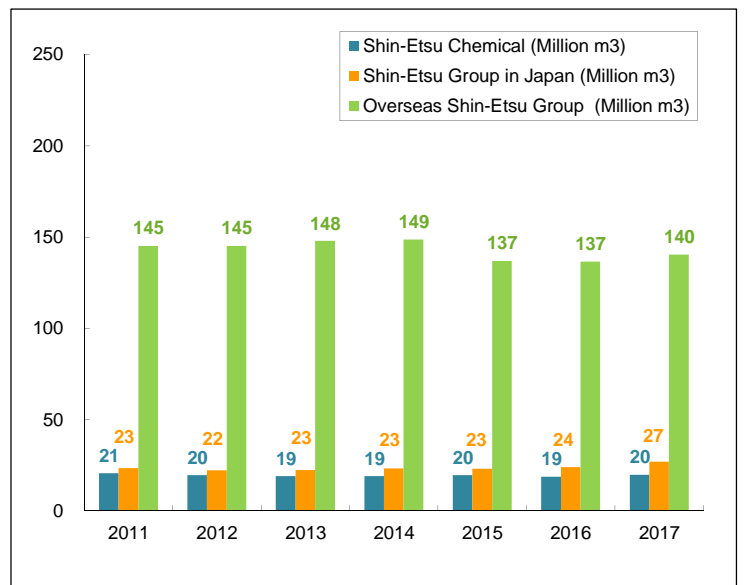
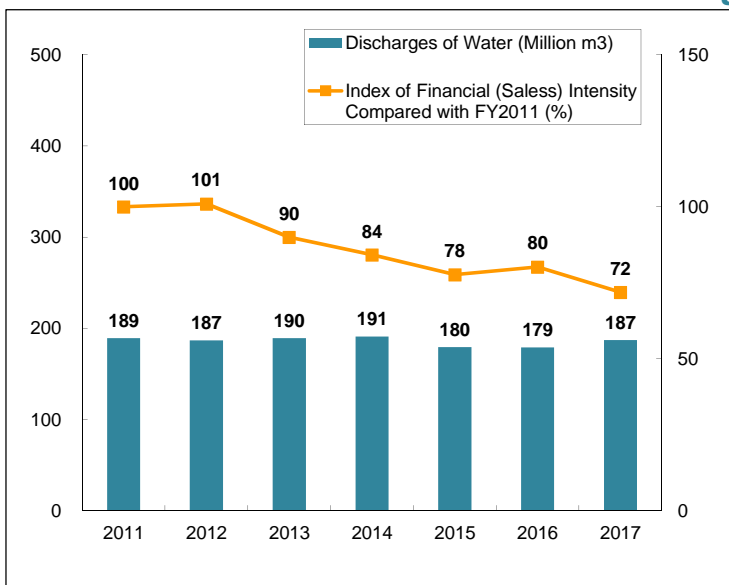
Water Withdrawals



