MONITORING OF SOLID WASTE IN HONG KONG

Waste Statistics for 2014




Environmental Protection Department

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Waste Statistics for 2014

Date of issue: **October 2015**

Work done by: **Statistics Unit,**
Environmental Protection Department

Security classification: **Unrestricted**

Cover photos

Top left: **Berth at Island West Transfer Station**

Bottom left: **Sorting of plastic waste in progress at EcoPark**

Top right: **Bird's eye view of North East New Territories Landfill**

Bottom right: **Waste composition survey in progress**

Contents

Abbreviations

AFCD	Agriculture, Fisheries and Conservation Department
AWCP	Animal Waste Composting Plant
C&SD	Census and Statistics Department
CEDD	Civil Engineering and Development Department
CWTC	Chemical Waste Treatment Centre
EPD	Environmental Protection Department
FEHD	Food and Environmental Hygiene Department
IETS	Island East Transfer Station
IWTS	Island West Transfer Station
KBTS	Kowloon Bay Transfer Station
MSW	Municipal Solid Waste
N/A	Not Available
NENT	North East New Territories Landfill
NLTS	North Lantau Transfer Station
NT	New Territories
NWNTRTS	North West New Territories Refuse Transfer Station
OITF	Outlying Islands Transfer Facilities
OWTF	Organic Waste Treatment Facilities
PET	Polyethylene Terephthalate
RTS(s)	Refuse Transfer Station(s)
SENT	South East New Territories Landfill
SLCP	Shaling Composting Plant
STTS	Sha Tin Transfer Station
tpd	tonnes per day
WENT	West New Territories Landfill
WKTS	West Kowloon Transfer Station

1. Introduction

This report presents the statistics on disposal and recovery / recycling of solid waste generated in Hong Kong in the year 2014. It aims to provide readers with the latest information available on solid waste.

The information contained in this report is compiled from the data collected from various sources throughout the year, including the ongoing solid waste monitoring work at waste facilities undertaken by the Environmental Protection Department.

The statistics on waste disposal and resource recovery and recycling are presented in Chapters 2 and 3 respectively, and the classification of solid waste and the methodology adopted in data collection are explained in Appendix 1.

In this report, figures of various plates may not add up to total and percentages may not add up to 100 due to rounding off.

Abbreviations used in the report are listed on page iv for ease of reference.

2. Waste Quantities and Characteristics

Plate 2.1 Disposal of total solid waste at landfills in 2014 - By main waste category

Waste category[1]			Average daily quantity (tpd)	
a.	**Municipal solid waste**		**9,782**	(2.5%)
	(i) Domestic waste		**6,418**	(0.9%)
	(ii) Commercial waste		**2,565**	(6.6%)
	(iii) Industrial waste		**799**	(2.4%)
b.	**Overall construction waste[2]**		**3,942**	(9.8%)
c.	**Special waste[3]**		**1,135**	(-3.2%)
d.	**All waste received at landfills (a+b+c)**	**Total**	**14,859**	(3.8%)

Notes:

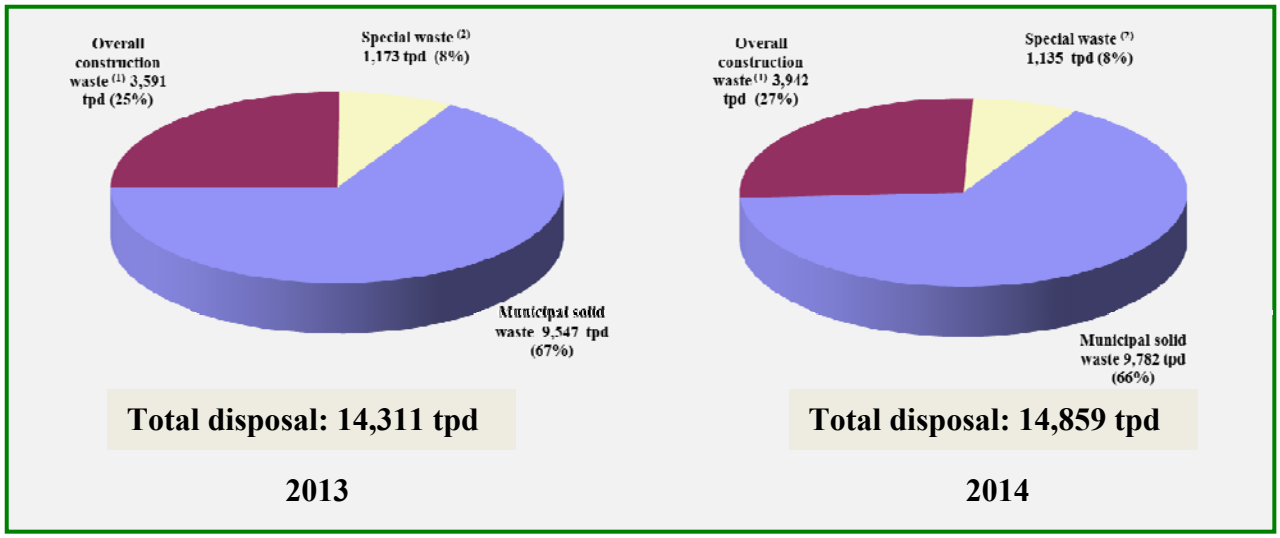
(1) Please refer to Appendix 1 for classification of solid waste.

(2) Overall construction waste includes waste or surplus materials arising from construction activities such as site clearance, refurbishment, renovation, demolition, land excavation and road works. It also includes waste concrete that is generated from concrete batching plants, cement plaster/mortar plants not set up inside construction sites.

(3) The quantity does not include special waste not disposed of at landfills.

(4) Figures in brackets refer to year-on-year (y-o-y) growth rates.

Plate 2.2 Disposal of total solid waste at landfills in 2013 and 2014 - By main waste category

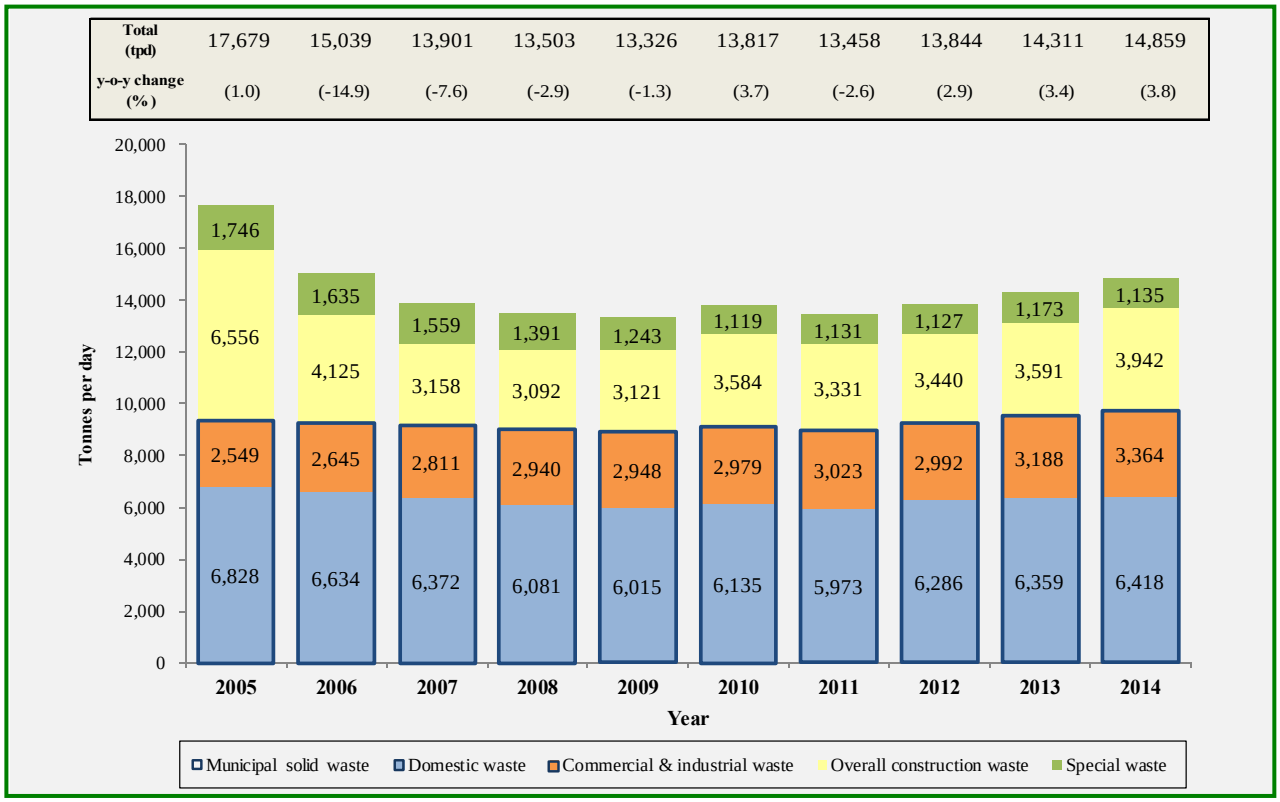


Notes:

