

## 4.01 Material Flow in Japan

(Unit: million t)

	Entrance					Exit							Recycling	
	Import volume		Domestic resource amount	Hydrate, etc. (※)	Export volume	Amount of net addition to stocks	Emission of energy consumption and industrial process	Amount food consumption	Amount of fertilizer	Generated amount of waste				Recycled and reused amount
	Products	Resources								To utilize for farming	To reduce volume to dispose	Final disposal		
1990	0.41	6.61	14.79	3.01	0.77	14.16	4.55	1.04	0.17	0.96	2.07	1.09	1.75	
1991	0.44	6.67	14.29	2.99	0.85	13.51	4.68	1.02	0.17	0.95	2.13	1.09	1.71	
1992	0.37	6.62	13.36	3.05	0.95	12.41	4.66	1.05	0.17	0.95	2.14	1.07	1.77	
1993	0.39	6.63	12.90	3.05	1.05	12.00	4.61	0.98	0.17	0.95	2.19	1.02	1.70	
1994	0.43	6.96	12.79	3.13	1.09	11.98	4.81	1.07	0.17	0.95	2.28	0.96	1.80	
1995	0.49	7.09	12.53	3.10	1.10	12.00	4.88	1.03	0.17	0.92	2.30	0.82	1.93	
1996	0.47	7.12	12.65	3.16	1.06	12.14	4.93	1.00	0.16	0.91	2.39	0.81	1.96	
1997	0.48	7.29	11.90	3.13	1.17	11.37	4.93	1.02	0.16	0.88	2.44	0.81	1.92	
1998	0.42	6.91	10.89	3.04	1.18	10.26	4.73	0.96	0.16	0.86	2.40	0.70	1.88	
1999	0.43	7.08	10.78	2.99	1.22	10.25	4.80	0.97	0.15	0.86	2.40	0.62	1.95	
2000	0.48	7.52	11.25	2.99	1.20	11.10	5.00	0.97	0.16	0.85	2.41	0.56	2.13	
2001	0.46	7.22	11.71	2.96	1.24	11.33	4.94	0.94	0.15	0.85	2.39	0.52	2.07	
2002	0.46	7.34	10.90	2.92	1.38	10.53	4.90	0.93	0.15	0.86	2.37	0.48	2.12	
2003	0.49	7.48	9.67	2.92	1.39	9.52	4.96	0.93	0.15	0.80	2.42	0.38	2.23	
2004	0.53	7.65	8.91	2.91	1.50	8.77	5.04	0.94	0.15	0.82	2.43	0.34	2.28	
2005	0.56	7.59	8.31	2.89	1.59	8.15	4.98	0.95	0.16	0.83	2.38	0.31	2.29	
2006	0.57	7.56	7.78	2.90	1.70	7.57	4.94	0.92	0.17	0.83	2.41	0.28	2.33	
2007	0.57	7.68	7.33	2.89	1.78	7.06	5.10	0.91	0.18	0.83	2.37	0.27	2.44	
2008	0.57	7.52	6.83	2.77	1.81	6.59	4.87	0.91	0.18	0.86	2.25	0.22	2.45	
2009	0.45	6.58	6.04	2.73	1.67	5.37	4.43	0.87	0.15	0.89	2.23	0.19	2.29	
2010	0.55	7.27	5.82	2.67	1.84	5.43	4.8	0.88	0.14	0.83	2.19	0.19	2.46	
2011	0.60	7.21	5.52	2.62	1.75	5.11	4.86	0.88	0.14	0.82	2.20	0.17	2.38	
2012	0.60	7.41	5.61	2.60	1.79	5.29	5.04	0.86	0.14	0.82	2.09	0.18	2.44	
2013	0.59	7.57	5.88	2.58	1.82	5.15	5.53	0.85	0.13	0.81	2.18	0.16	2.69	

※ It is the collective input (mining, construction, sludge from a water supply industry and mining slag) with waste and hydrous (sludge, livestock manure, sewage, waste acid, waste alkali) and sand due to economic activity.

Source: Compiled from materials of Waste Management and Recycling Department, Minister's Secretariat, MOE, Government of Japan

4.02 Changes in Material Flow Indicators in Japan

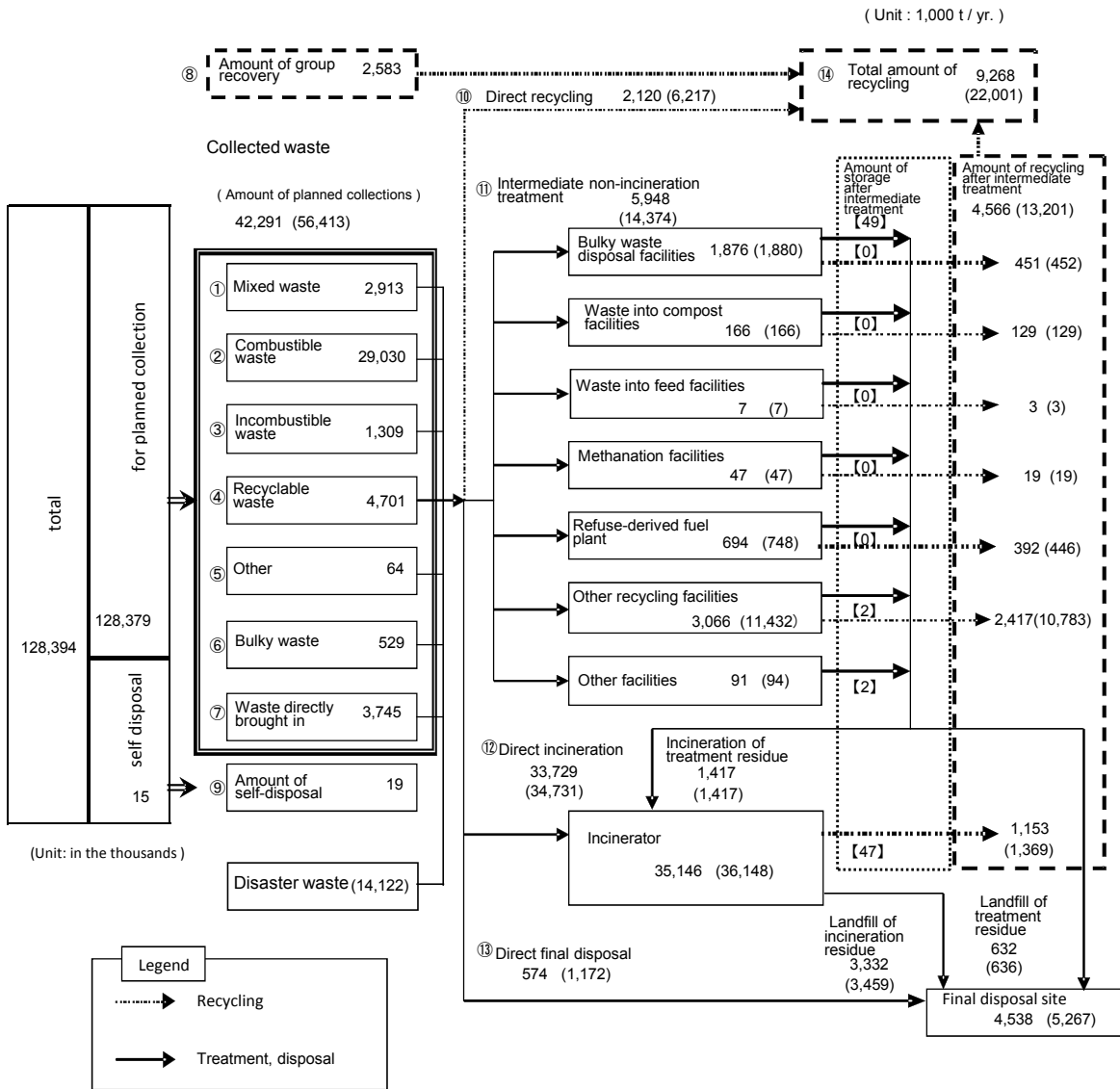
		Positioning of indicators under The Basic Environment Plan																																		
Main indicators for setting goals	Sub-indicators for setting goals	Various indicators for a monitoring purpose																																		
		Greenhouse gas emissions from the waste sector	Total Material Requirements (TMRF) related to the imported materials resources	Import volume of recyclable resources	Export volume of recyclable resources	Other	Medical service, health, social security and nursing care	Transportation	Electricity, gas and water supply	Other construction	Public construction	Other manufacturing	Machinery	Metal	Ceramic, stone and clay	Petroleum and coal products	Chemical products	Paper, printing and publishing	Timber and furniture	Textile products	Food, beverage, feed, fertilizer, and tobacco	Mining	Agriculture, forestry and fisheries	Resource productivity by industrial sector (※)	Resource productivity of manufacturing	Business resource input rate	Resource productivity of fossil resources	Resource productivity that underwent temporary equivalent transformation	Greenhouse gas emissions from the waste sector	Resource productivity without non-metallic mineral waste input	Final disposal volume	Recycling rate	Resource productivity			
Indicators	Unit	million tCO2	million t	million t	million t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t	10000 JPV/t			
1990				1.8	4.9																															
1995	22.8	8.7	82.0	54.3	32.3	17.3	97.7	5.6	44.7																											
1996	23.3	8.8	81.0	55.9	32.3	17.3	99.0	5.4																												
1997	24.0	8.9	81.0	54.9	31.7	17.3	98.0	5.6																												
1998	25.5	9.4	70.0	57.1	32.1	17.3	100.8	5.8																												
1999	25.6	9.6	62.0	56.4	33.5	17.3	98.8	5.7																												
2000	24.8	10.0	56.0	54.9	35.8	18.3	96.5	5.4	45.4																											
2001	24.5	9.6	52.0	56.5	35.5	17.3	98.8	5.2																												
2002	25.7	10.2	48.0	56.5	36.4	17.3	97.8	5.3																												
2003	27.8	11.2	38.0	57.0	38.3	17.3	97.7	5.4																												
2004	29.1	11.8	34.0	56.3	38.8	17.3	96.6	5.7																												
2005	30.8	12.2	31.0	57.6	39.5	21.5	98.8	5.9	47.5																											
2006	32.4	12.8	28.0	58.9	39.8	21.5	101.1	6.0																												
2007	33.7	13.5	27.0	58.8	41.4	21.5	100.4	6.2																												
2008	33.9	14.1	22.0	57.6	42.4	21.1	99.2	6.5	41.0																											
2009	37.9	14.9	18.8	64.0	40.9	24.4	106.8	7.1	50.4																											
2010	37.6	15.3	19.2	60.4	43.4	23.8	102.9	6.6	46.6																											
2011	38.6	15.2	17.4	60.8	42.7	23.6	102.9	6.7	46.5																											
2012	38.2	15.2	17.9	60.2	44.1	23.7	100.8	6.5	46.5																											
2013	37.8	16.1	16.3	60.4	46.1	23.7	100.5	6.2																												

Notes:

- Indicators are the same as the material flow indicators in the Third Fundamental Plan for Establishing a Sound Material-Cycle Society.
- To estimate resource productivity by industrial sector, 1995-2000-2005 linked input-output table compiled by Ministry of Internal Affairs and Communications and extended input-output table and simple extended input-output table compiled by Ministry of Economy, Trade and Industry were used. Each table adopts the 2005 standard. Also, note that the estimation gives an effective overview of trends, but cannot do so for inter-sectorial comparison.
- 1990 data and 2000 data remain as those years were used for comparison when indicators in the First Fundamental Plan for establishing a sound material-recycle society were set.

Source: Article of Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment

**4.03 Waste Disposal Flow Sheet (Actual FY2013)**



- ※ Figures in ( ) indicate actual in the previous year.
- Collected waste = ① + ② + ③ + ④ + ⑤ + ⑥ = 38,546 thousand tons
- Collected waste + Waste directly brought in = ① + ② + ③ + ④ + ⑤ + ⑥ + ⑦ = 42,291 thousand tons
- Total emissions of waste = ① + ② + ③ + ④ + ⑤ + ⑥ + ⑦ + ⑧ = 44,874 thousand tons
- Generation per person per day = (① + ② + ③ + ④ + ⑤ + ⑥ + ⑦ + ⑧) / total population / 365 = 958 g/person/day
- Total amount of waste disposal = ⑩ + ⑪ + ⑫ + ⑬ = 42,372 thousand tons
- Total amount of recycling = ⑭ = 9,268 thousand tons
- Recycling rate = ⑭ / (⑩ + ⑪ + ⑫ + ⑬ + ⑭) = 20.6%
- Reduction amount of intermediate treatment = (⑩ + ⑪) - amount of recycling after intermediate treatment - Landfill residue = 31,148 thousand tons

Source : Compiled from "Disposal of Waste in Japan" (FY2013 version ) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, Government of Japan

## 4.04 Trends in total amount of waste generated

(Unit : 1,000 t / year)

	Household waste	Business-related waste	Total amount of waste generated	Scheduled pickup	Carried-in by individual	Collected in groups	Total amount of waste generated
1971	—	—	—	24,569	8,333	(5,929)	38,831
1972	—	—	—	27,574	9,098	(5,918)	42,590
1973	—	—	—	28,852	9,923	(5,842)	44,617
1974	—	—	—	26,526	9,330	(4,209)	40,065
1975	—	—	—	27,916	10,262	(3,987)	42,165
1976	—	—	—	28,347	8,728	(3,556)	40,631
1977	—	—	—	30,077	8,574	(2,877)	41,528
1978	—	—	—	31,322	9,207	(2,663)	43,192
1979	—	—	—	32,574	9,574	(2,469)	44,617
1980	—	—	—	32,015	9,496	(2,425)	43,936
1981	—	—	—	33,145	7,081	(2,412)	42,638
1982	—	—	—	34,029	8,039	(2,409)	44,477
1983	—	—	—	33,866	6,752	(2,155)	42,773
1984	—	—	—	34,580	6,515	(1,944)	43,039
1985	—	—	—	35,383	6,147	564	42,094
1986	—	—	—	36,288	6,670	438	43,396
1987	—	—	—	38,164	6,767	568	45,499
1988	—	—	—	39,723	7,221	552	47,496
1989	—	—	—	41,602	7,054	693	49,348
1990	—	—	—	42,495	6,776	986	50,257
1991	—	—	—	42,074	7,646	1,412	51,132
1992	—	—	—	42,134	6,973	1,796	50,903
1993	—	—	—	42,997	6,350	1,920	51,267
1994	36,560	15,239	51,800	43,816	5,849	2,135	51,800
1995	36,984	15,240	52,224	44,100	5,806	2,318	52,224
1996	37,153	15,756	52,908	44,516	5,922	2,470	52,908
1997	37,126	15,972	53,098	44,872	5,711	2,515	53,098
1998	35,994	17,612	53,606	44,771	6,313	2,521	53,606
1999	36,220	17,478	53,698	45,736	5,359	2,604	53,698
2000	36,844	17,990	54,834	46,695	5,373	2,765	54,834
2001	37,381	17,300	54,681	46,528	5,316	2,837	54,681
2002	37,118	17,081	54,199	46,202	5,190	2,807	54,199
2003	37,321	16,950	54,271	46,044	5,398	2,829	54,271
2004	36,838	16,538	53,376	45,114	5,343	2,919	53,376
2005	36,471	16,249	52,720	44,633	5,090	2,996	52,720
2006	36,220	15,804	52,024	44,155	4,810	3,058	52,024
2007	35,724	15,092	50,816	42,629	5,138	3,049	50,816
2008	34,104	14,003	48,106	40,946	4,234	2,926	48,106
2009	32,974	13,278	46,252	39,616	3,845	2,792	46,252
2010	32,385	12,974	45,359	38,327	3,803	2,729	45,359
2011	32,385	13,045	45,430	39,025	3,724	2,682	45,430
2012	32,137	13,097	45,234	38,890	3,697	2,646	45,234
2013	31,757	13,117	44,874	38,546	3,745	2,583	44,874

## Notes:

- "Total waste generated" = "Scheduled pickup" + "Carried-in by individual" + "Collected in groups"
- A generated amount of general waste has been defined "Scheduled pickup" + "Carried-in by individuals" + "Collected in groups" under "The basic strategy of comprehensive and deliberate promotion on reduction of waste and other appropriate measures" based on "Waste Disposal Law".
- "Household Waste" includes "Waste collected in groups."
- The figures in parentheses in "Waste collected in groups" column show "self-treated waste."
- The amount of "self-treated waste" is the estimates by municipalities.

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan

## 4.05 Changes in generation of waste per person per day

(Unit: g per person / day)

	Total population (Unit: 1,000)	Household waste	Business-related waste	Total amount of waste generated	Scheduled pickup	Carried-in by individuals	Collected in groups	Total amount of waste generated
FY1971	10,454	—	—	—	644	218	155	1,018
1972	10,585	—	—	—	714	236	153	1,102
1973	10,820	—	—	—	731	251	148	1,130
1974	11,057	—	—	—	657	231	104	993
1975	11,238	—	—	—	681	250	97	1,028
1976	11,379	—	—	—	683	210	86	978
1977	11,428	—	—	—	721	206	69	996
1978	11,529	—	—	—	744	219	63	1,026
1979	11,664	—	—	—	765	225	58	1,048
1980	11,743	—	—	—	747	222	57	1,025
1981	11,814	—	—	—	769	164	56	989
1982	11,896	—	—	—	784	185	56	1,024
1983	11,973	—	—	—	775	155	49	979
1984	12,044	—	—	—	787	148	44	979
1985	12,127	—	—	—	799	139	13	951
1986	12,200	—	—	—	815	150	10	975
1987	12,219	—	—	—	853	151	13	1,017
1988	12,265	—	—	—	887	161	12	1,061
1989	12,314	—	—	—	926	157	15	1,098
1990	12,353	—	—	—	943	150	22	1,115
1991	12,415	—	—	—	926	168	31	1,125
1992	12,459	—	—	—	927	153	40	1,119
1993	12,496	—	—	—	943	139	42	1,124
1994	12,519	800	334	1,134	959	128	47	1,134
1995	12,535	806	332	1,138	961	127	51	1,138
1996	12,580	809	343	1,152	970	129	54	1,152
1997	12,614	806	347	1,153	975	124	55	1,153
1998	12,643	780	382	1,162	970	137	55	1,162
1999	12,654	782	377	1,159	988	116	56	1,159
2000	12,673	797	389	1,185	1,010	116	60	1,185
2001	12,701	806	373	1,180	1,004	115	61	1,180
2002	12,730	799	368	1,167	994	112	60	1,167
2003	12,751	800	363	1,163	987	116	61	1,163
2004	12,761	791	355	1,146	969	115	63	1,146
2005	12,771	782	349	1,131	958	109	64	1,131
2006	12,778	777	339	1,115	947	103	66	1,115
2007	12,749	766	323	1,089	914	110	65	1,089
2008	12,753	733	301	1,033	880	91	63	1,033
2009	12,743	709	285	994	852	83	60	994
2010	12,730	697	279	976	836	82	59	976
2011	12,715	696	280	976	839	80	58	977
2012	12,862	685	279	964	828	79	56	964
2013	12,839	678	280	958	823	80	55	958

## Notes:

- As for the population, the data are based on Basic Resident Register as of October 1st of each year, while some of them are the ones as of March 31.
- "Collected waste in groups" refers to "Self-treated Waste" until 1984.
- Waste generation per person per day = (Scheduled pickup + Carried-in by individuals + Collected in groups) / total population /365 (or 366)
- Waste generation per person per day = (Waste from life activities + Waste from business activities) /total population /365 (or 366)

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan

## 4.06 Waste Treatment by Prefecture

(Actual 2013)

	Total population thousand people	Population covered with scheduled waste pickup thousand people	Total waste generation						Waste generation per person / day (g/person/day)	Self-treatment thousand ton
			Scheduled pickup thousand tons	Carried-in by individuals thousand tons	Collected in groups thousand tons	Total thousand tons	Household waste (A) thousand tons	Business-related waste (B) thousand tons		
Hokkaido	5,460	5,454	1,605	265	149	2,019	1,408	611	1,013	1
Aomori	1,370	1,370	473	48	14	535	364	171	1,069	0
Iwate	1,312	1,312	391	38	23	453	309	143	945	0
Miyagi	2,327	2,327	762	65	38	865	600	265	1,018	0
Akita	1,072	1,072	353	34	5	392	264	128	1,002	1
Yamagata	1,151	1,151	322	32	32	387	277	111	921	1
Fukushima	1,964	1,964	658	89	29	777	564	214	1,084	0
Ibaraki	2,984	2,984	956	90	49	1,095	801	293	1,005	0
Tochigi	2,011	2,011	600	62	28	690	513	177	940	2
Gunma	2,022	2,022	640	91	43	775	579	196	1,050	0
Saitama	7,287	7,287	2,141	140	133	2,414	1,871	543	908	0
Chiba	6,249	6,249	1,906	133	141	2,180	1,589	591	956	0
Tokyo	13,195	13,195	4,137	145	291	4,572	3,464	1,108	949	0
Kanagawa	9,100	9,100	2,555	131	323	3,008	2,304	705	906	0
Niigata	2,357	2,357	777	78	38	894	616	278	1,039	0
Toyama	1,092	1,092	341	32	32	405	280	125	1,017	0
Ishikawa	1,164	1,164	370	42	10	422	272	150	994	0
Fukui	809	809	230	37	18	286	210	76	967	0
Yamanashi	862	862	271	28	12	310	224	86	987	0
Nagano	2,157	2,157	589	52	26	667	474	193	847	6
Gifu	2,055	2,055	574	66	56	696	505	191	928	2
Shizuoka	3,808	3,807	1,098	114	63	1,274	923	351	917	0
Aichi	7,494	7,494	2,179	204	189	2,572	1,951	621	940	0
Mie	1,833	1,833	569	65	23	657	475	181	982	0
Shiga	1,421	1,421	396	36	25	457	334	123	880	0
Kyoto	2,636	2,632	715	109	60	884	543	341	919	1
Osaka	8,877	8,877	2,905	165	230	3,300	1,944	1,356	1,018	0
Hyogo	5,652	5,652	1,668	165	177	2,011	1,367	643	975	0
Nara	1,404	1,404	398	48	24	471	325	145	918	0
Wakayama	1,013	1,013	283	89	11	383	268	115	1,035	0
Tottori	587	587	195	15	7	217	130	87	1,011	0
Shimane	712	712	213	31	2	247	173	73	949	0
Okayama	1,946	1,945	556	86	47	689	458	231	970	0
Hiroshima	2,877	2,877	849	74	24	947	609	338	902	0
Yamaguchi	1,444	1,444	441	98	15	554	377	177	1,051	0
Tokushima	783	783	253	12	9	274	207	67	959	1
Kagawa	1,011	1,011	314	12	4	330	232	98	895	0
Ehime	1,438	1,438	395	71	11	478	360	118	911	0
Kochi	755	755	231	27	1	260	190	69	943	0
Fukuoka	5,116	5,113	1,427	319	108	1,853	1,220	634	993	1
Saga	853	853	243	26	6	275	196	79	884	0
Nagasaki	1,420	1,420	404	73	21	498	339	158	960	0
Kumamoto	1,826	1,826	504	39	22	565	397	169	848	1
Oita	1,199	1,199	371	38	7	416	288	128	951	1
Miyazaki	1,143	1,143	352	49	2	404	271	133	969	0
Kagoshima	1,701	1,701	517	60	4	581	408	174	936	0
Okinawa	1,441	1,441	418	18	0	436	282	154	829	0
total	128,394	128,379	38,546	3,745	2,583	44,874	31,757	13,117	958	19

## Notes:

• Processing rate of reduction = (direct incineration+ bulk-waste treatment facilities+ waste composting facilities+feedstuff-production facilities + methanation facilities + fuel-production plant + other recycling facilities + other facilities + direct recycling ) ÷ amount of waste treatment × 100

• Household waste includes the amount of group recovery.

