

4.01 Material Flow in Japan

(Unit: million t)

Unit: million tons

	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			
	Products	Resources								To utilize for farming	To reduce volume to dispose	Final disposal	Recycled and reused amount
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	4.80	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
2015	0.63	7.35	5.91	2.58	1.76	5.26	5.33	0.86	0.14	0.78	2.22	0.15	2.61

Note : 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.

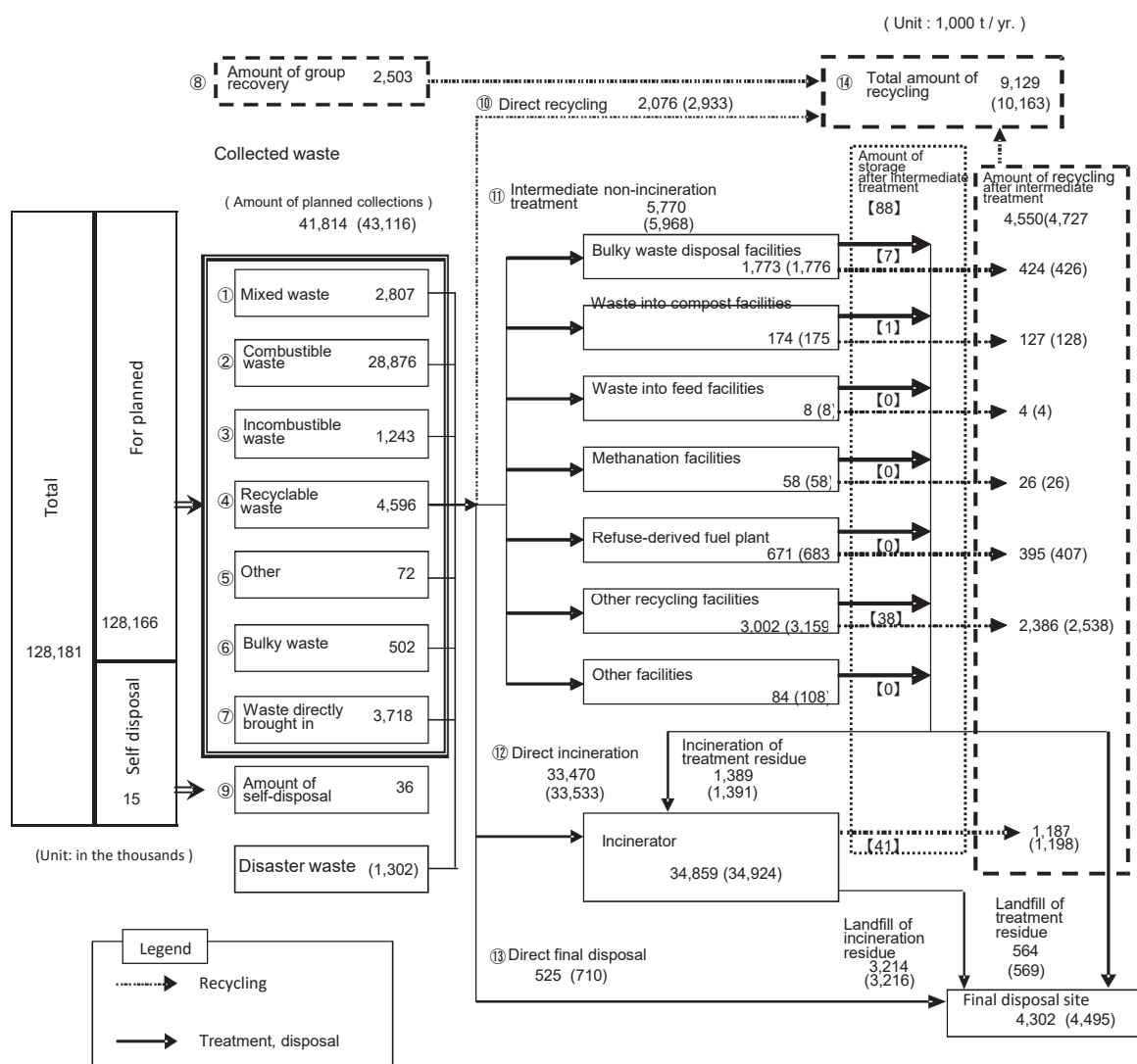
Source: Compiled from materials by Ministry of the Environment

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-sectoral 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 by Ministry of the Environment

4.03 Waste Disposal Flow Sheet



※ Figures in () indicate actual in the previous year.

- Collected waste = ①+②+③+④+⑤+⑥=38,095 thousand tons
- Collected waste + Waste directly brought in = ①+②+③+④+⑤+⑥+⑦=41,814 thousand tons
- Total emissions of waste = ①+②+③+④+⑤+⑥+⑦+⑧=44,317 thousand tons
- Generation per person per day = (①+②+③+④+⑤+⑥+⑦+⑧)/total population/365=947 g/person/day
- Total amount of waste disposal = ⑩+⑪+⑫+⑬=41,841 thousand tons
- Total amount of recycling = ⑭=9,129 thousand tons
- Recycling rate = ⑭/(⑧+⑩+⑪+⑫+⑬)=20.6%
- Reduction amount of intermediate treatment = (⑪+⑫) - amount of recycling after intermediate treatment - Landfill residue =30,912 thousand tons

Source : Compiled from "Disposal of Waste in Japan" (FY2014 version) by Ministry of the Environment

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
2014	31,242	13,075	44,317	38,095	3,718	2,503	44,317

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 Ministry of the Environment

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
2014	12,818	668	279	947	814	79	54	947

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 Ministry of the Environment

4.06 Waste Treatment by Prefecture (1)

(Actual 2014)

	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 tons)
			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	5,432	5,426	1,576	243	145	1,963	1,359	604	990
Aomori	1,356	1,356	459	45	13	517	353	165	1,046
Iwate	1,303	1,303	387	40	23	450	308	142	945
Miyagi	2,328	2,328	757	63	37	856	596	261	1,008
Akita	1,058	1,058	348	33	5	386	260	126	1,000
Yamagata	1,140	1,140	322	32	31	385	274	111	925
Fukushima	1,951	1,951	653	87	30	770	558	212	1,081
Ibaraki	2,974	2,974	956	94	41	1,092	782	310	1,006
Tochigi	2,006	2,006	591	61	27	680	501	179	929
Gunma	2,014	2,014	635	95	42	773	576	196	1,051
Saitama	7,303	7,303	2,121	141	130	2,392	1,846	546	897
Chiba	6,253	6,253	1,875	128	134	2,136	1,545	592	936
Tokyo	13,287	13,286	4,085	145	284	4,514	3,398	1,115	931
Kanagawa	9,117	9,117	2,538	135	299	2,972	2,264	708	893
Niigata	2,339	2,339	768	77	37	882	608	274	1,033
Toyama	1,086	1,086	337	45	32	413	280	133	1,042
Ishikawa	1,160	1,160	367	42	9	418	266	151	986
Fukui	804	804	226	37	18	280	207	73	954
Yamanashi	856	856	270	30	11	311	224	87	995
Nagano	2,149	2,149	581	52	24	657	464	193	838
Gifu	2,046	2,046	563	67	51	681	494	187	911
Shizuoka	3,789	3,789	1,075	113	60	1,248	903	345	902
Aichi	7,487	7,487	2,156	215	180	2,551	1,912	639	934
Mie	1,828	1,828	571	56	23	650	475	175	975
Shiga	1,421	1,421	388	31	23	441	323	119	851
Kyoto	2,629	2,625	704	104	57	864	529	336	901
Osaka	8,871	8,871	2,803	155	226	3,185	1,895	1,290	983
Hyogo	5,635	5,635	1,648	169	170	1,987	1,344	643	966
Nara	1,396	1,396	397	49	36	483	338	144	947
Wakayama	1,005	1,005	286	67	11	364	265	99	992
Tottori	584	584	191	16	6	214	127	86	1,002
Shimane	707	706	214	32	2	248	172	76	960
Okayama	1,940	1,940	564	84	60	708	472	237	1,000
Hiroshima	2,870	2,870	851	67	24	942	599	343	899
Yamaguchi	1,433	1,433	431	91	14	536	368	168	1,025
Tokushima	778	778	253	13	9	275	207	67	968
Kagawa	1,006	1,006	313	11	4	328	230	98	893
Ehime	1,428	1,428	392	72	11	475	356	119	910
Kochi	748	747	231	28	1	261	189	72	958
Fukuoka	5,117	5,115	1,418	335	103	1,857	1,204	653	994
Saga	848	848	240	28	6	274	193	81	886
Nagasaki	1,415	1,415	401	73	20	493	336	157	955
Kumamoto	1,819	1,818	499	42	21	561	391	171	846
Oita	1,191	1,191	370	39	7	416	286	130	957
Miyazaki	1,136	1,136	348	53	2	404	268	136	973
Kagoshima	1,687	1,687	512	62	4	578	406	173	939
Okinawa	1,449	1,449	425	21	0	446	292	154	844
Total	128,181	128,166	38,095	3,718	2,503	44,317	31,242	13,075	947

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.

4.06 Waste Treatment by Prefecture (2)

(Actual 2014)