(1) Overall construction waste includes waste or surplus materials arising from construction activities such as site clearance, refurbishment, renovation, demolition, land excavation and road works. It also includes waste concrete that is generated from concrete batching plants, cement plaster/mortar plants not set up inside construction sites.

(2) The quantity does not include special waste not disposed of at landfills.

Plate 2.3 Disposal of total solid waste at landfills from 2005 to 2014 - By main waste category

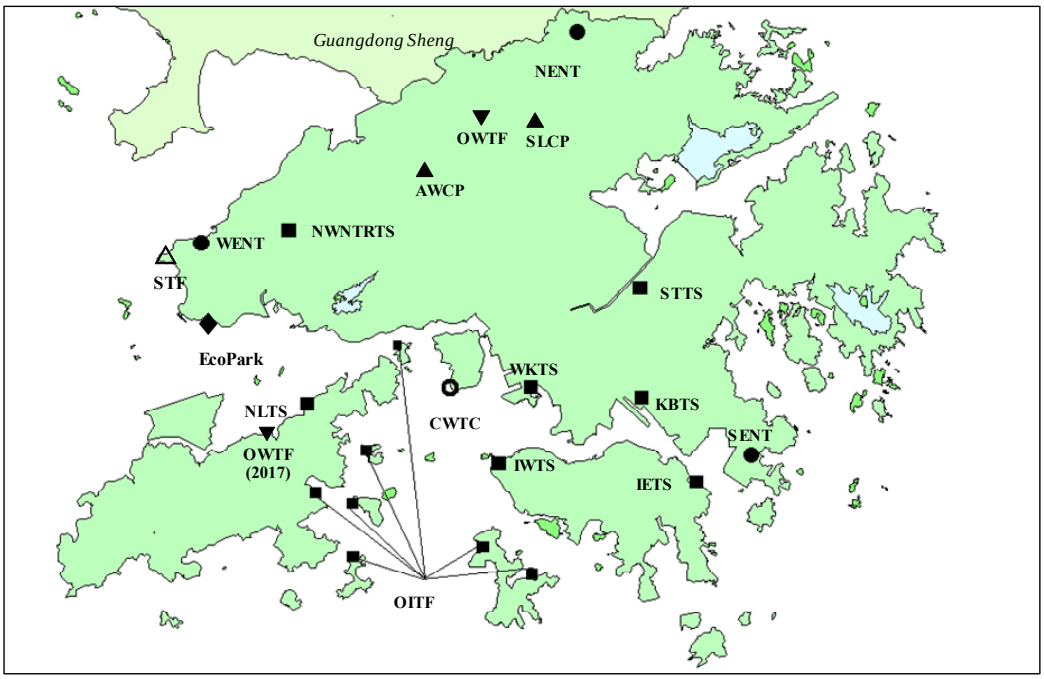


Notes:

(1) Waste concrete delivered to landfills as industrial waste since 2007 was re-grouped under overall construction waste. Its corresponding quantity has been deducted from commercial and industrial waste.

(2) There were 366 days for years 2008 and 2012.

Plate 2.4 Waste management facilities in Hong Kong



Landfill

- WENT - West New Territories Landfill
- SENT - South East New Territories Landfill
- NENT - North East New Territories Landfill

RTS

- IETS - Island East Transfer Station[(1)]
- IWTS - Island West Transfer Station[(1)]
- WKTS - West Kowloon Transfer Station[(1)]
- OITF - Outlying Islands Transfer Facilities[(1)]
- NLTS - North Lantau Transfer Station[(1)]
- STTS - Sha Tin Transfer Station[(2)]
- NWNTRTS - North West New Territories Refuse Transfer Station[(3)]
- KBTS - Kowloon Bay Transfer Station[(4)]

- CWTC - Chemical Waste Treatment Centre
- SLCP - Shaling Composting Plant[(5)]
- AWCP - Animal Waste Composting Plant
- EcoPark
- OWTF - Organic Waste Treatment Facilities [(6)]
- STF - Sludge Treatment Facility [(7)]

Notes:

(1) Waste from IETS, IWTS, WKTS, OITF and NLTS was transferred to WENT by sea.

(2) Waste from STTS was transferred to NENT by road.

(3) Waste from NWNTRTS was transferred to WENT by road.

(4) KBTS was closed in April 2005 and converted to a waste recycling centre.

(5) SLCP has stopped operation since October 2010.

(6) Phase 1 of the OWTF at Siu Ho Wan is expected to start operation in 2017. The Feasibility Study and the Environmental Impact Assessment for the second phase of the OWTF at Shaling had commenced.

(7) As from April 2015, dewatered sludge from sewage treatment plants has been treated by incineration at STF at Tuen Mun. The residue of incineration has been disposed of at landfills.

Plate 2.5 Total solid waste delivered to RTSs and landfills in 2014 - By main waste category

Disposal facility	Average daily quantity (tpd)							
	MSW		Overall construction waste		Special waste[1]		Total	
IETS - Island East Transfer Station	**829**	(3.8%)	-	-	-	-	**829**	(3.8%)
STTS - Sha Tin Transfer Station	**1,096**	(-2.0%)	-	-	-	-	**1,096**	(-2.0%)
IWTS - Island West Transfer Station	**599**	(7.8%)	-	-	-	-	**599**	(7.8%)
WKTS - West Kowloon Transfer Station	**2,640**	(10.7%)	-	-	**383**	(-17.0%)	**3,023**	(6.2%)
OITF - Outlying Islands Transfer Facilities	**84**	(2.7%)	**42**	(64.7%)	**3**	(-3.5%)	**129**	(16.7%)
NLTS - North Lantau Transfer Station	**197**	(4.4%)	-		**1**	(-4.7%)	**198**	(4.3%)
NWNTRTS - North West New Territories Refuse Transfer Station	**1,081**	(3.5%)	-	-	-	-	**1,081**	(3.5%)
WENT - West New Territories Landfill	**5,813[2]**	(7.2%)	**874[2]**	(24.7%)	**568**	(7.7%)	**7,254[2]**	(9.1%)
SENT - South East New Territories Landfill	**1,713**	(-13.5%)	**2,500**	(8.6%)	**297**	(-24.0%)	**4,510**	(-3.5%)
NENT - North East New Territories Landfill	**2,256[2]**	(5.3%)	**568**	(-3.4%)	**270**	(6.2%)	**3,094[2]**	(3.7%)
Total	**9,782**	(2.5%)	**3,942**	(9.8%)	**1,135**	(-3.2%)	**14,859**	(3.8%)

Notes:

(1) Please refer to Plate 2.12b for special waste not disposed of at landfills.

(2) The quantity includes solid waste transferred from RTS(s) to landfill.

(3) Figures in brackets refer to year-on-year (y-o-y) growth rates.