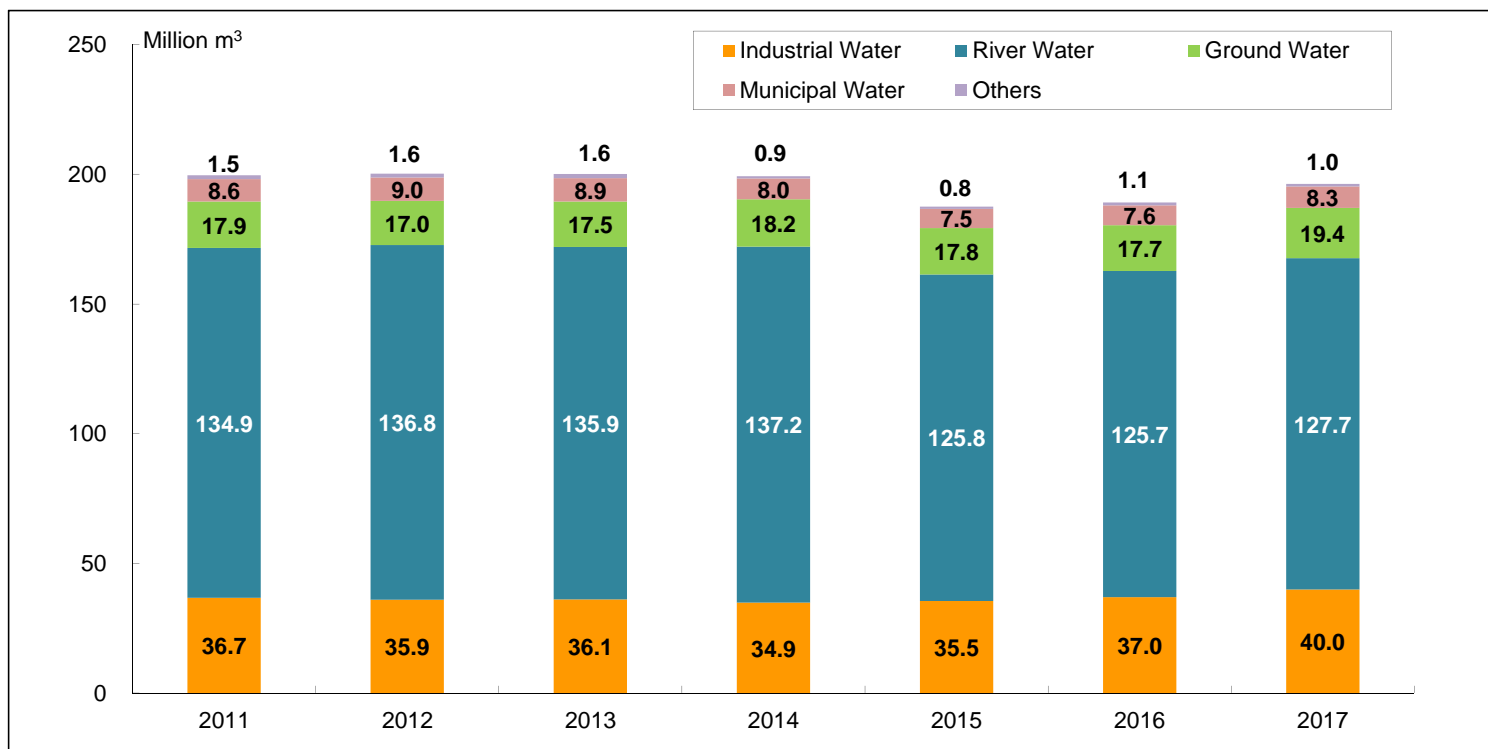
Amount of Water Recycled



Discharges of Water



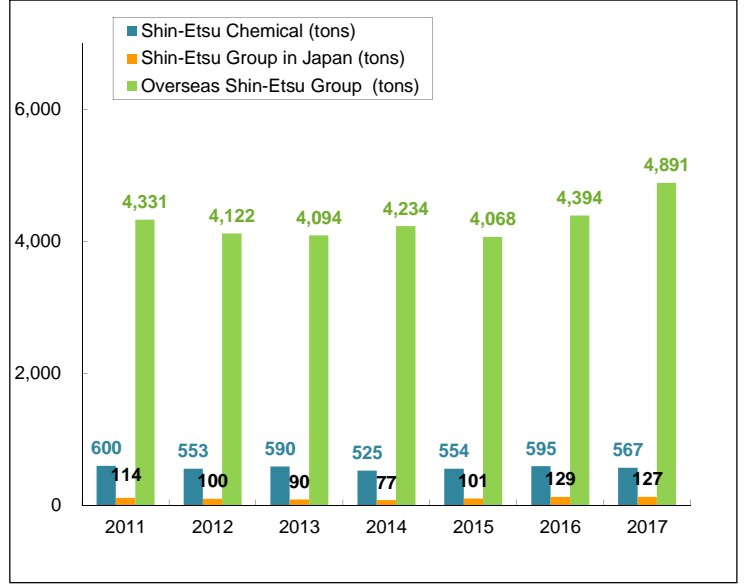
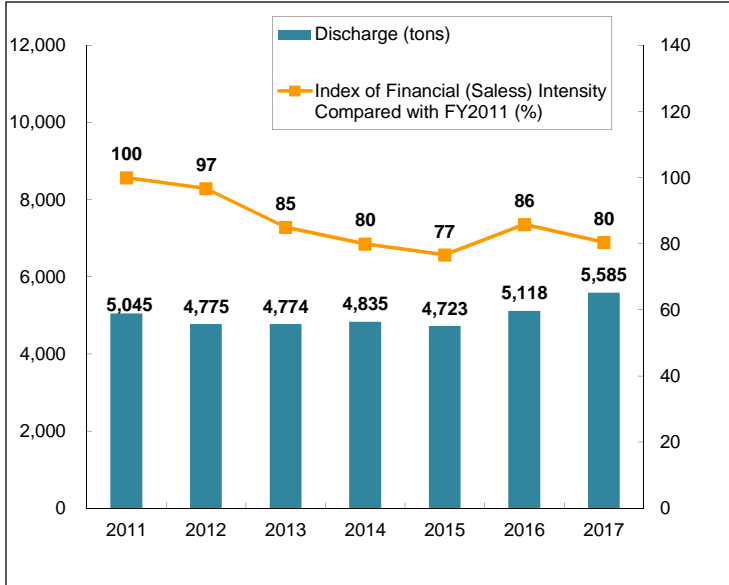
Water Withdrawals by Water Sources



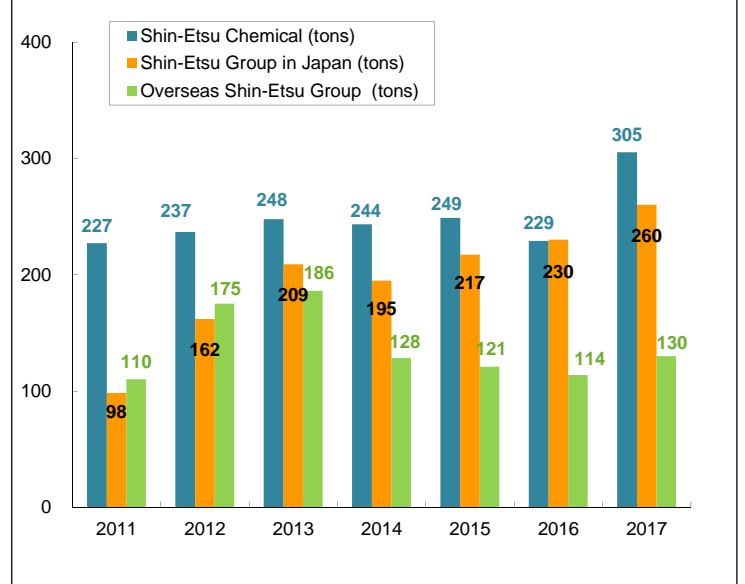
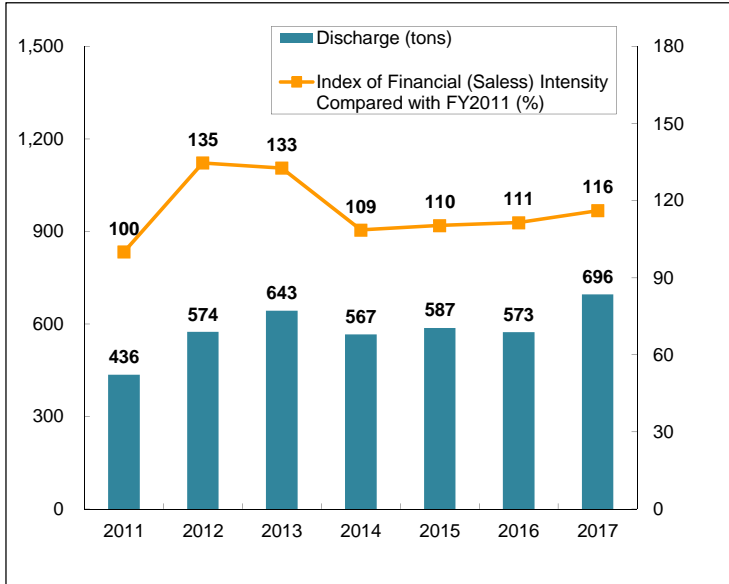
Water Sources	Water Withdrawals (Unit: million m3)						
	2011	2012	2013	2014	2015	2016	2017
Industrial Water	36.7	35.9	36.1	34.9	35.5	37.0	40.0
River Water	134.9	136.8	135.9	137.2	125.8	125.7	127.7
Ground Water	17.9	17.0	17.5	18.2	17.8	17.7	19.4
Municipal Water	8.6	9.0	8.9	8.0	7.5	7.6	8.3
Others	1.5	1.6	1.6	0.9	0.8	1.1	1.0
Total	199.6	200.3	200.1	199.2	187.5	189.1	196.3