Source: Compiled from "Waste Treatment in Japan" (an annual report ) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan

## 4.06 Waste Treatment by Prefecture

(Actual 2013)

	Amount of Waste disposal													Amount of Final disposal						
	Direct incineration	Direct final disposal	Intermediate non-incineration reprocesses									Direct recycling	Total	Rate of weight-reduction treatment (%)	Amount recycled after intermediate reprocesses	Recycling rate (%)	Direct final disposal	Incineration residue	Non-incineration reprocesses residue	Total
				Bulky waste disposal facility	Recycling facilities	Feedstuff-production facilities	Methanation facilities	Fuel-production plants	Recycling facilities	Other facilities	thousand tons									
Hokkaido	1,137	199	502	134	27	0	19	28	270	24	31	1,870	89.3	305	24.0	199	129	81	409	
Aomori	420	28	63	22	0	0	0	0	40	0	10	521	94.7	49	13.7	28	46	10	83	
Iwate	357	2	52	18	4	0	0	0	29	0	19	429	99.5	42	18.5	2	41	7	50	
Miyagi	661	7	151	57	1	0	0	0	93	0	8	826	99.2	100	16.8	7	100	9	116	
Akita	317	4	44	16	3	0	0	0	25	0	21	386	98.9	40	16.9	4	27	7	38	
Yamagata	305	2	40	15	3	0	0	0	21	1	8	355	99.4	23	16.2	2	34	9	45	
Fukushima	640	4	75	40	0	0	0	0	35	0	31	750	99.5	48	13.8	4	63	16	83	
Ibaraki	793	1	169	67	1	0	0	42	58	1	84	1,046	99.9	108	22.0	1	84	12	96	
Tochigi	538	0	90	34	2	0	0	3	51	0	32	659	100.0	61	17.5	0	45	15	60	
Gunma	625	2	77	48	1	0	0	7	21	0	28	732	99.7	50	15.6	2	73	14	89	
Saitama	1,828	1	286	92	1	0	0	2	186	5	163	2,278	99.9	305	24.9	1	105	25	131	
Chiba	1,622	5	279	120	8	0	0	0	143	8	136	2,042	99.8	237	23.5	5	132	26	163	
Tokyo	3,427	7	411	191	3	0	0	0	216	2	457	4,301	99.8	320	23.2	7	272	79	359	
Kanagawa	2,191	10	362	83	18	0	0	3	253	6	122	2,685	99.6	317	25.3	10	245	11	265	
Niigata	635	10	136	30	6	0	20	0	79	0	74	855	98.8	95	23.2	10	61	16	88	
Toyama	302	3	56	23	11	2	1	7	11	0	13	374	99.2	45	22.2	3	29	5	37	
Ishikawa	249	14	128	2	1	0	0	74	48	3	21	413	96.6	29	14.3	14	34	10	58	
Fukui	213	1	47	30	0	0	0	0	17	0	7	269	99.6	23	17.0	1	24	4	29	
Yamanashi	249	0	41	20	1	0	0	0	19	1	11	301	99.8	29	16.6	0	25	6	31	
Nagano	485	7	65	16	3	0	0	0	44	2	84	641	99.0	55	24.7	7	43	9	58	
Gifu	525	12	78	25	0	0	0	15	37	1	25	640	98.2	56	19.7	12	42	5	58	
Shizuoka	1,005	9	145	43	2	0	0	30	67	3	54	1,213	99.3	151	21.0	9	60	10	80	
Aichi	1,927	20	310	116	11	0	0	1	181	2	126	2,383	99.2	269	22.7	20	182	13	215	
Mie	413	27	153	21	1	0	0	88	42	1	41	634	95.7	134	30.1	27	10	13	50	
Shiga	338	8	61	28	2	0	0	10	21	0	25	431	98.2	37	19.1	8	37	6	50	
Kyoto	674	16	114	53	0	4	0	10	46	0	20	823	98.1	47	14.4	16	97	14	127	
Osaka	2,773	2	263	115	0	0	0	0	148	0	31	3,069	99.9	176	13.2	2	413	8	423	
Hyogo	1,550	29	205	96	10	0	0	12	85	2	49	1,832	98.4	110	16.7	29	204	26	258	
Nara	379	2	53	23	0	0	0	7	21	2	16	450	99.6	22	13.1	2	51	7	60	
Wakayama	313	4	47	7	0	0	0	1	34	4	5	369	98.8	35	13.6	4	41	6	52	
Tottori	153	0	34	1	6	0	0	2	24	0	23	210	99.9	27	26.1	0	14	5	18	
Shimane	177	5	53	12	2	0	0	11	27	0	10	244	98.1	50	25.0	5	10	6	21	
Okayama	558	13	49	15	0	0	0	0	31	3	22	642	98.0	118	27.1	13	22	7	42	
Hiroshima	607	29	272	47	1	0	0	133	92	0	15	922	96.9	170	22.1	29	69	21	119	
Yamaguchi	410	9	84	21	0	0	0	15	48	0	36	538	98.3	113	29.5	9	27	10	46	
Tokushima	211	1	37	18	0	0	0	1	19	0	16	265	99.8	21	16.8	1	22	11	33	
Kagawa	244	8	59	12	0	0	0	2	45	0	15	325	97.7	47	20.1	8	23	6	36	
Ehime	355	11	82	26	1	0	0	6	46	3	18	467	97.6	59	18.4	11	28	11	51	
Kochi	211	4	35	3	0	0	0	10	22	0	8	259	98.5	49	22.4	4	6	2	12	
Fukuoka	1,420	19	276	63	4	0	1	127	81	0	91	1,805	99.0	209	21.3	19	150	24	193	
Saga	224	0	38	8	2	0	0	0	28	0	6	269	100.0	39	18.6	0	13	4	17	
Nagasaki	406	15	50	5	1	0	0	1	42	0	6	477	96.9	53	16.0	15	30	3	48	
Kumamoto	420	3	108	13	4	0	0	39	51	0	14	545	99.5	75	19.7	3	46	9	57	
Oita	328	4	66	9	1	0	4	5	46	1	12	410	99.1	65	20.3	4	21	11	36	
Miyazaki	289	2	73	4	5	0	0	1	50	14	39	403	99.4	36	19.0	2	33	15	51	
Kagoshima	452	15	79	24	14	0	0	0	39	0	31	576	97.4	59	16.2	15	46	9	70	
Okinawa	375	3	49	10	3	0	0	0	35	1	8	436	99.3	58	15.3	3	21	3	26	
total	33,729	574	5,948	1,876	166	7	47	694	3,066	91	2,120	42,372	98.6	4,566	20.6	574	3,332	632	4,538	

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan

## 4.07 Development of Waste Incineration Plants

## Changes in the number of waste incineration plants by furnace type and the operating capacities

Type	Full continuous		Semi-continuous		Mechanized batch		Fixed batch		Total	
	# of Facilities	Operating capacity (t/day)	# of Facilities	Operating capacity (t/day)	# of Facilities	Operating capacity (t/day)	# of Facilities	Operating capacity (t/day)	# of Facilities	Operating capacity (t/day)
FY1977	326	85,354	51	4,270	1,088	31,636	537	7,916	2,002	129,176
1978	344	94,964	79	5,700	1,086	31,050	516	7,053	2,025	138,767
1979	341	96,396	113	8,862	1,063	32,504	497	6,811	1,984	144,573
1980	357	98,914	142	10,492	1,085	31,379	415	6,109	1,999	146,894
1981	370	101,399	157	11,423	1,059	30,048	397	5,510	1,983	148,380
1982	360	103,479	171	13,538	1,043	29,579	368	4,757	1,942	151,353
1983	361	105,152	183	14,346	1,035	29,601	336	4,204	1,915	153,303
1984	388	110,073	198	15,448	1,014	28,716	288	3,236	1,888	157,473
1985	403	113,453	207	15,747	1,000	28,260	290	3,393	1,900	160,853
1986	406	114,346	220	16,937	978	27,041	295	3,075	1,899	161,399
1987	409	116,201	230	17,577	970	27,133	284	2,737	1,893	163,648
1988	397	115,756	246	19,102	959	27,251	268	2,630	1,870	164,739
1989	425	120,130	281	21,010	963	24,804	272	2,540	1,941	168,484
1990	426	123,616	293	22,680	905	24,330	249	2,281	1,873	172,907
1991	435	127,512	324	25,188	875	22,748	207	2,129	1,841	177,577
1992	438	133,294	335	26,329	877	22,889	214	1,549	1,864	184,061
1993	433	128,911	324	25,344	866	22,418	231	1,434	1,854	178,106
1994	440	134,402	365	28,674	844	21,503	238	1,538	1,887	186,117
1995	445	137,072	379	30,438	813	20,009	243	1,326	1,880	188,844
1996	449	140,134	383	30,664	783	19,172	257	1,269	1,872	191,239
1997	460	142,011	377	30,630	759	18,423	247	1,180	1,843	192,243
1998	474	144,184	378	30,297	753	16,935	164	1,202	1,769	192,618
1999	498	149,327	365	28,794	705	15,799	149	1,204	1,717	195,125
2000	534	156,934	362	28,337	672	15,006	147	1,280	1,715	201,557
2001	549	159,252	359	28,167	629	14,137	143	1,177	1,680	202,733
2002	579	160,591	321	25,262	513	11,731	77	1,291	1,490	198,874
2003	588	159,537	300	23,573	447	10,289	61	458	1,396	193,856
2004	612	163,615	286	22,123	422	9,806	54	408	1,374	195,952
2005	618	160,186	269	19,961	380	8,899	51	412	1,318	189,458
2006	627	162,149	256	18,849	370	8,606	48	412	1,301	190,015
2007	642	162,733	245	17,931	353	8,151	45	329	1,285	189,144
2008	642	161,305	245	17,533	337	8,145	45	320	1,269	187,303
2009	644	162,024	235	16,824	317	7,035	47	323	1,243	186,205
2010	648	161,832	228	16,501	305	6,728	40	312	1,221	185,372
2011	658	163,574	221	15,889	296	6,574	36	219	1,211	186,255
2012	655	162,334	218	15,556	281	6,316	35	220	1,189	184,426
2013	652	161,044	220	15,518	267	5,919	33	202	1,172	182,683

## Notes:

- The figures in the table above include facilities of which construction started in the indicated fiscal year and of which operations are suspended temporarily, but abolished facilities
- Figures for mechanized batch is calculated by an equation ("Batch" - "Fixed batch").

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE

## Power generation by waste incineration plants

Classification	# of Generation plants	Total Generation capacity (MW)	Generation efficiency (%)	Total generation amount (GWh)
FY2001	236	1,246	10.43	5,538
2002	263	1,365	10.06	6,366
2003	271	1,441	10.23	7,100
2004	281	1,491	10.50	7,129
2005	286	1,512	10.70	7,090
2006	293	1,590	10.93	7,190
2007	298	1,604	11.14	7,132
2008	300	1,615	11.19	6,935
2009	304	1,673	11.29	6,876
2010	306	1,700	11.61	7,210
2011	314	1,740	11.73	7,487
2012	318	1,754	11.92	7,747
2013	328	1,770	12.03	7,966

## Notes:

- The figures in the table above include facilities of which construction started in the indicated fiscal year and of which operations are suspended temporarily, but abolished facilities are excluded.
- Generation efficiency is calculated by the following equation.  
Generation efficiency [%] =  $860[\text{kcal/kWh}] \times \text{total generation amount} [\text{kWh/year}] / 1,000[\text{kg/t}] \times \text{amount of Waste incineration} [\text{t/year}] \times \text{amount of Waste heat generation} [\text{kcal/kg}]$
- In this survey, the specifications and the publicized values for the standard quality of waste have been inquired about. However, it is calculated by actual values in the case there are no specifications, etc.

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan



## 4.08 Development of Waste Incineration Plants by Prefecture

(Actual 2013)

type	Full continuous		Semi-continuous		Mechanized batch		Fixed batch		Total	
	# of Facilities	Operating capacity (t / day)	# of Facilities	Operating capacity (t / day)	# of Facilities	Operating capacity (t / day)	# of Facilities	Operating capacity (t / day)	# of Facilities	Operating capacity (t / day)
Hokkaido	24	5,551	11	433	25	344	6	41	66	6,369
Aomori	12	2,243	5	251	0	0	0	0	17	2,494
Iwate	13	2,136	1	40	4	113	1	15	19	2,304
Miyagi	11	2,897	6	481	2	60	0	0	19	3,438
Akita	7	1,088	8	508	1	20	0	0	16	1,616
Yamagata	9	1,391	0	0	0	0	0	0	9	1,391
Fukushima	12	2,249	9	700	3	95	2	11	26	3,055
Ibaraki	15	3,201	11	1,180	4	140	0	0	30	4,521
Tochigi	12	2,273	7	572	0	0	0	0	19	2,845
Gunma	15	2,960	2	120	7	230	0	0	24	3,310
Saitama	44	9,262	8	812	2	70	0	0	54	10,144
Chiba	35	7,781	12	952	1	48	0	0	48	8,780
Tokyo	41	17,091	0	0	9	92	2	7	52	17,190
Kanagawa	27	12,792	6	329	2	50	0	0	35	13,171
Niigata	17	2,503	16	1,208	2	41	0	0	35	3,752
Toyama	4	1,473	3	294	0	0	0	0	7	1,767
Ishikawa	5	1,150	2	200	3	89	0	0	10	1,439
Fukui	5	823	4	306	2	44	0	0	11	1,173
Yamanashi	5	1,064	0	0	6	215	0	0	11	1,279
Nagano	9	1,627	6	560	9	278	1	2	25	2,467
Gifu	17	2,487	3	125	9	139	1	3	30	2,753
Shizuoka	24	5,413	7	347	5	124	2	21	38	5,905
Aichi	38	10,575	2	150	2	25	0	0	42	10,750
Mie	10	1,865	0	0	15	388	1	16	26	2,269
Shiga	9	1,105	3	400	2	118	0	0	14	1,623
Kyoto	13	3,331	5	291	4	105	0	0	22	3,727
Osaka	43	14,565	1	50	1	46	0	0	45	14,661
Hyogo	28	8,355	10	682	6	157	0	0	44	9,194
Nara	9	1,859	6	308	11	233	0	0	26	2,400
Wakayama	8	1,413	4	254	9	165	0	0	21	1,832
Tottori	4	774	1	60	9	103	0	0	14	937
Shimane	5	731	1	52	5	66	1	10	12	858
Okayama	9	2,190	4	389	15	359	0	0	28	2,938
Hiroshima	10	2,520	7	544	7	164	0	0	24	3,228
Yamaguchi	8	1,693	3	200	1	22	1	3	13	1,918
Tokushima	6	776	4	222	6	178	3	21	19	1,197
Kagawa	5	1,200	2	110	0	0	0	0	7	1,310
Ehime	9	1,765	3	139	10	171	3	3	25	2,078
Kochi	5	1,100	0	0	4	89	2	34	11	1,223
Fukuoka	17	6,610	5	374	3	134	1	0	26	7,118
Saga	5	877	3	242	3	61	1	1	12	1,181
Nagasaki	11	1,735	6	421	13	183	0	0	30	2,339
Kumamoto	8	1,571	4	306	8	293	1	2	21	2,172
Oita	4	1,170	5	348	5	102	0	0	14	1,620
Miyazaki	5	928	1	40	5	140	1	8	12	1,116
Kagoshima	13	1,592	8	303	12	221	3	3	36	2,118
Okinawa	7	1,293	5	216	15	206	0	0	27	1,715
Total	652	161,044	220	15,518	267	5,919	33	202	1,172	182,683

Notes:

- There excludes the shutdown facilities but includes the ones whose construction started in 2013 and the ones temporarily closed just for the current year.
- Figures for mechanized batch is calculated by an equation ("batch" - "Fixed batch").

Source : Compiled from "Waste Treatment in Japan (an annual report 2013)" by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, Ministry of the Environment

## 4.09 Development of Recycling Facilities

Changes in the number of recycling facilities and reprocessing capacities

type	Recycling facilities												Refuse-derived fuel plants		Other facilities		Total			
	Separation		Compress & Pack		Into compost		Into feed		Methanation		Others		Total		# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)		
	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)								
FY1981	--	--	--	--	(15)	(412)	--	--	--	--	--	--	15	412	--	--	15	412		
1982	--	--	--	--	(20)	(424)	--	--	--	--	--	--	20	424	--	--	20	424		
1983	--	--	--	--	(23)	(389)	--	--	--	--	--	--	23	389	--	--	23	389		
1984	--	--	--	--	(28)	(598)	--	--	--	--	--	--	28	598	--	--	28	598		
1985	--	--	--	--	(36)	(868)	--	--	--	--	--	--	36	868	--	--	36	868		
1986	--	--	--	--	(39)	(866)	--	--	--	--	--	--	39	866	--	--	39	866		
1987	--	--	--	--	(29)	(632)	--	--	--	--	--	--	29	632	--	--	29	632		
1988	--	--	--	--	(29)	(583)	--	--	--	--	--	--	29	583	--	--	29	583		
1989	--	--	--	--	(29)	(599)	--	--	--	--	--	--	29	599	--	--	29	599		
1990	--	--	--	--	(26)	(549)	--	--	--	--	--	--	26	549	--	--	26	549		
1991	--	--	--	--	(29)	(566)	--	--	--	--	--	--	29	566	--	--	29	566		
1992	--	--	--	--	(28)	(531)	--	--	--	--	--	--	28	531	--	--	28	531		
1993	--	--	--	--	(32)	(597)	--	--	--	--	--	--	490	597	5	246	27	327	554	9,741
1994	--	--	--	--	(31)	(588)	--	--	--	--	--	--	553	568	5	246	30	515	619	10,825
1995	--	--	--	--	(32)	(573)	--	--	--	--	--	--	565	573	8	307	49	697	654	11,502
1996	--	--	--	--	(34)	(596)	--	--	--	--	--	--	544	596	11	363	73	1711	662	13,355
1997	--	--	--	--	(32)	(615)	--	--	--	--	--	--	592	11,439	14	576	94	2,164	700	14,179
1998	--	--	--	--	(33)	(599)	--	--	--	--	--	--	753	14,526	23	936	17	293	793	15,755
1999	--	--	--	--	(38)	(603)	--	--	--	--	--	--	813	15,379	30	1,310	29	558	872	17,248
2000	--	--	--	--	(40)	(628)	--	--	--	--	--	--	882	16,488	32	1,513	35	685	949	18,686
2001	--	--	--	--	(45)	(682)	--	--	--	--	--	--	938	17,139	38	1,768	46	1,036	1,022	19,943
2002	--	--	--	--	(56)	(744)	--	--	--	--	--	--	1,005	18,209	47	2,764	60	1,591	1,112	22,564
2003	--	--	--	--	(59)	(759)	--	--	--	--	--	--	1,044	19,603	54	3,058	61	1,716	1,159	24,377
2004	--	--	--	--	(65)	(763)	--	--	--	--	--	--	1,081	19,646	57	3,532	67	1,714	1,205	24,892
2005	804	17,650	799	17,040	86	1,347	4	83	6	184	126	2,771	1,044	21,266	60	3,424	63	2,111	1,167	26,801
2006	841	20,226	828	17,214	94	1,335	2	37	8	233	135	3,038	1,085	23,652	65	3,466	68	2,258	1,218	29,375
2007	859	18,689	850	17,869	92	3,359	3	62	--	--	138	3,618	1,088	24,155	67	3,577	56	2,236	1,211	29,969
2008	873	19,097	862	18,252	98	3,447	3	214	--	--	140	3,463	1,106	24,699	67	3,425	57	2,313	1,230	30,437
2009	880	18,521	860	17,461	101	3,440	1	33	--	--	145	3,675	1,100	23,866	70	3,662	56	2,311	1,226	29,839
2010	877	18,463	855	17,338	102	3,511	1	33	--	--	140	3,477	1,088	23,613	69	3,617	56	2,434	1,213	29,664
2011	895	18,878	872	17,753	102	3,487	1	33	--	--	144	3,582	1,111	24,095	71	3,578	56	1,911	1,238	29,584
2012	865	18,557	847	17,562	97	3,455	1	33	--	--	138	3,477	1,077	23,804	72	3,668	54	1,823	1,203	29,295
2013	863	18,584	844	17,607	96	3,428	1	33	--	--	141	3,686	1,070	23,837	71	3,731	54	1,811	1,195	29,379

## Notes:

• The facilities in this chart are the ones that were built by the municipalities and the consortiums. It excludes the shutdown facilities but include the ones whose constructions started in indicated each fiscal years and the ones temporarily closed just for the indicated current year.

• "Recycling facilities" are facilities for sorting non-combustible waste, for compressing and packing waste (including the preconditioning facilities and the facilities located in the final disposal sites), for turning combustible waste and garbage into compost, and for processing into feedstuff, and the methanation facilities. "Bulk waste disposal facilities" and "Refuse-derived fuel plants" are not included in them.

• Before 1997, ① the facilities other than for sorting or recycling recyclable waste, ② the facilities not categorized as "Refuse-derived fuel plants" and the facilities categorized as both ① and ② were classified as "Others", but from the field survey in FY1998, the facilities to crush and reduce volume for landfill have been classified as "Others" regardless of the purpose whether or not to recycle waste.