Plate 2.6 Arisings of solid waste in 2014 - By district by main waste category

District	Average daily quantity[1] [2] (tpd)							
	Domestic waste (a)		Commercial & industrial waste (b)		Municipal solid waste (c) =(a)+(b)		Overall construction waste (d)	
Eastern	433	(-4.3%)	160	(14.6%)	593	(0.1%)	97	(36.3%)
Wanchai	234	(-5.4%)	171	(15.9%)	405	(2.5%)	76	(-3.0%)
Central & Western	278	(-1.5%)	103	(9.9%)	381	(1.4%)	145	(7.9%)
Southern	236	(6.7%)	101	(14.8%)	337	(9.0%)	131	(3.6%)
Hong Kong Island Sub-total	1,182	(-1.9%)	534	(14.1%)	1,716	(2.6%)	449	(9.4%)
Yau Tsim Mong	526	(1.3%)	236	(8.6%)	761	(3.5%)	214	(28.4%)
Kwun Tong	514	(-3.6%)	219	(-6.7%)	733	(-4.6%)	382	(-6.9%)
Sham Shui Po	368	(4.3%)	185	(16.3%)	553	(8.0%)	102	(11.8%)
Kowloon City	318	(2.7%)	192	(11.3%)	510	(5.7%)	291	(-28.4%)
Wong Tai Sin	292	(0.2%)	165	(11.5%)	457	(4.0%)	28	(-27.3%)
Kowloon Sub-total	2,017	(0.6%)	997	(7.0%)	3,014	(2.6%)	1,018	(-8.6%)
Yuen Long	621	(3.3%)	402	(6.1%)	1,023	(4.3%)	188	(12.7%)
Tuen Mun	408	(3.6%)	306	(6.4%)	714	(4.8%)	584	(30.0%)
Sai Kung	374	(11.3%)	210	(-11.6%)	584	(1.8%)	1,021	(32.1%)
Sha Tin	429	(0.1%)	145	(-5.2%)	574	(-1.3%)	133	(-0.7%)
North	332	(-7.0%)	193	(2.3%)	525	(-3.8%)	97	(4.5%)
Kwai Tsing	333	(2.3%)	172	(9.1%)	505	(4.5%)	175	(3.8%)
Tai Po	328	(11.8%)	112	(13.9%)	440	(12.3%)	88	(-28.9%)
Tsuen Wan	233	(-8.0%)	163	(2.3%)	396	(-4.0%)	87	(-12.8%)
NT- Mainland Sub-total	3,058	(2.3%)	1,704	(2.5%)	4,762	(2.4%)	2,373	(18.2%)
North Lantau	80	(1.0%)	-	-	-	-	-	-
Cheung Chau	27	(2.3%)	-	-	-	-	-	-
Mui Wo	25	(1.9%)	-	-	-	-	-	-
Ma Wan	11	(-2.4%)	-	-	-	-	-	-
Lamma Island	9	(-2.3%)	-	-	-	-	-	-
Peng Chau	6	(-2.2%)	-	-	-	-	-	-
Hei Ling Chau	3	(-5.8%)	-	-	-	-	-	-
NT-Outlying Islands Sub-total	161	(0.7%)	129[3]	(2.1%)	291[3]	(1.3%)	102[3]	(74.0%)
Total	6,418	(0.9%)	3,364	(5.5%)	9,782	(2.5%)	3,942	(9.8%)

Notes:

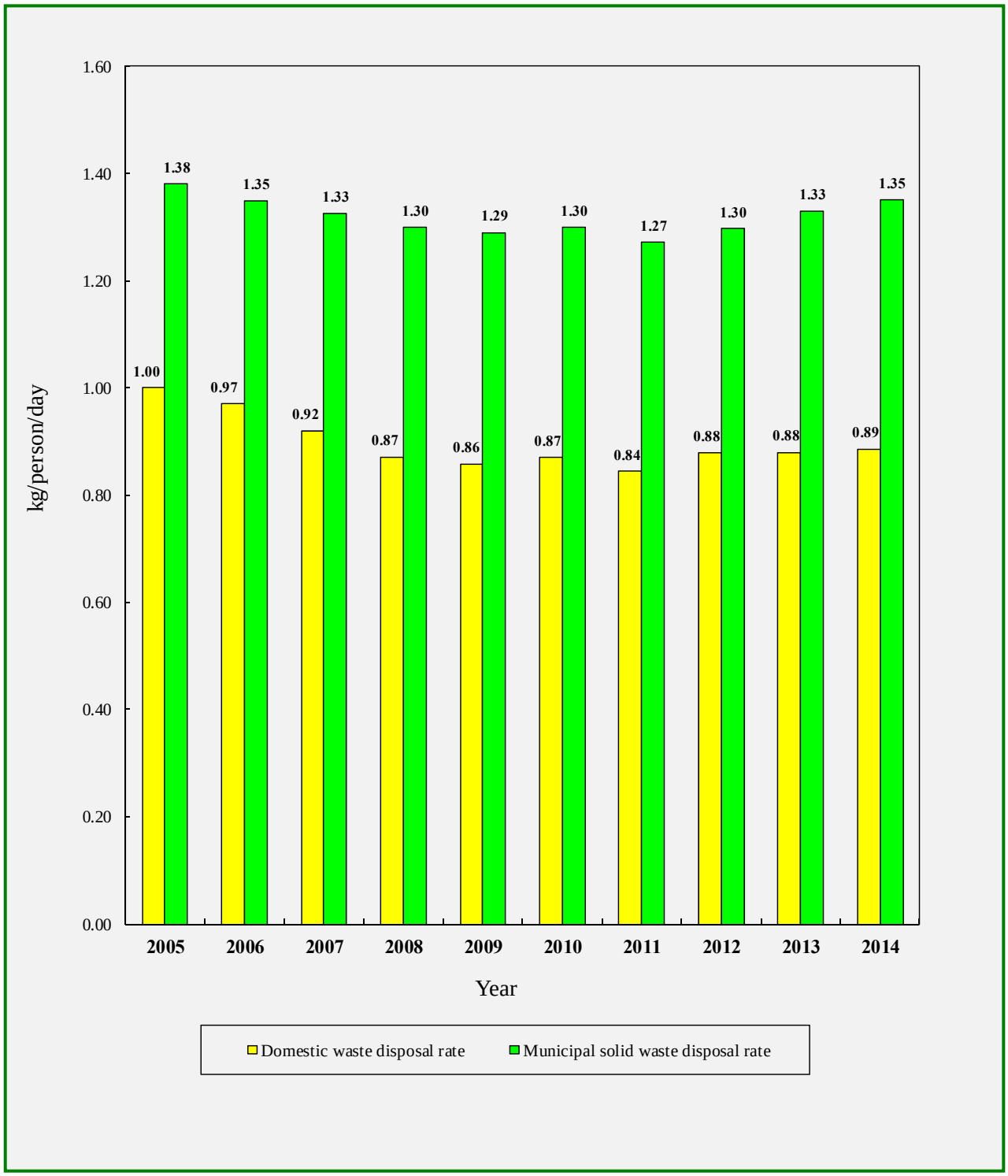
(1) The geographical distribution of solid waste arisings is mainly estimated from waste intake records taken at waste treatment facilities and should be regarded as indicative reference only.

(2) Special waste is not included.

(3) Breakdown into individual islands / areas is not available.

(4) Figures in brackets refer to year-on-year (y-o-y) growth rates.

Plate 2.7 Per capita disposal rates of MSW and domestic waste from 2005 to 2014



Notes:

(1) The per capita disposal rates are calculated based on the population data (mid-year) updated by the C&SD in August 2015.

(2) There were 366 days for years 2008 and 2012.