Discharge of Water Pollutant

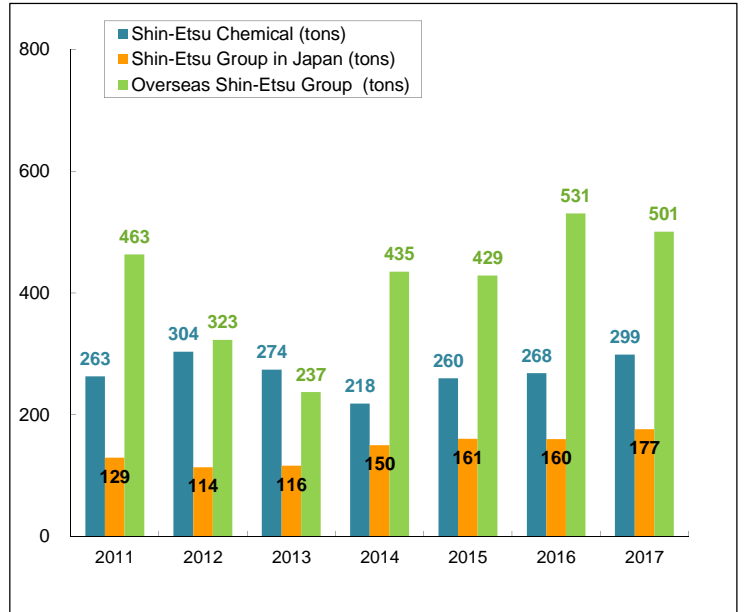
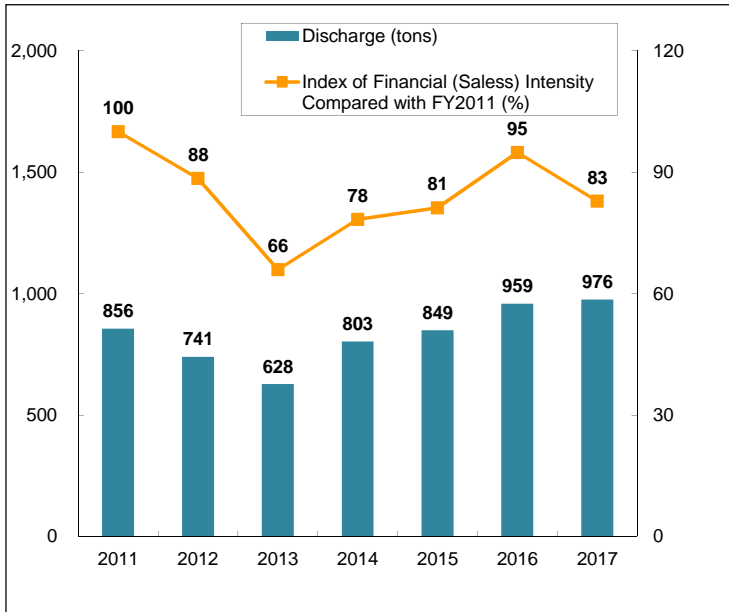
COD