• From FY2005, "Recycling facilities" have been classified as "Separation", "Compression & Packing", "Into compost", "Into feed", "Methanation" and "Others", and the "High speed composting facilities" is included in "Recycling facilities". The number in the parentheses under "Waste into compost" is solely the number of "High-speed composting facilities" and is included in the total facilities.

• The methanation facilities have been included in "Refuse-derived fuel plants" since FY2007.

Source: "Waste Treatment in Japan (an annual report)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.09 Development of Recycling Facilities

## Changes in number of bulky waste facility and operating capacities

type	Combination		Crushing		Compression		Total	
	# of Facilities	Operating capacities (t / day)	# of Facilities	Operating capacities (t / day)	# of Facilities	Operating capacities (t / day)	# of Facilities	Operating capacities (t / day)
FY1981							417	17,385
1982							440	17,279
1983							471	19,472
1984							494	20,291
1985							538	21,162
1986							541	22,693
1987							556	23,279
1988							594	24,041
1989							612	24,814
1990							638	25,724
1991							588	23,674
1992							610	24,462
1993							597	23,445
1994							632	25,050
1995							654	25,717
1996							670	26,281
1997	412	16,839	210	8,339	58	1,276	680	26,454
1998	429	17,201	203	8,728	54	1,071	686	27,000
1999	429	16,928	200	8,375	51	1,149	680	26,452
2000	441	17,181	201	8,201	53	1,226	695	26,608
2001	439	17,038	202	8,702	57	1,611	698	27,350
2002	436	16,695	210	8,804	50	1,331	696	26,830
2003	434	16,644	210	8,413	44	1,388	688	26,445
2004	426	16,435	225	9,023	42	1,045	693	26,503
2005	413	16,247	226	8,885	41	954	680	26,087
2006	391	15,410	251	9,303	39	1,076	681	25,789
2007	390	14,852	247	9,294	39	1,074	676	25,219
2008	376	13,918	245	9,746	41	1,118	662	24,782
2009	368	13,261	250	10,217	43	1,170	661	24,648
2010	368	13,694	247	9,781	38	1,025	653	24,500
2011	365	13,365	253	9,958	38	929	656	24,252
2012	354	12,985	270	10,543	36	867	660	24,395
2013	347	12,725	265	10,195	37	865	649	23,785

## Notes:

- "Bulky waste disposal facilities" are the ones to crush and compress into small pieces and also to look for the valuables out of the bulky waste.
- The facilities in this chart are the ones that were built by the municipalities and the consortiums. It excludes the shutdown facilities but include the ones whose constructions started in the indicated fiscal years and the ones temporarily closed just for the indicated year.
- "Crushing": The facilities to crush combustible bulky waste into small pieces for incineration
- "Compression": The facilities to crush and compress incombustible bulk waste into small pieces
- "Combination": The facilities to crush both combustible and non-combustible bulky waste

Source: "Waste Treatment in Japan (an annual report)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, Ministry of the Environment

## 4.10 Development of Recycling Facilities by Prefecture (FY2013)

(Actual FY2013)

	Recycling facilities		Refuse-derived fuel plants		Other facilities		Total		Storage facilities	
	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Reprocessing capacity (t/day)	# of Facilities	Area (m <sup>2</sup> )
Hokkaido	112	1,277	8	347	10	314	130	1,938	101	62,720
Aomori	7	360	0	0	0	0	7	360	17	9,135
Iwate	20	247	0	0	1	42	21	289	24	7,193
Miyagi	19	334	0	0	0	0	19	334	19	5,367
Akita	16	265	0	0	0	0	16	265	10	6,671
Yamagata	11	2,380	1	0	1	52	13	2,432	9	3,932
Fukushima	29	358	1	6	1	5	31	370	24	16,045
Ibaraki	25	518	2	277	1	3	28	798	37	17,587
Tochigi	16	319	1	0	1	58	18	377	10	5,138
Gunma	16	222	4	81	0	0	20	303	17	5,015
Saitama	44	1,110	0	0	1	4	45	1,114	42	13,357
Chiba	20	706	0	0	2	40	22	746	31	33,820
Tokyo	36	3,598	0	0	2	35	38	3,633	12	7,015
Kanagawa	25	988	0	0	1	150	26	1,138	25	18,489
Niigata	11	398	1	65	0	0	12	463	12	3,824
Toyama	5	81	1	28	0	0	6	109	9	3,506
Ishikawa	11	279	5	367	2	10	18	656	12	19,082
Fukui	9	168	0	0	0	0	9	168	14	6,760
Yamanashi	5	75	0	0	0	0	5	75	3	1,759
Nagano	30	610	0	0	1	20	31	630	32	34,226
Gifu	27	301	1	90	1	4	29	395	25	43,610
Shizuoka	26	285	1	150	0	0	27	435	29	27,055
Aichi	39	737	3	21	1	68	43	826	32	27,786
Mie	37	640	7	485	5	80	49	1,205	29	42,821
Shiga	21	179	1	22	1	8	23	209	17	7,075
Kyoto	14	395	2	55	2	23	18	473	20	5,245
Osaka	20	445	0	0	0	0	20	445	27	11,523
Hyogo	41	474	2	63	1	10	44	547	30	11,619
Nara	18	130	1	35	1	2	20	167	21	8,806
Wakayama	15	181	2	36	1	5	18	222	11	6,199
Tottori	4	145	0	0	0	0	4	145	4	1,663
Shimane	18	229	1	30	2	60	21	319	16	3,081
Okayama	26	232	0	0	0	0	26	232	32	8,707
Hiroshima	29	615	7	550	1	30	37	1,195	40	18,444
Yamaguchi	30	497	4	76	1	3	35	576	28	14,190
Tokushima	13	106	0	0	1	30	14	136	20	7,675
Kagawa	14	216	0	0	0	0	14	216	8	7,297
Ehime	35	1,014	2	34	1	8	38	1,056	18	7,546
Kochi	18	166	2	59	0	0	20	225	29	14,027
Fukuoka	29	662	6	608	4	576	39	1,846	13	4,916
Saga	18	126	1	1	1	5	20	132	14	10,377
Nagasaki	17	216	0	0	2	27	19	243	20	5,689
Kumamoto	27	359	2	133	0	0	29	492	19	14,655
Oita	13	340	2	112	1	32	16	484	13	5,919
Miyazaki	12	261	0	0	2	103	14	364	15	6,292
Kagoshima	27	304	0	0	1	5	28	309	21	8,452
Okinawa	15	290	0	0	0	0	15	290	20	10,914
Total	1,070	23,837	71	3,731	54	1,811	1,195	29,379	1,031	622,223

Note:

- The data in the above table includes the facilities that have started construction and the ones temporarily closed for FY2013, excluding the shutdowns.

Source: Compiled from "Waste Treatment in Japan" (an annual report, FY2013) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan

## 4.11 Development of Bulky Waste Disposal Facilities

(t / day)

	Combination		Crushing		Compression		Total	
	# of Facilities	Capacity (t/day)	# of Facilities	Capacity (t/day)	# of Facilities	Capacity (t/day)	# of Facilities	Capacity (t/day)
FY1978	127	6,386	142	6,948	82	1,892	351	15,226
1979	106	5,885	165	8,468	52	1,836	323	16,189
1980	141	7,529	206	7,716	57	1,540	404	16,785
1981	149	7,827	211	8,159	57	1,399	417	17,385
1982	165	8,011	222	8,247	53	1,021	440	17,279
1983	175	8,413	239	9,907	57	1,152	471	19,472
1984	170	8,125	258	10,833	66	1,333	494	20,291
1985	187	8,712	285	11,107	66	1,343	538	21,162
1986	230	10,865	241	10,372	70	1,456	541	22,693
1987	259	11,953	227	9,853	70	1,473	556	23,279
1988	282	12,485	233	9,875	79	1,681	594	24,041
1989	292	12,952	247	10,167	73	1,695	612	24,814
1990	333	14,413	241	9,802	64	1,509	638	25,724
1991	295	12,653	240	9,778	53	1,243	588	23,674
1992	337	14,529	217	8,674	56	1,259	610	24,462
1993	314	12,977	233	9,355	50	1,113	597	23,445
1994	354	14,518	228	9,436	50	1,096	632	25,050
1995	372	15,541	228	9,020	54	1,156	654	25,717
1996	397	16,350	218	8,773	55	1,159	670	26,281
1997	412	16,839	210	8,339	58	1,276	680	26,454
1998	429	17,201	203	8,728	54	1,071	686	27,000
1999	429	16,928	200	8,375	51	1,149	680	26,452
2000	441	17,181	201	8,201	53	1,226	695	26,608
2001	439	17,038	202	8,702	57	1,611	698	27,350
2002	436	16,695	210	8,804	50	1,331	696	26,830
2003	434	16,644	210	8,413	44	1,388	688	26,445
2004	426	16,435	225	9,023	42	1,045	693	26,503
2005	413	16,247	228	8,900	41	954	682	26,101
2006	391	15,410	251	9,303	39	1,076	681	25,789
2007	390	14,852	247	9,294	39	1,074	676	25,219
2008	376	13,918	245	9,746	41	1,118	662	24,782
2009	368	13,261	250	10,217	43	1,170	661	24,648
2010	368	13,694	247	9,781	38	1,025	653	24,500
2011	365	13,365	253	9,958	38	929	656	24,252
2012	354	12,985	270	10,543	36	867	660	24,395
2013	347	12,725	265	10,195	37	865	649	23,785

## Notes:

- "Bulky waste disposal facility" is defined as a facility to crush and compress into small pieces and also to look for the valuables out of the bulky waste.
- The facilities in the above table are the ones built by the municipalities and the consortiums. There includes the ones whose constructions have started and the ones temporarily closed just for the current year.
- "Crushing": The facilities to crush combustible bulky waste into small pieces for incineration
- "Compression": The facilities to crush and compress incombustible bulk waste into small pieces
- "Combination": The facilities to crush both combustible and non-combustible bulky waste

Source: "Waste Treatment in Japan (an annual report)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.12 Development of Bulky Waste Facilities by Prefecture

(Actual FY2013)

	Combination		Crushing		Compression		Total	
	Number of Facilities	Operating capacities (t/day)	Number of Facilities	Operating capacities (t/day)	Number of Facilities	Operating capacities (t/day)	Number of Facilities	Operating capacities (t/day)
Hokkaido	27	1,155	23	381	2	19	52	1,555
Aomori	5	260	1	20	0	0	6	280
Iwate	8	223	5	80	1	50	14	353
Miyagi	10	438	3	200	0	0	13	638
Akita	7	167	5	108	0	0	12	275
Yamagata	4	177	2	25	0	0	6	202
Fukushima	10	346	5	150	0	0	15	496
Ibaraki	17	588	4	112	3	95	24	795
Tochigi	9	290	3	57	0	0	12	348
Gunma	13	535	0	0	1	20	14	555
Saitama	18	773	13	471	2	60	33	1,304
Chiba	17	983	7	293	3	208	27	1,483
Tokyo	15	617	9	825	2	42	26	1,484
Kanagawa	13	528	15	643	3	32	31	1,202
Niigata	15	384	6	116	1	30	22	530
Toyama	1	9	3	90	1	80	5	179
Ishikawa	2	14	1	5	0	0	3	19
Fukui	2	55	4	160	0	0	6	215
Yamanashi	4	135	1	40	0	0	5	175
Nagano	6	163	1	3	0	0	7	166
Gifu	5	200	3	139	1	3	9	342
Shizuoka	8	498	11	338	1	8	20	845
Aichi	12	571	9	634	1	20	22	1,225
Mie	3	44	11	484	0	0	14	528
Shiga	6	232	8	189	1	8	15	429
Kyoto	3	125	5	580	0	0	8	705
Osaka	11	589	16	841	1	22	28	1,452
Hyogo	13	560	13	866	0	0	26	1,426
Nara	9	235	4	123	1	9	14	367
Wakayama	0	0	2	105	2	11	4	116
Tottori	0	0	1	45	0	0	1	45
Shimane	4	91	5	122	4	36	13	249
Okayama	5	156	7	194	0	0	12	350
Hiroshima	7	230	7	169	1	50	15	449
Yamaguchi	3	60	8	270	0	0	11	330
Tokushima	4	51	3	46	0	0	7	97
Kagawa	1	100	0	0	0	0	1	100
Ehime	5	212	5	70	0	0	10	282
Kochi	4	36	1	5	1	3	6	44
Fukuoka	8	197	13	854	2	53	23	1,104
Saga	5	153	0	0	0	0	5	153
Nagasaki	3	180	0	0	0	0	3	180
Kumamoto	5	78	9	143	0	0	14	221
Oita	3	49	1	15	0	0	4	64
Miyazaki	2	45	1	10	0	0	3	55
Kagoshima	12	170	5	63	0	0	17	233
Okinawa	3	24	6	112	2	6	11	142
Total	347	12,725	265	10,195	37	865	649	23,785

Note:

- The facilities in the above table include the ones whose construction started in 2013 and the ones temporarily closed just for the current year, but exclude the shutdowns.

Source: "Waste Treatment in Japan (FY2013)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.13 Changes in Total Volume of Final Disposal

	Mountains		Sea surface		Water surface		Flatlands		Total		Final disposal amount (1,000 t/yr.)	Final disposal site remaining volume (billion m <sup>3</sup> )	Number of remaining years (Yr.)
	# of Facilities	Total capacities (1,000 m <sup>3</sup> )	# of Facilities	Total capacities (1,000 m <sup>3</sup> )	# of Facilities	Total capacities (1,000 m <sup>3</sup> )	# of Facilities	Total capacities (1,000 m <sup>3</sup> )	# of Facilities	Total capacities (1,000 m <sup>3</sup> )			
FY1978	1,707		39		59		872		2,677	392,565	19,900	2.39	9.8
1979	1,583		39		54		799		2,475	425,761	20,352	2.14	8.6
1980	1,600		36		50		796		2,482	356,109	19,715	1.92	7.9
1981	1,619		40		48		779		2,486	403,156	17,250	1.82	8.6
1982	1,612		36		46		778		2,472	377,583	18,188	1.76	7.9
1983	1,638		34		41		766		2,479	382,728	16,763	1.71	8.3
1984	1,633		37		38		731		2,439	403,062	16,196	1.74	8.8
1985	1,630		38		42		721		2,431	410,096	16,048	1.96	10.0
1986	1,629		36		39		707		2,411	429,895	16,020	2.07	10.6
1987	1,637		31		35		692		2,395	423,858	16,486	1.95	9.7
1988	1,628		35		34		676		2,373	414,278	16,897	1.71	8.3
1989	1,601		34		31		668		2,334	424,535	17,008	1.67	8.0
1990	1,617		33		33		653		2,336	415,622	16,809	1.57	7.6
1991	1,567		31		29		623		2,250	420,219	16,379	1.57	7.8
1992	1,639	269,679	33	101,103	29	2,880	662	62,044	2,363	435,705	15,296	1.54	8.2
1993	1,621	273,033	32	101,818	26	2,560	642	59,862	2,321	437,273	14,959	1.49	8.1
1994	1,675	289,180	31	101,808	26	3,672	660	63,372	2,392	458,032	14,142	1.51	8.7
1995	1,683	293,194	30	100,956	22	3,573	626	64,913	2,361	462,636	13,602	1.42	8.5
1996	1,692	301,166	31	99,679	24	3,548	641	72,624	2,388	477,017	13,093	1.59	9.9
1997	1,620	297,908	33	119,069	24	3,548	589	71,816	2,266	492,341	12,008	1.72	11.7
1998	1,546	300,340	32	119,094	21	3,460	529	70,607	2,128	493,501	11,350	1.78	12.8
1999	1,503	293,985	30	138,303	19	3,438	513	65,442	2,065	501,168	10,869	1.72	12.9
2000	1,520	289,326	30	108,903	18	3,048	509	70,442	2,077	471,719	10,514	1.65	12.8
2001	1,504	287,137	29	110,668	17	2,844	509	68,054	2,059	468,702	9,949	1.60	13.2
2002	1,499	287,712	28	110,637	19	2,924	501	68,127	2,047	469,400	9,030	1.53	13.8
2003	1,491	290,460	27	109,820	17	2,848	504	68,815	2,039	471,943	8,452	1.45	14.0
2004	1,464	286,843	25	92,076	16	2,937	504	67,638	2,009	449,493	8,093	1.38	14.0
2005	1,343	271,340	24	110,787	15	3,061	465	64,423	1,847	449,611	7,328	1.33	14.8
2006	1,346	273,094	25	117,340	13	3,016	469	63,766	1,853	457,217	6,809	1.30	15.6
2007	1,333	272,375	23	100,008	14	13,308	462	63,815	1,832	449,507	6,349	1.22	15.7
2008	1,321	278,832	26	100,264	11	11,177	465	65,515	1,823	455,788	5,531	1.22	18.0
2009	1,298	275,148	28	117,743	9	873	465	67,330	1,800	461,095	5,072	1.16	18.7
2010	1,281	274,539	26	117,479	10	1,119	458	67,473	1,775	460,610	4,837	1.14	19.3
2011	1,274	274,253	26	117,479	9	1,104	463	68,249	1,772	461,086	4,821	1.14	19.4
2012	1,262	272,313	26	117,479	9	1,106	445	68,098	1,742	458,996	4,648	1.12	19.7
2013	1,243	268,486	25	127,112	9	1,106	446	68,124	1,723	464,829	4,538	1.07	19.3

## Notes:

- Facility is defined as final disposal site built by a municipality or a consortium including a one established by Tokyo Metropolitan government, and also including a one of which construction started in an indicated year.
- The number of remaining years represents the period (yrs.) of the site capacity available until it gets filled with landfill waste, without newly developing final disposal sites. It is calculated by the equation of (the residual volume at the end of the fiscal year) ÷ (the final disposal volume of the fiscal year ÷ weight of landfill waste). (Landfill waste density: 0.8163)
- In FY2005, residual volume and remaining years were recalculated retro-respectively; an incremental residual volume in the amount of 7,737,000 m<sup>3</sup> reflecting aerial survey results, and so forth, was added up to that in each year prior to 2005. Accordingly, remaining years for each year were recalculated.
- The facilities in the above table include the ones whose construction started in an indicated fiscal year and the ones temporarily closed just for that year, but exclude the shutdowns.

Source: "Waste Treatment in Japan (an annual report)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.14 Development of Final Disposal Sites by Prefecture

(Actual FY2013)

	Mountains				Sea surface				Water surface			
	# of Sites	Landfill area (1,000 m <sup>2</sup> )	Total capacity (1,000 m <sup>3</sup> )	Remaining capacity (1,000 m <sup>3</sup> )	# of Sites	Landfill area (1,000 m <sup>2</sup> )	Total capacity (1,000 m <sup>3</sup> )	Remaining capacity (1,000 m <sup>3</sup> )	# of Sites	Landfill area (1,000 m <sup>2</sup> )	Total capacity (1,000 m <sup>3</sup> )	Remaining capacity (1,000 m <sup>3</sup> )
Hokkaido	129	4,297	36,408	5,267	0	0	0	0	0	0	0	0
Aomori	43	1,121	9,503	1,758	0	0	0	0	0	0	0	0
Iwate	34	614	4,126	956	0	0	0	0	0	0	0	0
Miyagi	34	873	9,939	5,367	0	0	0	0	0	0	0	0
Akita	48	923	7,193	1,183	0	0	0	0	0	0	0	0
Yamagata	8	392	1,948	436	0	0	0	0	0	0	0	0
Fukushima	39	708	6,289	928	0	0	0	0	0	0	0	0
Ibaraki	10	247	1,709	231	0	0	0	0	0	0	0	0
Tochigi	7	162	1,498	391	0	0	0	0	0	0	0	0
Gunma	21	407	3,507	945	0	0	0	0	0	0	0	0
Saitama	8	117	965	250	0	0	0	0	0	0	0	0
Chiba	35	803	6,532	1,347	2	194	1,660	4	0	0	0	0
Tokyo	19	466	7,926	1,562	2	3,600	93,150	22,206	0	0	0	0
Kanagawa	21	256	2,592	546	3	632	9,857	1,913	0	0	0	0
Niigata	28	518	5,716	458	0	0	0	0	0	0	0	0
Toyama	13	211	2,276	631	0	0	0	0	0	0	0	0
Ishikawa	21	636	7,351	2,036	0	0	0	0	0	0	0	0
Fukui	15	176	1,108	467	1	10	56	23	0	0	0	0
Yamanashi	1	12	48	0	0	0	0	0	0	0	0	0
Nagano	47	513	3,370	804	0	0	0	0	0	0	0	0
Gifu	43	746	7,724	1,712	0	0	0	0	2	23	78	55
Shizuoka	50	688	5,922	1,126	0	0	0	0	1	20	246	29
Aichi	39	1,021	10,864	1,948	2	14	116	96	0	0	0	0
Mie	35	749	7,418	1,267	0	0	0	0	0	0	0	0
Shiga	17	254	2,033	212	0	0	0	0	3	132	443	6
Kyoto	33	761	8,951	4,160	0	0	0	0	0	0	0	0
Osaka	6	223	2,088	339	1	731	11,690	2,333	0	0	0	0
Hyogo	33	1,886	34,146	11,758	1	14	43	14	0	0	0	0
Nara	10	242	2,147	866	0	0	0	0	0	0	0	0
Wakayama	17	268	1,599	372	0	0	0	0	0	0	0	0
Tottori	2	78	937	210	0	0	0	0	0	0	0	0
Shimane	28	286	2,191	391	0	0	0	0	0	0	0	0
Okayama	38	623	4,767	926	0	0	0	0	0	0	0	0
Hiroshima	24	507	5,973	2,030	1	184	1,003	0	0	0	0	0
Yamaguchi	35	304	2,540	492	6	257	1,785	537	3	74	340	75
Tokushima	10	57	298	88	1	20	87	14	0	0	0	0
Kagawa	20	398	3,345	646	0	0	0	0	0	0	0	0
Ehime	28	473	3,785	997	1	24	363	356	0	0	0	0
Kochi	22	227	1,857	606	0	0	0	0	0	0	0	0
Fukuoka	24	747	9,380	3,535	1	573	7,150	1,772	0	0	0	0
Saga	12	126	674	193	0	0	0	0	0	0	0	0
Nagasaki	26	547	6,145	2,012	1	17	40	8	0	0	0	0
Kumamoto	17	343	4,254	1,344	1	2	6	0	0	0	0	0
Oita	13	535	5,458	1,026	0	0	0	0	0	0	0	0
Miyazaki	18	452	4,228	850	0	0	0	0	0	0	0	0
Kagoshima	56	752	9,314	1,449	0	0	0	0	0	0	0	0
Okinawa	6	58	444	188	1	13	107	67	0	0	0	0
Total	1,243	26,798	268,486	66,309	25	6,285	127,112	29,345	9	249	1,106	165

Note:

\* The facilities in the above table include the ones whose construction started in 2013 and the ones temporarily closed just for the current year, but excludes the shutdowns.