Plate 2.8 Composition of MSW disposed of at landfills in 2014 - By waste type

Composition	Average daily quantity (tpd) and percentage shares by weight				
	Domestic waste (a)	Commercial waste (b)	Industrial waste (c)	Commercial & industrial waste (d)=(b)+(c)	Municipal solid waste (e)=(a)+(d)
Glass	**178** (2.8%)	**75** (2.9%)	**32** (4.0%)	**107** (3.2%)	**285** (2.9%)
Metals	**120** (1.9%)	**74** (2.9%)	**15** (1.9%)	**89** (2.6%)	**209** (2.1%)
Paper	**1,223** (19.1%)	**588** (22.9%)	**111** (13.9%)	**699** (20.8%)	**1,922** (19.6%)
Plastics	**1,303** (20.3%)	**560** (21.8%)	**152** (19.1%)	**713** (21.2%)	**2,015** (20.6%)
Putrescibles	**3,042** (47.4%)	**1,010** (39.4%)	**104** (13.0%)	**1,114** (33.1%)	**4,156** (42.5%)
Textiles	**211** (3.3%)	**50** (1.9%)	**32** (4.0%)	**82** (2.4%)	**293** (3.0%)
Wood/Rattan	**71** (1.1%)	**62** (2.4%)	**212** (26.5%)	**274** (8.2%)	**346** (3.5%)
Household hazardous wastes (HHWs)(1)	**100** (1.6%)	**49** (1.9%)	**12** (1.5%)	**60** (1.8%)	**160** (1.6%)
Others(2)	**168** (2.6%)	**97** (3.8%)	**129** (16.2%)	**227** (6.7%)	**395** (4.0%)
Total	**6,418** (100%)	**2,565** (100%)	**799** (100%)	**3,364** (100%)	**9,782** (100%)

Notes:

(1) Household hazardous wastes (HHWs) include paints, pesticides, fuels, cylinders, batteries, electrical appliances, computer products, mercury-containing fluorescent lamps and medicines, etc.

(2) Others include bulky items directly disposed of at landfills and other miscellaneous waste materials.

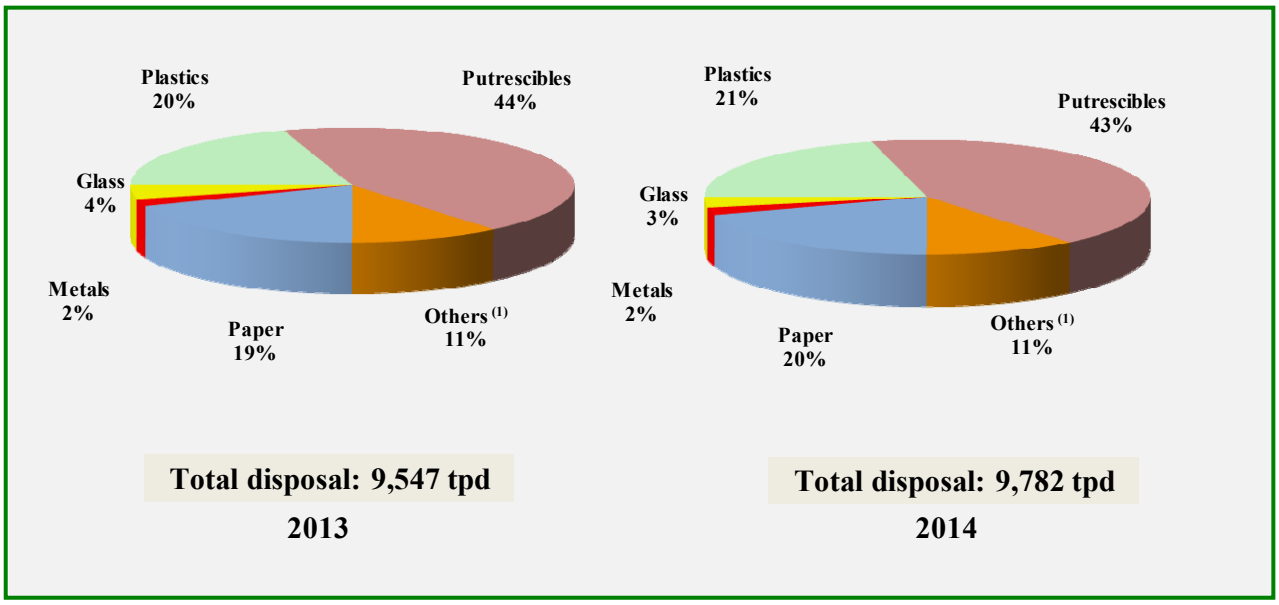
(3) Figures in brackets refer to percentage shares by weight.

Plate 2.9 Composition of MSW disposed of at landfills in 2014 – By major waste type

Composition	Average daily quantity (tpd) and percentage shares by weight					
	Domestic waste (a)		Commercial & industrial waste (b)		Municipal solid waste (c) = (a) + (b)	
Glass						
- Glass bottles	**144**	(2.2%)	**60**	(1.8%)	**204**	(2.1%)
- Other glass	**34**	(0.5%)	**47**	(1.4%)	**81**	(0.8%)
(Glass) Sub-total	**178**	(2.8%)	**107**	(3.2%)	**285**	(2.9%)
Metals						
- Ferrous metals	**94**	(1.5%)	**61**	(1.8%)	**155**	(1.6%)
- Aluminium cans	**15**	(0.2%)	**15**	(0.4%)	**30**	(0.3%)
- Other non-ferrous metals	**11**	(0.2%)	**13**	(0.4%)	**25**	(0.3%)
(Metals) Sub-total	**120**	(1.9%)	**89**	(2.6%)	**209**	(2.1%)
Paper						
- Newsprint	**385**	(6.0%)	**84**	(2.5%)	**470**	(4.8%)
- Cardboard	**197**	(3.1%)	**201**	(6.0%)	**399**	(4.1%)
- Office paper	**76**	(1.2%)	**62**	(1.8%)	**138**	(1.4%)
- Tetrapak	**46**	(0.7%)	**27**	(0.8%)	**74**	(0.8%)
- Others[1]	**518**	(8.1%)	**324**	(9.6%)	**842**	(8.6%)
(Paper) Sub-total	**1,223**	(19.1%)	**699**	(20.8%)	**1,922**	(19.6%)
Plastics						
- Plastic bags	**466**	(7.3%)	**198**	(5.9%)	**665**	(6.8%)
- PET plastic bottles	**82**	(1.3%)	**50**	(1.5%)	**132**	(1.3%)
- Non-PET plastic bottles	**59**	(0.9%)	**15**	(0.4%)	**74**	(0.8%)
- Polyfoam-others	**30**	(0.5%)	**15**	(0.4%)	**45**	(0.5%)
- Polyfoam-dining wares	**31**	(0.5%)	**13**	(0.4%)	**43**	(0.4%)
- Others[2]	**635**	(9.9%)	**422**	(12.5%)	**1,057**	(10.8%)
(Plastics) Sub-total	**1,303**	(20.3%)	**713**	(21.2%)	**2,015**	(20.6%)
Putrescibles						
- Food waste	**2,608**	(40.6%)	**1,033**	(30.7%)	**3,640**	(37.2%)
- Yard waste[3]	**83**	(1.3%)	**27**	(0.8%)	**111**	(1.1%)
- Others[4]	**351**	(5.5%)	**54**	(1.6%)	**405**	(4.1%)
(Putrescibles) Sub-total	**3,042**	(47.4%)	**1,114**	(33.1%)	**4,156**	(42.5%)

Notes:
(1) Other paper waste includes tissue paper and paper bags etc.
(2) Other plastics waste includes household utensils, packaging materials, toys, off-cuts, scrap, etc.
(3) Yard waste not disposed of at landfills is not included. For example, part of the yard waste collected by AFCD will be treated in country parks managed by the Department.
(4) Other putrescibles waste includes cotton products, other organic waste, etc.
(5) Figures in brackets refer to percentage shares by weight.