BOD

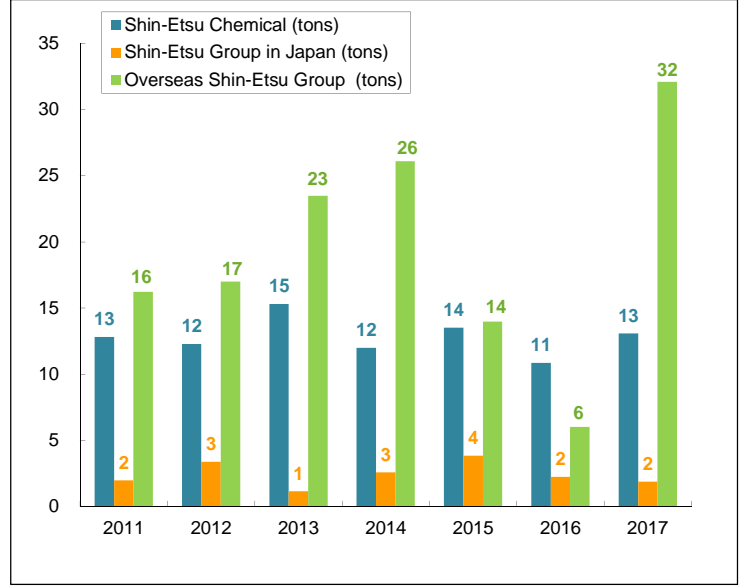
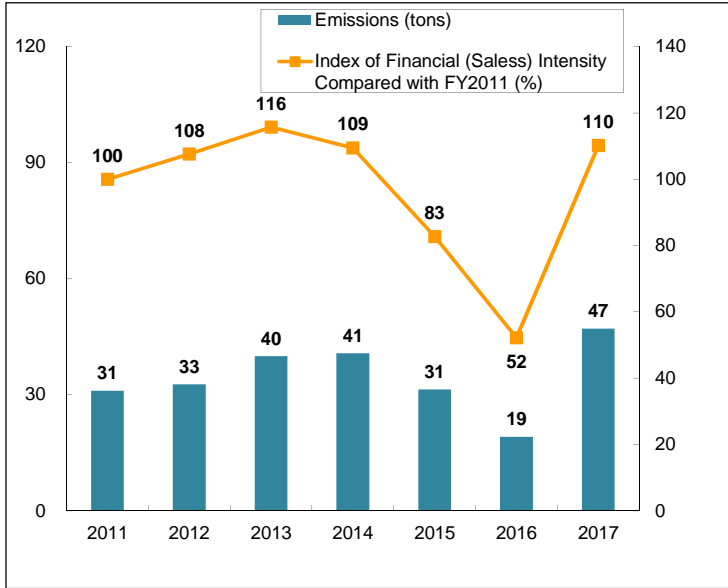


SS

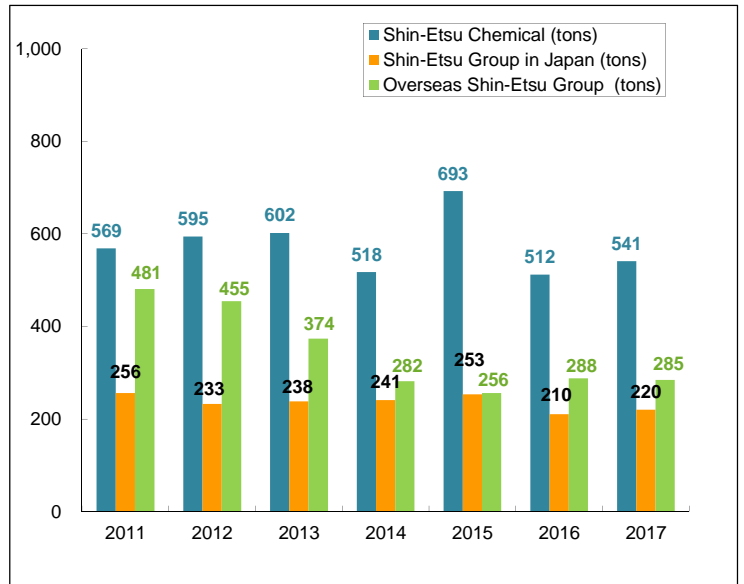
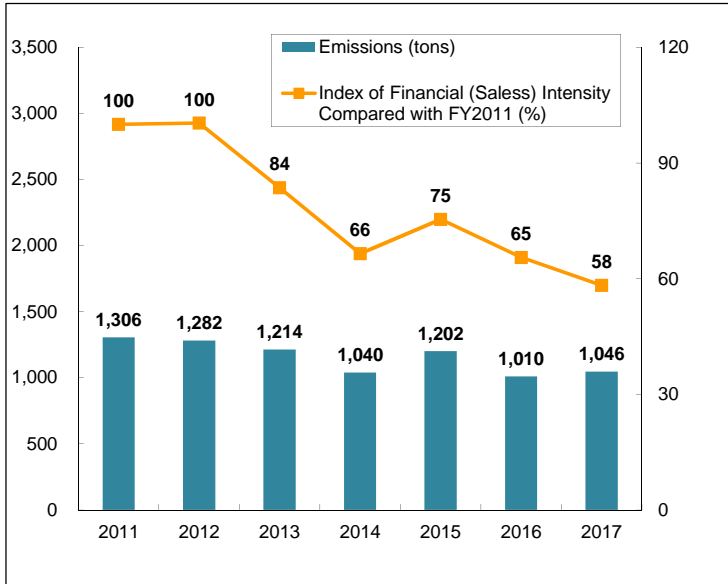