Source: Compiled from "Waste Treatment in Japan" (for FY2013) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government of Japan



## 4.14 Development of Final Disposal Sites by Prefecture

(Actual FY2013)

	Flatlands				Total			
	# of Sites	Landfill area (1,000 m <sup>2</sup> )	Total capacity (1,000 m <sup>3</sup> )	Remaining capacity (1,000 m <sup>3</sup> )	# of Sites	Landfill area (1,000 m <sup>2</sup> )	Total capacity (1,000 m <sup>3</sup> )	Remaining capacity (1,000 m <sup>3</sup> )
Hokkaido	56	3,084	22,020	3,449	185	7,380	58,428	8,715
Aomori	8	141	704	164	51	1,263	10,207	1,923
Iwate	1	11	69	9	35	625	4,196	965
Miyagi	0	0	0	0	34	873	9,939	5,367
Akita	17	365	1,254	368	65	1,288	8,447	1,551
Yamagata	4	136	787	234	12	527	2,735	670
Fukushima	8	151	875	257	47	859	7,164	1,186
Ibaraki	7	108	779	282	17	355	2,488	513
Tochigi	6	85	430	98	13	246	1,928	490
Gunma	11	189	1,032	321	32	595	4,539	1,266
Saitama	37	513	2,563	672	45	630	3,527	921
Chiba	22	359	2,082	258	59	1,355	10,274	1,610
Tokyo	1	65	639	72	22	4,132	101,715	23,840
Kanagawa	8	605	8,533	402	32	1,493	20,982	2,861
Niigata	21	424	2,094	855	49	942	7,810	1,313
Toyama	0	0	0	0	13	211	2,276	631
Ishikawa	0	0	0	0	21	636	7,351	2,036
Fukui	1	9	37	1	17	195	1,201	492
Yamanashi	3	41	197	0	4	53	245	0
Nagano	23	184	1,088	255	70	697	4,458	1,059
Gifu	26	252	1,176	170	71	1,021	8,977	1,937
Shizuoka	16	208	807	201	67	915	6,975	1,356
Aichi	43	1,026	8,128	858	84	2,060	19,107	2,902
Mie	5	104	401	61	40	852	7,819	1,328
Shiga	12	303	1,422	208	32	689	3,898	426
Kyoto	1	38	318	71	34	798	9,269	4,231
Osaka	4	72	352	113	11	1,026	14,129	2,786
Hyogo	10	214	1,926	538	44	2,114	36,114	12,309
Nara	1	27	264	0	11	269	2,411	866
Wakayama	0	0	0	0	17	268	1,599	372
Tottori	1	18	56	22	3	96	993	232
Shimane	6	53	228	106	34	339	2,419	497
Okayama	9	243	818	6	47	866	5,585	932
Hiroshima	5	294	2,289	387	30	984	9,265	2,417
Yamaguchi	6	183	768	98	50	819	5,433	1,201
Tokushima	8	82	538	0	19	159	922	102
Kagawa	2	110	320	17	22	508	3,665	663
Ehime	1	2	5	0	30	499	4,153	1,354
Kochi	5	14	45	10	27	240	1,902	616
Fukuoka	9	75	365	88	34	1,395	16,895	5,395
Saga	3	161	493	128	15	286	1,167	321
Nagasaki	11	62	206	120	38	626	6,390	2,140
Kumamoto	3	54	221	57	21	399	4,481	1,401
Oita	2	65	280	49	15	601	5,739	1,075
Miyazaki	5	49	230	70	23	501	4,458	920
Kagoshima	5	481	317	56	61	1,234	9,631	1,506
Okinawa	13	132	969	462	20	202	1,520	717
Total	446	10,793	68,124	11,592	1,723	44,125	464,829	107,410

## 4.15 Changes in Annual Expenses for the Waste Management

(Unit: JPY million)

		FY2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013		
Population (Unit: 1,000)		127,507	127,606	127,712	127,781	127,487	127,530	127,429	127,302	127,147	128,622	128,394		
Total		1,750,387	1,709,195	1,683,421	1,862,654	1,859,902	1,823,476	1,832,022	1,838,976	1,790,511	1,789,097	1,851,007		
Revenue (for municipalities)	General budget	1,411,268	1,353,531	1,357,926	1,350,754	1,345,236	1,343,986	1,340,785	1,352,056	1,293,130	1,288,579	1,284,848		
	National treasury disbursement	37,276	50,178	31,033	56,650	46,752	37,099	47,880	50,662	38,467	50,324	70,529		
	Prefectural treasury disbursement	6,072	8,448	5,462	5,406	5,370	5,068	6,651	8,632	9,167	6,593	9,198		
	Usage fees, charges	144,119	152,860	166,229	231,113	234,965	235,077	230,928	231,863	234,256	239,669	249,149		
	Municipal bonds	91,539	76,539	61,551	125,949	107,184	85,012	99,293	82,206	94,109	82,502	99,042		
	Other	60,113	67,640	61,220	92,781	120,395	117,234	106,484	113,558	121,381	121,430	138,241		
	Subtotal	339,119	355,665	325,495	511,900	514,666	479,490	491,236	486,920	497,381	500,518	566,159		
Waste management expenses		1,960,037	1,934,330	1,902,500	1,862,654	1,859,902	1,816,944	1,825,588	1,838,976	1,790,372	1,788,541	1,851,007		
Expenses (the sum of municipalities and cooperatives)	Construction improvement costs	Construction costs												
		Collection and transportation facilities	—	—	—	26,182	3,130	1,873	3,037	1,539	1,176	2,718	3,308	
		Intermediate processing	260,994	214,516	207,294	164,470	177,530	153,068	173,406	151,144	157,111	172,961	217,052	
		Final disposal sites	62,110	71,692	62,040	42,114	23,966	17,096	19,356	24,031	23,323	23,799	23,482	
		Others	12,844	12,117	10,276	7,302	4,777	4,230	5,071	8,483	5,158	5,085	8,754	
	Inspection fees	6,104	3,450	2,796	4,277	3,188	3,430	3,356	3,769	4,782	4,237	4,874		
	Subtotal	342,052	301,774	279,610	244,344	212,591	179,696	204,227	188,965	191,549	208,801	257,470		
	*Note) Allotted charges to partial-affairs-association	37,009	38,136	31,318	24,852	24,967	27,357	24,848	20,810	20,230	31,044	42,175		
	Processing, Maintenance and Operation costs	Processing costs	Personnel cost	561,777	550,043	534,988	522,187	519,282	495,676	473,014	488,464	438,448	416,013	398,352
			Collection and transportation facilities	77,212	78,861	75,538	67,048	71,687	65,967	63,975	64,792	61,618	60,437	57,187
Intermediate processing			277,061	283,153	277,656	277,683	284,230	285,512	273,069	268,864	271,938	262,107	266,012	
Final disposal sites			36,770	36,140	28,825	29,817	31,756	34,624	33,288	36,714	34,693	32,751	34,490	
Purchases cost of vehicles and other supplies		10,105	7,702	8,016	7,329	5,933	6,792	7,959	4,855	8,066	7,518	5,478		
Outsourcing fees		Collection and transportation facilities	—	—	268,980	277,128	279,929	292,206	300,504	300,959	305,142	310,861	322,076	
		Intermediate processing	—	—	238,779	254,516	264,068	279,650	287,098	294,342	298,755	307,319	315,982	
		Final disposal sites	—	—	47,949	48,543	52,948	46,911	44,140	43,036	42,675	45,968	52,514	
		Others	—	—	29,053	22,999	25,167	21,386	21,393	22,766	22,168	21,262	20,716	
Outsourcing expenses		529,341	545,482	584,761	603,186	622,112	640,152	653,134	661,102	668,739	685,411	711,287		
Others	43,950	43,210	—	—	—	—	—	—	—	—	—			
Survey and Research costs	—	—	3,918	1,575	1,222	1,426	1,167	1,173	1,277	961	997			
Subtotal	1,536,216	1,544,591	1,513,702	1,508,825	1,536,223	1,530,149	1,505,606	1,525,964	1,484,779	1,465,199	1,473,803			
*Note) Allotted charges to partial-affairs-association	285,904	272,923	250,682	241,279	243,117	247,728	249,676	234,946	236,950	239,549	241,806			
Other	81,769	87,964	106,392	109,485	111,088	107,100	115,756	124,047	114,043	114,542	119,734			
Annual expenses for Waste Management Project (on a per capita basis)		15,400	15,200	14,900	14,600	14,600	14,200	14,300	14,400	14,100	13,900	14,400		

Note:

· "Allotted charges to partial-affairs-association" is an allotment to municipalities that the partial-affairs-association are comprised of and payable to it. As the charges are used for the expenses for waste management by the association, the charges are not included in total.

Source: "Waste Treatment in Japan ( an annual report ) ," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.16 Changes in Annual Expenditures for Waste Management Program

(Unit: 100 million yen)

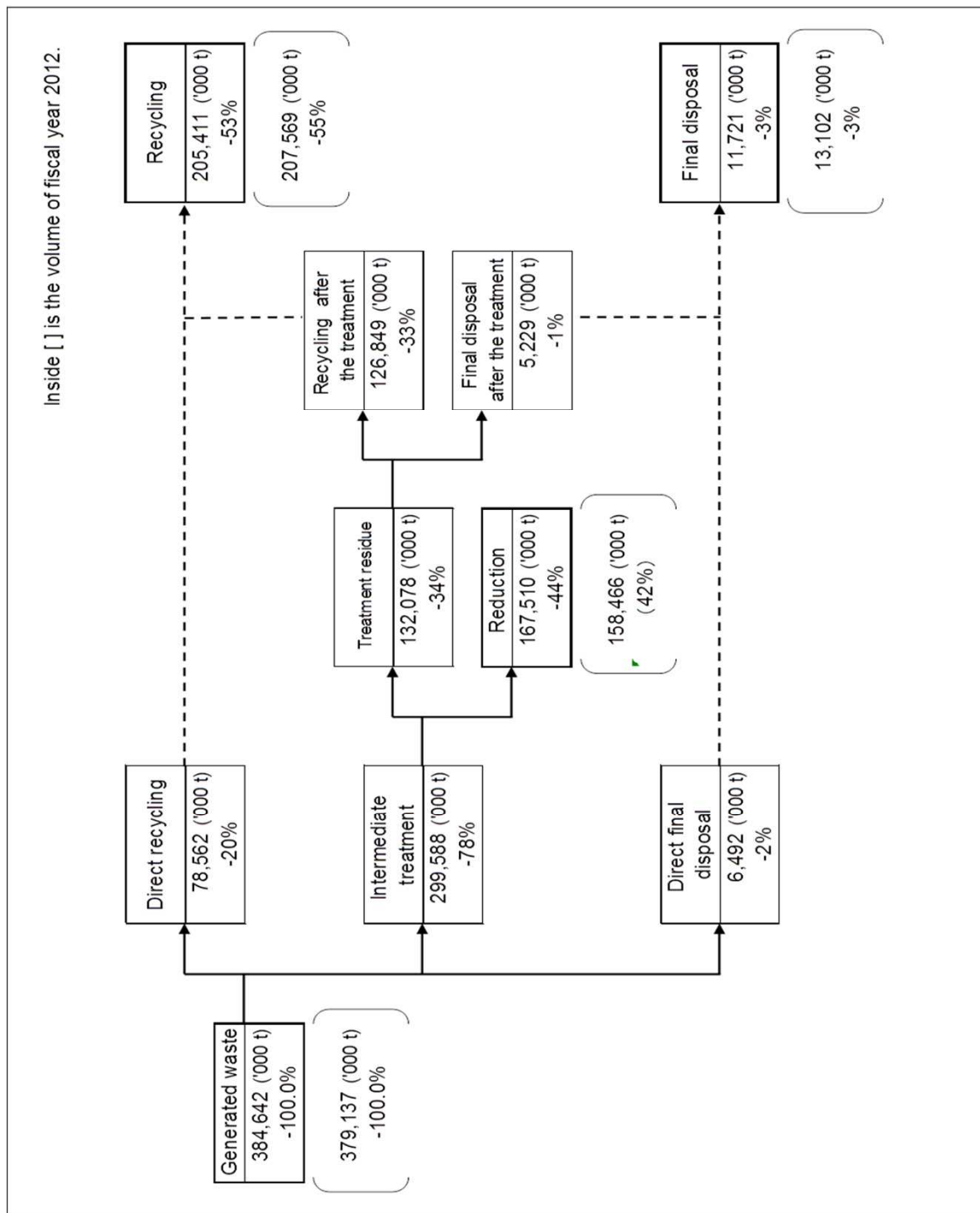
FY1982	12,697
1983	13,075
1984	13,213
1985	13,545
1986	13,926
1987	14,427
1988	14,493
1989	16,190
1990	17,563
1991	19,986
1992	22,663
1993	27,404
1994	26,269
1995	26,542
1996	26,990
1997	26,654
1998	26,694
1999	26,519
2000	27,381
2001	29,464
2002	27,309
2003	22,746
2004	22,450
2005	22,161
2006	21,344
2007	21,060
2008	20,557
2009	20,572
2010	20,605
2011	20,167
2012	20,052
2013	20,715

Note:

Expenditure of waste management program = Waste management expenses + night-soil disposal expenses

Source: "Waste Treatment in Japan ( an annual report ) ," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.17 Flow of treatment for industrial waste (in FY2013)



Note:

\* Figures for each item are rounded off; therefore, the total may not equal the sum of breakdown.

Source: "An field survey of the industrial waste disposals & Research of recycling processes ( for 2013 )," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.18 Generation of Industrial Waste by Industrial Sector

Industrial sector	FY1975		1980		1985		1990		1991		1992	
	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture	41,319	17.5	49,913	17.1	62,690	20.1	77,390	19.6	77,495	19.5	76,642	19.0
Forestry	-	-	-	-	0	0.0	0	0.0	0	0.0	0	0.0
Fishery	-	-	-	-	12	0.0	61	0.0	234	0.1	64	0.0
Mining	12,527	5.3	37,006	12.7	26,017	8.3	34,000	8.6	34,802	8.7	26,541	6.6
Construction	33,871	14.3	30,416	10.4	57,481	18.4	71,139	18.0	77,105	19.4	85,715	21.2
Manufacturing	135,707	57.4	159,773	54.7	132,324	42.4	150,388	38.1	143,711	36.1	141,000	34.9
Food	8,962	3.8	13,697	4.7	12,093	3.9	11,862	3.0	11,500	2.9	12,027	3.0
Beverages, tobacco and feedstuff	-	-	-	-	-	-	4,621	1.2	4,828	1.2	5,514	1.4
Textile industry (garment and other textile products --- classified separately before 2007)	6,435	2.7	4,658	1.6	2,629	0.8	1,907	0.5	2,202	0.6	2,084	0.5
Garment and other textile products (*consolidated into "Textile industry" after 2008)	-	-	76	0.0	115	0.0	137	0.0	181	0.0	225	0.1
Lumber and wood products	4,879	2.1	4,919	1.7	4,034	1.3	3,439	0.9	3,460	0.9	3,665	0.9
Furniture and fixture	825	0.3	886	0.3	425	0.1	477	0.1	497	0.1	604	0.1
Pulp, paper, and paper products	9,947	4.2	13,628	4.7	12,800	4.1	27,502	7.0	21,213	5.3	27,208	6.7
Printing and related business	620	0.3	1,033	0.4	870	0.3	745	0.2	483	0.1	722	0.2
Chemical industry	6,875	2.9	10,594	3.6	10,364	3.3	12,624	3.2	11,949	3.0	11,414	2.8
Petroleum and coal products	4,396	1.9	1,014	0.3	2,482	0.8	1,017	0.3	1,158	0.3	1,096	0.3
Plastic products	-	-	-	-	-	-	629	0.2	767	0.2	829	0.2
Rubber products	162	0.1	195	0.1	290	0.1	271	0.1	318	0.1	336	0.1
Leather-tanning, leather products and fur skins	-	-	195	0.1	263	0.1	153	0.0	174	0.0	151	0.0
Cement and ceramic industry	12,660	5.4	18,452	6.3	17,941	5.7	17,492	4.4	17,566	4.4	17,025	4.2
Iron and steel industry	64,142	27.1	65,284	22.3	50,098	16.0	48,561	12.3	48,346	12.1	38,443	9.5
Non-ferrous metals	4,550	1.9	9,635	3.3	2,150	0.7	4,196	1.1	4,249	1.1	4,131	1.0
Metal products	2,506	1.1	4,407	1.5	4,452	1.4	4,835	1.2	4,841	1.2	4,547	1.1
General machinery and equipment	2,155	0.9	2,571	0.9	2,152	0.7	1,750	0.4	1,781	0.4	1,579	0.4
Electrical machinery and equipment Telecommunications machinery and equipment Electronic, components and devices	1,089	0.5	3,115	1.1	3,811	1.2	3,737	0.9	3,870	1.0	4,282	1.1
Machinery and equipment for transportation	4,284	1.8	4,573	1.6	4,450	1.4	3,848	1.0	3,746	0.9	4,537	1.1
Precision machinery and equipment	139	0.1	217	0.1	177	0.1	230	0.1	239	0.1	199	0.0
Arms	-	-	26	0.0	-	-	35	0.0	-	-	-	-
Others	1,081	0.5	599	0.2	729	0.2	320	0.1	343	0.1	382	0.1
Electric, gas, heat supply, and water supply industries	5,189	2.2	8,301	2.8	27,748	8.9	54,983	13.9	57,789	14.5	65,456	16.2
Information and telecommunications industry, transport industry	457	0.2	1,252	0.4	582	0.2	512	0.1	946	0.2	1,562	0.4
Wholesaler, retailer, accommodations, drinking and eating services	5,959	2.5	3,830	1.3	3,441	1.1	4,054	1.0	3,882	1.0	3,534	0.9
Medical care and welfare	-	-	-	-	-	-	-	-	-	-	-	-
Education, learning support, complex services, and service industry	1,413	0.6	1,820	0.6	1,476	0.5	2,198	0.6	1,894	0.5	2,143	0.5
Public service	-	-	-	-	500	0.2	12	0.0	89	0.0	820	0.0
Total	236,442	100.0	292,311	100.0	312,271	100.0	394,736	100.0	397,949	100.0	403,480	100.0

Industrial sector	FY1993		1994		1995		1996		1997		1998	
	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture	75,761	19.1	74,878	18.5	73,336	18.6	72,517	17.9	93,995	22.7	92,973	22.8
Forestry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fishery	40	0.0	71	0.0	68	0.0	58	0.0	43	0.0	42	0.0
Mining	29,173	7.4	30,793	7.6	27,717	7.0	27,999	6.9	23,515	5.7	20,334	5.0
Construction	81,605	20.6	76,931	19.0	75,201	19.1	77,138	19.1	77,142	18.6	79,071	19.4
Manufacturing	134,657	33.9	139,033	34.3	130,910	33.2	136,563	33.8	126,028	30.4	125,045	30.6
Food	10,847	2.7	11,856	2.9	10,514	2.7	11,696	2.9	10,626	2.6	10,940	2.7
Beverages, tobacco and feedstuff	5,215	1.3	7,377	1.8	6,253	1.6	5,331	1.3	3,972	1.0	4,608	1.1
Textile industry (garment and other textile products --- classified separately before 2007)	1,879	0.5	1,457	0.4	1,483	0.4	2,550	0.6	2,440	0.6	2,337	0.6
Garment and other textile products (*consolidated into "Textile industry" after 2008)	196	0.0	179	0.0	190	0.0	198	0.0	165	0.0	132	0.0
Lumber and wood products	3,312	0.8	4,377	1.1	3,989	1.0	4,071	1.0	3,346	0.8	1,998	0.5
Furniture and fixture	466	0.1	468	0.1	468	0.1	464	0.1	381	0.1	392	0.1
Pulp, paper, and paper products	29,373	7.4	24,917	6.1	25,879	6.6	28,296	7.0	27,080	6.5	26,054	6.4
Printing and related business	784	0.2	846	0.2	953	0.2	1,083	0.3	1,028	0.2	1,217	0.3
Chemical industry	14,986	3.8	17,928	4.4	18,807	4.8	17,840	4.4	16,487	4.0	14,630	3.6
Petroleum and coal products	801	0.2	812	0.2	730	0.2	808	0.2	755	0.2	994	0.2
Plastic products	1,246	0.3	1,321	0.3	1,276	0.3	1,421	0.4	1,269	0.3	923	0.2
Rubber products	294	0.1	282	0.1	303	0.1	314	0.1	306	0.1	364	0.1
Leather-tanning, leather products and fur skins	147	0.0	156	0.0	138	0.0	157	0.0	104	0.0	78	0.0
Cement and ceramic industry	17,250	4.3	19,425	4.8	15,738	4.0	15,791	3.9	15,373	3.7	13,118	3.2
Iron and steel industry	30,934	7.8	30,081	7.4	27,051	6.9	28,033	6.9	24,056	5.8	29,527	7.2
Non-ferrous metals	2,742	0.7	3,416	0.8	3,578	0.9	3,794	0.9	4,488	1.1	4,086	1.0
Metal products	3,941	1.0	3,771	0.9	3,103	0.8	3,470	0.9	3,204	0.8	3,762	0.9
General machinery and equipment	1,590	0.4	1,576	0.4	1,834	0.5	1,721	0.4	1,610	0.4	1,699	0.4
Electrical machinery and equipment Telecommunications machinery and equipment Electronic, components and devices	3,768	0.9	3,741	0.9	3,621	0.9	4,092	1.0	4,082	1.0	3,835	0.9
Machinery and equipment for transportation	4,003	1.0	3,992	1.0	4,018	1.0	4,163	1.0	4,413	1.1	3,787	0.9
Precision machinery and equipment	178	0.0	179	0.0	221	0.0	228	0.1	216	0.1	246	0.1
Arms	-	-	-	-	-	-	-	-	-	-	-	-
Others	705	0.2	876	0.2	762	0.2	1,043	0.3	626	0.2	317	0.1
Electric, gas, heat supply, and water supply industries	67,488	17.0	74,610	18.4	77,635	19.7	79,970	19.8	86,371	20.8	87,458	21.4
Information and telecommunications industry, transport industry	656	0.2	1,054	0.3	971	0.2	1,102	0.3	705	0.2	509	0.1
Wholesaler, retailer, accommodations, drinking and eating services	4,386	1.1	5,454	1.3	5,716	1.5	5,689	1.4	5,227	1.3	1,476	0.4
Medical care and welfare	-	-	-	-	-	-	-	-	-	-	-	-
Education, learning support, complex services, and service industry	2,669	0.7	2,200	0.5	2,245	0.6	3,546	0.9	1,793	0.4	1,544	0.4
Public service	433	0.1	429	0.1	12	0.0	21	0.0	34	0.0	39	0.0
Total	396,869	100.0	405,455	100.0	393,812	100.0	404,602	100.0	414,854	100.0	408,490	100.0