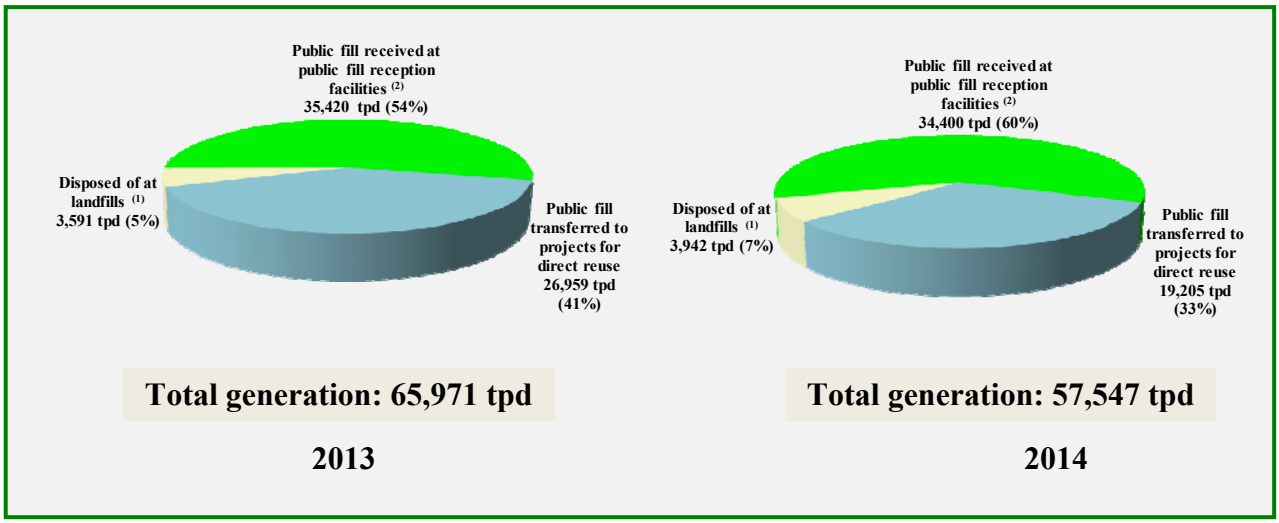
Plate 2.10 Composition of MSW disposed of at landfills in percentages in 2013 and 2014 – By major waste type



Note:

(1) Others include textiles, wood/rattan, household hazardous wastes, bulky items directly disposed of at landfills, and miscellaneous waste materials.

Plate 2.11 Disposal and reuse of overall construction waste in 2013 and 2014



Notes:

(1) Overall construction waste includes waste or surplus materials arising from construction activities such as site clearance, refurbishment, renovation, demolition, land excavation and road works. It also includes waste concrete that is generated from concrete batching plants, cement plaster/mortar plants not set up inside construction sites. The waste is sorted into inert materials and others, where inert materials like debris, rubble, concrete and earth (called public fill) are reused in construction sites, or as fill in reclamation sites when available. Others (basically non-inert waste) are disposed of at landfills.

(2) Public fill reception facilities (PFRFs) are managed by CEDD for receiving construction waste (inert fill materials) appropriate for reuse. At present, two major PFRFs are in operation, one at Tseung Kwan O and the other at Tuen Mun.

Plate 2.12a Disposal of special waste at landfills in 2014 - By special waste type

Special waste type	Average daily quantity[1] (tpd)	
Abattoir waste	**8**	(1.8%)
Animal carcasses and kennel waste	**10**	(9.9%)
Asbestos waste	**4**	(26.2%)
Chemical waste other than asbestos waste	**7**	(1.9%)
Clinical waste (with packaging material)	**1**	(76.0%)
Condemned goods	**25**	(1.1%)
CWTC stabilised residue and incineration ash	**35**	(207.8%)
Dewatered dredged materials	**12**	(21.3%)
Dewatered sewage sludge	**824**	(-8.5%)
Dewatered waterworks sludge	**58**	(17.2%)
Livestock waste[2]	**57**	(-3.1%)
Sewage works screenings	**69**	(6.3%)
Waste tyres[3]	**25**	(-3.0%)
Disposal at Landfills Sub-total	**1,135**	(-3.2%)

Notes:

(1) Some types of special waste may not arise daily throughout the whole year. The average daily quantity is the total amount of waste generated in the year divided by the number of days in that year.

(2) In 2014, the generation of livestock waste amounted to 163 tpd, out of which 57 tpd were disposed of at landfills. The remaining livestock waste was treated by other environmentally-acceptable means such as on-site composting, aerobic treatment, and dry muck-out.

(3) Waste tyres are shredded or cut prior to disposal at landfills.

(4) Figures in brackets refer to year-on-year (y-o-y) growth rates.

Plate 2.12b Treatment of special waste in 2014 (Not disposed of at landfills) - By special waste type

Special waste type	Treatment method	Average daily quantity[1] (tpd)	
Chemical waste other than asbestos waste	**CWTC**	**26**	(0.2%)
Clinical waste	**CWTC**	**5**	(-1.4%)
Grease trap waste	**WKTS[2]**	**383**	(-17.0%)
Horse stable waste	**AWCP**	**22**	(0.0%)
Dredged mud and excavated materials	**Marine dumping[3]**	**104,658**	(27.8%)
Furnace bottom ash	**Concrete manufacturing, stored in lagoon[4]**	**141**	(15.6%)
Pulverised fuel ash	**Concrete manufacturing, stored in lagoon[4]**	**1,467**	(12.2%)

Notes:

(1) Some types of special waste may not arise daily throughout the whole year. The average daily quantity is the total amount of waste generated in the year divided by the number of days in that year.

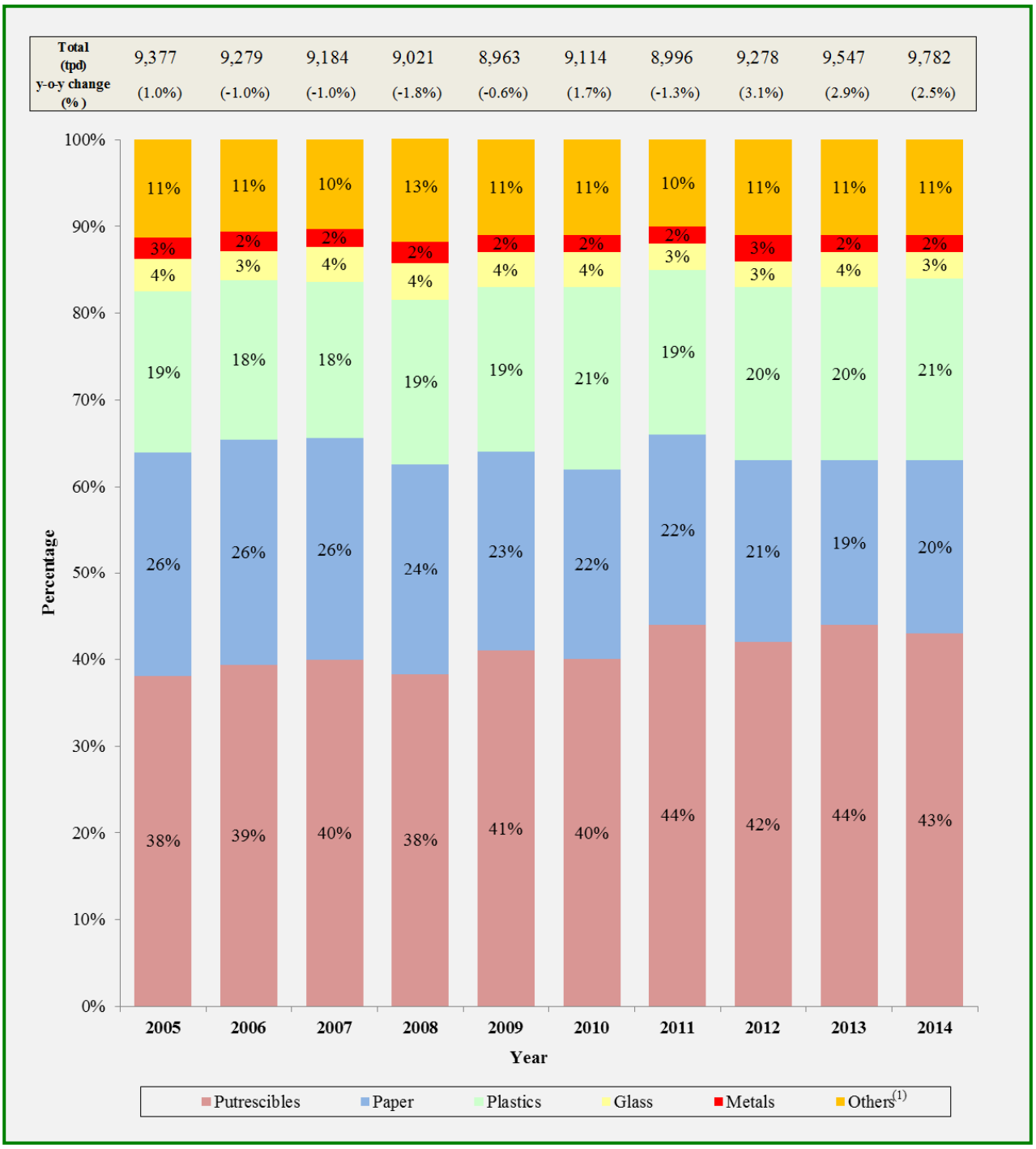
(2) The figure is the quantity of grease trap waste treated by the Grease Trap Waste Treatment Facility at WKTS.