	Amount of Waste disposal											Amount recycled after intermediate reprocesses (thousand tons)	Recycling rate (%)	Amount of Final disposal						
	Direct incineration (thousand tons)	Direct final disposal (thousand tons)		Intermediate non-incineration reprocesses							Total (thousand tons)			Ale of weight-reduction treatment (%)	Direct final disposal (thousand tons)	Incineration residue (thousand tons)	Non-incineration reprocesses residue (thousand tons)	Total (thousand tons)		
				Bulkwaste disposal facility (thousand tons)	composting facilities (thousand tons)	Feedstuff-production facilities (thousand tons)	Methanation facilities (thousand tons)	Fuel-production plants (thousand tons)	Recycling facilities (thousand tons)	Other facilities (thousand tons)										
Hokkaido	1,124	175	459	119	34	1	17	23	259	6	31	1,789	90.2	301	24.6	175	125	58	358	
Aomori	409	25	60	21	0	0	0	0	39	0	10	504	95.0	46	13.5	25	45	8	78	
Iwate	356	2	51	18	4	0	0	0	28	0	18	427	99.5	38	17.4	2	40	8	50	
Miyagi	658	6	148	55	1	0	0	0	92	0	6	819	99.2	98	16.4	6	93	9	108	
Akita	316	4	42	15	2	0	0	0	24	0	19	381	98.9	39	16.2	4	27	6	37	
Yamagata	305	3	39	14	3	0	0	0	21	1	8	354	99.2	22	15.8	3	34	9	45	
Fukushima	634	4	67	37	0	0	0	0	29	0	31	735	99.5	46	13.9	4	60	14	78	
Ibaraki	747	0	158	65	2	0	0	0	39	52	95	1,000	100.0	102	22.8	0	78	9	88	
Tochigi	540	0	82	29	2	0	0	0	51	0	31	652	100.0	56	16.8	0	47	14	61	
Gunma	621	3	77	48	1	0	0	7	21	0	29	731	99.6	50	15.6	3	69	13	86	
Saitama	1,825	1	285	93	2	0	0	2	184	5	155	2,266	99.9	304	24.6	1	101	22	124	
Chiba	1,613	4	265	110	7	0	0	0	139	8	132	2,015	99.8	225	22.8	4	133	25	161	
Tokyo	3,408	5	400	180	3	0	0	0	215	2	437	4,249	99.9	314	22.8	5	278	72	355	
Kanagawa	2,170	10	366	80	18	0	0	4	259	6	126	2,672	99.6	339	25.7	10	218	9	237	
Niigata	631	10	130	29	8	0	19	0	74	0	74	845	98.8	94	23.3	10	56	14	80	
Toyama	302	3	65	22	6	3	5	19	10	0	12	382	99.3	55	24.0	3	27	4	34	
Ishikawa	251	12	126	2	1	0	0	72	46	4	20	409	97.1	28	13.8	12	34	8	54	
Fukui	210	1	45	29	0	0	0	0	16	0	7	263	99.6	22	16.6	1	24	3	28	
Yamanashi	248	0	42	20	1	0	0	0	21	1	9	299	100.0	32	16.7	0	31	6	38	
Nagano	485	7	64	15	3	0	0	0	43	2	77	633	98.9	51	23.1	7	48	9	64	
Gifu	517	11	78	23	0	0	0	0	17	36	1	24	630	98.3	61	19.9	11	42	7	60
Shizuoka	994	9	129	35	2	0	0	0	21	68	3	49	1,181	99.3	145	20.5	9	55	8	71
Aichi	1,930	19	303	110	12	0	0	0	180	1	120	2,371	99.2	268	22.3	19	183	11	213	
Mie	421	20	149	20	1	0	0	86	41	1	36	627	96.8	134	29.7	20	6	12	38	
Shiga	320	7	58	24	2	0	0	11	21	0	25	410	98.3	43	21.0	7	36	5	48	
Kyoto	666	14	123	40	0	4	0	10	52	17	19	822	98.3	48	14.1	14	93	12	119	
Osaka	2,672	1	252	107	0	0	0	0	145	0	38	2,964	100.0	174	13.7	1	383	7	391	
Hyogo	1,544	27	199	90	11	0	6	5	84	2	51	1,820	98.5	115	16.8	27	195	24	247	
Nara	383	2	46	23	0	0	0	0	22	1	17	448	99.6	22	15.6	2	53	6	61	
Wakayama	299	10	41	8	0	0	0	1	31	1	6	355	97.3	33	13.5	10	34	6	49	
Tottori	151	0	31	1	6	0	0	1	23	0	24	207	99.8	25	26.0	0	13	4	18	
Shimane	178	5	53	12	4	0	0	11	26	0	9	245	97.9	49	24.2	5	9	6	21	
Okayama	568	8	49	17	1	0	0	0	29	3	24	648	98.8	126	29.5	8	22	7	37	
Hiroshima	614	29	265	44	1	0	0	133	87	1	12	920	96.9	170	21.8	29	63	14	106	
Yamaguchi	394	8	87	20	0	0	4	15	47	0	31	521	98.4	119	30.7	8	14	9	32	
Tokushima	213	1	38	20	0	0	0	1	16	0	15	266	99.8	23	16.9	1	22	9	32	
Kagawa	246	8	56	12	0	0	0	2	42	0	14	324	97.5	45	19.3	8	22	5	35	
Ehime	355	10	81	26	2	0	0	7	43	3	17	464	97.8	60	18.6	10	27	10	47	
Kochi	213	5	35	3	0	0	0	10	22	0	8	261	98.2	49	22.2	5	6	2	13	
Fukuoka	1,428	16	280	67	4	0	1	126	81	0	96	1,820	99.1	208	21.1	16	155	25	196	
Saga	224	0	38	7	2	0	0	1	27	0	6	268	100.0	39	18.7	0	13	3	17	
Nagasaki	406	14	47	5	1	0	0	1	39	1	6	474	97.0	52	15.8	14	30	4	49	
Kumamoto	420	3	104	12	4	0	0	40	48	0	13	540	99.4	73	19.1	3	46	8	57	
Oita	331	3	65	9	1	0	5	4	47	0	10	410	99.4	66	20.1	3	20	9	31	
Miyazaki	293	2	68	3	5	0	0	1	49	11	38	402	99.4	34	18.3	2	35	15	52	
Kagoshima	456	15	71	20	13	0	0	0	35	2	33	574	97.4	53	15.6	15	44	9	68	
Okinawa	383	2	51	11	4	0	0	0	36	1	8	444	99.5	57	14.7	2	24	2	28	
Total	33,470	525	5,770	1,773	174	8	58	671	3,002	84	2,076	41,841	98.7	4,550	20.6	525	3,214	564	4,302	

Source: Compiled from "Waste Treatment in Japan" (an annual report) by Ministry of the Environment

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
2014	662	162,480	207	14,775	258	5,640	34	217	1,161	183,111

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 Ministry of the Environment

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
2014	338	1,907	12.42	7,958

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 Ministry of the Environment

4.08 Development of Waste Incineration Plants by Prefecture

(Actual 2014)

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	5,372	11	433	24	319	7	57	66	6,181
Aomori	11	1,773	5	254	0	0	0	0	16	2,027
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	8	1,218	7	411	1	20	0	0	16	1,649
Yamagata	9	1,391	0	0	0	0	0	0	9	1,391
Fukushima	12	2,249	9	700	3	95	1	8	25	3,052
Ibaraki	15	3,201	11	1,180	4	140	0	0	30	4,521
Tochigi	13	2,283	4	342	0	0	0	0	17	2,625
Gunma	15	2,960	2	120	7	230	0	0	24	3,310
Saitama	43	8,980	7	754	2	70	0	0	52	9,804
Chiba	35	7,781	11	912	1	48	0	0	47	8,740
Tokyo	42	17,961	0	0	10	107	2	7	54	18,075
Kanagawa	27	12,792	6	434	2	50	0	0	35	13,276
Niigata	16	2,433	16	1,238	2	41	0	0	34	3,712
Toyama	4	1,276	2	224	0	0	0	0	6	1,500
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	6	1,433	0	0	6	215	0	0	12	1,648
Nagano	10	1,737	6	560	9	278	1	2	26	2,577
Gifu	17	2,487	3	110	8	119	1	3	29	2,718
Shizuoka	24	5,201	7	347	5	124	2	21	38	5,693
Aichi	37	10,275	2	150	2	25	0	0	41	10,450
Mie	10	1,865	0	0	14	343	1	16	25	2,224
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	47	15,465	0	0	1	46	0	0	48	15,511
Hyogo	31	9,095	6	450	6	157	0	0	43	9,702
Nara	9	1,925	6	308	11	233	0	0	26	2,466
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	5	433	13	317	0	0	27	2,940
Hiroshima	12	2,655	7	544	7	164	0	0	26	3,363
Yamaguchi	10	1,947	2	110	1	22	1	3	14	2,082
Tokushima	6	776	4	222	6	178	3	21	19	1,197
Kagawa	5	1,200	2	140	1	6	0	0	8	1,346
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	16	6,340	5	374	2	84	2	2	25	6,800
Saga	6	988	2	168	2	26	1	1	11	1,183
Nagasaki	11	1,735	6	421	10	140	0	0	27	2,296
Kumamoto	7	1,481	4	306	8	293	1	2	20	2,082
Oita	4	1,170	5	348	5	102	0	0	14	1,620
Miyazaki	4	728	1	40	5	140	1	8	11	916
Kagoshima	13	1,603	8	303	12	221	3	3	36	2,129
Okinawa	7	1,293	5	216	14	166	0	0	26	1,675
Total	662	162,480	207	14,775	258	5,640	34	217	1,161	183,111

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").
- There excludes the melting facilities of the furnace type which are not described the above classification.

Source : Compiled from "Waste Treatment in Japan (an annual report 2014)" by Ministry of the Environment

4.09 Development of Recycling Facilities (1)

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)	(568)	—	—	—	—	—	—	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	1,711	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
2014	840	18,806	827	17,918	96	3,469	1	33	—	—	139	3,258	1,048	23,764	73	3,826	49	1,728	1,170	29,318

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, ①the facilities other than for sorting or recycling recyclable waste, ②the 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.

4.09 Development of Recycling Facilities (2)

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
2014	337	12,355	261	10,050	37	763	635	23,168

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)," Ministry of the Environment

4.10 Development of Recycling Facilities by Prefecture

(Actual FY2014)

	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 ²)
Hokkaido	111	1,264	8	355	11	314	130	1,933	100	62,295
Aomori	8	365	0	0	0	0	8	365	18	9,525
Iwate	21	260	0	0	1	42	22	302	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	6,784
Yamagata	11	2,345	1	0	1	52	12	2,397	9	3,932
Fukushima	29	358	1	6	0	0	30	365	24	16,045
Ibaraki	25	518	2	277	1	3	28	798	37	17,587
Tochigi	17	429	0	0	1	58	18	487	8	4,379
Gunma	16	222	4	81	0	0	20	303	17	5,015
Saitama	42	1,032	0	0	1	4	43	1,036	41	13,125
Chiba	19	700	0	0	2	40	21	740	30	33,718
Tokyo	23	3,436	0	0	0	0	23	3,436	16	10,713
Kanagawa	25	1,010	0	0	1	150	26	1,160	20	17,736
Niigata	11	398	1	65	0	0	12	463	13	3,914
Toyama	3	33	1	28	0	0	4	61	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	6,915
Yamanashi	7	91	0	0	0	0	7	91	3	1,759
Nagano	30	610	0	0	1	20	31	630	33	43,035
Gifu	26	299	1	90	1	4	28	392	26	43,760
Shizuoka	26	295	1	150	0	0	27	445	31	28,184
Aichi	39	747	3	21	1	68	43	836	32	27,986
Mie	37	661	7	485	4	46	48	1,192	32	45,315
Shiga	21	179	1	22	1	8	23	209	17	7,075
Kyoto	15	412	2	55	2	23	19	490	21	5,276
Osaka	21	447	0	0	0	0	21	447	28	13,185
Hyogo	36	454	2	63	1	10	39	527	30	11,619
Nara	17	115	1	35	1	2	19	152	22	9,601
Wakayama	14	174	3	41	0	0	17	215	11	6,199
Tottori	4	135	0	0	0	0	4	135	4	1,663
Shimane	18	229	1	30	2	60	21	319	16	3,081
Okayama	27	251	0	0	0	0	27	251	29	6,347
Hiroshima	30	685	7	550	1	30	38	1,265	41	19,795
Yamaguchi	31	506	5	128	1	3	37	637	29	24,472
Tokushima	12	87	0	0	1	30	13	117	22	8,415
Kagawa	15	217	0	0	0	0	15	217	8	7,297
Ehime	33	1,001	2	34	1	8	36	1,043	16	7,223
Kochi	18	166	2	59	0	0	20	225	29	14,027
Fukuoka	29	669	6	608	4	576	39	1,853	12	4,636
Saga	15	115	1	1	0	0	16	116	14	10,377
Nagasaki	16	209	1	30	2	27	19	266	19	6,033
Kumamoto	27	359	2	133	0	0	29	492	18	10,535
Oita	13	340	2	112	1	32	16	484	13	5,919
Miyazaki	12	261	0	0	2	103	14	364	14	6,245
Kagoshima	27	304	0	0	1	5	28	309	21	10,318
Okinawa	16	297	0	0	0	0	16	297	20	10,914
Total	1,048	23,729	73	3,826	49	1,728	1,169	29,283	1,032	647,121

Note:

- The data in the above table includes the facilities that have started construction and the ones temporarily closed for FY2014, excluding the shutdowns.