Emissions of Air Pollution Substances

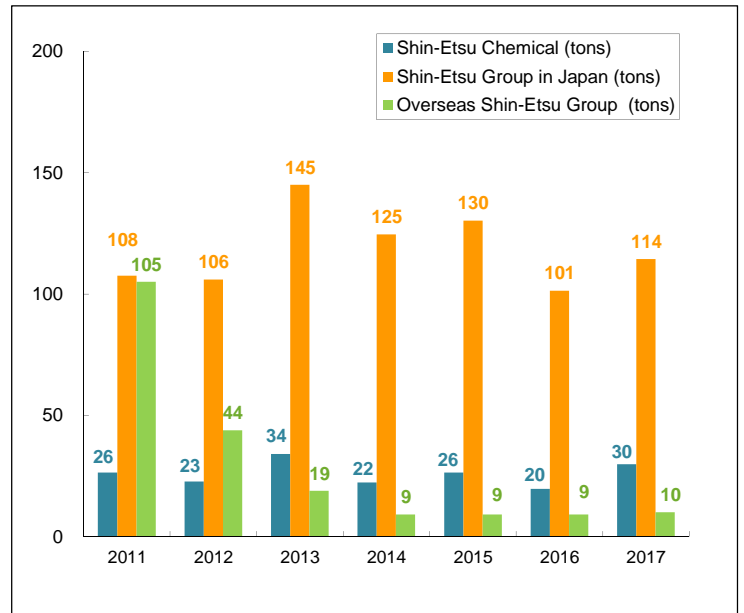
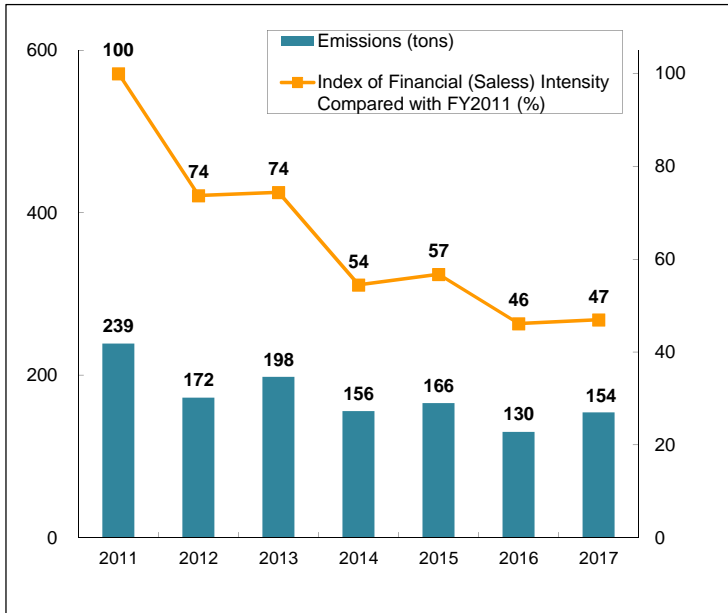
Soot



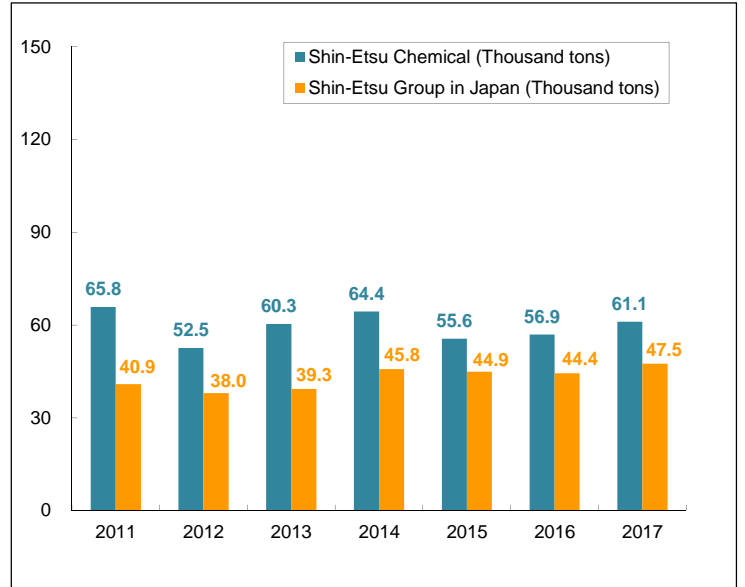
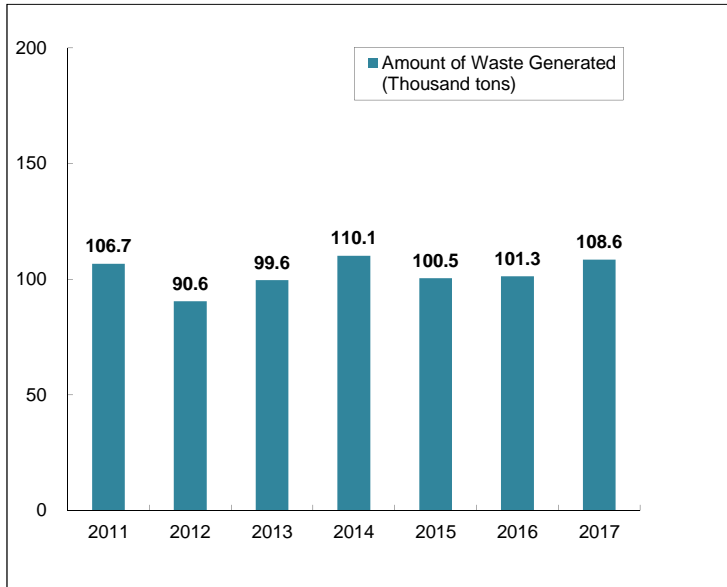
NOx