(3) The density of the dredged mud and excavated materials is assumed to be one tonne per cubic metre.

(4) Figures provided by the Power Companies.

(5) Figures in brackets refer to year-on-year (y-o-y) growth rates.

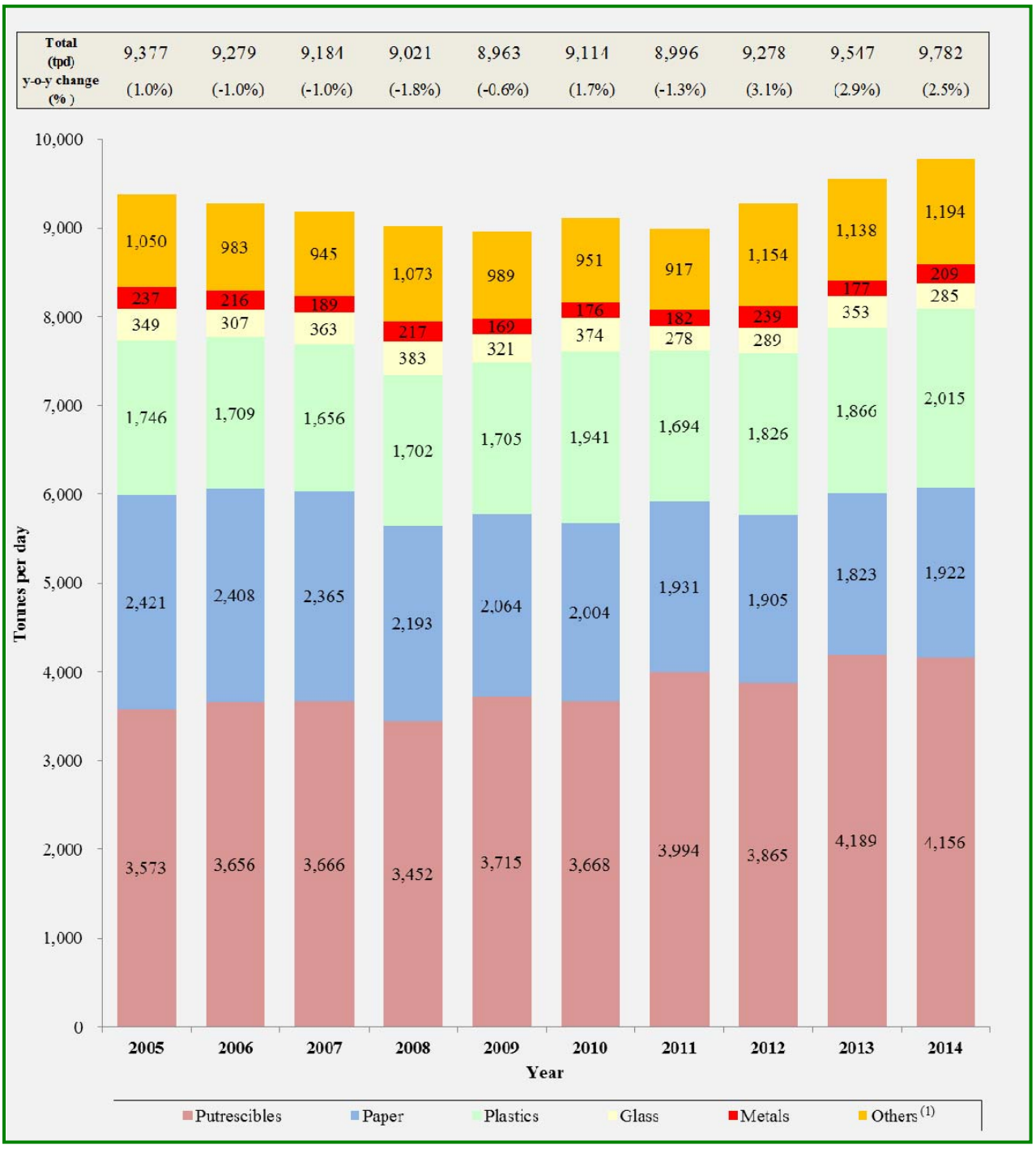
Plate 2.13 Composition of MSW disposed of at landfills in percentages from 2005 to 2014 – By major waste type



Note:

(1) Others include textiles, wood/rattan, household hazardous wastes, bulky items directly disposed of at landfills, and miscellaneous waste materials.

Plate 2.14 Composition of MSW disposed of at landfills in quantities from 2005 to 2014 – By major waste type

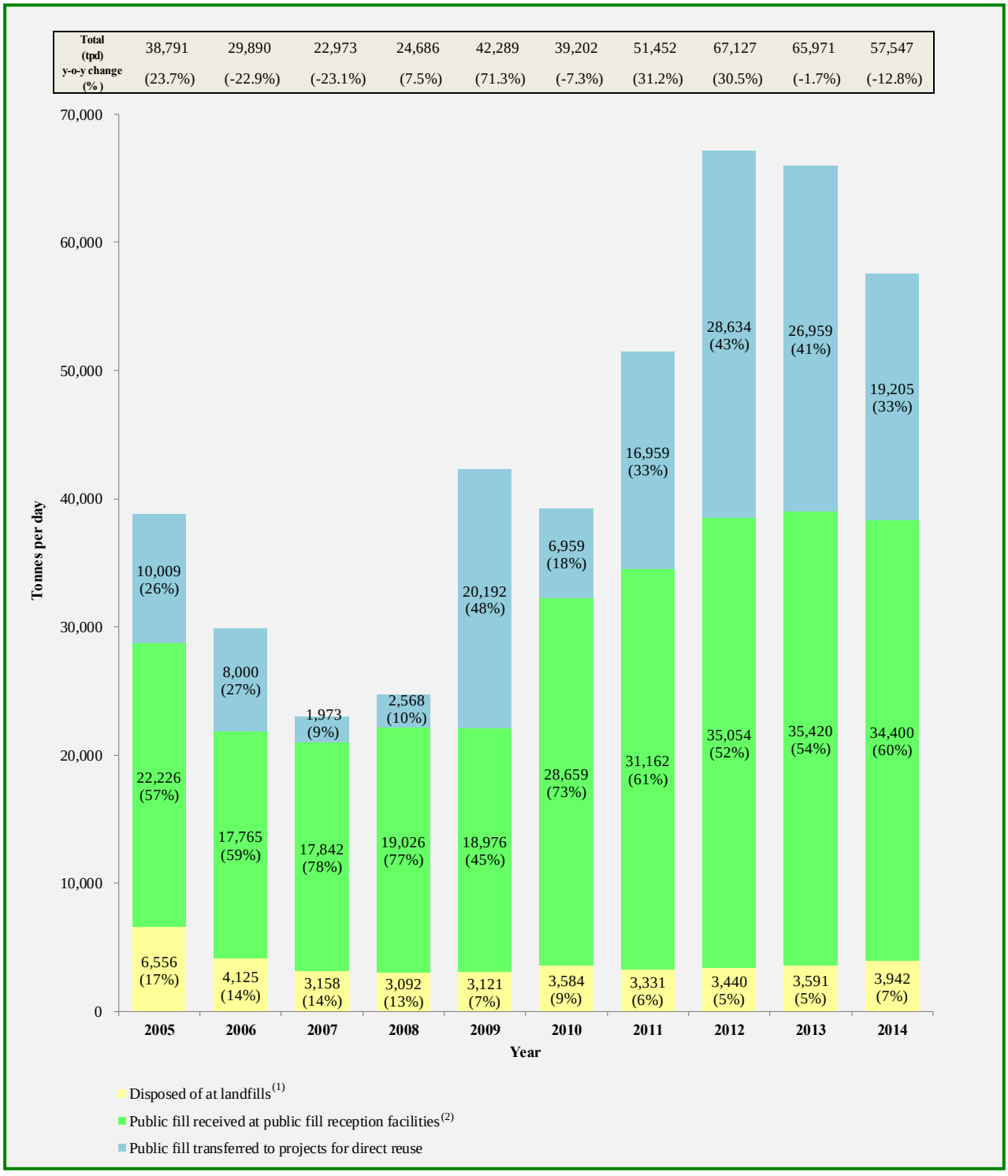


Notes:

(1) Others include textiles, wood/rattan, household hazardous wastes, bulky items directly disposed of at landfills and miscellaneous waste materials.