Source: Compiled from "Waste Treatment in Japan" (an annual report, FY2014) by Ministry of the Environment

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
2014	337	12,355	261	10,050	37	763	635	23,168

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)," Ministry of the Environment

4.12 Development of Bulky Waste Facilities by Prefecture

(Actual FY2014)

	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	26	1,079	24	391	2	19	52	1,489
Aomori	3	120	2	60	0	0	5	180
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	7	235	2	50	0	0	9	285
Gunma	13	535	0	0	1	20	14	555
Saitama	16	643	15	576	2	60	33	1,279
Chiba	18	1,102	6	279	2	95	26	1,476
Tokyo	13	547	6	688	2	42	21	1,277
Kanagawa	14	578	15	643	3	32	32	1,252
Niigata	13	346	6	116	1	30	20	492
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	2	76	0	0	6	211
Nagano	6	163	1	3	0	0	7	166
Gifu	5	200	3	139	1	3	9	342
Shizuoka	8	488	11	338	1	8	20	835
Aichi	11	521	9	634	1	20	21	1,175
Mie	3	44	10	409	0	0	13	453
Shiga	5	182	8	189	1	8	14	379
Kyoto	4	185	5	580	0	0	9	765
Osaka	12	605	16	841	1	22	29	1,468
Hyogo	13	560	12	853	0	0	25	1,413
Nara	8	220	4	123	2	20	14	363
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	6	182	7	184	0	0	13	366
Hiroshima	7	230	7	169	1	50	15	449
Yamaguchi	3	60	9	284	0	0	12	344
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	7	189	12	830	2	53	21	1,072
Saga	5	153	0	0	0	0	5	153
Nagasaki	3	180	0	0	0	0	3	180
Kumamoto	5	78	7	73	0	0	12	151
Oita	3	49	1	15	0	0	4	64
Miyazaki	2	45	1	10	0	0	3	55
Kagoshima	12	170	5	62	0	0	17	232
Okinawa	3	24	6	112	2	6	11	142
Total	337	12,355	261	10,050	37	763	635	23,168

Note:

- The facilities in the above table include the ones whose construction started in 2014 and the ones temporarily closed just for the current year, but exclude the shutdowns.

Source: "Waste Treatment in Japan (FY2014)," Ministry of the Environment

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 ³)	Number of remaining years (yr.)
	# of Facilities	Total capacities (1,000 m ³)	# of Facilities	Total capacities (1,000 m ³)	# of Facilities	Total capacities (1,000 m ³)	# of Facilities	Total capacities (1,000 m ³)	# of Facilities	Total capacities (1,000 m ³)			
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	1.11	18.9
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
2014	1,223	271,441	26	127,113	9	1,106	440	67,514	1,698	467,174	4,302	1.06	20.1

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 m³ 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)," Ministry of the Environment

4.14 Development of Final Disposal Sites by Prefecture (1)

(Actual FY2014)

	Mountains				Sea surface				Water surface			
	# of Sites	Landfill area (1,000 m ²)	Total capacity (1,000 m ³)	Remaining capacity (1,000 m ³)	# of Sites	Landfill area (1,000 m ²)	Total capacity (1,000 m ³)	Remaining capacity (1,000 m ³)	# of Sites	Landfill area (1,000 m ²)	Total capacity (1,000 m ³)	Remaining capacity (1,000 m ³)
Hokkaido	128	4,608	40,316	4,910	0	0	0	0	0	0	0	0
Aomori	43	1,174	9,776	1,622	0	0	0	0	0	0	0	0
Iwate	32	608	4,125	935	0	0	0	0	0	0	0	0
Miyagi	33	881	10,039	5,347	0	0	0	0	0	0	0	0
Akita	47	915	7,088	1,146	0	0	0	0	0	0	0	0
Yamagata	8	392	1,948	414	0	0	0	0	0	0	0	0
Fukushima	39	708	6,253	572	0	0	0	0	0	0	0	0
Ibaraki	10	247	1,709	122	0	0	0	0	0	0	0	0
Tochigi	6	156	1,477	366	0	0	0	0	0	0	0	0
Gunma	21	407	3,504	904	0	0	0	0	0	0	0	0
Saitama	8	117	965	238	0	0	0	0	0	0	0	0
Chiba	34	802	6,529	1,272	2	194	1,660	4	0	0	0	0
Tokyo	17	544	8,810	1,555	2	3,600	93,150	21,944	0	0	0	0
Kanagawa	20	255	2,664	478	3	632	9,857	1,834	0	0	0	0
Niigata	27	501	5,840	418	0	0	0	0	0	0	0	0
Toyama	13	211	2,276	611	0	0	0	0	0	0	0	0
Ishikawa	21	636	7,351	1,903	0	0	0	0	0	0	0	0
Fukui	15	176	1,108	450	1	10	56	22	0	0	0	0
Yamanashi	2	41	350	0	0	0	0	0	0	0	0	0
Nagano	47	511	3,356	782	0	0	0	0	0	0	0	0
Gifu	43	751	7,664	1,597	0	0	0	0	2	23	78	43
Shizuoka	50	691	5,908	1,129	0	0	0	0	1	20	246	25
Aichi	39	1,021	10,882	1,850	2	14	116	96	0	0	0	0
Mie	34	727	7,385	1,550	0	0	0	0	0	0	0	0
Shiga	17	254	2,033	213	0	0	0	0	3	132	443	6
Kyoto	32	760	8,935	4,014	0	0	0	0	0	0	0	0
Osaka	6	223	2,088	328	1	731	11,690	2,192	0	0	0	0
Hyogo	33	1,886	34,146	11,670	1	14	43	14	0	0	0	0
Nara	9	195	1,790	835	0	0	0	0	0	0	0	0
Wakayama	17	268	1,599	357	0	0	0	0	0	0	0	0
Tottori	2	78	937	207	0	0	0	0	0	0	0	0
Shimane	29	302	2,266	665	0	0	0	0	0	0	0	0
Okayama	36	610	4,693	856	0	0	0	0	0	0	0	0
Hiroshima	24	507	5,973	1,376	1	184	1,003	0	0	0	0	0
Yamaguchi	33	295	2,495	462	6	257	1,785	941	3	74	340	74
Tokushima	10	57	298	84	1	20	87	13	0	0	0	0
Kagawa	19	386	3,281	604	0	0	0	0	0	0	0	0
Ehime	28	473	3,785	978	2	24	363	355	0	0	0	0
Kochi	22	204	1,629	595	0	0	0	0	0	0	0	0
Fukuoka	24	747	9,380	3,618	1	573	7,150	1,649	0	0	0	0
Saga	12	126	674	240	0	0	0	0	0	0	0	0
Nagasaki	26	429	4,744	1,944	1	17	40	8	0	0	0	0
Kumamoto	15	309	4,095	1,237	1	2	6	0	0	0	0	0
Oita	13	535	5,458	1,003	0	0	0	0	0	0	0	0
Miyazaki	18	452	4,232	799	0	0	0	0	0	0	0	0
Kagoshima	55	724	9,144	2,999	0	0	0	0	0	0	0	0
Okinawa	6	58	444	182	1	13	107	63	0	0	0	0
Total	1,223	26,956	271,441	65,437	26	6,285	127,113	29,135	9	249	1,106	148

Note: The facilities in the above table include the ones whose construction started in 2014 and the ones temporarily closed just for the current year, but excludes the shutdowns.

4.14 Development of Final Disposal Sites by Prefecture (2)

(Actual FY2014)

	Flatlands				Total			
	# of Sites	Landfill area (1,000 m ²)	Total capacity (1,000 m ³)	Remaining capacity (1,000 m ³)	# of Sites	Landfill area (1,000 m ²)	Total capacity (1,000 m ³)	Remaining capacity (1,000 m ³)
Hokkaido	56	3,038	21,844	3,135	184	7,646	62,160	8,045
Aomori	8	141	704	149	51	1,315	10,480	1,771
Iwate	1	11	69	6	33	619	4,195	941
Miyagi	0	0	0	0	33	881	10,039	5,347
Akita	17	365	1,254	359	64	1,281	8,342	1,505
Yamagata	4	136	787	212	12	527	2,735	626
Fukushima	8	151	875	246	47	859	7,128	818
Ibaraki	7	108	779	259	17	355	2,488	381
Tochigi	4	53	246	89	10	209	1,724	455
Gunma	11	189	1,032	259	32	595	4,537	1,163
Saitama	37	513	2,560	653	45	630	3,524	891
Chiba	22	359	2,082	254	58	1,354	10,270	1,530
Tokyo	1	65	639	72	20	4,210	102,599	23,571
Kanagawa	8	605	8,532	380	31	1,492	21,053	2,692
Niigata	20	342	1,620	809	47	844	7,461	1,227
Toyama	0	0	0	0	13	211	2,276	611
Ishikawa	0	0	0	0	21	636	7,351	1,903
Fukui	1	9	37	1	17	195	1,201	474
Yamanashi	3	41	197	0	5	81	547	0
Nagano	22	180	1,078	243	69	691	4,433	1,026
Gifu	26	252	1,176	169	71	1,026	8,917	1,808
Shizuoka	15	203	792	190	66	914	6,946	1,345
Aichi	42	1,011	8,060	844	83	2,046	19,057	2,790
Mie	5	104	401	61	39	831	7,786	1,610
Shiga	12	303	1,422	204	32	689	3,898	423
Kyoto	1	38	318	70	33	797	9,253	4,084
Osaka	4	72	352	111	11	1,026	14,129	2,631
Hyogo	7	196	1,842	515	41	2,096	36,031	12,200
Nara	1	27	264	0	10	222	2,054	835
Wakayama	0	0	0	0	17	268	1,599	357
Tottori	1	18	56	19	3	96	993	226
Shimane	5	37	153	104	34	339	2,419	768
Okayama	10	251	856	65	46	861	5,549	921
Hiroshima	5	294	2,289	375	30	985	9,265	1,751
Yamaguchi	5	132	693	92	47	759	5,312	1,568
Tokushima	10	143	1,055	114	21	219	1,439	211
Kagawa	2	110	320	17	21	496	3,601	621
Ehime	1	2	5	0	31	499	4,154	1,334
Kochi	5	14	45	9	27	217	1,674	604
Fukuoka	8	66	338	113	33	1,386	16,868	5,380
Saga	3	161	493	125	15	286	1,167	365
Nagasaki	13	64	228	118	40	510	5,012	2,070
Kumamoto	3	54	221	54	19	365	4,322	1,292
Oita	2	65	280	47	15	601	5,739	1,050
Miyazaki	5	49	230	57	23	501	4,461	855
Kagoshima	6	482	321	59	61	1,206	9,465	3,058
Okinawa	13	132	969	446	20	202	1,520	691
Total	440	10,587	67,514	11,104	1,698	44,077	467,174	105,824