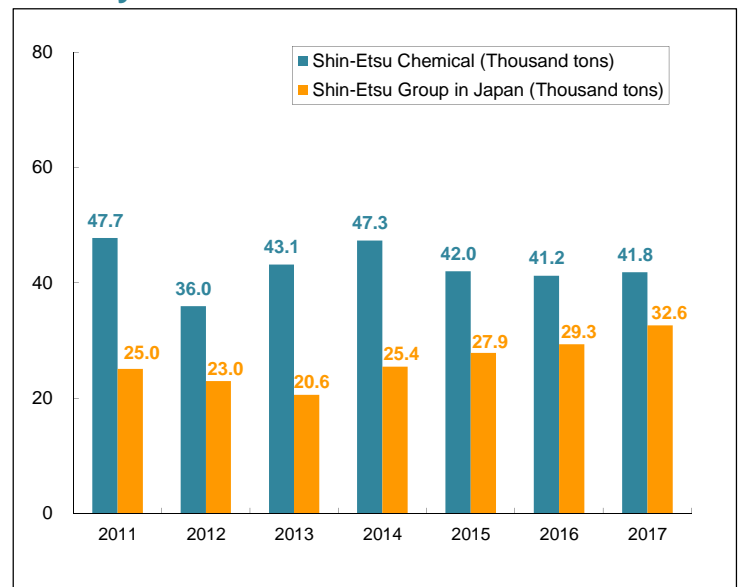
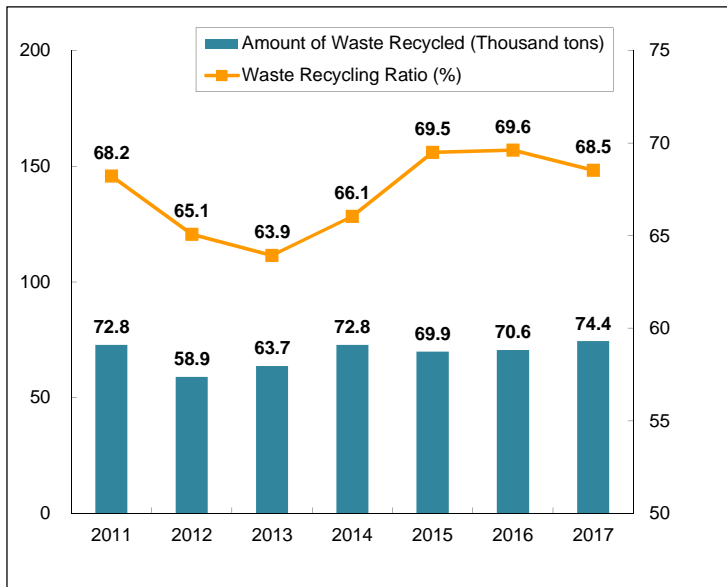
SOx



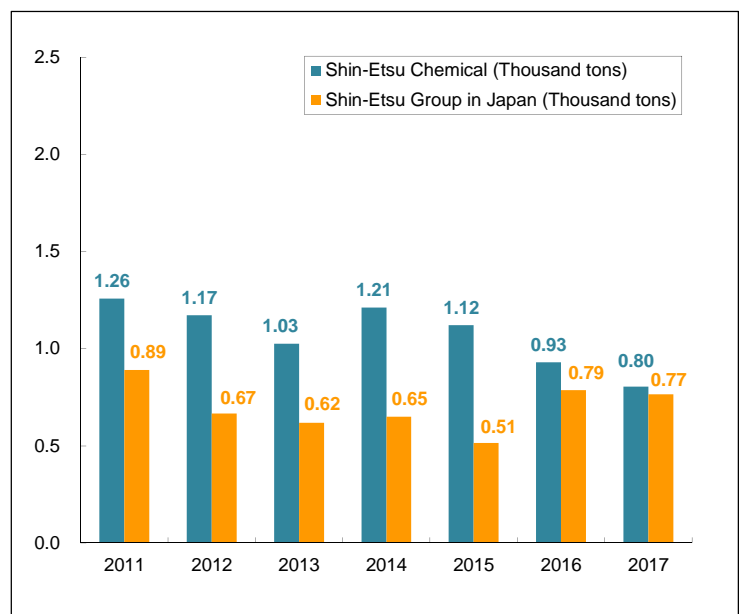
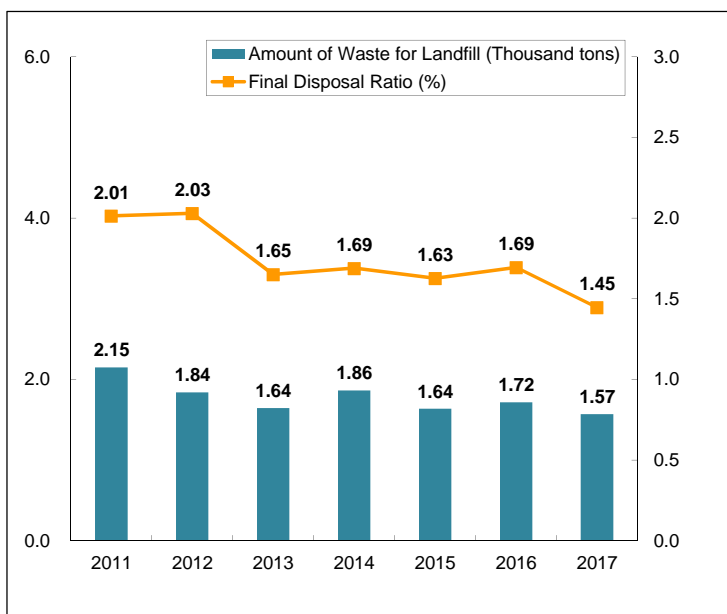
Amount of Waste Generated



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	2011	2012	2013	2014	2015	2016	2017
Sluge	tons	52,098	41,124	29,219	31,695	41,002	41,462	45,503
Waste Oil	tons	24,259	22,822	23,829	24,499	13,263	17,183	17,754
Waste Acid	tons	11,698	7,197	9,834	8,740	5,417	4,666	5,028
Waste Alkaline	tons	3,037	4,254	21,210	28,548	24,925	21,546	22,763
Waste Plastic	tons	3,849	6,371	7,916	8,023	7,878	7,808	7,621
Waste Paper	tons	1,793	1,956	2,018	2,115	1,807	2,102	2,118
Waste Wood	tons	691	692	734	702	649	698	897
Metal Scraps	tons	3,983	3,686	3,622	4,641	4,495	4,496	5,257
Glassl Scraps	tons	993	845	833	754	767	982	1,152
Others	tons	4,313	1,604	429	431	338	390	473
Total	tons	106,715	90,551	99,644	110,148	100,540	101,333	108,567