## 4.18 Generation of Industrial Waste by Industrial Sector

Industrial sector	FY1999		2000		2001		2002		2003		2004	
	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture	91,855	23.0	90,804	22.4	90,430	22.6	90,147	22.9	90,589	22.0	89,285	21.4
Forestry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fishery	28	0.0	24	0.0	29	0.0	14	0.0	13	0.0	16	0.0
Mining	17,655	4.4	16,751	4.1	13,772	3.4	12,409	3.2	13,945	3.4	13,393	3.2
Construction	76,236	19.1	79,011	19.5	76,151	19.0	73,510	18.7	75,006	18.2	79,055	19.0
Manufacturing	120,046	30.0	123,730	30.5	122,893	30.7	122,551	31.2	135,090	32.8	137,422	32.9
Food	10,999	2.8	10,639	2.6	10,829	2.7	10,104	2.6	10,201	2.5	9,789	2.3
Beverages, tobacco and feedstuff (textile industry garment and other textile products -- classified separately before 2007)	4,566	1.1	4,692	1.2	4,682	1.2	4,743	1.2	4,098	1.0	4,339	1.0
Garment Clothing and other textile products ("consolidated into "Textile industry" after 2008)	119	0.0	124	0.0	109	0.0	100	0.0	104	0.0	108	0.0
Lumber and wood products	1,879	0.5	1,627	0.4	1,634	0.4	1,439	0.4	1,864	0.5	1,661	0.4
Furniture and fixture	368	0.1	345	0.1	332	0.1	303	0.1	325	0.1	307	0.1
Pulp, paper, and paper products	26,284	6.6	27,058	6.7	27,138	6.8	30,402	7.7	36,601	8.9	36,776	8.8
Printing and related business	1,216	0.3	1,198	0.3	1,239	0.3	1,175	0.3	1,114	0.3	910	0.2
Chemical industry	16,440	4.1	16,863	4.2	16,887	4.2	16,792	4.3	19,398	4.7	16,887	4.0
Petroleum and coal products	1,020	0.3	1,231	0.3	1,259	0.3	1,428	0.4	1,457	0.4	1,425	0.3
Plastic products	959	0.2	964	0.2	928	0.2	964	0.2	1,050	0.3	1,198	0.3
Rubber products	372	0.1	387	0.1	361	0.1	362	0.1	310	0.1	334	0.1
Leather-tanning, leather products and fur skins	100	0.0	91	0.0	90	0.0	96	0.0	141	0.0	80	0.0
Cement and ceramic industry	11,564	2.9	12,532	3.1	12,174	3.0	10,862	2.8	10,464	2.5	9,561	2.3
Iron and steel industry	25,389	6.4	26,598	6.6	26,450	6.6	26,503	6.7	30,724	7.5	37,300	8.9
Non-ferrous metals	3,353	0.8	4,114	1.0	3,994	1.0	3,732	0.9	3,768	0.9	3,507	0.8
Metal products	3,573	0.9	3,506	0.9	3,479	0.9	3,266	0.8	2,406	0.6	2,484	0.6
General machinery and equipment	1,602	0.4	1,812	0.4	1,743	0.4	1,418	0.4	1,551	0.4	1,700	0.4
Electrical machinery and equipment												
Telecommunications machinery and equipment	3,932	1.0	4,729	1.2	4,251	1.1	3,617	0.9	4,094	1.0	3,726	0.9
Electronic, components and devices												
Machinery and equipment for transportation	3,873	1.0	3,582	0.9	3,791	0.9	3,862	1.0	4,132	1.0	3,486	0.8
Precision machinery and equipment	149	0.0	168	0.0	169	0.0	155	0.0	182	0.0	165	0.0
Arms	-	-	-	-	-	-	-	-	-	-	-	-
Others	219	0.1	206	0.1	215	0.1	182	0.0	190	0.0	727	0.2
Electric, gas, heat supply, and water supply industries	90,220	22.6	91,504	22.5	93,145	23.3	89,743	22.8	92,248	22.4	92,362	22.1
Information and telecommunications industry, transport industry	498	0.1	888	0.2	804	0.2	1,152	0.3	1,084	0.3	1,362	0.3
Wholesaler, retailer, accommodations, drinking and eating services	1,664	0.4	1,790	0.4	1,478	0.4	1,526	0.4	1,551	0.4	2,193	0.5
Medical care and welfare	-	-	-	-	-	-	260	0.1	268	0.1	253	0.1
Education, learning support, complex services, and service industry	1,566	0.4	1,512	0.4	1,530	0.4	1,900	0.5	1,814	0.4	1,644	0.4
Public service	31	0.0	22	0.0	21	0.0	23	0.0	15	0.0	171	0.0
<b>Total</b>	<b>399,799</b>	<b>100.0</b>	<b>406,037</b>	<b>100.0</b>	<b>400,243</b>	<b>100.0</b>	<b>393,234</b>	<b>100.0</b>	<b>411,623</b>	<b>100.0</b>	<b>417,156</b>	<b>100.0</b>

Industrial sector	FY2005		2006		2007	
	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture	87,543	20.8	87,924	21.0	87,811	20.9
Forestry	0	0.0	0	0.0	0	0.0
Fishery	40	0.0	21	0.0	25	0.0
Mining	14,039	3.3	13,947	3.3	12,509	3.0
Construction	76,466	18.1	77,534	18.5	77,253	18.4
Manufacturing	141,628	33.6	137,338	32.8	141,613	33.8
Food	9,805	2.3	9,720	2.3	9,812	2.3
Beverages, tobacco and feedstuff	3,219	0.8	3,147	0.8	3,168	0.8
Textile industry (garment and other textile products -- classified separately before 2007)	934	0.2	823	0.2	766	0.2
Garment and other textile products ("consolidated into "Textile industry" after 2008)	124	0.0	111	0.0	115	0.0
Lumber and wood products	1,550	0.4	1,458	0.3	1,405	0.3
Furniture and fixture	269	0.1	252	0.1	320	0.1
Pulp, paper, and paper products	35,493	8.4	33,872	8.1	35,479	8.5
Printing and related business	1,069	0.3	980	0.2	960	0.2
Chemical industry	16,796	4.0	17,209	4.1	17,578	4.2
Petroleum and coal products	1,764	0.4	1,802	0.4	1,572	0.4
Plastic products	1,150	0.3	1,277	0.3	1,297	0.3
Rubber products	316	0.1	329	0.1	394	0.1
Leather-tanning, leather products and fur skins	66	0.0	63	0.0	58	0.0
Cement and ceramic industry	9,949	2.4	9,594	2.3	10,097	2.4
Iron and steel industry	43,176	10.2	38,375	9.2	38,266	9.1
Non-ferrous metals	3,556	0.8	4,124	1.0	4,891	1.2
Metal products	2,323	0.6	3,487	0.8	3,576	0.9
General machinery and equipment	1,739	0.4	1,848	0.4	2,172	0.5
Electrical machinery and equipment						
Telecommunications machinery and equipment	3,856	0.9	4,768	1.1	5,149	1.2
Electronic, components and devices						
Machinery and equipment for transportation	3,615	0.9	3,506	0.8	3,911	0.9
Precision machinery and equipment	221	0.1	194	0.0	263	0.1
Arms	-	-	-	-	-	-
Others	640	0.2	397	0.1	366	0.1
Electric, gas, heat supply, and water supply industries	97,068	23.0	97,080	23.2	95,810	22.8
Information and telecommunications industry, transport industry	834	0.2	889	0.2	697	0.2
Wholesaler, retailer, accommodations, drinking and eating services	2,010	0.5	1,671	0.4	1,683	0.4
Medical care and welfare	329	0.1	237	0.1	249	0.1
Education, learning support, complex services, and service industry	1,637	0.4	1,739	0.4	1,744	0.4
Public service	83	0.0	29	0.0	30	0.0
<b>Total</b>	<b>421,677</b>	<b>100.0</b>	<b>418,497</b>	<b>100.0</b>	<b>419,425</b>	<b>100.0</b>

**4.18 Generation of Industrial Waste by Industrial Sector**

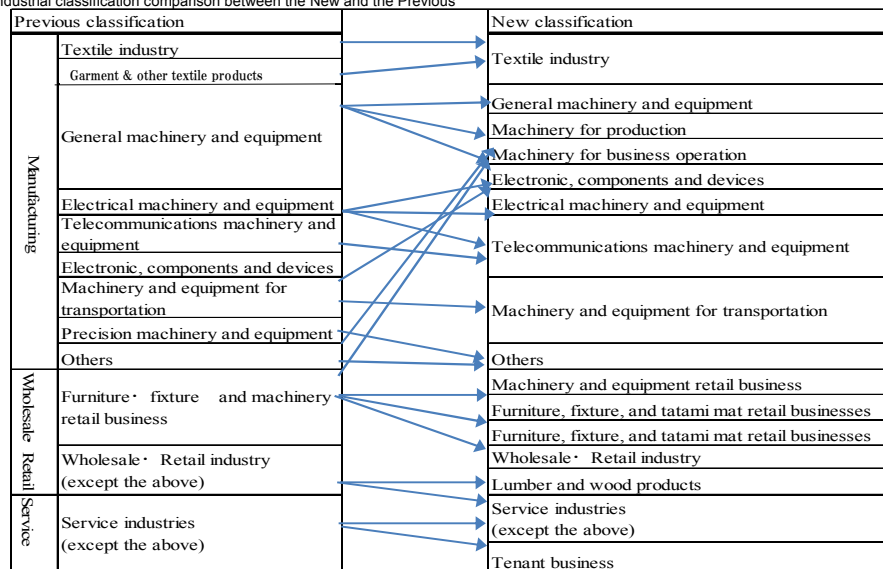
Industrial sector	FY2008		2009		2010		2011		2012		2013	
	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture & Forestry	87,974	21.8	88,410	22.7	85,090	22.0	84,710	22.2	85,721	22.6	82,963	21.6
Fishery	17	0.0	36	0.0	18	0.0	15	0.0	7	0.0	9	0.0
Mining	12,866	3.2	13,865	3.6	11,577	3.0	10,466	2.7	9,481	2.5	8,785	2.3
Construction	76,465	18.9	73,640	18.9	73,211	19.0	75,395	19.8	74,124	19.6	80,348	20.9
Manufacturing	124,899	30.9	113,205	29.0	115,813	30.0	110,898	29.1	108,970	28.7	109,470	28.5
Food	9,041	2.2	9,135	2.3	8,524	2.2	8,626	2.3	8,484	2.2	8,650	2.2
Beverages, tobacco and feedstuff	3,280	0.8	3,458	0.9	3,140	0.8	2,970	0.8	2,864	0.8	2,649	0.7
Textile industry (garment and other textile products --- classified separately before 2007)	812	0.2	986	0.3	634	0.2	625	0.2	604	0.2	768	0.2
Garment and other textile products ("consolidated into "Textile industry" after 2008)	-	-	-	-	-	-	-	-	-	-	-	-
Lumber and wood products	1,096	0.3	913	0.2	691	0.2	648	0.2	626	0.2	846	0.2
Furniture and fixture	247	0.1	228	0.1	214	0.1	217	0.1	329	0.1	194	0.1
Pulp, paper, and paper products	33,583	8.3	34,170	8.8	33,405	8.7	29,895	7.8	28,996	7.6	30,441	7.9
Printing and related business	727	0.2	653	0.2	624	0.2	558	0.1	1,272	0.3	522	0.1
Chemical industry	14,216	3.5	13,253	3.4	13,890	3.6	13,373	3.5	12,913	3.2	12,807	3.3
Petroleum and coal products	1,356	0.3	975	0.3	924	0.2	1,003	0.3	2,166	0.6	1,133	0.3
Plastic products	1,061	0.3	982	0.3	1,117	0.3	1,091	0.3	992	0.3	1,019	0.3
Rubber products	262	0.1	279	0.1	300	0.1	301	0.1	330	0.1	254	0.1
Leather-tanning, leather products and fur skins	105	0.0	189	0.0	64	0.0	57	0.0	84	0.0	42	0.0
Cement and ceramic industry	8,529	2.1	8,510	2.2	8,987	2.3	8,779	2.3	7,129	1.9	7,603	2.0
Iron and steel industry	31,955	7.9	24,898	6.4	28,634	7.4	28,249	7.4	28,655	7.6	30,755	8.0
Non-ferrous metals	3,848	1.0	2,382	0.6	2,567	0.7	2,494	0.7	3,352	0.9	1,479	0.4
Metal products	2,354	0.6	2,950	0.8	2,054	0.5	1,951	0.5	2,309	0.6	2,042	0.5
General machinery and equipment, Others	4,128	1.0	2,243	0.6	2,577	0.7	2,871	0.8	2,681	0.7	2,287	0.6
Electrical machinery and equipment												
Telecommunications machinery and equipment	4,823	1.2	4,067	1.0	4,339	1.1	4,106	1.1	3,625	1.0	3,341	0.9
Electronic, components and devices												
Machinery and equipment for transportation	3,475	0.9	2,935	0.8	3,128	0.8	3,083	0.8	2,277	0.6	2,639	0.7
Electric, gas, heat supply, and water supply industries	96,283	23.9	96,371	24.7	95,572	24.8	95,576	25.1	96,473	25.4	97,936	25.5
Information and telecommunications industry, transport industry	762	0.2	823	0.2	759	0.2	691	0.1	810	0.2	1,005	0.3
Wholesaler, retailer, accommodations, drinking and eating services	1,892	0.5	1,671	0.4	1,833	0.5	1,762	0.5	1,715	0.5	1,890	0.5
Medical care and welfare	534	0.1	465	0.1	447	0.1	138	0.0	384	0.1	515	0.1
Education, learning support, complex services, and service industry	1,795	0.4	1,184	0.3	1,542	0.4	1,138	0.3	1,385	0.3	1,594	0.4
Public service	174	0.0	77	0.0	127	0.0	96	0.0	67	0.0	128	0.0
<b>Total</b>	<b>403,661</b>	<b>100.0</b>	<b>389,746</b>	<b>100.0</b>	<b>385,988</b>	<b>100.0</b>	<b>381,206</b>	<b>100.0</b>	<b>379,137</b>	<b>100.0</b>	<b>384,642</b>	<b>100.0</b>

Notes:

- \* The sum of the industrial waste to each industry may not be exactly the same as that of the total figures due to rounding.
- \* Because of the revision of Japan Standard Industrial Classification, the new industrial classification has been used since 2008.

Source: Compiled from "An field survey of the industrial waste disposals & Research of recycling processes " ( for 2013 ) by Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE Government

Industrial classification comparison between the New and the Previous



## 4.19 Generation of Industrial Waste by Type

Type	FY1975		1980		1985		1990		1995		FY2000	
	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)
Cinder	1,203	0.5	1,797	0.6	2,409	0.8	2,678	0.7	3,258	0.8	1,892	0.5
Sludge	37,660	15.9	88,190	30.2	112,821	36.1	171,450	43.4	185,508	47.1	189,181	46.6
Waste oil	2,289	1.0	2,419	0.8	3,672	1.2	3,471	0.9	3,173	0.8	3,248	0.8
Waste acid	9,872	4.2	10,219	3.5	4,320	1.4	2,674	0.7	4,441	1.1	2,938	0.7
Waste alkali	14,435	6.1	6,090	2.1	923	0.3	1,547	0.4	2,020	0.5	1,563	0.4
Waste plastics	1,480	0.6	2,232	0.8	2,816	0.9	4,334	1.1	6,253	1.6	5,790	1.4
Waste paper	991	0.4	1,624	0.6	1,472	0.5	1,193	0.3	1,897	0.5	2,156	0.5
Wood waste	7,890	3.3	6,628	2.3	8,058	2.6	6,573	1.7	7,161	1.8	5,511	1.4
Waste fiber	204	0.1	101	0.0	98	0.0	99	0.0	84	0.0	76	0.0
Animal and plant residue	2,596	1.1	4,323	1.5	2,207	0.7	3,543	0.9	3,961	1.0	4,052	1.0
Animal offal												
Waste rubber	597	0.3	92	0.0	78	0.0	94	0.0	87	0.0		
Scrap metal	9,985	4.2	13,111	4.5	8,877	2.8	8,533	2.2	6,482	1.6	44	0.0
Waste glass and ceramics	2,870	1.2	2,297	0.8	3,910	1.3	5,295	1.3	6,067	1.5	8,096	2.0
Slag	60,950	25.8	60,561	20.7	41,649	13.3	42,507	10.8	24,242	6.2	4,797	1.2
Debris	34,144	14.4	30,007	10.3	48,948	15.7	54,798	13.9	58,460	14.8	16,448	4.1
Animal excreta	41,184	17.4	49,629	17.0	62,462	20.0	77,208	19.5	72,996	18.5	58,829	14.5
Animal corpse	38	0.0	62	0.0	96	0.0	28	0.0	145	0.0	90,489	22.3
Soot and dust	8,101	3.4	11,731	4.0	6,224	2.0	7,491	1.9	7,578	1.9	163	0.0
Total	236,489	100.0	292,312	100.0	312,271	100.0	394,736	100.0	393,812	100.0	406,037	100.0

Type	2001		2002		2003		2004		2005		FY2006	
	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)
Cinder	1,941	0.5	1,782	0.5	1,949	0.5	1,935	0.5	1,857	0.4	1,969	0.5
Sludge	186,895	46.7	182,438	46.4	190,379	46.3	188,306	45.1	187,688	44.5	185,327	44.2
Waste oil	3,089	0.8	3,185	0.8	3,817	0.9	3,310	0.8	3,471	0.8	3,406	0.8
Waste acid	2,822	0.7	2,681	0.7	2,662	0.6	2,738	0.7	2,477	0.6	5,405	1.3
Waste alkali	1,528	0.4	1,492	0.4	1,942	0.5	2,039	0.5	2,079	0.5	2,561	0.6
Waste plastics	5,473	1.4	5,552	1.4	5,462	1.3	5,939	1.4	6,052	1.4	6,094	1.5
Waste paper	2,159	0.5	2,096	0.5	1,923	0.5	1,756	0.4	1,748	0.4	1,664	0.4
Wood waste	5,357	1.3	4,963	1.3	5,915	1.4	5,959	1.4	5,951	1.4	5,852	1.4
Waste fiber	78	0.0	70	0.0	72	0.0	75	0.0	93	0.0	80	0.0
Animal and plant residue	4,110	1.0	4,477	1.1	3,393	0.8	3,393	0.8	3,117	0.7	3,008	0.7
Animal offal												
Waste rubber			203	0.1	99	0.0	119	0.0	97	0.0	104	0.0
Scrap metal	38	0.0	37	0.0	43	0.0	47	0.0	55	0.0	48	0.0
Waste glass and ceramics	8,233	2.1	7,684	2.0	9,044	2.2	10,039	2.4	10,947	2.6	11,004	2.6
Slag	4,605	1.2	4,545	1.2	4,273	1.0	5,473	1.3	4,555	1.1	4,922	1.2
Debris	16,350	4.1	16,249	4.1	17,037	4.1	21,192	5.1	26,186	6.2	21,288	5.1
Animal excreta	57,096	14.3	55,365	14.1	59,246	14.4	62,497	15.0	60,562	14.4	60,823	14.5
Animal corpse	90,094	22.5	89,799	22.8	88,977	21.6	87,686	21.0	87,204	20.7	87,573	20.9
Soot and dust	191	0.0	211	0.1	200	0.0	186	0.0	196	0.0	234	0.1
Total	400,243	100.0	393,234	100.0	411,623	100.0	417,156	100.0	421,677	100.0	418,497	99.8



## 4.19 Generation of Industrial Waste by Type

Type	2008		2009		2010		2011		FY2012		FY2013	
	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)
Cinder	2,053	0.5	1,821	0.5	1,835	0.5	1,836	0.5	1,869	0.5	1,833	0.5
Sludge	176,114	43.6	173,629	44.5	169,885	44.0	166,132	43.6	164,638	43.4	164,115	42.7
Waste oil	3,617	0.9	3,048	0.8	3,251	0.8	3,118	0.8	3,212	0.8	2,912	0.8
Waste acid	2,721	0.7	2,542	0.7	2,483	0.6	2,752	0.7	2,595	0.7	2,778	0.7
Waste alkali	2,648	0.7	1,867	0.5	2,563	0.7	1,889	0.5	1,778	0.5	2,243	0.6
Waste plastics	6,445	1.6	5,665	1.5	6,185	1.6	5,710	1.5	5,691	1.5	6,120	1.6
Waste paper	1,383	0.3	1,265	0.3	1,153	0.3	1,118	0.3	1,020	0.3	896	0.2
Wood waste	6,262	1.6	6,294	1.6	6,121	1.6	6,233	1.6	6,229	1.6	6,991	1.8
Waste fiber	74	0.0	69	0.0	79	0.0	79	0.0	68	0.0	89	0.0
Animal and plant residue	3,194	0.8	2,888	0.7	2,902	0.8	2,754	0.7	2,572	0.7	2,603	0.7
Animal offal									70	0.0	97	0.0
Waste rubber	124	0.0	113	0.0	126	0.0	84	0.0	34	0.0	26	0.0
Scrap metal	41	0.0	27	0.0	32	0.0	32	0.0	7,267	1.9	7,815	2.0
Waste glass and ceramics	8,766	2.2	7,830	2.0	7,246	1.9	7,242	1.9	6,083	1.6	6,468	1.7
Slag	6,174	1.5	5,411	1.4	6,031	1.6	6,361	1.7	16,398	4.3	16,761	4.4
Debris	18,440	4.6	14,109	3.6	16,006	4.1	15,493	4.1	58,887	15.5	63,233	16.4
Animal excreta	61,189	15.2	58,921	15.1	58,264	15.1	59,839	15.7	85,434	22.5	82,626	21.5
Animal corpse	87,698	21.7	88,162	22.6	84,847	22.0	84,459	22.2	153	0.0	125	0.0
Soot and dust	168	0.0	161	0.0	156	0.0	172	0.0	15,138	4.0	16,911	4.4
Total	403,661	100.0	389,746	100.0	385,988	100.0	381,206	100.0	379,137	100.0	384,642	100.0

Note: The sum of each type of industrial waste may be different from the total value because of rounding.