Source: Compiled from "Waste Treatment in Japan" (for FY2014) by Ministry of the Environment

4.15 Changes in Annual Expenses for the Waste Management

(Unit: JPY million)

	FY2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
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	128,181
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	1,943,149
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	1,318,635
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	82,379
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	7,045
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	248,360
Municipal bonds	91,539	76,539	61,551	125,949	107,184	85,012	99,293	82,206	94,109	82,502	99,042	130,535
Other	60,113	67,640	61,220	92,781	120,395	117,234	106,484	113,558	121,381	121,430	138,241	156,194
Subtotal	339,119	355,665	325,495	511,900	514,666	479,490	491,236	486,920	497,381	500,518	566,159	624,514
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	1,943,149
Construction costs												
Collection and transportation facilities	—	—	—	26,182	3,130	1,873	3,037	1,539	1,176	2,718	3,308	3,315
Intermediate processing	260,994	214,516	207,294	164,470	177,530	153,068	173,406	151,144	157,111	172,961	217,052	264,109
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	28,326
Others	12,844	12,117	10,276	7,302	4,777	4,230	5,071	8,483	5,158	5,085	8,754	12,855
Inspection fees	6,104	3,450	2,796	4,277	3,188	3,430	3,356	3,769	4,782	4,237	4,874	3,525
Subtotal	342,052	301,774	279,610	244,344	212,591	179,696	204,227	188,965	191,549	208,801	257,470	312,129
*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	42,239
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	392,186
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	55,592
Intermediate processing	277,061	283,153	277,656	277,683	284,230	285,512	273,069	268,864	271,938	262,107	266,012	267,942
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	35,362
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	5,327
Collection and transportation facilities	—	—	268,980	277,128	279,929	292,206	300,504	300,959	305,142	310,861	322,076	338,428
Intermediate processing	—	—	238,779	254,516	264,068	279,650	287,098	294,342	298,755	307,319	315,982	339,650
Final disposal sites	—	—	47,949	48,543	52,948	46,911	44,140	43,036	42,675	45,968	52,514	52,110
Others	—	—	29,053	22,999	25,167	21,386	21,393	22,766	22,168	21,262	20,716	24,742
Outsourcing expenses	529,341	545,482	584,761	603,186	622,112	640,152	653,134	661,102	668,739	685,411	711,287	754,930
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	1,106
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	1,512,445
*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	240,467
Other	81,769	87,964	106,392	109,485	111,088	107,100	115,756	124,047	114,043	114,542	119,734	118,574
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	15,200

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)," Ministry of the Environment

4.16 Changes in Annual Expenditures for Waste Management Program

(Unit: 100 million yen)

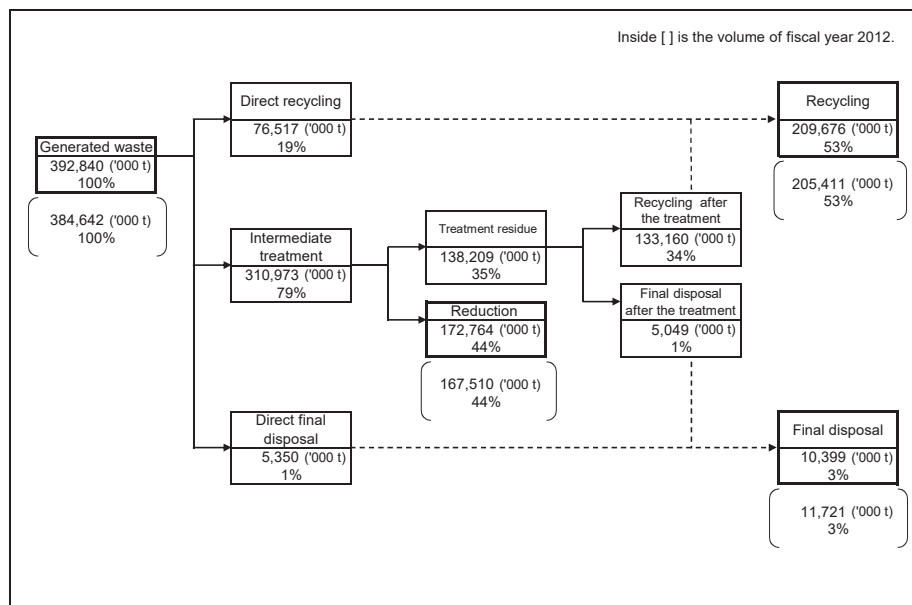
FY1982	12,697
1983	13,075
1984	13,213
1985	13,545
1986	13,926
1987	14,427
1988	14,493
1989	16,190
1990	17,563
1991	19,986
1992	22,663
1993	27,404
1994	26,269
1995	26,542
1996	26,990
1997	26,654
1998	26,694
1999	26,519
2000	27,381
2001	29,464
2002	27,309
2003	22,746
2004	22,450
2005	22,161
2006	21,344
2007	21,060
2008	20,557
2009	20,572
2010	20,605
2011	20,167
2012	20,052
2013	20,715
2014	21,683

Note:

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

Source: "Waste Treatment in Japan (an annual report) ," Ministry of the Environment

4.17 Flow of treatment for industrial waste



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 2014)," Ministry of the Environment

4.18 Generation of Industrial Waste by Industrial Sector (1)

Industrial sector	FY1975		1980		1985		1990		1991		1992		1993	
	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 (%)	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	75,761	19.1
Forestry	—	—	—	—	0	0.0	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	40	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	29,173	7.4
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	81,605	20.6
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	134,657	33.9
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	10,847	2.7
Beverages, tobacco and feedstuff	—	—	—	—	—	—	4,621	1.2	4,828	1.2	5,514	1.4	5,215	1.3
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	1,879	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	196	0.0
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	3,312	0.8
Furniture and fixture	825	0.3	886	0.3	425	0.1	477	0.1	497	0.1	604	0.1	466	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	29,373	7.4
Printing and related business	620	0.3	1,033	0.4	870	0.3	745	0.2	483	0.1	722	0.2	784	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	14,986	3.8
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	801	0.2
Plastic products	—	—	—	—	—	—	629	0.2	767	0.2	829	0.2	1,246	0.3
Rubber products	162	0.1	195	0.1	290	0.1	271	0.1	318	0.1	336	0.1	294	0.1
Leather-tanning, leather products and fur skins	—	—	195	0.1	263	0.1	153	0.0	174	0.0	151	0.0	147	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	17,250	4.3
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	30,934	7.8
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	2,742	0.7
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	3,941	1.0
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	1,590	0.4
Electrical machinery and equipment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Telecommunications machinery and equipment	1,089	0.5	3,115	1.1	3,811	1.2	3,737	0.9	3,870	1.0	4,282	1.1	3,768	0.9
Electronic, components and devices	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	4,003	1.0
Precision machinery and equipment	139	0.1	217	0.1	177	0.1	230	0.1	239	0.1	199	0.0	178	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	705	0.2
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	67,488	17.0
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	656	0.2
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	4,386	1.1
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	2,669	0.7
Public service	—	—	—	—	500	0.2	12	0.0	89	0.0	820	0.0	433	0.1
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	396,869	100.0