Amount of Waste Recycled

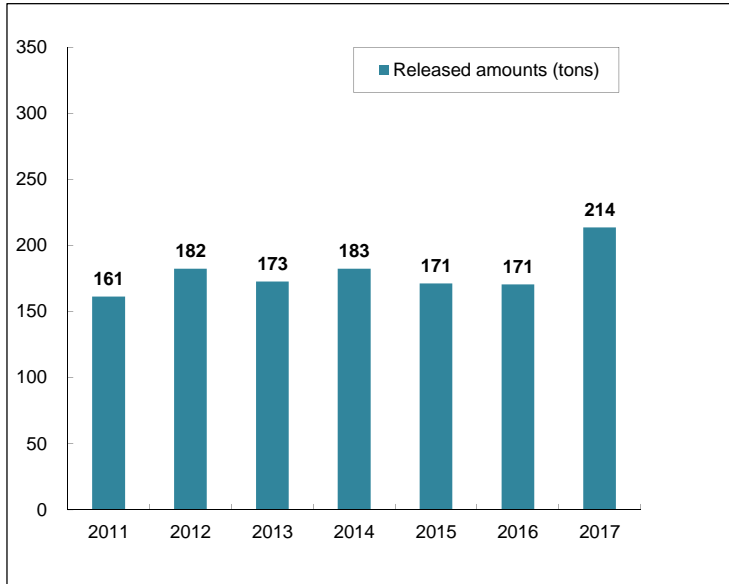
Item	Unit	2011	2012	2013	2014	2015	2016	2017
Sluge	tons	39,470	29,293	15,672	17,658	20,917	25,000	28,353
Waste Oil	tons	7,215	6,615	5,636	6,029	6,355	7,514	5,401
Waste Acid	tons	10,966	6,699	8,550	7,447	4,371	3,408	4,017
Waste Alkaline	tons	2,297	3,212	20,168	26,912	23,882	20,047	21,128
Waste Plastic	tons	2,696	5,733	7,280	7,394	7,417	7,305	7,114
Waste Paper	tons	917	1,266	1,405	1,506	1,321	1,419	1,633
Waste Wood	tons	404	536	606	575	503	554	586
Metal Scraps	tons	3,963	3,668	3,572	4,569	4,439	4,393	5,084
Glassl Scraps	tons	667	561	589	477	513	720	887
Others	tons	4,201	1,340	227	187	162	200	207
Total	tons	72,796	58,923	63,704	72,753	69,880	70,560	74,410

Amount of Waste for Landfill

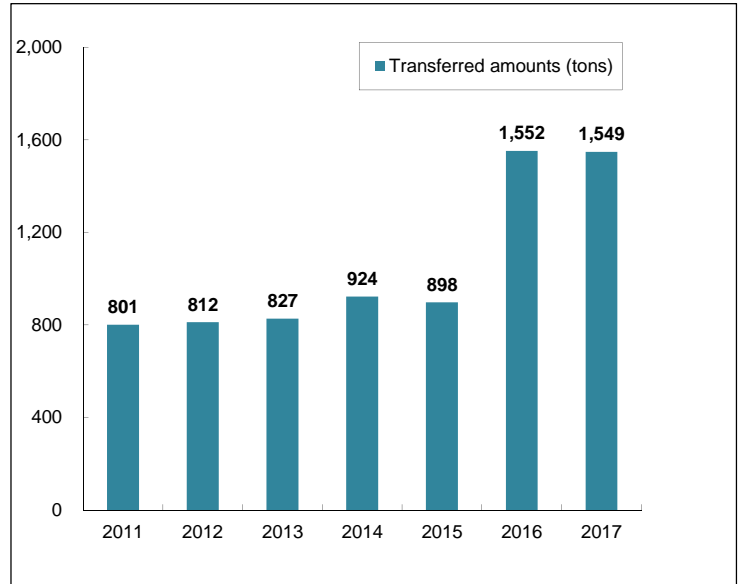
Item	Unit	2011	2012	2013	2014	2015	2016	2017
Sluge	tons	1,266	1,110	1,000	1,165	1,119	1,163	1,077
Waste Oil	tons	80	22	19	19	17	18	18
Waste Acid	tons	58	18	16	15	15	16	11
Waste Alkaline	tons	43	93	80	66	32	53	33
Waste Plastic	tons	242	169	170	188	154	135	103
Waste Paper	tons	88	94	59	49	20	32	28
Waste Wood	tons	5	4	3	4	2	2	1
Metal Scraps	tons	4	2	7	2	4	11	13
Glassl Scraps	tons	273	254	241	254	238	242	247
Others	tons	91	73	50	101	35	45	39
Total	tons	2,149	1,839	1,645	1,861	1,636	1,717	1,570