Source: "Survey of the industrial waste disposals & of recycling processes (for 2013)," Waste Management Division, Waste and Recycling Department, Minister's Secretariat, MOE, the Government of Japan

## 4.20 Changes in Disposal/Treatment of Industrial Waste

( Unit : 100 million t )

	Recycling	Reduction	Final disposal
FY1980	1.24	1.00	0.68
1985	1.29	0.92	0.91
1990	1.51	1.55	0.89
1991	1.58	1.49	0.91
1992	1.61	1.53	0.89
1993	1.56	1.57	0.84
1994	1.56	1.70	0.80
1995	1.47	1.78	0.69
1996	1.50	1.87	0.68
1997	1.69	1.79	0.67
1998	1.72	1.79	0.58
1999	1.71	1.79	0.50
2000	1.84	1.77	0.45
2001	1.83	1.75	0.42
2002	1.82	1.72	0.40
2003	2.01	1.80	0.30
2004	2.14	1.77	0.26
2005	2.19	1.79	0.24
2006	2.15	1.82	0.22
2007	2.19	1.80	0.20
2008	2.17	1.70	0.17
2009	2.07	1.69	0.14
2010	2.05	1.67	0.14
2011	2.00	1.69	0.12
2012	2.08	1.58	0.13
2013	2.05	1.68	0.12

Source: "Survey of industrial waste generation and treatment 2013," Industrial Waste Section, Waste and Recycling Division, Minister's Secretariat, MOE, the Government of Japan

#### 4.21 Changes in the Number of Permissions for the Industrial Waste and the Remaining Periods of the Capacity of Final Disposal Sites

	Number of Intermediate waste processing facilities	Landfill site (Isolated-Type)		Landfill site (Non-Leachate-Controlled Type)		Landfill site (Leachate-Controlled Type)		Total		Final disposal volume (10,000 t)	Remaining years
		Number of Facilities	Remaining capacity (10,000 m <sup>3</sup> )	Number of Facilities	Remaining capacity (10,000 m <sup>3</sup> )	Number of Facilities	Remaining capacity (10,000 m <sup>3</sup> )	Number of Facilities	Remaining capacity (10,000 m <sup>3</sup> )		
FY1990	9,912	39	1.68	1,464	5,615	1,096	9,867	2,599	15,484	8,900	1.7
1991	10,440	37	3.05	1,490	6,257	1,003	11,312	2,530	17,572	9,100	1.9
1992	10,579	37	2.03	1,609	7,194	990	12,869	2,636	20,065	8,900	2.3
1993	11,018	37	1.37	1,639	8,020	1,011	13,050	2,687	21,071	8,400	2.5
1994	11,226	40	2.08	1,676	7,955	1,004	13,272	2,720	21,229	8,000	2.7
1995	11,683	44	3.86	1,688	8,403	1,072	12,577	2,804	20,984	6,900	3.0
1996	11,976	44	4.34	1,776	8,665	1,100	12,098	2,920	20,767	6,800	3.1
1997	14,625	45	3.95	1,805	8,355	1,101	12,747	2,951	21,106	6,700	3.2
1998	14,007	43	3.50	1,834	8,412	1,095	10,616	2,972	19,031	5,800	3.3
1999	13,854	41	3.37	1,669	8,205	1,039	10,186	2,749	18,394	5,000	3.7
2000	17,381	41	2.78	1,674	8,088	1,035	9,518	2,750	17,609	4,500	3.9
2001	19,540	41	2.95	1,651	7,610	1,019	10,328	2,711	17,941	4,200	4.3
2002	19,284	39	2.88	1,632	7,309	970	10,866	2,641	18,178	4,000	4.5
2003	19,916	35	3.12	1,554	6,910	958	11,504	2,547	18,418	3,000	6.1
2004	20,613	33	2.32	1,484	7,289	961	11,192	2,478	18,483	2,600	7.2
2005	19,164	33	1.98	1,413	7,649	889	10,974	2,335	18,625	2,400	7.7
2006	19,076	33	1.91	1,382	7,722	880	10,126	2,295	17,850	2,200	8.2
2007	19,444	32	1.84	1,361	7,567	860	9,646	2,253	17,215	2,000	8.5
2008	19,345	32	1.61	1,326	7,544	841	10,093	2,199	17,639	1,700	10.6
2009	19,320	32	1.25	1,283	7,542	842	10,459	2,157	18,003	1,400	13.2
2010	19,147	25	1.18	1,244	6,933	778	12,517	2,047	19,452	1,400	13.6
2011	18,880	25	1.06	1,201	6,868	764	11,736	1,990	18,603	1,200	14.9
2012	18,829	25	0.99	1,164	7,063	753	11,206	1,942	18,271	1,300	13.9
2013	18,691	24	0.99	1,120	6,710	736	10,470	1,880	17,181	1,200	14.7

Note:

The remaining years = the remaining capacity / the final disposal volume (conversion factor: 1m<sup>3</sup>/t)

Source: "Administrative organization of industrial waste," "Survey of industrial waste generation and treatment," Industrial Waste Section, Waste and Recycling Division, Minister's Secretariat, MOE, the Government of Japan

## 4.22 Number of illegal-dumping cases of Industrial Waste and volume dumped by Prefecture ( Newly-reported cases ) (1)

	2001		2002		2003		2004		2005		2006		2007	
	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )	Number of Cases	Volume dumped ( t )
Hokkaido	31	3,345	25	28,961	19	2,363	17	1,341	23	14,344	25	10,590	20	7,739
Aomori	39	3,732	40	7,618	42	5,564	30	3,921	16	2,957	17	9,295	24	1,971
Iwate	7	36,481	5	1,724	10	11,701	27	4,837	17	8,155	13	3,479	11	2,116
Miyagi	16	2,892	9	11,316	16	58,134	9	3,002	5	1,358	2	181	2	58
Akita	5	494	4	323	3	388	2	45	0	0	0	0	0	0
Yamagata	7	826	4	261	5	320	1	150	2	134	0	0	2	27,706
Fukushima	14	7,178	17	3,612	33	2,441	25	1,390	15	796	24	3,796	3	123
Ibaraki	165	25,501	159	21,568	126	11,218	123	72,022	101	15,564	59	10,924	39	15,260
Tochigi	29	3,008	53	6,159	27	7,545	40	17,567	25	6,794	39	4,393	21	7,967
Gunma	51	8,499	40	4,277	45	6,850	26	13,766	37	1,108	20	491	4	201
Saitama	12	454	13	1,040	1	13	1	800	1	27	1	66	0	0
Chiba	270	47,731	150	36,007	191	11,712	92	9,725	73	26,294	79	23,861	40	13,853
Tokyo	0	0	2	30	0	0	0	0	0	0	0	0	0	0
Kanagawa	1	170	2	120	1	10	0	0	5	418	2	4,791	0	0
Niigata	28	2,429	26	1,434	26	3,613	17	3,526	5	1,341	18	4,191	8	825
Toyama	2	106	1	150	3	130	0	0	4	160	0	0	1	11
Ishikawa	14	4,878	6	644	6	7,187	3	1,090	10	1,924	11	2,152	2	64
Fukui	3	926	5	1,098	8	225	9	414	3	218	3	2,184	4	473
Yamanashi	8	398	2	192	6	3,098	4	778	2	20	2	140	0	0
Nagano	12	2,025	8	3,111	1	41	1	25	1	20	2	85	0	0
Gifu	3	75	2	752	10	567,272	2	70	3	33,500	1	238	1	40
Shizuoka	12	2,163	12	1,651	10	389	4	204,533	6	1,961	10	1,989	13	796
Aichi	8	2,585	7	20,201	11	687	4	10,613	1	60	4	7,770	5	476
Mie	15	977	24	6,124	27	6,766	20	2,608	11	808	6	130	14	507
Shiga	9	590	4	174	12	455	7	4,722	8	282	11	600	10	1,860
Kyoto	52	24,773	22	8,895	21	5,367	5	2,201	5	1,261	3	354	2	3,055
Osaka	8	8,257	7	3,169	0	0	3	45	1	700	1	1,000	0	0
Hyogo	17	19,759	14	9,953	11	3,677	7	443	12	14,607	18	5,073	11	5,995
Nara	5	515	3	40	9	1,183	24	10,333	10	1,160	14	5,845	7	1,270
Wakayama	11	4,360	14	7,202	2	36	8	853	10	418	5	846	1	88
Tottori	13	888	2	194	8	258	3	57	2	23	7	956	7	1,225
Shimane	11	953	11	4,236	5	647	1	0	2	87	4	100	2	122
Okayama	10	1,819	20	3,830	21	972	21	992	10	625	12	1,069	1	20
Hiroshima	7	625	5	584	8	1,839	1	12	8	1,598	5	959	6	506
Yamaguchi	3	838	4	21,641	6	309	1	13	1	2,140	0	0	1	18
Tokushima	3	1,458	6	1,123	3	43	2	147	5	580	2	200	4	80
Kagawa	8	679	4	123	10	886	8	505	6	207	1	211	0	0
Ehime	14	224	10	1,064	5	1,137	5	30,865	10	17,844	14	991	10	434
Kochi	11	1,771	17	507	19	1,102	13	252	5	167	5	513	0	0
Fukuoka	24	4,748	15	1,646	8	826	4	412	5	887	4	265	5	103
Saga	8	2,382	6	496	0	0	2	54	2	1,037	3	760	1	70
Nagasaki	56	3,465	37	2,358	30	2,931	29	1,713	22	1,244	16	634	43	1,731
Kumamoto	19	1,899	29	25,511	44	7,332	17	1,755	9	1,500	18	2,035	9	530
Oita	21	782	33	4,184	3	122	4	139	5	1,434	3	50	7	807
Miyazaki	27	1,583	11	446	7	117	28	1,886	38	2,652	43	16,616	27	3,072
Kagoshima	52	1,950	29	1,153	27	3,314	22	1,627	11	1,019	21	1,011	14	549
Okinawa	9	496	15	61,283	8	4,759	1	24	5	2,745	6	401	0	0
Total	1,150	241,676	934	318,181	894	744,978	673	410,824	558	172,179	554	131,233	382	101,718

## Notes:

- 1) A figures is the number of illegal dumping cases that were identified and reported in an indicated year.
- 2) The aggregated amount of illegal dumping in each column does not match the total value because of rounding.
- 3) The number of cases in a government-decreed cities is included in the prefecture in which the city is situated.

Source: "Status of Illegal Dumping of Industrial Waste (2014)," Office for Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.22 Number of illegal-dumping cases of Industrial Waste and volume dumped by Prefecture (including Newly-reported cases) (2)

	2008		2009		2010		2011		2012		2013		2014	
	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)	Number of Cases	Volume dumped (t)
Hokkaido	10	1,850	6	263	6	1,030	5	5,935	4	2,566	7	2,630	4	377
Aomori	7	829	5	2,521	3	102	1	86	13	1,383	10	540	8	2,283
Iwate	15	5,285	11	3,229	3	4,333	9	291	4	440	2	76	0	0
Miyagi	5	454	6	2,712	0	0	0	0	0	0	1	21	1	176
Akita	1	45	1	110	0	0	0	0	0	0	0	0	0	0
Yamagata	0	0	3	176	0	0	1	55	0	0	0	0	1	17
Fukushima	4	44,018	9	3,957	2	812	3	1,398	0	0	2	173	7	473
Ibaraki	59	35,873	36	5,848	28	3,486	34	8,310	41	3,713	28	4,684	34	2,932
Tochigi	13	4,678	7	653	12	5,289	4	8,098	7	3,926	12	610	5	2,458
Gunma	5	178	5	550	8	565	8	449	5	3,365	6	707	6	463
Saitama	0	0	0	0	1	20	0	0	0	0	0	0	0	0
Chiba	16	2,287	39	3,220	35	5,830	34	8,380	16	4,502	13	2,281	7	385
Tokyo	0	0	0	0	0	0	0	0	0	0	0	0	1	30
Kanagawa	0	0	0	0	0	0	0	0	1	22	0	0	0	0
Niigata	7	854	14	726	4	676	3	665	5	229	2	192	7	751
Toyama	2	40	0	0	0	0	0	0	0	0	0	0	0	0
Ishikawa	5	773	4	88	3	89	5	113	2	230	0	0	6	160
Fukui	7	361	8	357	3	126	2	917	2	531	2	73	1	200
Yamanashi	2	315	5	234	5	163	2	44	2	834	2	160	3	1,816
Nagano	0	0	1	9,220	0	0	1	119	0	0	0	0	0	0
Gifu	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shizuoka	18	5,649	8	540	5	399	4	84	2	4,058	0	0	5	135
Aichi	5	998	5	540	1	150	0	0	0	0	1	30	0	0
Mie	8	68,005	5	393	4	311	3	390	5	205	3	601	3	6,390
Shiga	4	250	2	125	2	26,000	2	4,300	2	24	7	2,633	2	10
Kyoto	5	2,495	7	2,248	2	827	0	0	1	60	4	1,209	4	299
Osaka	0	0	0	0	2	190	0	0	0	0	0	0	0	0
Hyogo	3	3,591	7	2,716	5	1,358	6	322	5	747	5	454	1	15
Nara	15	3,765	10	10,781	12	600	2	160	8	527	3	2,630	0	0
Wakayama	5	2,859	0	0	1	573	1	1,065	1	1,065	4	1,616	0	0
Tottori	0	0	10	355	0	0	1	182	3	1,241	1	15	0	0
Shimane	2	67	2	372	1	20	0	0	2	44	1	15	3	120
Okayama	2	55	3	60	3	103	0	0	3	1,142	1	61	2	693
Hiroshima	5	725	8	1,350	8	233	9	1,957	4	440	2	36	2	55
Yamaguchi	2	161	0	0	1	1,000	0	0	0	0	1	82	0	0
Tokushima	2	20	0	0	1	59	0	0	1	13	0	0	4	129
Kagawa	4	5,241	2	602	1	47	0	0	0	0	1	60	1	29
Ehime	7	342	7	233	1	22	2	237	1	19	0	0	1	11
Kochi	1	2,500	0	0	2	150	2	325	3	438	1	108	1	63
Fukuoka	3	2,182	1	62	1	18	0	0	0	0	3	3,848	3	1,309
Saga	2	704	4	235	9	3,903	5	1,228	5	563	4	227	1	23
Nagasaki	14	515	4	279	10	376	11	409	9	257	7	1,443	8	597
Kumamoto	0	0	0	0	1	30	2	108	0	0	3	61	8	550
Oita	0	0	0	0	1	30	1	15	0	0	1	34	0	0
Miyazaki	23	2,329	10	1,226	8	135	14	969	16	10,463	11	1,099	11	2,197
Kagoshima	17	2,078	15	551	15	1,438	12	1,565	10	754	7	406	12	3,585
Okinawa	3	358	9	743	6	1,451	3	5,136	4	75	1	27	2	43
Total	308	202,730	279	57,274	216	61,944	192	53,311	187	43,875	159	28,840	165	28,773

Source: "Status of Illegal Dumping of Industrial Waste (2014)," Office for Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.22 Number of illegal-dumping cases of Industrial Waste and volume dumped by Prefecture (Newly-reported cases) (3)

	Illegal dumping (case)	Amount (10,000 t)
FY1993	274	34.2
1994	353	38.2
1995	679	44.4
1996	719	21.9
1997	855	40.8
1998	1,197	42.4
1999	1,049	43.3
2000	1,027	40.3
2001	1,150	24.2
2002	934	31.8
2003	894	74.5
2004	673	41.1
2005	558	17.2
2006	554	13.1
2007	382	10.2
2008	308	20.3
2009	279	5.7
2010	216	6.2
2011	192	5.3
2012	187	4.4
2013	159	2.9
2014	165	2.9

Note:

Figures show the cases in which a dumped volume per case is 10t or more among those cases grasped by prefectures and government-creed cities.

Source: "Status of Illegal Dumping of Industrial Waste (2014)," Office for Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.23 Survey on Environmental impacts by Illegal dumping and measures by prefectures (the unsolved cases)

(As of the end of FY2014)

	Number of unsolved cases	Percentage (%)	Remaining volume (t)	Percentage (%)
Have already been detrimental to environment	7	0.3%	2,050,933	12.9%
Measure/order - issued	5	0.2%	2,050,701	12.9%
Administrative subrogation - Already taken	3	0.1%	1,914,456	12.0%
Not yet	2	0.1%	136,245	0.9%
Measure/order - Not issued yet	2	0.1%	232	0.0%
Administrative advice etc.	2	0.1%	232	0.0%
Offender not identified yet	0	0.0%	0	0.0%
More likely to be detrimental to environment	83	3.2%	5,566,016	34.9%
Measure/order - issued	45	1.7%	4,846,092	30.4%
Administrative subrogation - Already taken	13	0.5%	3,932,326	24.7%
Not yet	32	1.2%	913,766	5.7%
Measure/order - Not issued yet	38	1.5%	719,924	4.5%
Administrative advice etc.	37	1.4%	719,902	4.5%
Offender not identified yet	1	0.0%	22	0.0%
Not detrimental currently	2,474	95.8%	7,921,431	49.7%
Measure/order - issued	71	2.7%	1,161,826	7.3%
Administrative subrogation - Already taken	4	0.2%	64,268	0.4%
Not yet	67	2.6%	1,097,558	6.9%
Measure/order - Not issued yet	2,403	93.0%	6,759,604	42.4%
Administrative advice etc.	1,903	73.7%	5,075,876	31.8%
Offender not identified yet	334	12.9%	505,099	3.2%
No response	166	6.4%	1,178,629	7.4%
Under investigatic	19	0.7%	403,199	2.5%
Measure/order - issued	0	0.0%	0	0.0%
Administrative subrogation - Already taken	0	0.0%	0	0.0%
Not yet	0	0.0%	0	0.0%
Measure/order - Not issued yet	19	0.7%	403,199	2.5%
Administrative advice etc.	19	0.7%	403,199	2.5%
Offender not identified yet	0	0.0%	0	0.0%
Total	2,583	100.0%	15,941,579	100.0%

## Notes:

\* "Administrative advice, etc." means such governmental action as an administrative advice, collection of reports, a site inspection, an order for improvement, accusation, order of business suspension, nullification of business licenses, nullification of facility construction permits, etc.

\* The aggregated amount of the remaining volume and the rates in each column doesn't match the total value because of rounding.

Source: "Status of Illegal Dumping of Industrial Waste in FY 2014," Office of Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.24 Offenders of illegal dumping

	Waste-discharging business		Non-licensed business		Licensed business		Other		Multiple businesses		Unknown		Total	
	Number (case)	Weight (t)	Number (case)	Weight (t)	Number (case)	Weight (t)	Number (case)	Weight (t)	Number (case)	Weight (t)	Number (case)	Weight (t)	Number (case)	Weight (t)
FY1998	694	141,548	77	148,418	74	46,218			19	7,708	333	80,408	1,197	424,300
1999	619	96,509	108	105,894	87	53,725			14	17,700	221	159,465	1,049	433,293
2000	571	119,982	95	76,299	75	53,760			15	55,534	271	97,700	1,027	403,274
2001	498	122,789	174	46,448	67	18,148			17	7,290	394	47,001	1,150	241,676
2002	444	48,471	137	83,455	64	143,395			18	23,247	271	19,613	934	318,181
2003	368	73,796	93	49,089	55	592,467			28	5,004	350	24,623	894	744,978
2004	290	32,289	65	86,727	43	244,887			13	5,620	262	41,302	673	410,824
2005	228	26,635	85	82,833	52	29,017			7	9,180	186	24,514	558	172,179
2006	271	47,810	63	10,499	58	34,869			14	26,109	148	11,947	554	131,233
2007	193	24,113	57	22,804	21	31,114			11	3,502	100	20,186	382	101,718
2008	149	97,894	30	19,859	23	5,709	7	6,419	28	54,945	71	17,905	308	202,730
2009	150	24,780	18	3,301	12	2,523	6	300	22	12,658	71	13,711	279	57,274
2010	122	22,585	8	14,361	6	12,740	14	5,707	21	2,545	45	4,006	216	61,944
2011	119	19,487	8	4,238	9	18,912	2	179	10	5,849	44	4,646	192	53,311
2012	105	22,489	5	5,438	11	10,229	13	836	10	2,427	43	2,457	187	43,875
2013	90	13,313	2	76	6	1,615	6	549	15	9,256	40	4,031	159	28,840
2014	71	11,895	9	4,740	8	1,283	15	1,089	17	8,005	45	1,761	165	28,773

## Notes:

- "Other" has been added in the survey since FY 2009. It includes waste-discharging businesses such as secondhand-goods dealers, landowners, and also non-licensed businesses or other than licensed businesses.
- The aggregated amount in the column of "Weight" may not match the total value because of rounding.