Industrial sector	FY1994		1995		1996		1997		1998		1999		2000	
	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 (%)	Generated volume (1,000 t)	Percentage (%)
Agriculture	74,878	18.5	73,336	18.6	72,517	17.9	93,995	22.7	92,973	22.8	91,855	23.0	90,804	22.4
Forestry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Fishery	71	0.0	68	0.0	58	0.0	43	0.0	42	0.0	28	0.0	24	0.0
Mining	30,793	7.6	27,717	7.0	27,999	6.9	23,515	5.7	20,334	5.0	17,655	4.4	16,751	4.1
Construction	76,931	19.0	75,201	19.1	77,138	19.1	77,142	18.8	79,071	19.4	76,236	19.1	79,011	19.5
Manufacturing	139,033	34.3	130,910	33.2	136,563	33.8	126,028	30.4	125,045	30.6	120,046	30.0	123,730	30.5
Food	11,856	2.9	10,514	2.7	11,696	2.9	10,626	2.6	10,940	2.7	10,999	2.8	10,639	2.6
Beverages, tobacco and feedstuff	7,377	1.8	6,253	1.6	5,331	1.3	3,972	1.0	4,608	1.1	4,566	1.1	4,692	1.2
Textile industry (garment and other textile products - -- classified separately before 2007)	1,457	0.4	1,483	0.4	2,550	0.6	2,440	0.6	2,337	0.6	2,070	0.5	1,219	0.3
Garment and other textile products ("consolidated into "Textile industry" after 2008)	179	0.0	190	0.0	198	0.0	165	0.0	132	0.0	119	0.0	124	0.0
Lumber and wood products	4,377	1.1	3,989	1.0	4,071	1.0	3,346	0.8	1,998	0.5	1,879	0.5	1,627	0.4
Furniture and fixture	468	0.1	468	0.1	464	0.1	381	0.1	392	0.1	368	0.1	345	0.1
Pulp, paper, and paper products	24,917	6.1	25,879	6.6	28,296	7.0	27,080	6.5	26,054	6.4	26,284	6.6	27,058	6.7
Printing and related business	846	0.2	953	0.2	1,083	0.3	1,028	0.2	1,217	0.3	1,216	0.3	1,198	0.3
Chemical industry	17,928	4.4	18,807	4.8	17,840	4.4	16,487	4.0	14,630	3.6	16,440	4.1	16,863	4.2
Petroleum and coal products	812	0.2	730	0.2	808	0.2	755	0.2	994	0.2	1,020	0.3	1,231	0.3
Plastic products	1,321	0.3	1,276	0.3	1,421	0.4	1,269	0.3	923	0.2	959	0.2	964	0.2
Rubber products	282	0.1	303	0.1	314	0.1	306	0.1	364	0.1	372	0.1	387	0.1
Leather-tanning, leather products and fur skins	156	0.0	138	0.0	157	0.0	104	0.0	78	0.0	100	0.0	91	0.0
Cement and ceramic industry	19,425	4.8	15,738	4.0	15,791	3.9	15,373	3.7	13,118	3.2	11,564	2.9	12,532	3.1
Iron and steel industry	30,061	7.4	27,051	6.9	28,033	6.9	24,056	5.8	29,527	7.2	25,389	6.4	26,598	6.6
Non-ferrous metals	3,416	0.8	3,578	0.9	3,794	0.9	4,488	1.1	4,086	1.0	3,353	0.8	4,114	0.9
Metal products	3,771	0.9	3,103	0.8	3,470	0.9	3,204	0.8	3,762	0.9	3,573	0.9	3,506	0.9
General machinery and equipment	1,576	0.4	1,834	0.5	1,721	0.4	1,610	0.4	1,699	0.4	1,602	0.4	1,812	0.4
Electrical machinery and equipment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Telecommunications machinery and equipment	3,741	0.9	3,621	0.9	4,092	1.0	4,082	1.0	3,835	0.9	3,932	1.0	4,729	1.2
Electronic, components and devices	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Machinery and equipment for transportation	3,992	1.0	4,018	1.0	4,163	1.0	4,413	1.1	3,787	0.9	3,873	1.0	3,582	0.9
Precision machinery and equipment	179	0.0	221	0.0	228	0.1	216	0.1	246	0.1	149	0.0	168	0.0
Arms	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Others	876	0.2	762	0.2	1,043	0.3	626	0.2	317	0.1	219	0.1	206	0.1
Electric, gas, heat supply, and water supply industries	74,610	18.4	77,635	19.7	79,970	19.8	86,371	20.8	87,458	21.4	90,220	22.6	91,504	22.5
Information and telecommunications industry, transport industry	1,054	0.3	971	0.2	1,102	0.3	705	0.2	509	0.1	498	0.1	888	0.2
Wholesaler, retailer, accommodations, drinking and eating services	5,454	1.3	5,716	1.5	5,689	1.4	5,227	1.3	1,476	0.4	1,664	0.4	1,790	0.4
Medical care and welfare	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Education, learning support, complex services, and service industry	2,200	0.5	2,245	0.6	3,546	0.9	1,793	0.4	1,544	0.4	1,566	0.4	1,512	0.4
Public service	429	0.1	12	0.0	21	0.0	34	0.0	39	0.0	31	0.0	22	0.0
Total	405,455	100.0	393,812	100.0	404,602	100.0	414,854	100.0	408,490	100.0	399,799	100.0	406,037	100.0

4.18 Generation of Industrial Waste by Industrial Sector (2)

	FY2001		2002		2003		2004		2005		2006		2007	
	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 (%)	Generated volume (1,000 t)	Percentage (%)
Industrial sector	90,430	22.6	90,147	22.9	90,589	22.0	89,285	21.4	87,543	20.8	87,924	21.0	87,811	20.9
Agriculture	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Forestry	29	0.0	14	0.0	13	0.0	16	0.0	40	0.0	21	0.0	25	0.0
Fishery	13,772	3.4	12,409	3.2	13,945	3.4	13,393	3.2	14,039	3.3	13,947	3.3	12,509	3.0
Mining	76,151	19.0	73,510	18.7	75,006	18.2	79,055	19.0	76,466	18.1	77,534	18.5	77,253	18.4
Construction	122,883	30.7	122,551	31.2	135,090	32.8	137,422	32.9	141,628	33.6	137,338	32.8	141,613	33.8
Manufacturing	10,829	2.7	10,104	2.6	10,201	2.5	9,789	2.3	9,805	2.3	9,720	2.3	9,812	2.3
Food	4,682	1.2	4,743	1.2	4,098	1.0	4,339	1.0	3,219	0.8	3,147	0.8	3,168	0.8
Beverages, tobacco and feedstuff	1,127	0.3	1,046	0.3	916	0.2	952	0.2	934	0.2	823	0.2	766	0.2
Textile industry (garment and other textile products - ... classified separately before 2007)	109	0.0	100	0.0	104	0.0	108	0.0	124	0.0	111	0.0	115	0.0
Garment and other textile products ("consolidated into "Textile industry" after 2008)	1,634	0.4	1,439	0.4	1,864	0.5	1,661	0.4	1,550	0.4	1,458	0.3	1,405	0.3
Lumber and wood products	332	0.1	303	0.1	325	0.1	307	0.1	269	0.1	252	0.1	320	0.1
Furniture and fixture	27,138	6.8	30,402	7.7	36,601	8.9	36,776	8.8	35,493	8.4	33,872	8.1	35,479	8.5
Pulp, paper, and paper products	1,239	0.3	1,175	0.3	1,114	0.3	910	0.2	1,069	0.3	980	0.2	960	0.2
Printing and related business	16,887	4.2	16,792	4.3	19,398	4.7	16,887	4.0	16,796	4.0	17,209	4.1	17,578	4.2
Chemical industry	1,259	0.3	1,428	0.4	1,457	0.4	1,425	0.3	1,764	0.4	1,802	0.4	1,572	0.4
Petroleum and coal products	928	0.2	964	0.2	1,050	0.3	1,198	0.3	1,150	0.3	1,277	0.3	1,297	0.3
Plastic products	361	0.1	362	0.1	310	0.1	334	0.1	316	0.1	329	0.1	394	0.1
Rubber products	90	0.0	96	0.0	141	0.0	80	0.0	66	0.0	63	0.0	58	0.0
Leather-tanning, leather products and fur skins	12,174	3.0	10,862	2.8	10,464	2.5	9,561	2.3	9,949	2.4	9,594	2.3	10,097	2.4
Cement and ceramic industry	26,450	6.6	26,503	6.7	30,724	7.5	37,300	8.9	43,176	10.2	38,375	9.2	38,266	9.1
Iron and steel industry	3,994	1.0	3,732	0.9	3,768	0.9	3,507	0.8	3,556	0.8	4,124	1.0	4,891	1.2
Non-ferrous metals	3,479	0.9	3,266	0.8	2,406	0.6	2,484	0.6	2,323	0.6	3,487	0.8	3,576	0.9
Metal products	1,743	0.4	1,418	0.4	1,551	0.4	1,700	0.4	1,739	0.4	1,848	0.4	2,172	0.5
General machinery and equipment	4,251	1.1	3,617	0.9	4,094	1.0	3,726	0.9	3,856	0.9	4,768	1.1	5,149	1.2
Electrical machinery and equipment	3,791	0.9	3,862	1.0	4,132	1.0	3,486	0.8	3,615	0.9	3,506	0.8	3,911	0.9
Telecommunications machinery and equipment	169	0.0	155	0.0	182	0.0	165	0.0	221	0.1	194	0.0	263	0.1
Machinery and equipment for transportation	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Precision machinery and equipment	215	0.1	182	0.0	190	0.0	727	0.2	640	0.2	397	0.1	366	0.1
Arms	93,145	23.3	89,743	22.8	92,248	22.4	92,362	22.1	97,068	23.0	97,080	23.2	95,810	22.8
Others	804	0.2	1,152	0.3	1,084	0.3	1,362	0.3	834	0.2	889	0.2	697	0.2
Electric, gas, heat supply, and water supply industries	1,478	0.4	1,526	0.4	1,551	0.4	2,193	0.5	2,010	0.5	1,671	0.4	1,683	0.4
Information and telecommunications industry, transport industry	—	—	260	0.1	268	0.1	253	0.1	329	0.1	237	0.1	249	0.1
Wholesaler, retailer, accommodations, drinking and eating services	1,530	0.4	1,900	0.5	1,814	0.4	1,644	0.4	1,637	0.4	1,739	0.4	1,744	0.4
Medical care and welfare	21	0.0	23	0.0	15	0.0	171	0.0	83	0.0	29	0.0	30	0.0
Education, learning support, complex services, and service industry	21	0.0	23	0.0	15	0.0	171	0.0	83	0.0	29	0.0	30	0.0
Public service	400,243	100.0	393,234	100.0	411,623	100.0	417,156	100.0	421,677	100.0	418,497	100.0	419,425	100.0
Total	400,243	100.0	393,234	100.0	411,623	100.0	417,156	100.0	421,677	100.0	418,497	100.0	419,425	100.0

4.18 Generation of Industrial Waste by Industrial Sector (3)

Industrial sector	FY2008		2009		2010		2011		2012		2013		2014	
	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 (%)	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	81,902	20.8
Fishery	17	0.0	36	0.0	18	0.0	15	0.0	7	0.0	9	0.0	6	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	9,086	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	81,614	20.8
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	112,404	28.6
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	9,178	2.3
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	2,886	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	836	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	842	0.2
Furniture and fixture	247	0.1	228	0.1	214	0.1	217	0.1	329	0.1	194	0.1	242	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	32,612	8.3
Printing and related business	727	0.2	653	0.2	624	0.2	558	0.1	1,272	0.3	522	0.1	548	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	11,896	3.0
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	1,318	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	990	0.3
Rubber products	262	0.1	279	0.1	300	0.1	301	0.1	330	0.1	254	0.1	250	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	44	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	8,941	2.3
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	28,637	7.3
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	1,287	0.3
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	2,289	0.6
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	2,431	0.7
Electrical 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	4,061	1.0
Telecommunications machinery and equipment, components and devices	3,475	0.9	2,935	0.8	3,128	0.8	3,083	0.8	2,277	0.6	2,639	0.7	3,118	0.8
Machinery and equipment for transportation	96,283	23.9	96,371	24.7	95,572	24.8	95,576	25.1	96,473	25.4	97,936	25.5	101,032	25.7
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	894	0.2
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	2,148	0.6
Medical care and welfare	534	0.1	465	0.1	447	0.1	138	0.0	384	0.1	515	0.1	360	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	2,661	0.6
Public service	174	0.0	77	0.0	127	0.0	96	0.0	67	0.0	128	0.0	259	0.1
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	392,840	100.0

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.