(2) There were 366 days for years 2008 and 2012.

Plate 2.15 Disposal and reuse of overall construction waste from 2005 to 2014



Notes:

(1) Overall construction waste includes waste or surplus materials arising from construction activities such as site clearance, refurbishment, renovation, demolition, land excavation and road works. It also includes waste concrete that is generated from concrete batching plants, cement plaster/mortar plants not set up inside construction sites. The waste is sorted into inert materials and others, where inert materials like debris, rubble, concrete and earth (called public fill) are reused in construction sites, or as fill in reclamation sites when available. Others (basically non-inert waste) are disposed of at landfills.

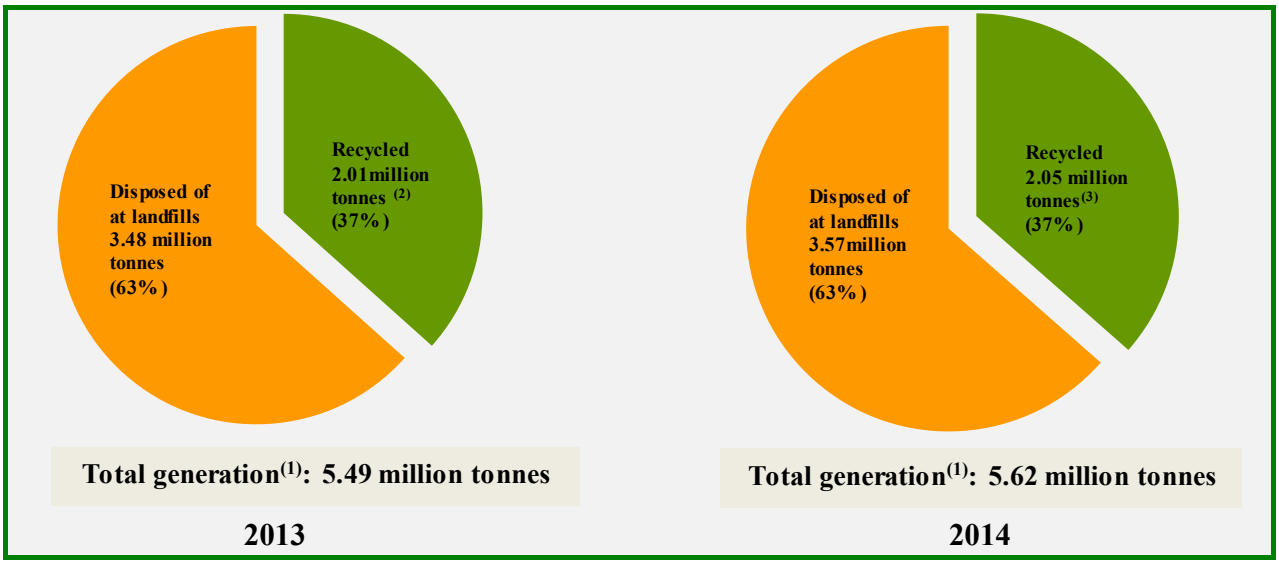
(2) Public fill reception facilities (PFRFs) are managed by CEDD for receiving construction waste (inert fill materials) appropriate for reuse. At present, two major PFRFs are in operation, one at Tseung Kwan O and the other at Tuen Mun.

(3) The data series on public fill (inert fill materials) have been revised based on more detailed data obtained from CEDD.

(4) There were 366 days for years 2008 and 2012.

3. Resource Recovery and Recycling

Plate 3.1 Generation, disposal and recovery of MSW in 2013 and 2014



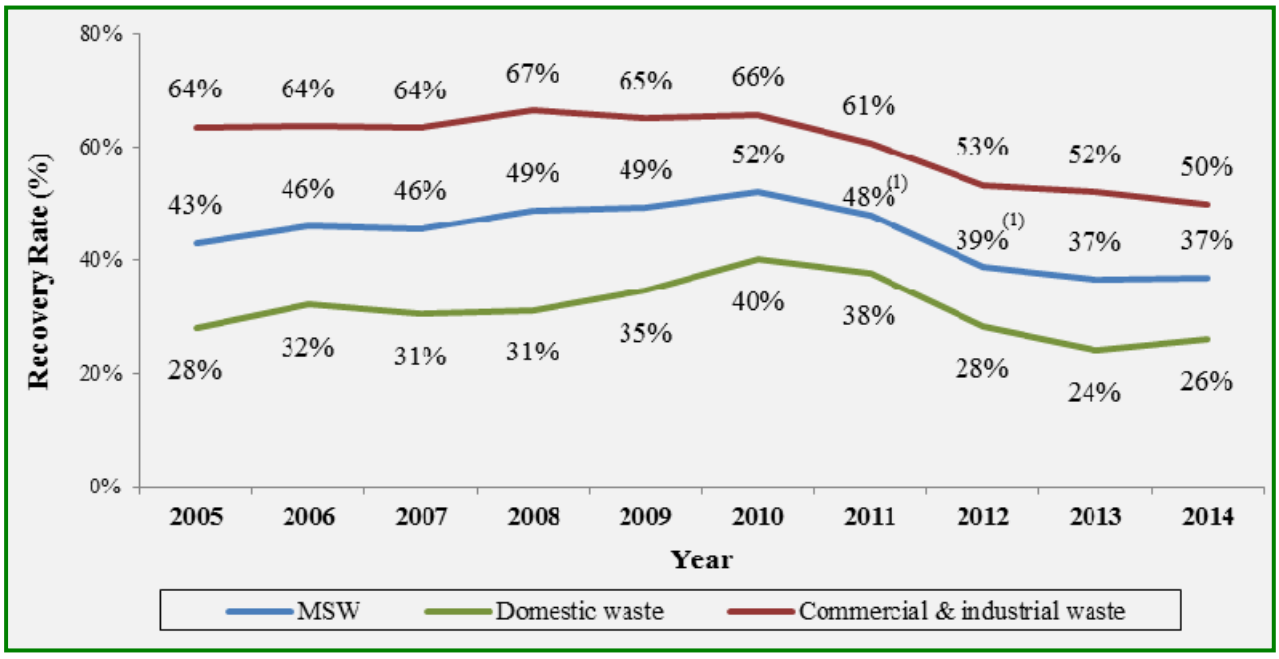
Notes:

(1) Generation of MSW is the sum of MSW disposed of at landfills and MSW recovered for recycling.

(2) A total of 2.01 million tonnes of recyclable materials were recovered for recycling in 2013, of which, 1.87 million tonnes (93%) were exported for recycling and 0.14 million tonnes (7%) recycled locally.

(3) A total of 2.05 million tonnes of recyclable materials were recovered for recycling in 2014, of which, 2.01 million tonnes (98%) were exported for recycling and 0.05 million tonnes (2%) recycled locally.

Plate 3.2 Recovery rates of MSW, domestic waste, and commercial and industrial waste from 2005 to 2014



Note:

(1) The apparent decreases in MSW recovery rate from 2010 to 2012 were mainly due to substantial fluctuations in local plastics waste exported for recycling, nevertheless the quantities of MSW disposed of at landfills remained steady in the same period (see Plates 2.3 and 2.7).