Source: "Status of Illegal Dumping of Industrial Waste in FY 2014," Office of Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan



#### 4.25 Number of Unsolved Cases of Illegal Dumping and Remaining Amount

(as of the end of FY2014)

	Less than 500 t	500 t ~ 1,000 t	1,000 t ~ 5,000 t	5,000 t ~	5,000 t ~	10,000 t ~	50,000 t ~	100,000 t ~	Total	
					5,000 t ~ 10,000 t	50,000 t ~ 100,000 t	100,000 t ~			
Number of cases		1,562	228	462	331	120	149	36	26	2,583
	%	60.5%	8.8%	17.9%	12.8%	4.6%	5.8%	1.4%	1.0%	100.0%
Amount (t)		164,873	150,967	1,053,229	14,572,509	835,764	2,906,659	2,242,455	8,587,632	15,941,579
	&	1.0%	0.9%	6.6%	91.4%	5.2%	18.2%	14.1%	53.9%	100.0%

Source: "Illegal Dumping of Industrial Waste in FY 2014," Office of Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

#### 4.26 Number of the Unsolved Cases of Illegal Dumping and Remaining Amount by Prefecture

(As of the end of FY2014)

Prefecture	Number of cases	Amount ( t )
Hokkaido	49	183,181
Aomori	108	172,123
Iwate	34	55,047
Miyagi	21	1,127,925
Akita	6	1,017,517
Yamagata	6	59,766
Fukushima	60	76,992
Ibaraki	383	526,977
Tochigi	100	298,744
Gunma	119	97,705
Saitama	95	925,539
Chiba	779	3,945,879
Tokyo	26	81,080
Kanagawa	34	126,697
Niigata	48	71,096
Toyama	3	2,505
Ishikawa	48	98,749
Fukui	9	900,093
Yamanashi	31	27,339
Nagano	20	52,838
Gifu	31	90,146
Shizuoka	23	42,344
Aichi	37	663,686
Mie	44	1,944,501
Shiga	37	737,238
Kyoto	44	123,548
Osaka	36	127,285
Hyogo	46	85,974
Nara	28	250,633
Wakayama	10	30,990
Tottori	16	2,672
Shimane	8	225
Okayama	16	6,627
Hiroshima	23	56,784
Yamaguchi	2	2,836
Tokushima	3	76,499
Kagawa	14	150,003
Ehime	16	452,918
Kochi	2	715
Fukuoka	27	527,951
Saga	16	12,607
Nagasaki	27	205,211
Kumamoto	11	6,750
Oita	5	1,338
Miyazaki	18	10,646
Kagoshima	42	39,241
Okinawa	22	444,417
Total	2,583	15,941,579

Source: "Illegal Dumping of Industrial Waste in FY 2014," Office of Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.27 Improper Disposal of Sulfate Pitch

(As of the end of FY2014)

FY	Improper disposal case		Treated		Not-treated		
	Number of cases	Volume of Improper disposal (drums)	Number of cases	Treated (drums)	Number of cases	Not-treated (drums)	Partially-treated (drums)
1999	8	1,639	8	1,639	0	0	0
2000	5	822	5	822	0	0	0
2001	34	5,626	33	5,577	1	49	0
1st half	11	1,644	11	1,644	0	0	0
2nd half	23	3,982	22	3,933	1	49	0
2002	38	17,613	36	17,168	2	345	100
1st half	17	7,616	17	7,616	0	0	0
2nd half	21	9,997	19	9,552	2	345	100
2003	81	28,462	78	28,067	3	260	135
1st half	39	21,371	37	21,036	2	200	135
2nd half	42	7,091	41	7,031	1	60	0
2004	62	9,829	60	8,954	2	204	671
1st half	42	8,252	40	7,377	2	204	671
2nd half	20	1,577	20	1,577	0	0	0
2005	31	4,322	31	4,322	0	0	0
1st half	15	1,522	15	1,522	0	0	0
2nd half	16	2,800	16	2,800	0	0	0
2006	14	2,170	14	2,170	0	0	0
1st half	13	1,375	13	1,375	0	0	0
2nd half	1	795	1	795	0	0	0
2007	4	277	4	277	0	0	0
2008	0	0	0	0	0	0	0
2009	1	7	1	7	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
Total	278	70,767	270	69,003	8	858	906

Note:

Volume was converted in terms of the number of drums.

Source: "Status of Improper Disposal of Sulfate Pitch (2014),"Office for Waste Disposal Management, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.28 Wide-area movement of municipal waste

( Unit : 10 thousand t / yr. ) (FY2013)

Region	Final disposal amount	Transported out of Prefectures 1 )		Transported out of the Region 2 )	
Hokkaido / Tohoku	158.5	1.4	(0.9%)	0.3	(0.2%)
		4.5%		1.9%	
Tokyo Metropolitan area	118.0	19.5	(16.5%)	9.1	(7.7%)
		62.1%		57.2%	
Hokuriku / Chubu	61.6	7.3	(11.9%)	5.5	(8.9%)
		23.2%		34.6%	
Kinki	100.2	2.1	(2.1%)	0.4	(0.4%)
		6.7%		2.5%	
Chugoku / Shikoku	38.7	0.7	(1.8%)	0.4	(1.0%)
		2.2%		2.5%	
Kyushu / Okinawa	49.9	0.4	(0.8%)	0.1	(0.1%)
		1.3%		0.4%	
Total	526.8	31.4	(6.0%)	15.9	(3.0%)
		100.0%		100.0%	

## Notes:

1: A simple regional aggregation of the municipal wastes of which final disposal was outsourced to public corporations/businesses outside the prefecture by a municipality. However, the amount outsourced to Osaka Bay Regional Offshore Environmental Improvement Center is not included.

2: The amount of municipal wastes of which final disposal was outsourced to public corporations/businesses outside the region by municipalities.

-The sum may not exactly match the total value because the unit is rounded off.

-The percentage in the parentheses (%) shows that of the final disposal amount.

-The figures in the lower row for each region show the regional rate of the final disposal amount transported out of the prefecture and the region respectively.

Source: "Report of further study on regional waste management (cf. "Current status of Regional waste disposal") and the amount of waste recycling," Planning Division, Minister's Secretariat, Waste Management and Recycling Department, MOE, the Government of Japan

## 4.29 Wide-area movement of industrial waste

(Unit : 10 thousand t / yr.) (FY2013)

	Amount transported out of prefectures where waste was discharged			
			Inside the region	Outside the region
Hokkaido / Tohoku	234.7	(6.0%)	136.4	98.2
Tokyo Metropolitan area	1,734.6	(44.2%)	1,440.0	294.6
Chubu	688.8	(17.5%)	357.9	330.8
Kinki	651.4	(16.6%)	399.2	252.2
Chugoku	250.3	(6.4%)	114.8	135.6
Shikoku	105.8	(2.7%)	30.5	75.3
Kyushu / Okinawa	260.4	(6.6%)	206.1	54.3
Total	3,926.0	(100.0%)	2,685.0	1,241.1

Note:

The sum value may not exactly match the total because the unit less than 1,000 tons are rounded.

Source: "Report of further study on regional waste management (cf. "Current status of Regional waste disposal") and the amount of waste recycling," Planning Division, Minister's Secretariat, Waste Management and Recycling Department, MOE, the Government of Japan

### 4.30 Percentage of Containers and Packaging in Household Waste

(Ratio by volume)

(Unit : %)

		2009	2010	2011	2012	2013	2014	2015
Packaging	Papers	11.8	9.6	14.5	13.1	13.1	13.9	10.3
	Plastic	36.6	34.8	33.9	36.5	35.9	43.2	39.8
	Glass	1.6	1.4	1.2	1.3	1.0	1.0	1.4
	Metal	3.5	4.1	2.5	2.9	3.0	2.9	3.5
	Other	0.2	0.1	0.4	0.1	0.2	0.1	0.0
	Subtotal	53.7	50.0	52.5	53.8	53.0	61.0	55.1
Non-packaging	Papers	16.8	16.1	20.3	17.8	18.1	17.5	19.4
	Plastic	4.2	5.6	7.1	5.0	4.9	5.9	5.4
	Glass	0.1	0.1	0.1	0.2	0.1	0.0	0.1
	Metal	0.6	0.5	0.4	0.9	0.8	0.6	0.9
	Other	24.6	27.6	19.7	22.4	23.1	14.9	19.0
	Subtotal	46.3	49.9	47.5	46.2	47.0	39.0	44.9
Total		100.0	99.9	100.0	100.0	100.0	100.0	100.0

(Ratio by wet weight)

(Unit : %)

		2009	2010	2011	2012	2013	2014	2015
Packaging	Papers	7.8	6.0	10.3	9.1	7.4	8.2	6.6
	Plastic	8.4	6.7	8.8	8.9	8.6	9.9	8.7
	Glass	4.9	3.5	3.7	4.0	3.6	3.9	4.6
	Metal	1.9	1.5	1.3	2.1	1.5	1.7	2.0
	Other	0.3	0.1	0.1	0.2	0.2	0.1	0.0
	Subtotal	23.3	17.8	24.1	24.1	21.3	23.8	22.0
Non-packaging	Papers	24.8	24.2	27.6	26.7	25.3	26.4	26.3
	Plastic	2.8	2.0	1.9	2.4	1.6	1.7	2.0
	Glass	0.3	0.2	0.2	0.3	0.2	0.3	0.2
	Metal	1.2	0.6	0.7	1.5	1.3	1.5	1.7
	Other	47.6	55.2	45.5	45.0	50.3	46.5	47.8
	Subtotal	76.7	82.2	75.9	75.9	78.7	76.4	78.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: "Report on Using and Discarding Containers and Packaging," Office for Recycling Promotion, Policy Planning Division, Waste and Recycling Department, Minister's Secretariat, Ministry of the Environment, the Government of Japan

## 4.31 Changes in shipping volume of glass bottles

By use (Unit : 1,000 t / year)

	Pharmaceuti- als and beverages	Cosmetics	Food, seasoning	Milk	Sake 1.8L	Sake (small and medium)	Beer	Western liquor and other Japanese liquor	Soft drinks	Others	Export	Total
1995	304.9	37.6	455.8	26.8	116.5	155.4	94.8	263.0	743.3	3.4	0.9	2,202.4
1996	312.9	37.1	461.5	28.2	112.1	162.9	123.3	260.9	665.3	2.7	2.6	2,169.5
1997	310.5	37.1	437.2	29.6	97.9	161.7	126.7	280.1	593.2	2.8	2.7	2,079.5
1998	282.9	32.1	432.5	30.7	84.6	151.8	156.9	280.2	478.9	2.0	1.5	1,934.1
1999	331.2	33.3	429.4	32.8	79.2	144.7	120.4	243.4	419.9	1.7	0.9	1,836.9
2000	347.1	33.7	428.3	33.7	75.5	145.8	98.8	227.0	376.6	1.3	1.5	1,769.3
2001	352.4	32.4	416.7	29.4	67.3	143.8	84.5	209.3	361.3	1.1	0.7	1,698.9
2002	362.2	30.5	411.8	28.4	63.7	141.9	70.8	187.1	334.6	1.3	0.0	1,632.3
2003	358.8	31.3	395.3	29.0	62.9	144.5	42.5	176.9	305.3	0.9	0.0	1,547.4
2004	327.4	34.2	391.6	28.0	65.6	152.9	50.5	175.0	303.4	1.2	0.0	1,529.8
2005	324.9	34.1	383.7	26.6	62.9	140.4	46.7	168.5	281.0	0.1	0.0	1,468.9
2006	300.2	29.7	373.7	23.0	62.4	144.2	55.2	165.5	276.1	0.0	0.0	1,430.0
2007	291.6	32.2	356.9	22.8	63.7	138.1	48.2	159.4	276.4	0.1	0.0	1,389.4
2008	298.7	29.4	354.1	18.7	65.2	133.9	47.1	153.5	263.3	0.0	0.0	1,363.9
2009	291.7	24.9	348.2	18.3	61.5	129.0	46.0	146.4	256.0	0.0	0.0	1,322.0
2010	296.9	22.3	356.3	16.8	60.0	122.8	43.7	146.4	260.8	0.1	-	1,326.1
2011	295.7	20.5	336.2	15.6	60.8	121.3	43.5	136.3	265.9	0.1	-	1,295.9
2012	287.3	19.0	330.4	14.7	59.7	124.8	42.3	136.9	249.8	0.1	-	1,265.0
2013	276.9	17.5	325.4	14.0	59.8	122.8	40.5	140.6	257.8	0.1	-	1,255.4
2014	265.2	17.5	313.0	12.9	58.2	123.9	41.9	141.4	244.0	0.2	-	1,218.2

Source: Compiled from materials of Japan Glass Bottle Association, Glass Bottle Forum Japan, and Glass Bottle Recycle Promotion Association.

## 4.32 Production and disposal of plastics

(Unit : 1,000 t / year)

	Production of resin	Domestic consumption of resin products 1 )	Total disposal of plastic waste	General Waste	Industrial waste
1975	5,170	3,150	2,610	1,470	1,140
1980	7,520	5,520	3,250	1,780	1,470
1985	9,230	6,990	4,190	2,320	1,870
1986	9,370	7,300	4,530	2,500	2,030
1987	10,030	7,920	4,650	2,600	2,050
1988	11,020	8,610	4,880	2,760	2,120
1989	11,910	9,570	5,060	2,910	2,150
1990	12,630	9,990	5,570	3,130	2,440
1991	12,800	10,070	6,220	3,450	2,770
1992	12,580	9,280	6,920	3,910	3,010
1993	12,250	9,020	7,560	4,190	3,370
1994	13,040	9,660	8,460	4,230	* 4,230
1995	14,030	9,790	8,840	4,430	* 4,410
1996	14,660	10,810	9,090	4,550	* 4,540
1997	15,210	11,360	9,490	4,780	* 4,710
1998	13,910	10,200	9,840	4,990	* 4,850
1999	14,570	10,810	9,760	4,860	* 4,900
2000	14,740	10,980	9,970	5,080	* 4,890
2001	13,880	10,960	10,160	5,280	* 4,890
2002	13,850	10,570	9,900	5,080	* 4,820
2003	13,979	11,005	10,010	5,131	* 4,879
2004	14,460	11,360	10,130	5,190	* 4,940
2005	14,510	11,590	10,060	5,200	* 4,860
2006	14,450	11,200	10,050	5,080	* 4,980
2007	14,650	11,030	9,940	5,020	* 4,920
2008	13,450	10,890	9,980	5,020	* 4,960
2009	11,210	8,430	9,120	4,440	* 4,680
2010	12,700	9,700	9,450	4,590	* 4,860
2011	11,590	9,870	9,520	4,650	* 4,860
2012	10,540	9,600	9,290	4,460	* 4,820
2013	10,600	9,660	9,400	4,540	* 4,860
2014	10,610	9,700	9,260	4,420	* 4,830

Note:

- Domestic consumption of resin products = (Production of resin) - (export volume of resin) + (import volume of resin) - (amount of liquid resin) - (amount of processing losses) + (recycled resin input) - (export volume of product) + (import amount of product)
- \* Since 1994, the unused volume of production/process and loss volume during processing have been added to the volume of industrial waste.

Source: Compiled from information of Plastic Waste Management Institute web page.



### 4.33 Changes in sales amounts of aluminum cans and recycling ratio

	Total weight sold ( 1,000 t / year )	Weight recycled ( 1,000 t / year )	Recycling rate (%)
1984	54	22	40.6
1994	248	151	61.1
2001	283	235	82.8
2002	292	243	83.1
2003	297	243	81.8
2004	303	261	86.1
2005	302	276	91.7
2006	299	271	90.9
2007	301	279	92.7
2008	299	261	87.3
2009	293	274	93.4
2010	296	274	92.6
2011	298	276	92.5
2012	301	285	94.7
2013	304	255	83.8
2014	313	273	87.4

Note:

Recycling rate refers to percentage of aluminum can scrap that was recycled to aluminum can materials, car parts, a deoxidizing agent and the like for steel-making, among the consumed aluminum cans.

Source: Compiled from materials of Japan Aluminum Can Recycling Association.

### 4.34 Changes in consumption and recycling rate of steel cans

	Total weight sold (1,000 t/year)	Weight recycled (1,000 t/year)	Recycling rate (%)
1984	1,027	341	33.2
1994	1,475	1,030	69.8
2001	1,055	899	85.2
2002	949	817	86.1
2003	911	797	87.5
2004	908	791	87.1
2005	770	868	88.7
2006	832	732	88.1
2007	834	710	85.1
2008	772	683	88.5
2009	699	623	89.1
2010	684	612	89.4
2011	682	616	90.4
2012	664	603	90.8
2013	611	567	92.9
2014	571	525	92.0

Notes:

- Before 1998, production amounts are used for consumption weights and used amounts of steel can scrap are used for collected weights.
- Recycling rates = recycled weight / weight of consumption

Source: Compiled from materials of Japan Steel Can Recycling Association.

## 4.35 Change in recovery rate of cardboard

	Recovery rate (%)
2004	84.0
2005	86.9
2006	88.4
2007	90.3
2008	92.1
2009	94.8
2010	95.0
2011	93.3
2012	94.1
2013	95.3
2014	96.7

### Notes:

· Recovery rate = [A] Real recovery amount of cardboard, waste paper, etc. / ([B] Consumption amount of base paper for cardboard + [C] Amount of products for import and export )

[A] is calculated by subtracting a weight of waste paper other than other than cardboard-origin and glue adhered on the cardboard from the collected weight of waste cardboard.

[B] refers to consumption amount of cardboard base-paper at cardboard factories.

[C] refers to an excess amount of exports (over imports) of cardboard used to pack import and export products.

### ※ Revised calculation method for recovery rate

According to the previous method, the weight of any brand products other than cardboard and foreign materials contained in collected waste was calculated on an assumption that they were contained with the same ratio as that in the domestic shipping amount of the base paper for cardboard and the consumption amount of it in the plants. This time, an inspection at factory sites by opening collected cardboard was conducted to find out that the ratio of weight of other brand products than cardboard and foreign materials was 8.4%. The new recovery rate is calculated by this ratio, that is lower than the previous ratio by 3 to 5 %.

Source: Compiled from materials of Cardboard Recycling Council.

## 4.36 Changes in production volume and recovery ratio of PET bottles

( Unit : ton/year )

	Amount of sorted-collection by municipalities	Production of PET resin ( actual demand )					Sales of designated PET bottles ( 1,000 ton )	2) Municipal recovery rate	Recovery rate (including business-related waste)
		Soft drinks	Specified seasonings without oil	Sake, etc.	Other 1)	Total			
1995	2,594	118,831	13,491	9,788	30,720	172,830		1.8%	
1996	5,094	149,088	13,581	10,233	30,521	203,423		2.9%	
1997	21,361	194,748	13,222	10,836	32,923	251,729		9.8%	
1998	47,620	258,793	12,900	10,234	31,972	313,899		16.9%	
1999	75,811	308,222	12,501	11,479	38,284	370,486		22.8%	
2000	124,873	338,654	12,829	10,461	39,452	401,396		34.5%	
2001	161,651	380,372	11,265	11,090	40,053	442,780		40.1%	44.1%
2002	188,194	391,126	12,076	9,363	33,308	445,873		45.6%	53.4%
2003	211,753	412,970	12,606	10,980	34,175	470,731		48.5%	61.1%
2004	238,469	490,173	11,174	12,365	35,839	549,551		46.4%	62.3%
2005	251,962	509,684	10,995	11,904	38,027	570,610	530	47.5%	61.7%
2006	268,266	515,414	11,100	11,970	38,998	577,482	544	49.3%	66.3%
2007	283,441	533,091	13,175	11,583	41,363	599,212	572	49.6%	69.3%
2008	283,866	520,120	21,644	14,511	45,779	602,054	573	49.5%	77.7%
2009	287,340	511,080	21,121	14,500	46,545	593,246	565	50.9%	77.4%
2010	296,815	521,657	21,991	13,972	42,930	600,550	596	49.8%	72.2%
2011	297,839	511,412	20,339	13,363	37,893	583,007	604	49.3%	79.6%
2012	299,241	529,989	24,049	14,948	41,046	610,032	583	51.3%	90.4%
2013	301,787	568,340	25,553	15,291	44,620	653,804	579	52.1%	91.3%
2014	292,157	571,905	21,784	13,770	45,465	652,925	569	51.3%	93.5%

## Notes:

1. Except soft drinks, specified seasonings without oil, alcoholic beverages: namely, detergent,s and shampoo, cooking oil, other seasoning, cosmetics, pharmaceutical products, and the like.

2. Municipal recovery rate = Amount of municipal sorted collection ÷ Sales volume of PET bottles

(Until the end of fiscal year 2004, defined as Municipal recovery rate = Amount of municipal separate collection ÷ Production volume of resin )

Source: Compiled from materials of the Council for PET Bottles Recycling.

and "The Performance of Sorted Collection and Recycling by Municipalities under the Containers and Packaging Recycling Act in FY 2015" by Office for Recycling Division, Waste Management and Recycling Department, Minister's Secretariat, MOE, Government of Japan

### 4.37 Utilization of products from recycled PET bottles

( Unit : ton / year )

	Fiber	Sheet	Bottle	Molding	Other	Total
2010	79,824	57,646	8,940	6,443	339	153,192
2011	79,074	59,563	7,534	7,815	370	154,357
2012	74,605	61,684	12,343	6,027	357	155,017
2013	73,635	69,108	19,581	6,081	400	168,805
2014	67,347	59,152	19,667	3,664	225	150,056
2015	66,946	73,038	17,190	3,554	299	161,026
Ratio ( FY 2015 )	41.6%	45.4%	10.6%	2.2%	0.2%	100.0%

Source: materials of the Japan Containers And Packaging Recycling Association

### 4.38 Changes in sales volume and collection rate of household cartons

( Unit: ton / year )

	Sales volume	Collection volume	Collection rate
FY2002	171,840	39,914	23.2%
2003	181,100	44,300	24.5%
2004	188,400	46,300	24.6%
2006	191,200	48,100	25.2%
2007	194,100	55,600	28.6%
2008	189,300	56,700	30.0%
2009	184,300	57,300	31.1%
2010	184,600	56,600	30.7%
2011	184,800	56,200	30.4%
2012	180,300	57,200	31.7%
2013	178,500	59,400	33.3%
2014	176,200	60,400	34.3%

## Notes:

- Loss of paper from beverage makers, collected cartons from households, and milk cartons for school lunch, are not assumed to include aluminum-coated cartons.
- Collection rate of household paper cartons = volume collected from households / manufacturers' sales volume of paper cartons for home-use beverages

Source: Compiled from materials of Committee for Milk Container Environmental Issues.