Industrial classification comparison between the New and the Previous

Previous classification		New classification	
Manufacturing	Textile industry		Textile industry
	Garment & other textile products		
	General machinery and equipment		General machinery and equipment
			Machinery for production
			Machinery for business operation
			Electronic, components and devices
	Electrical machinery and equipment		Electrical machinery and equipment
	Telecommunications machinery and equipment		Telecommunications machinery and equipment
	Electronic, components and devices		
	Machinery and equipment for transportation		Machinery and equipment for transportation
Precision machinery and equipment			
Others		Others	
Wholesale * Retail	Furniture * fixture and machinery retail business		Machinery and equipment retail business
	Wholesale * Retail industry (except the above)		Furniture, fixture, and tatami mat retail businesses
			Furniture, fixture, and tatami mat retail businesses
			Wholesale * Retail industry
Service	Service industries (except the above)		Lumber and wood products
			Service industries (except the above)
			Tenant business

Source: Compiled from "An field survey of the industrial waste disposals & Research of recycling processes " (for 2014) by Ministry of the Environment

4.19 Generation of Industrial Waste by Type (1)

Type	FY1975		1980		1985		1990		1995	
	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
Sludge	37,660	15.9	88,190	30.2	112,821	36.1	171,450	43.4	185,508	47.1
Waste oil	2,289	1.0	2,419	0.8	3,672	1.2	3,471	0.9	3,173	0.8
Waste acid	9,872	4.2	10,219	3.5	4,320	1.4	2,674	0.7	4,441	1.1
Waste alkali	14,435	6.1	6,990	2.1	923	0.3	1,547	0.4	2,020	0.5
Waste plastics	1,480	0.6	2,232	0.8	2,816	0.9	4,334	1.1	6,253	1.6
Waste paper	991	0.4	1,624	0.6	1,472	0.5	1,193	0.3	1,897	0.5
Wood waste	7,890	3.3	6,628	2.3	8,058	2.6	6,573	1.7	7,161	1.8
Waste fiber	204	0.1	101	0.0	98	0.0	99	0.0	84	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
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
Waste glass and ceramics	2,870	1.2	2,297	0.8	3,910	1.3	5,295	1.3	6,067	1.5
Slag	60,950	25.8	60,561	20.7	41,649	13.3	42,507	10.8	24,242	6.2
Debris	34,144	14.4	30,007	10.3	48,948	15.7	54,798	13.9	58,460	14.8
Animal excreta	41,164	17.4	49,629	17.0	62,462	20.0	77,208	19.5	72,996	18.5
Animal corpse	38	0.0	62	0.0	96	0.0	28	0.0	145	0.0
Soot and dust	8,101	3.4	11,731	4.0	6,224	2.0	7,491	1.9	7,578	1.9
Others	0	0.0	1,199	0.4	1,230	0.4	1,228	0.3		
Total	236,489	100.0	292,312	100.0	312,271	100.0	394,736	100.0	393,812	100.0

Type	FY2000		2001		2002		2003		2004		2005	
	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	1,892	0.5	1,941	0.5	1,782	0.5	1,949	0.5	1,935	0.5	1,857	0.4
Sludge	189,181	46.6	186,895	46.7	182,438	46.4	190,379	46.3	188,306	45.1	187,688	44.5
Waste oil	3,248	0.8	3,089	0.8	3,185	0.8	3,817	0.9	3,310	0.8	3,471	0.8
Waste acid	2,938	0.7	2,822	0.7	2,681	0.7	2,662	0.6	2,738	0.7	2,477	0.6
Waste alkali	1,563	0.4	1,528	0.4	1,492	0.4	1,942	0.5	2,039	0.5	2,079	0.5
Waste plastics	5,790	1.4	5,473	1.4	5,552	1.4	5,462	1.3	5,939	1.4	6,052	1.4
Waste paper	2,156	0.5	2,159	0.5	2,096	0.5	1,923	0.5	1,756	0.4	1,748	0.4
Wood waste	5,511	1.4	5,357	1.3	4,963	1.3	5,915	1.4	5,959	1.4	5,951	1.4
Waste fiber	76	0.0	78	0.0	70	0.0	72	0.0	75	0.0	93	0.0
Animal and plant residue	4,052	1.0	4,110	1.0	4,477	1.1	3,393	0.8	3,393	0.8	3,117	0.7
Animal offal					203	0.1	99	0.0	119	0.0	97	0.0
Waste rubber	44	0.0	38	0.0	37	0.0	43	0.0	47	0.0	55	0.0
Scrap metal	8,086	2.0	8,233	2.1	7,684	2.0	9,044	2.2	10,039	2.4	10,947	2.6
Waste glass and ceramics	4,797	1.2	4,605	1.2	4,545	1.2	4,273	1.0	5,473	1.3	4,555	1.1
Slag	16,448	4.1	16,350	4.1	16,249	4.1	17,037	4.1	21,192	5.1	26,186	6.2
Debris	58,829	14.5	57,096	14.3	55,365	14.1	59,246	14.4	62,497	15.0	60,562	14.4
Animal excreta	90,489	22.3	90,094	22.5	89,799	22.8	88,977	21.6	87,686	21.0	87,204	20.7
Animal corpse	163	0.0	191	0.0	211	0.1	200	0.0	186	0.0	196	0.0
Soot and dust	10,765	2.7	10,183	2.5	10,406	2.6	15,190	3.7	14,466	3.5	17,342	4.1
Total	406,037	100.0	400,243	100.0	393,234	100.0	411,623	100.0	417,156	100.0	421,677	100.0

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4.19 Generation of Industrial Waste by Type (2)

Type	FY2006		2007		2008		2009		2010		2011	
	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	1,969	0.5	2,028	0.5	2,053	0.5	1,821	0.5	1,835	0.5	1,869	0.5
Sludge	185,327	44.2	185,305	44.2	176,114	43.6	173,629	44.5	169,885	44.0	164,638	43.4
Waste oil	3,406	0.8	3,610	0.9	3,617	0.9	3,048	0.8	3,251	0.8	3,212	0.8
Waste acid	5,405	1.3	5,662	1.3	2,721	0.7	2,542	0.7	2,483	0.6	2,595	0.7
Waste alkali	2,961	0.6	2,777	0.7	2,648	0.7	1,867	0.5	2,563	0.7	1,778	0.5
Waste plastics	6,094	1.5	6,428	1.5	6,445	1.6	5,665	1.5	6,185	1.6	5,691	1.5
Waste paper	1,664	0.4	1,466	0.3	1,383	0.3	1,265	0.3	1,153	0.3	1,020	0.3
Wood waste	5,852	1.4	5,971	1.4	6,262	1.6	6,294	1.6	6,121	1.6	6,229	1.6
Waste fiber	80	0.0	75	0.0	74	0.0	69	0.0	79	0.0	68	0.0
Animal and plant residue	3,008	0.7	3,066	0.7	3,194	0.8	2,888	0.7	2,902	0.8	2,572	0.7
Animal Offal	104	0.0	78	0.0	124	0.0	113	0.0	126	0.0	70	0.0
Scrap rubber	48	0.0	62	0.0	41	0.0	27	0.0	32	0.0	34	0.0
Scrap metal	11,461	2.7	8,766	2.2	7,830	2.0	7,246	1.9	7,242	1.9	7,267	1.9
Waste glass and ceramics	5,183	1.2	6,174	1.5	5,411	1.4	6,031	1.6	6,361	1.7	6,083	1.6
Slag	20,715	4.9	18,440	4.6	14,109	3.6	16,006	4.1	15,493	4.1	16,398	4.3
Debris	60,900	14.5	61,189	15.2	58,921	15.1	58,264	15.1	59,839	15.7	58,887	15.5
Animal excreta	87,476	20.9	87,698	21.7	88,162	22.6	84,847	22.0	84,459	22.2	85,434	22.5
Animal corpse	197	0.0	168	0.0	161	0.0	156	0.0	172	0.0	153	0.0
Soot and dust	16,964	4.0	16,550	4.1	15,923	4.1	16,823	4.4	15,903	4.2	15,138	4.0
Total	419,425	100.0	403,661	100.0	389,746	100.0	385,988	100.0	381,206	100.0	379,137	100.0

Type	FY2012		FY2013		FY2014	
	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)	Volume (1,000 t)	Percentage (%)
Cinder	1,869	0.5	1,833	0.5	2,046	0.5
Sludge	164,638	43.4	164,115	42.7	168,621	43.0
Waste oil	3,212	0.8	2,912	0.8	3,044	0.8
Waste acid	2,595	0.7	2,778	0.7	3,191	0.8
Waste alkali	1,778	0.5	2,243	0.6	2,306	0.6
Waste plastics	5,691	1.5	6,120	1.6	6,509	1.7
Waste paper	1,020	0.3	896	0.2	985	0.3
Wood waste	6,229	1.6	6,991	1.8	7,487	1.9
Waste fiber	68	0.0	89	0.0	103	0.0
Animal and plant residue	2,572	0.7	2,603	0.7	2,706	0.7
Animal offal	70	0.0	97	0.0	83	0.0
Waste rubber	34	0.0	26	0.0	28	0.0
Scrap metal	7,267	1.9	7,815	2.0	9,284	2.4
Waste glass and ceramics	6,083	1.6	6,468	1.7	8,267	2.1
Slag	16,398	4.3	16,761	4.4	14,563	3.7
Debris	58,887	15.5	63,233	16.4	64,394	16.4
Animal excreta	85,434	22.5	82,626	21.5	81,416	20.7
Animal corpse	153	0.0	125	0.0	126	0.0
Soot and dust	15,138	4.0	16,911	4.4	17,479	4.4
Total	379,137	100.0	384,642	100.0	392,840	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 2014)," Ministry of the Environment

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
2014	2.10	1.72	0.10

Source: "Survey of industrial waste generation and treatment 2014," Ministry of the Environment

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 ³)	Number of Facilities	Remaining capacity (10,000 m ³)	Number of Facilities	Remaining capacity (10,000 m ³)	Number of Facilities	Remaining capacity (10,000 m ³)		
2014	18,680	24	0.99	1,073	6,014	730	10,589	1,827	16,604	1,040	16.0

Note:

The remaining years = the remaining capacity / the final disposal volume (conversion factor: 1m³/t)

Source: "Administrative organization of industrial waste," "Survey of industrial waste generation and treatment," Ministry of the Environment

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.