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

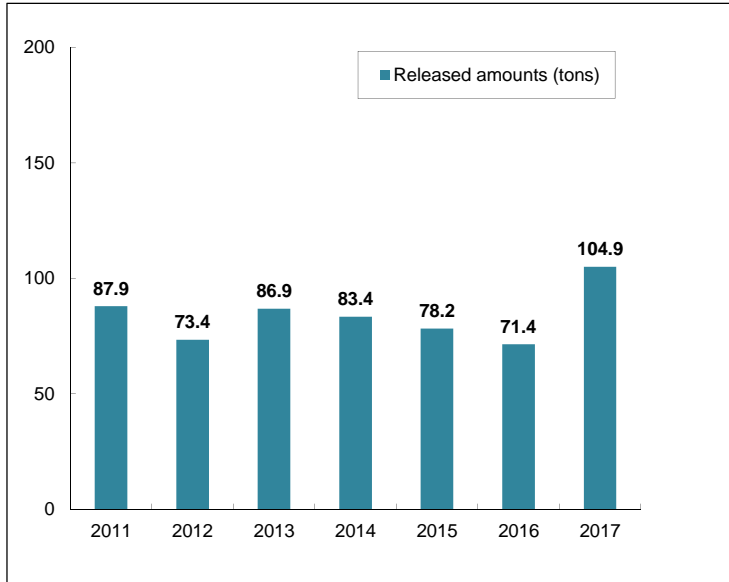
PRTR System Total Released Amounts



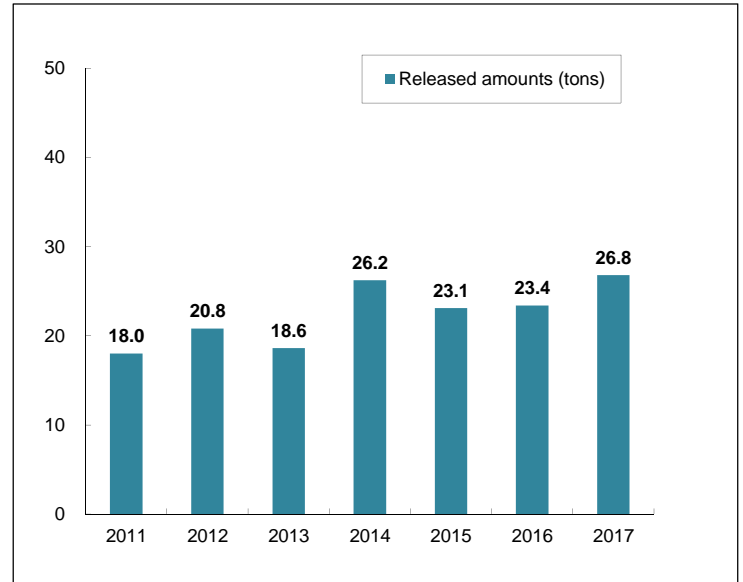
PRTR System Total Transferred Amounts



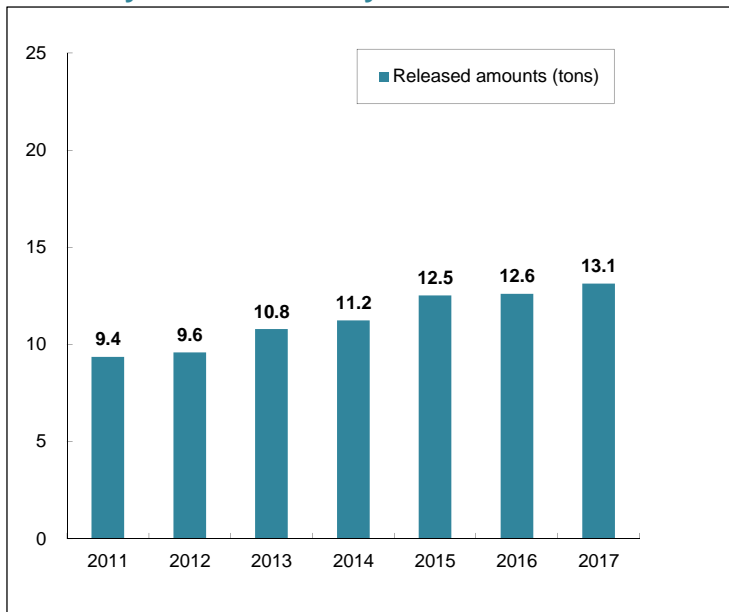
PRTR System Chloromethane Released Amounts



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		2017	2016	2015	2014	2013	2012
U p s t r e a m C h a i o f S u p p l y	1. Purchased Goods and Services	3,121	2,545	2,834	2,813	2,301	2,270
	2. Capital Goods	481	398	368	300	243	196
	3. Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	478	445	420	415	406	403
	4. Upstream Transportation and Distribution *Transport of products purchased *Export of products (freight was paid by Shin- Etsu Group)	1,008	671	700	775	686	232
	5. Waste Generated in Operations	72	61	52	88	80	79.5
	6. Business Travel	10	11	13	11	10	8.7
	7. Employee Commuting	22	24	22	22	20	18.3
	8. Upstream Leased Assets ¹	–	–	–	–	–	0.283
D o w n s t r e a m S u p p l y C h a i o f	9. Downstream Transportation and Distribution ² *Export of products (freight was paid by customers)	132	220	–	–	–	354
	10. Processing of Sold Products	6,734	5,818	–	–	–	–
	11. Use of Sold Products	–	–	–	–	–	–
	12. End-of-life Treatment of Sold Products	4,696	4,610	–	–	–	–
	13. Downstream Leased Assets	–	–	–	–	–	–
	14. Franchises	–	–	–	–	–	–
	15. Investments	–	–	–	–	–	–
Total		16,754	14,803	4,409	4,426	3,745	3,562

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.

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.
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.
Yamagata Shin-Etsu Quartz Co., Ltd.
Fukui Shin-Etsu Quartz Co., Ltd.
Shinmujiko Co., Ltd.
Others (20 companies)

Overseas
Shintech Inc.
Shin-Etsu (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 (24 companies)