### 4.39 Achievement on Sorted Collection and Recycling based on the Containers and Packaging Recycling Act

		Estimate (t)	Actual (t)	Recycled (t)	Municipalities conducting sorted collection		
					# of municipalities conducting collection	Rate (%)	Population coverage rate (%)
Clear glass bottles	FY1997	406,133	292,775	275,119	1,610	49.5	76.8
	2010	358,442	326,614	310,356	1,660	94.9	98.9
	2011	324,023	322,655	308,851	1,639	94.1	98.5
	2012	340,563	315,630	302,432	1,635	93.9	98.4
	2013	339,032	325,149	301,619	1,634	93.8	98.5
	2014	323,210	319,018	296,590	1,640	94.2	98.5
Brown glass bottles	FY1997	299,536	243,916	228,170	1,610	49.5	77.0
	2010	307,399	282,663	268,540	1,662	95.0	98.9
	2011	293,965	278,409	264,833	1,643	94.3	98.5
	2012	292,687	274,022	260,553	1,636	93.9	98.3
	2013	291,567	271,797	258,447	1,635	93.9	98.4
	2014	274,004	260,111	249,682	1,640	94.2	98.4
Glass bottles of other colors	FY1997	118,536	107,533	95,190	1,535	47.2	74.1
	2010	183,967	188,117	175,345	1,657	94.7	98.3
	2011	179,736	189,780	177,615	1,646	94.5	98.0
	2012	179,717	196,237	183,701	1,644	94.4	97.9
	2013	179,402	200,578	188,356	1,655	95.0	98.0
	2014	185,679	202,745	191,573	1,663	95.5	98.0
Paper containers and packaging	FY2000	86,724	34,537	26,310	343	10.6	13.0
	2010	158,374	93,107	82,518	627	35.8	34.6
	2011	127,455	91,251	84,204	613	35.2	34.4
	2012	130,090	88,698	83,171	612	35.1	33.9
	2013	133,082	90,121	84,575	644	37.0	34.4
	2014	132,368	82,202	77,656	661	38.0	35.6
Pet bottles	FY1997	21,180	21,361	19,330	631	19.4	41.8
	2010	314,628	296,815	286,009	1,711	97.8	98.5
	2011	301,211	297,839	288,292	1,694	97.2	98.6
	2012	304,838	299,241	288,762	1,696	97.4	99.6
	2013	306,038	301,787	291,700	1,702	97.7	99.7
	2014	300,413	292,455	282,287	1,717	98.6	99.5
Plastic containers and packaging	FY2000	239,174	100,810	77,568	881	27.3	30.7
	2010	932,272	708,950	671,704	1,303	74.5	83.6
	2011	785,736	725,621	685,556	1,293	74.2	82.8
	2012	818,380	727,238	686,363	1,307	75.0	85.4
	2013	846,443	734,063	694,289	1,312	75.3	82.6
	2014	758,814	731,022	688,758	1,295	74.4	85.3
Steel cans	FY1997	526,701	464,662	443,506	2,411	74.1	86.4
	2010	310,523	226,038	224,329	1,722	98.4	98.1
	2011	250,251	218,637	215,719	1,698	97.5	97.6
	2012	248,461	207,845	203,446	1,692	97.1	97.5
	2013	246,687	193,804	189,527	1,689	97.0	96.7
	2014	213,227	179,068	174,722	1,692	97.2	97.5
Aluminum cans	FY1997	148,885	112,527	107,455	2,420	74.3	86.7
	2010	151,096	131,121	130,198	1,718	98.2	98.2
	2011	141,081	130,887	128,581	1,698	97.5	97.9
	2012	141,152	130,353	128,067	1,688	96.9	97.7
	2013	141,151	130,681	128,732	1,680	96.4	97.7
	2014	137,581	128,273	125,688	1,686	96.8	97.8
Cardboard	FY2000	434,888	380,290	372,576	1,728	53.5	61.0
	2010	769,679	603,244	601,753	1,583	90.5	91.8
	2011	697,549	615,841	614,937	1,561	89.6	91.3
	2012	697,363	604,528	599,496	1,558	89.4	93.2
	2013	697,643	610,129	598,892	1,556	89.3	93.5
	2014	698,150	586,654	581,809	1,563	89.8	93.4
Milk cartons and drink boxes	FY1997	23,028	6,644	6,419	993	30.5	43.4
	2010	27,334	15,612	15,542	1,357	77.5	87.9
	2011	22,696	14,447	14,413	1,314	75.4	87.8
	2012	22,904	15,079	14,426	1,308	75.1	88.0
	2013	23,321	13,933	13,183	1,304	74.9	86.5
	2014	22,919	13,231	12,476	1,301	74.7	85.6

Source: "Achievement on Sorted collection and Recycling based on the Containers and Packaging Recycling Act by municipalities in FY2014" by Office for Recycling Promotion, Policy Planning Division, Waste Management and Recycling Department, Minister's Secretariat, Ministry of the Environment

#### 4.40 Changes in production volume and recycling rate of foamed polystyrene

( Unit : 1,000 t / year )

	Production volume	Domestic circulation volume	Recycling volume	Recycling rate
1994	223	158	38	24.2%
1996	225	180	52	28.7%
1998	213	182	57	31.2%
2000	209	183	64	34.9%
2002	197	176	69	39.1%
2004	194	175	72	41.0%
2006	187	169	76	45.0%
2007	182	165	83	50.0%
2008	168	155	82	53.0%
2009	151	141	80	56.8%
2010	153	148	82	55.5%
2011	150	142	78	55.0%
2012	139	130	74	56.9%
2013	139	129	73	56.6%
2014	141	129	72	55.8%

Note:

Recycling rate= Recycling volume/Domestic distribution volume.

Source: Compiled from materials of Japan Expanded Polystyrene Association.



## 4.41 Implementation of Recycling of Specified Home Appliances

Gross weight of parts and/or materials when they are processed into a shape that can be used as materials or parts of products and transacted at any cost or for free

		Number collected in designated collection locations (thousand)	Number processed for recycling (thousand)	Weight processed for recycling (1)(A)	Weight recycled (1)(B)	Resource regeneration rate[%] (B÷A×100)	Iron [t]	Copper [t]	Aluminum [t]	Mixer of non-iron materials and iron [t]	Cathode-ray tube (CRT) glass [t]	Others [t]	Total weight [t]
FY2003	Air conditioner	1,584	1,579	69,686	57,058	81%	23,219	3,432	1,136	26,831	—	2,439	57,058
	TV	3,550	3,549	96,435	76,025	78%	8,013	3,602	183	767	55,975	7,481	76,025
	Refrigerator	2,664	2,653	153,531	97,119	63%	68,417	1,113	293	18,179	—	9,115	97,119
2004	Washing machine	2,662	2,656	80,169	52,288	65%	35,120	644	263	9,894	—	6,365	52,288
	Air conditioner	1,814	1,809	79,044	64,939	82%	25,878	4,137	1,340	30,396	—	3,185	64,939
	TV	3,786	3,777	103,200	83,868	81%	8,167	3,825	123	1,100	60,818	9,823	83,868
2005	Refrigerator	2,801	2,807	161,131	103,546	64%	71,608	1,267	380	19,401	—	10,888	103,546
	Washing machine	2,813	2,791	85,764	58,710	68%	37,668	789	435	10,893	—	8,903	58,710
	Air conditioner	1,989	1,990	85,814	72,585	84%	26,200	5,490	2,228	33,925	—	4,742	72,585
2006	TV	3,857	3,852	107,993	83,530	77%	8,678	4,068	192	1,035	53,727	15,830	83,530
	Refrigerator	2,820	2,807	162,419	108,284	66%	70,931	1,309	384	20,661	—	14,999	108,284
	Washing machine	2,952	2,950	92,801	69,664	75%	39,225	1,016	520	13,713	—	15,190	69,664
2007	Air conditioner	1,828	1,835	77,655	66,791	86%	23,910	5,031	2,023	30,275	—	5,552	66,791
	TV	4,127	4,094	117,849	91,092	77%	11,620	4,456	85	892	52,394	21,645	91,092
	Refrigerator	2,716	2,709	157,106	112,106	71%	67,042	1,722	268	20,312	—	22,762	112,106
2008	Washing machine	2,943	2,951	94,652	74,854	79%	39,857	1,050	544	14,018	—	19,385	74,854
	Air conditioner	1,890	1,872	78,715	68,861	87%	23,729	5,076	8,634	24,453	—	6,969	68,861
	TV	4,613	4,542	134,283	115,563	86%	13,881	4,951	73	1,199	68,269	27,190	115,563
2009	Refrigerator	2,725	2,724	159,763	116,683	73%	68,435	1,994	325	20,188	—	25,741	116,683
	Washing machine	2,884	2,879	94,101	77,231	82%	40,755	1,240	612	12,915	—	21,709	77,231
	Air conditioner	1,968	1,968	82,746	73,698	89%	24,403	5,406	9,344	25,696	—	8,849	73,698
2010	TV	5,365	5,210	156,546	139,476	89%	15,800	5,719	77	1,448	83,749	32,683	139,476
	Refrigerator	2,746	2,733	163,056	121,331	74%	70,095	2,401	414	20,293	—	28,128	121,331
	Washing machine	2,821	2,818	94,010	79,894	84%	41,524	1,605	789	11,360	—	24,616	79,894
2011	Air conditioner	2,154	2,114	88,530	78,069	88%	25,160	5,917	9,927	27,448	—	9,617	78,069
	TV CRT	10,320	9,213	269,145	232,475	86%	27,188	9,541	93	1,812	137,644	56,197	232,475
	LCD/PDP	218	179	2,625	1,963	74%	925	31	132	34	—	841	1,963
2012	Refrigerator	3,007	2,979	181,511	136,569	75%	77,045	2,269	538	22,770	—	33,947	136,569
	Washing machine	3,087	3,031	102,308	87,795	85%	46,200	1,514	941	12,047	—	27,093	87,795
	Air conditioner	3,142	3,071	127,850	112,848	88%	35,628	8,367	14,395	40,238	—	14,220	112,848
2013	TV	17,368	15,607	434,983	373,899	85%	43,737	15,153	218	2,636	217,846	94,309	373,899
	LCD/PDP	654	564	7,000	5,549	79%	2,709	90	290	102	—	2,358	5,549
	Refrigerator/ Freezer	3,400	3,381	210,272	159,836	76%	88,121	2,895	1,479	25,887	—	41,454	159,836
2014	Washer/Dryer	3,136	3,162	108,555	93,816	86%	48,015	1,785	1,257	13,216	—	29,543	93,816
	Air conditioner	2,341	2,372	98,783	88,566	89%	26,972	6,445	11,184	31,615	—	12,350	88,566
	TV CRT	7,866	10,622	284,439	226,392	79%	28,482	10,154	172	1,782	122,452	63,350	226,392
2015	LCD/PDP	599	648	9,707	8,064	83%	3,814	112	406	87	—	3,645	8,064
	Refrigerator/ Freezer	2,843	2,836	175,723	139,090	79%	73,167	2,374	1,242	21,867	—	40,440	139,090
	Washer/Dryer	3,151	3,095	107,363	93,699	87%	47,660	1,776	1,332	12,901	—	30,030	93,699
2016	Air conditioner	2,359	2,358	97,909	89,206	91%	27,887	6,546	10,372	30,178	—	14,223	89,206
	TV CRT	2,282	2,467	67,401	55,522	82%	6,920	2,476	58	481	30,908	14,679	55,522
	LCD/PDP	491	483	9,253	8,053	87%	3,483	93	400	91	—	3,986	8,053
2017	Refrigerator/ Freezer	2,919	2,925	183,467	147,180	80%	77,121	2,795	1,104	21,682	—	44,478	147,180
	Washer/Dryer	3,145	3,108	109,992	95,606	86%	48,750	1,743	1,412	12,749	—	30,952	95,606
	Air conditioner	2,961	2,721	112,769	103,434	91%	31,847	7,434	12,124	34,711	—	17,318	103,434
2018	TV CRT	2,042	1,987	54,266	43,245	79%	5,623	1,917	51	394	23,176	12,084	43,245
	LCD/PDP	698	660	13,122	11,743	89%	4,857	122	546	149	—	6,069	11,743
	Refrigerator/ Freezer	3,432	3,224	205,607	164,909	80%	83,698	3,449	1,297	24,810	—	51,655	164,909
2019	Washer/Dryer	3,599	3,446	125,821	111,416	88%	55,484	2,088	1,819	15,170	—	36,855	111,416
	Air conditioner	2,225	2,465	102,155	94,213	92%	28,279	7,435	10,451	31,415	—	16,633	94,213
	TV CRT	1,872	1,849	49,352	37,446	75%	5,147	1,791	34	398	18765	11,311	37,446
2020	LCD/PDP	847	834	16,629	14,806	89%	6,524	160	598	224	—	7,300	14,806
	Refrigerator/ Freezer	2,775	2,978	187,654	150,913	80%	76,131	3,392	1,280	22,547	—	47,563	150,913
	Washer/Dryer	3,142	3,349	124,195	110,294	88%	54,674	2,151	1,943	14,755	—	36,771	110,294

## 4.41 Implementation of Recycling of Specified Home Appliances

Collected and disposal weight of Freon used as a refrigerant

		Collected weight of Freon used as a refrigerant [kg]	Disposal weight of Freon used as a refrigerant [kg]
FY2003	Air conditioner	860,496	-
	Refrigerator/Freezer	286,646	-
2004	Air conditioner	994,732	976,479
	Refrigerator/Freezer	310,915	312,257
2005	Air conditioner	1,122,462	1,117,923
	Refrigerator/Freezer	310,701	309,734
2006	Air conditioner	1,043,778	1,047,979
	Refrigerator/Freezer	297,619	297,868
2007	Air conditioner	1,089,423	1,084,342
	Refrigerator/Freezer	298,544	298,145
2008	Air conditioner	1,166,887	1,170,356
	Refrigerator/Freezer	299,118	301,307
2009	Air conditioner	1,304,142	1,292,694
	Refrigerator/Freezer	319,896	315,323
2010	Washer/Dryer	847	818
	Air conditioner	1,870,472	1,855,076
	Refrigerator/Freezer	357,145	353,175
2011	Washer/Dryer	1,370	1,307
	Air conditioner	1,477,875	1,466,194
	Refrigerator/Freezer	284,360	282,469
2012	Washer/Dryer	2,523	2,400
	Air conditioner	1,478,610	1,469,477
	Refrigerator/Freezer	277,886	274,984
2013	Washer/Dryer	3,399	3,226
	Air conditioner	1,726,110	1,700,328
	Refrigerator/Freezer	292,057	286,221
2014	Washer/Dryer	6,756	6,519
	Air conditioner	1,576,865	1,040,914
	Refrigerator/Freezer	247,927	189,409
	Washer/Dryer	11,815	11,438

Collected and disposal weight of the liquefied Freon included in insulation material

		Collected weight of the liquefied Freon included in insulation material [kg]	Disposal weight of the liquefied Freon included in insulation material [kg]
FY2006	Refrigerator/Freezer	592,511	589,832
2007	Refrigerator/Freezer	574,535	562,020
2008	Refrigerator/Freezer	556,754	554,472
2009	Refrigerator/Freezer	543,502	514,701
2010	Refrigerator/Freezer	577,217	562,607
2011	Refrigerator/Freezer	433,566	421,381
2012	Refrigerator/Freezer	405,387	397,447
2013	Refrigerator/Freezer	432,354	420,404
2014	Refrigerator/Freezer	392,367	386,262

Source: Compiled from "About the publication of the results of recycling Home Appliances by each Home Appliance manufacturers" by Association for Electric Home Appliances.

## 4.42 Volumes of construction waste by type

(FY2012)

Type	Volume (1,000 t)	Percentage (%)
Asphalt, concrete blocks	25,770	35
Concrete blocks	30,920	43
Construction sludge	6,570	9
Mixed construction waste	2,800	4
Waste wood generated from construction	5,000	7
Others	1,640	2
Nation-wide total	72,690	100

## Notes:

- The total volume may not foot due to rounding off .
- Waste wood generated from construction includes the volume of logging wood and root wood and the like.

Source: "Survey on Construction By-products 2012," Ministry of Land, Infrastructure, Transport and Tourism.

#### 4.43 Recycling of construction waste by item

( Unit : % )

	Construction waste	Asphalt, concrete blocks	Concrete blocks	Wood generated from construction ( excludes Reduction )	Wood generated from construction ( includes Reduction )	construction sludge ( includes Reduction )	Mixed construction waste (10,000 t)
FY 1990	42	50	48	56	-	21	31
1995	58	81	65	40	-	14	11
2000	85	98	96	38	82	41	485
2002	92	99	98	62	90	68	337
2005	92	98	98	68	91	75	293
2008	94	98	97	80	89	85	267
2012	96	99	99	89	94	85	280

Notes:

- Wood generated from construction includes the number of logging wood and root wood and the like.
- Recycling, etc.=Amount of recycling, etc. / amount of generation
- Reduction refers to incineration and dehydration, etc.

Compiled from "Survey on Construction By-products 2012," Ministry of Land, Infrastructure, Transport and Tourism.

#### 4.44 Generation and treatment of food waste

FY 2012

( Unit : 10,000 t )

	Total amount generated	Amount disposed				
		Incinerated and/or landfilled	Amount recycled			Total
			Composted	Animal Feed Produced	Others	
Municipal waste	14,460	12,340	—	—	—	2,120
Household	8,850	8,290	—	—	—	550
Businesses	5,610	4,050	560	560	440	1,570
Industrial waste	2,570	510	360	1,500	210	2,060
<b>Total</b>	<b>17,030</b>	<b>12,850</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>4,180</b>

Sources:

- "FY2012 Food Balance Sheet," Minister's Secretariat, Ministry of Agriculture, Forestry, Fisheries
- "Amount of Food Waste Generated and Recycling (FY2012)" Statistics Department, Ministry of Agriculture, Forestry, Fisheries
- "FY2014 Report on Recycling by Food Industry," a sponsored project by Ministry of Agriculture, Forestry, Fisheries
- Municipal wastes from households and businesses are estimates by Waste Management and Recycling Department, Ministry of the Environment based on its publication, "Generation and Treatment of Municipal Waste and Industrial Waste"
- "FY2014 Report on Performance Survey on Food Recycling Resource," a contract project by Ministry of the Environment

## 4.45 Collection of used cars (number of cases reported)

( Unit: cars )

	Type of process					
	Collection process	CFC recovery process	Dismantling process*2	Among them Dismantling process→ Dismantling process	Crushing process	Among them Crushing process→ Crushing process
FY 2004	471,057	383,343	425,640	(14,056)	542,725	(187,952)
2005	3,048,539	2,419,473	3,167,138	(116,306)	4,823,812	(1,845,470)
2006	3,573,215	2,621,280	3,738,877	(154,925)	5,848,370	(2,306,910)
2007	3,708,996	2,792,803	3,867,349	(149,065)	6,294,748	(2,623,147)
2008	3,580,882	2,798,418	3,716,791	(137,361)	6,129,797	(2,610,509)
2009	3,918,415	3,221,770	4,076,424	(169,152)	6,841,394	(3,007,090)
2010	3,648,428	3,048,627	3,833,989	(154,972)	6,516,840	(2,867,100)
2011	2,963,642	2,441,715	3,083,162	(123,358)	5,177,173	(2,288,072)
2012	3,405,662	2,900,043	3,567,777	(152,499)	6,053,494	(2,698,623)
2013	3,433,356	2,974,479	3,587,714	(147,664)	6,064,548	(2,696,864)
2014	3,331,901	2,927,357	3,503,381	(147,624)	5,901,803	(2,616,185)

Note:

The figures for fiscal year 2004 are the totals from January to March, 2005 after the enforcement of the law.

Source: Compiled from "State of enforcement with the End-of-Life Vehicle Recycling Law 2015" by Manufacturing Industries Bureau, METI as well as by Waste Management and Recycling Department, MOE Government of Japan

## 4.46 Rate of recycling of Shredder dust (ASR) and the like by automobile manufacturers

( Unit : % )

		Shredder dust	Airbag etc.
Goals	2005 ~	30	85
	2010 ~	50	
	2015 ~	70	
Actual	FY 2004	49 ~ 69.1	91.6 ~ 100
	FY 2005	48.0 ~ 70.0	93.0 ~ 94.7
	FY 2006	63.7 ~ 75.0	93.5 ~ 95.1
	FY 2007	64.2 ~ 78.0	92.0 ~ 94.7
	FY 2008	72.4 ~ 80.5	94.1 ~ 94.9
	FY 2009	77.5 ~ 82.1	93.2 ~ 100
	FY 2010	79.9 ~ 87	93 ~ 100
	FY 2011	92 ~ 94	92 ~ 100
	FY 2012	93 ~ 96.8	93 ~ 95
	FY 2013	96 ~ 97.7	94 ~ 95
FY 2014	96.8 ~ 98.1	94 ~ 95	

## Notes:

- Recycle rate is indicated by the following equation.

$$\frac{\text{Amount of ASR loaded into regeneration facilities} + \text{Amount equivalent to ASR contained in dismantled ELVs loaded into electric furnaces} - \text{Amount of ASR-originated residue from regeneration facilities and electric furnaces}}{\text{Total ASR weight collected by automobile manufacturers} + \text{Amount equivalent to ASR contained in dismantled ELVs loaded into electric furnaces}}$$

- ASR : Automotive shredder residue, a mixture of metallic waste resulting from the shredding of automobiles
- Airbags: Total weight of the airbags that have been regenerated to be used as parts of the products / Total weight of the airbags that have been collected by automobile manufacturers and the like.
- The figures for fiscal year 2004 are the totals from January to March, 2005 after the enforcement of the law.

Source: Compiled from "State of Enforcement with the End-of-Life Vehicle Recycling Law 2015" by Manufacturing Industries Bureau, METI as well as by Waste Management and Recycling Department, MOE, Government of Japan respectively

## 4.47 Voluntary collection and resource regeneration of PC and small rechargeable batteries (FY2014)

## ( 1 ) Voluntary collection

## PC (household and business total)

## Small rechargeable batteries

Product groups	Weight (t)
NiCad batteries	777
Nickel hydride batteries	195
Lithium Rechargeable Batteries	404
Small valve regulated lead-acid batteries	1,121
Total	2,498

## PC

Product groups	Number collected (piece)
Desktop PC	200,124
Notebook PC	241,512
CRT-type display device	37,237
LCD display device	203,543
Total	682,416

## ( 2 ) Resource regeneration

## PC

Product groups	Treatment amount ( t )	Resource regeneration amount (t)	Resource regeneration rate ( % )	Statutory target (%)
Desktop PC	1,968	1,507	76.6	50
Notebook PC	781	472	60.4	20
CRT type display device	611	438	71.6	55
LCD display device	1,572	1,169	74.4	55
Total	4,933	3,585		

## Small rechargeable batteries

Product groups	Treatment amount ( t )	Resource regeneration amount (t)	Resource regeneration rate ( % )	Statutory target (%)
NiCad batteries	699	497	71.1	60
Nickel hydride batteries	176	135	76.6	55
Lithium Rechargeable Batteries	375	217	57.9	30
Total	2,372	1,410		

## Note:

Resource regeneration refers to using it as reproduction resource.  
The total volume may not foot due to rounding up/down.

Source: "The Publication of the implementation status of voluntary collection and resource regeneration by each project under Act on the Promotion of Effective Utilization of Resources," Manufacturing Industries Bureau, METI as well as by Waste Management and Recycling Department, MOE, the Government of Japan