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		2015	
	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)	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	4	280
Aomori	7	829	5	2,521	3	102	1	86	13	1,383	10	540	8	2,283	8	1,395
Iwate	15	5,285	11	3,229	3	4,333	9	291	4	440	2	76	0	0	4	12,988
Miyagi	5	454	6	2,712	0	0	0	0	0	0	1	21	1	176	0	0
Akita	1	45	1	110	0	0	0	0	0	0	0	0	0	0	2	48
Yamagata	0	0	3	176	0	0	1	55	0	0	0	0	1	17	2	218
Fukushima	4	44,018	9	3,957	2	812	3	1,398	0	0	2	173	7	473	5	746
Ibaraki	59	35,873	36	5,848	28	3,486	34	8,310	41	3,713	28	4,684	34	2,932	8	509
Tochigi	13	4,678	7	653	12	5,289	4	8,098	7	3,926	12	610	5	2,458	7	2,440
Gunma	5	178	5	550	8	565	8	449	5	3,365	6	707	6	463	1	21
Saitama	0	0	0	0	1	20	0	0	0	0	0	0	0	0	1	200
Chiba	16	2,287	39	3,220	35	5,830	34	8,380	16	4,502	13	2,281	7	385	19	1,149
Tokyo	0	0	0	0	0	0	0	0	0	0	0	0	1	30	0	0
Kanagawa	0	0	0	0	0	0	0	0	1	22	0	0	0	0	0	0
Niigata	7	854	14	726	4	676	3	665	5	229	2	192	7	751	3	83
Toyama	2	40	0	0	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	1	11
Fukui	7	361	8	357	3	126	2	917	2	531	2	73	1	200	2	92
Yamanashi	2	315	5	234	5	163	2	44	2	834	2	160	3	1,816	2	521
Nagano	0	0	1	9,220	0	0	1	119	0	0	0	0	0	0	0	0
Gifu	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	629
Shizuoka	18	5,649	8	540	5	399	4	84	2	4,058	0	0	5	135	3	246
Aichi	5	998	5	540	1	150	0	0	0	0	1	30	0	0	0	0
Mie	8	68,005	5	393	4	311	3	390	5	205	3	601	3	6,390	12	1,007
Shiga	4	250	2	125	2	26,000	2	4,300	2	24	7	2,633	2	10	4	112,602
Kyoto	5	2,495	7	2,248	2	827	0	0	1	60	4	1,209	4	299	0	0
Osaka	0	0	0	0	2	190	0	0	0	0	0	0	0	0	1	55
Hyogo	3	3,591	7	2,716	5	1,358	6	322	5	747	5	454	1	15	6	241
Nara	15	3,765	10	10,781	12	600	2	160	8	527	3	2,630	0	0	2	30
Wakayama	5	2,859	0	0	1	573	1	1,065	1	1,065	4	1,616	0	0	1	50
Tottori	0	0	10	355	0	0	1	182	3	1,241	1	15	0	0	0	0
Shimane	2	67	2	372	1	20	0	0	2	44	1	15	3	120	0	0
Okayama	2	55	3	60	3	103	0	0	3	1,142	1	61	2	693	5	342
Hiroshima	5	725	8	1,350	8	233	9	1,957	4	440	2	36	2	55	2	46
Yamaguchi	2	161	0	0	1	1,000	0	0	0	0	1	82	0	0	1	26,134
Tokushima	2	20	0	0	1	59	0	0	1	13	0	0	4	129	0	0
Kagawa	4	5,241	2	602	1	47	0	0	0	0	1	60	1	29	1	740
Ehime	7	342	7	233	1	22	2	237	1	19	0	0	1	11	2	220
Kochi	1	2,500	0	0	2	150	2	325	3	438	1	108	1	63	1	438
Fukuoka	3	2,182	1	62	1	18	0	0	0	0	3	3,848	3	1,309	0	0
Saga	2	704	4	235	9	3,903	5	1,228	5	563	4	227	1	23	0	0
Nagasaki	14	515	4	279	10	376	11	409	9	257	7	1,443	8	597	6	414
Kumamoto	0	0	0	0	1	30	2	108	0	0	3	61	8	550	5	320
Oita	0	0	0	0	1	30	1	15	0	0	1	34	0	0	4	340
Miyazaki	23	2,329	10	1,226	8	135	14	969	16	10,463	11	1,099	11	2,197	8	779
Kagoshima	17	2,078	15	551	15	1,438	12	1,565	10	754	7	406	12	3,585	6	159
Okinawa	3	358	9	743	6	1,451	3	5,136	4	75	1	27	2	43	2	58
Total	308	202,730	279	57,274	216	61,944	192	53,311	187	43,875	159	28,840	165	28,773	143	165,550

Source: "Status of Illegal Dumping of Industrial Waste (2015)," Ministry of the Environment

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
2015	143	16.6

Note:

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

Source: "Status of Illegal Dumping of Industrial Waste (2015)," Ministry of the Environment

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

(As of the end of FY2015)

	Number of unsolved cases	Percentage (%)	Remaining volume (t)	Percentage (%)
Have already been detrimental to environment	12	0.5%	1,977,142	12.3%
Measure/order - issued	6	0.2%	1,970,025	12.2%
Administrative subrogation - Already taken	3	0.1%	1,903,738	11.8%
Not yet	3	0.1%	66,287	0.4%
Measure/order - Not issued yet	6	0.2%	7,117	0.0%
Administrative advice etc.	5	0.2%	7,097	0.0%
Offender not identified yet	1	0.0%	20	0.0%
More likely to be detrimental to environment	88	3.3%	5,492,411	34.1%
Measure/order - issued	42	1.6%	4,655,426	28.9%
Administrative subrogation - Already taken	13	0.5%	3,901,765	24.2%
Not yet	29	1.1%	753,661	4.7%
Measure/order - Not issued yet	46	1.7%	836,986	5.2%
Administrative advice etc.	45	1.7%	836,964	5.2%
Offender not identified yet	1	0.0%	22	0.0%
Not detrimental currently	2,527	95.5%	7,961,700	49.5%
Measure/order - issued	71	2.7%	1,161,745	7.2%
Administrative subrogation - Already taken	4	0.2%	64,273	0.4%
Not yet	67	2.5%	1,097,472	6.8%
Measure/order - Not issued yet	2,456	92.8%	6,799,955	42.2%
Administrative advice etc.	1,953	73.8%	5,152,161	32.0%
Offender not identified yet	326	12.3%	500,572	3.1%
No response	177	6.7%	1,147,222	7.1%
Under investigatio	19	0.7%	665,435	4.1%
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%	665,435	4.1%
Administrative advice etc.	19	0.7%	665,435	4.1%
Offender not identified yet	0	0.0%	0	0.0%
Total	2,646	100.0%	16,096,690	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 2015," Ministry of the Environment

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
2015	81	13,607	3	162	7	139,145	4	283	12	10,243	36	2,110	143	165,500

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 2015," Ministry of the Environment

4.25 Number of Unsolved Cases of Illegal Dumping and Remaining Amount

(As of the end of FY2015)

		Less than 500 t	500 t ~ 1,000 t	1,000 t ~ 5,000 t	5,000 t ~	5,000 t ~ 10,000 t	10,000 t ~ 50,000 t	50,000 t ~ 100,000 t	100,000 t ~	Total
Number of cases		1,622	228	465	331	120	149	36	26	2,646
	%	61.3%	8.6%	17.6%	12.5%	4.5%	5.6%	1.4%	1.0%	100.0%
Amount (t)		166,558	151,872	1,061,176	14,717,084	835,832	2,930,155	2,245,024	8,706,702	16,096,690
	&	1.0%	0.9%	6.6%	91.4%	5.2%	18.2%	13.9%	54.1%	100.0%

Source: "Illegal Dumping of Industrial Waste in FY 2015," Ministry of the Environment

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

(As of the end of FY2015)

Prefecture	Number of cases	Amount (t)
Hokkaido	52	179,700
Aomori	103	166,291
Iwate	35	58,135
Miyagi	20	1,112,792
Akita	7	1,017,370
Yamagata	6	59,766
Fukushima	63	76,146
Ibaraki	373	514,383
Tochigi	96	296,645
Gunma	133	396,030
Saitama	96	923,559
Chiba	830	3,955,570
Tokyo	26	81,436
Kanagawa	37	127,373
Niigata	46	70,961
Toyama	1	205
Ishikawa	46	97,879
Fukui	8	897,255
Yamanashi	33	33,197
Nagano	20	52,753
Gifu	36	90,396
Shizuoka	23	42,274
Aichi	40	672,346
Mie	46	1,924,140
Shiga	36	837,258
Kyoto	43	123,540
Osaka	38	127,024
Hyogo	53	99,251
Nara	29	250,364
Wakayama	11	31,040
Tottori	12	1,325
Shimane	8	178
Okayama	17	6,581
Hiroshima	23	12,632
Yamaguchi	3	28,957
Tokushima	3	76,499
Kagawa	12	78,181
Ehime	19	453,172
Kochi	2	715
Fukuoka	23	527,419
Saga	19	13,136
Nagasaki	18	91,898
Kumamoto	12	6,940
Oita	4	838
Miyazaki	18	9,273
Kagoshima	43	34,097
Okinawa	24	439,771
Total	2,646	16,096,690

Source: "Illegal Dumping of Industrial Waste in FY 2015," Ministry of the Environment

4.27 Improper Disposal of Sulfate Pitch

(As of the end of FY2015)

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	0	0	0
	2nd half	23	3,982	22	1	49	0
2002	38	17,639	35	17,151	3	351	137
	1st half	17	7,616	17	0	0	0
	2nd half	21	10,023	18	3	351	137
2003	81	28,462	78	28,067	3	260	135
	1st half	39	21,371	37	2	200	135
	2nd half	42	7,091	41	1	60	0
2004	62	9,860	60	8,954	2	256	650
	1st half	42	8,283	40	2	256	650
	2nd half	20	1,577	20	0	0	0
2005	31	4,322	31	4,322	0	0	0
	1st half	15	1,522	15	0	0	0
	2nd half	16	2,800	16	0	0	0
2006	14	2,170	14	2,170	0	0	0
	1st half	13	1,375	13	0	0	0
	2nd half	1	795	1	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
2015	0	0	0	0	0	0	0
Total	278	70,824	269	68,986	9	916	922

Note:

Volume was converted in terms of the number of drums.

Source: "Status of Improper Disposal of Sulfate Pitch (2015)," Ministry of the Environment

4.28 Wide-area movement of municipal waste

(Unit : 10 thousand t / yr.) (FY2014)

Region	Final disposal amount	Transported out of Prefectures ¹⁾		Transported out of the Region ²⁾	
Hokkaido / Tohoku	91.0	1.7	(1.9%)	0.3	(0.4%)
		6.7%		2.1%	
Tokyo Metropolitan area	121.5	15.1	(12.4%)	8.0	(6.6%)
		58.0%		51.8%	
Hokuriku / Chubu	60.5	7.7	(12.8%)	6.2	(10.3%)
		29.7%		40.2%	
Kinki	91.9	0.7	(0.7%)	0.4	(0.5%)
		2.5%		2.9%	
Chugoku / Shikoku	34.3	0.7	(2.0%)	0.4	(1.2%)
		2.7%		2.7%	
Kyushu / Okinawa	49.8	0.1	(0.2%)	0.1	(0.1%)
		0.4%		0.5%	
Total	449.0	26.0	(5.8%)	15.5	(3.5%)
		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," Ministry of the Environment

4.29 Wide-area movement of industrial waste

(Unit : 10 thousand t / yr.) (FY2014)

	Amount transported out of prefectures where waste was discharged		
			<div>Inside the region</div> <div>Outside the region</div>
Hokkaido / Tohoku	289.7	(7.3%)	178.7 111.0
Tokyo Metropolitan area	1,854.4	(46.4%)	1,551.3 303.1
Chubu	689.0	(17.3%)	362.4 326.6
Kinki	614.1	(15.4%)	376.3 237.7
Chugoku	231.3	(5.8%)	117.1 114.2
Shikoku	92.9	(2.3%)	31.2 61.7
Kyushu / Okinawa	221.0	(5.5%)	170.5 50.5
Total	3,992.4	(100.0%)	2,787.6 1,204.9

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," Ministry of the Environment

4.30 Percentage of Containers and Packaging in Household Waste**(Ratio by volume)****(Unit : %)**

		2009	2010	2011	2012	2013	2014	2015	2016
Packaging	Papers	11.8	9.6	14.5	13.1	13.1	13.9	10.3	10.7
	Plastic	36.6	34.8	33.9	36.5	35.9	43.2	39.8	38.1
	Glass	1.6	1.4	1.2	1.3	1.0	1.0	1.4	2.1
	Metal	3.5	4.1	2.5	2.9	3.0	2.9	3.5	3.8
	Other	0.2	0.1	0.4	0.1	0.2	0.1	0.0	0.0
	Subtotal	53.7	50.0	52.5	53.8	53.0	61.0	55.1	54.7
Non-packaging	Papers	16.8	16.1	20.3	17.8	18.1	17.5	19.4	18.4
	Plastic	4.2	5.6	7.1	5.0	4.9	5.9	5.4	6.0
	Glass	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1
	Metal	0.6	0.5	0.4	0.9	0.8	0.6	0.9	0.9
	Other	24.6	27.6	19.7	22.4	23.1	14.9	19.0	19.9
	Subtotal	46.3	49.9	47.5	46.2	47.0	39.0	44.9	45.3
Total		100.0	99.9	100.0	100.0	100.0	100.0	100.0	100.0

(Ratio by wet weight)**(Unit : %)**

		2009	2010	2011	2012	2013	2014	2015	2016
Packaging	Papers	7.8	6.0	10.3	9.1	7.4	8.2	6.6	6.7
	Plastic	8.4	6.7	8.8	8.9	8.6	9.9	8.7	8.7
	Glass	4.9	3.5	3.7	4.0	3.6	3.9	4.6	6.0
	Metal	1.9	1.5	1.3	2.1	1.5	1.7	2.0	1.8
	Other	0.3	0.1	0.1	0.2	0.2	0.1	0.0	0.1
	Subtotal	23.3	17.8	24.1	24.1	21.3	23.8	22.0	23.3
Non-packaging	Papers	24.8	24.2	27.6	26.7	25.3	26.4	26.3	25.3
	Plastic	2.8	2.0	1.9	2.4	1.6	1.7	2.0	1.9
	Glass	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.3
	Metal	1.2	0.6	0.7	1.5	1.3	1.5	1.7	1.5
	Other	47.6	55.2	45.5	45.0	50.3	46.5	47.8	47.8
	Subtotal	76.7	82.2	75.9	75.9	78.7	76.4	78.0	76.8
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: "Report on Using and Discarding Containers and Packaging," Ministry of the Environment

4.31 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
2015	10,860	9,640	9,150	4,350	* 4,800

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 (<https://pwmi.or.jp/>)

4.32 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
2015	332	256	77.1

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 by Japan Aluminum Can Recycling Association

4.33 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
2015	486	451	92.9

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 by Japan Steel Can Recycling Association

4.34 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
2015	97.2

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 by Cardboard Recycling Council

4.35 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)	Municipal recovery rate ²⁾	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	292,455	571,905	21,784	13,770	45,465	652,925	569	51.4%	93.5%
2015	292,881	587,322	27,191	9,293	53,584	677,390	563	52.0%	92.4%

Notes:

1. Except soft drinks, specified seasonings without oil, alcoholic beverages: namely, detergent, 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 Ministry of the Environment

4.36 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
2016	56,519	68,758	24,554	3,466	840	154,137
Ratio (FY 2016)	36.7%	44.6%	15.9%	2.2%	0.5%	100.0%

Source: Materials by the Japan Containers And Packaging Recycling Association

4.37 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%
2015	176,200	56,300	32.0%

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 by Committee for Milk Container Environmental Issues

4.38 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
	2015	322,380	321,138	294,821	1,653	94.9	98.7
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
	2015	272,962	256,458	243,578	1,652	94.9	98.7
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
	2015	186,252	210,614	197,748	1,672	96.0	98.2
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
	2015	135,577	80,180	75,798	684	39.3	35.4
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
	2015	300,090	292,881	280,301	1,717	98.6	99.8
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
	2015	763,369	745,508	696,883	1,328	76.3	85.5
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
	2015	211,210	164,153	160,390	1,704	97.9	97.2
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
	2015	137,684	131,342	129,231	1,697	97.5	98.0
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
	2015	700,294	591,863	586,969	1,580	90.8	94.4
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
	2015	23,319	12,579	12,325	1,344	77.2	87.3

Source: "Achievement on Sorted collection and Recycling based on the Containers and Packaging Recycling Act by municipalities in FY2015" by Ministry of the Environment

4.39 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%
2015	140	127	72	56.2%

Note:

Recycling rate= Recycling volume/Domestic distribution volume

Source: Compiled from materials by Japan Expanded Polystyrene Association

4.40 Implementation of Recycling of Specified Home Appliances (1)

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 (t)(A)	Weight recycled (t)(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 CRT	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	18,765	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
2021	Air conditioner	2,335	2,333	96,370	89,646	93%	27,166	6,652	8,308	31,025	—	16,495	89,646
	TV CRT	1,551	1,708	43,703	32,258	73%	4,695	1,647	28	231	15,838	9,819	32,258
	LCD/PDP	1,033	1,061	21,177	18,988	89%	9,022	236	756	346	—	8,628	18,988
2022	Refrigerator/ Freezer	2,799	2,799	173,861	142,586	82%	70,635	3,436	1,198	20,298	—	47,019	142,586
	Washer/Dryer	3,139	3,109	117,726	106,904	90%	51,332	2,240	1,995	13,856	—	37,481	106,904

4.40 Implementation of Recycling of Specified Home Appliances (2)

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
	Washer/Dryer	847	818
2010	Air conditioner	1,870,472	1,855,076
	Refrigerator/Freezer	357,145	353,175
	Washer/Dryer	1,370	1,307
2011	Air conditioner	1,477,875	1,466,194
	Refrigerator/Freezer	284,360	282,469
	Washer/Dryer	2,523	2,400
2012	Air conditioner	1,478,610	1,469,477
	Refrigerator/Freezer	277,886	274,984
	Washer/Dryer	3,399	3,226
2013	Air conditioner	1,726,110	1,700,328
	Refrigerator/Freezer	292,057	286,221
	Washer/Dryer	6,756	6,519
2014	Air conditioner	1,576,865	1,040,914
	Refrigerator/Freezer	247,927	189,409
	Washer/Dryer	11,815	11,438
2015	Air conditioner	1,504,769	387,728
	Refrigerator/Freezer	210,076	103,021
	Washer/Dryer	14,654	11,182

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
2015	Refrigerator/Freezer	333,840	325,779

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

4.41 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

4.42 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.

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

4.43 Generation and treatment of food waste

FY 2012

(Unit : 10,000 t)

	Total amount generated	Amount disposed					
		Incinerated and/or landfilled	Amount recycled				Amount reduced
			Composted	Animal Feed Produced	Others	Total	
Municipal waste	1,953	334	249	983	162	1,394	225
Household	839	—	—	—	—	—	—
Businesses	889	—	—	—	—	—	—
Industrial waste	822	767	—	—	—	54	—
Total	2,775	1,101	—	—	—	1,449	—

Sources:

- "FY2014 Food Balance Sheet," Ministry of Agriculture, Forestry, Fisheries.
- "Amount of Food Waste Generated and Recycling (FY2014)" Ministry of Agriculture, Forestry, Fisheries.
- "FY2014 Report on Recycling by Food Industry," by Ministry of Agriculture, Forestry, Fisheries.
- Municipal wastes from households and businesses are estimates by Ministry of the Environment based on its publication, "Generation and Treatment of Municipal Waste and Industrial Waste".
- "FY2016 Report on Performance Survey on Food Recycling Resource," by Ministry of the Environment.

4.44 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)
2015	3,156,459	2,774,004	3,306,187	(136,453)	5,531,795	(2,457,437)

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 Ministry of Economy, Trade and Industry as well as by Ministry of the Environment

4.45 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
	FY 2015	96.5~98.8	93~94

Notes:

- Recycle rate is indicated by the following equation.

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

- 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 manufactures 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 Ministry of Economy, Trade and Industry respectively

4.46 Voluntary collection and resource regeneration of PC and small rechargeable batteries

(1) Voluntary collection

PC (household and business total)

Small rechargeable batteries

Product groups	Weight (t)
NiCad batteries	715
Nickel hydride batteries	187
Lithium Rechargeable Batteries	365
Small valve regulated lead-acid batteries	725
Total	1,993

PC

Product groups	Number collected (piece)
Desktop PC	133,051
Notebook PC	191,285
CRT-type display device	23,342
LCD display device	162,153
Total	509,831

(2) Resource regeneration

PC

Product groups	Treatment amount (t)	Resource regeneration amount (t)	Resource regeneration rate (%)	Statutory target (%)
Desktop PC	1,249	978	78.3	50
Notebook PC	521	319	61.1	20
CRT type display device	385	285	73.9	55
LCD display device	1,184	879	74.2	55
Total	3,340	2,460		

Small rechargeable batteries

Product groups	Treatment amount (t)	Resource regeneration amount (t)	Resource regeneration rate (%)	Statutory target (%)
NiCad batteries	643	460	71.5	60
Nickel hydride batteries	169	129	76.6	55
Lithium Rechargeable Batteries	339	189	55.9	30
Small valve regulated lead-acid batteries	725	363	50.1	50
Total	1,876	1,141		

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," Ministry of Economy, Trade and Industry