Plate 3.3 Recyclable materials recovered from MSW in 2014 - By type of recyclable

Recyclable type	Quantity of recovered recyclable materials (thousand tonnes)					
	Exported for recycling (a)		Recycled locally (b)		Total recovered for recycling (c) = (a) + (b)	
Paper	**947.9**	(47.2%)	**0.0**	(0.0%)	**947.9**	(46.2%)
Plastics	**82.7**	(4.1%)	**16.0**	(35.4%)	**98.7**	(4.8%)
Ferrous metals	**844.7**	(42.1%)	**0.4**	(0.9%)	**845.1**	(41.2%)
Non-ferrous metals	**75.5**	(3.8%)	**0.1**	(0.1%)	**75.5**	(3.7%)
Glass(1)	**0.0**	(0.0%)	**8.4**	(18.6%)	**8.4**	(0.4%)
Rubber tyres(2)	**0.2**	(0.0%)	**4.4**	(9.7%)	**4.6**	(0.2%)
Textiles	**1.5**	(0.1%)	**2.8**	(6.1%)	**4.2**	(0.2%)
Wood	**3.1**	(0.2%)	**3.2**	(7.1%)	**6.3**	(0.3%)
Food waste(3)	**0.0**	(0.0%)	**6.9**	(15.4%)	**6.9**	(0.3%)
Electrical and electronic equipment(4)	**52.6**	(2.6%)	**2.9**	(6.5%)	**55.5**	(2.7%)
Total	**2,008.1**	(100.0%)	**45.1**	(100.0%)	**2,053.2**	(100.0%)

Notes:

(1) Glass beverage bottles recovered for reuse through deposit-and-refund system operated by local beverage manufacturers are not included.

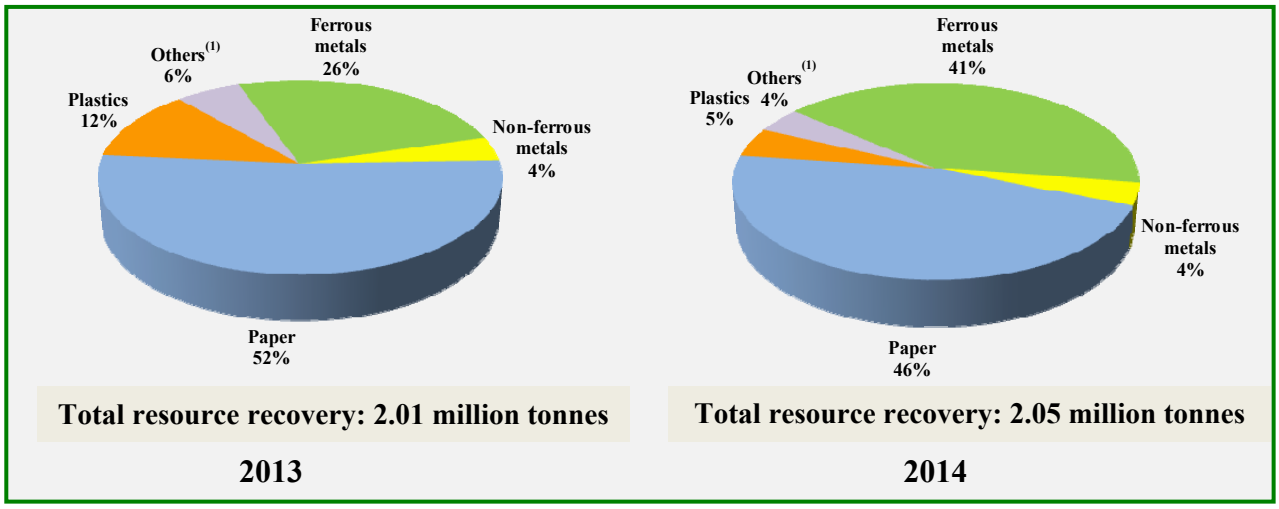
(2) The quantity includes reuse, retreading and recycling of vehicle tyres and retreading of aircraft tyres in Hong Kong.

(3) The quantity of food waste recycled locally includes those recycled by industrial operators and those recycled at EPD's composting facilities at Kowloon Bay.

(4) The volume of waste electrical and electronic equipment recovered for recycling is compiled from results of a biennial survey on "Generation & Disposal Practice of Used/ End-of-Life Electrical & Electronic Equipment and Batteries in Hong Kong" commissioned by EPD.

(5) Figures in brackets refer to percentage shares.

Plate 3.4 Recyclable materials recovered from MSW in percentages in 2013 and 2014 - By type of recyclable



Note:

(1) Others include glass, wood, rubber tyres, textiles, food waste and electrical and electronic equipment.

Plate 3.5 Total quantities and export values of recyclable materials recovered from MSW from 2005 to 2014

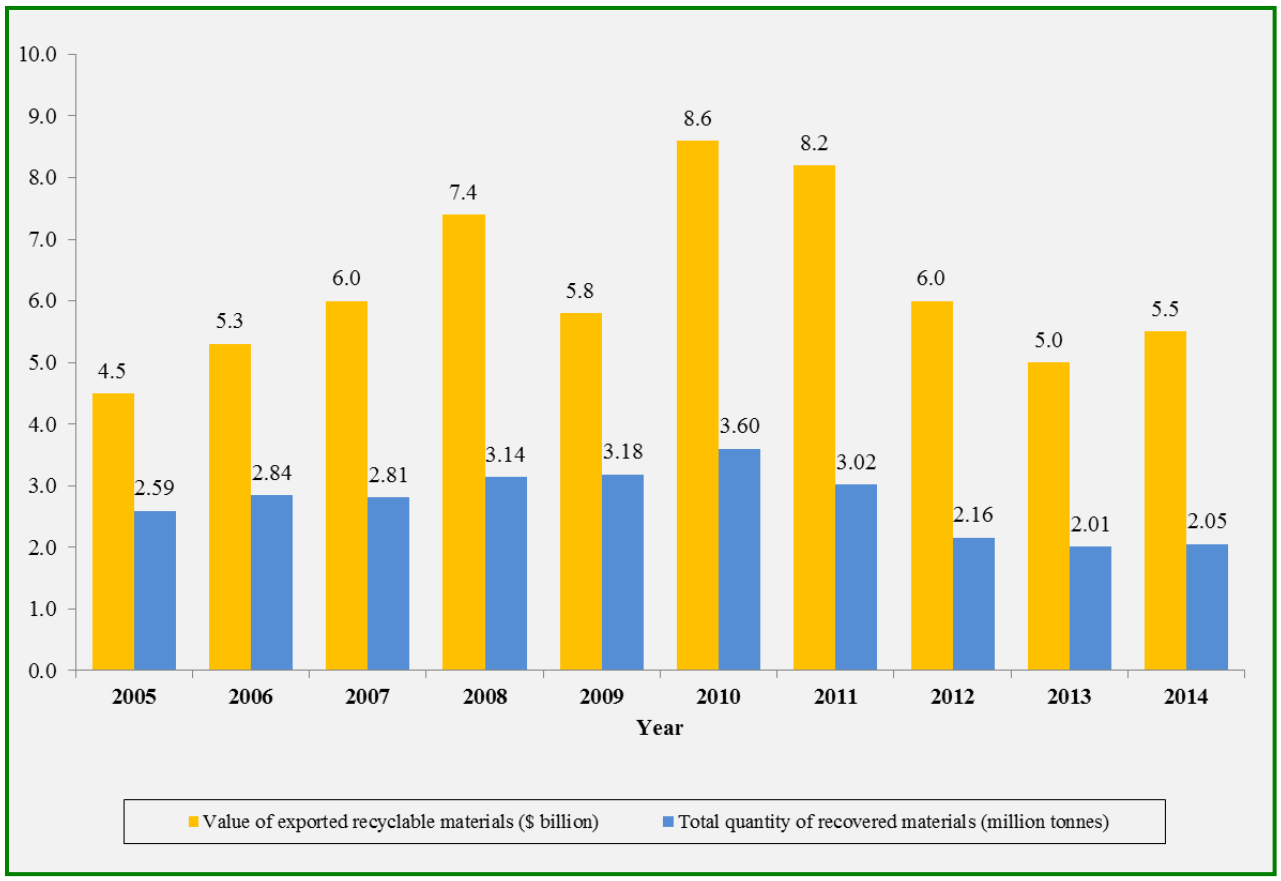
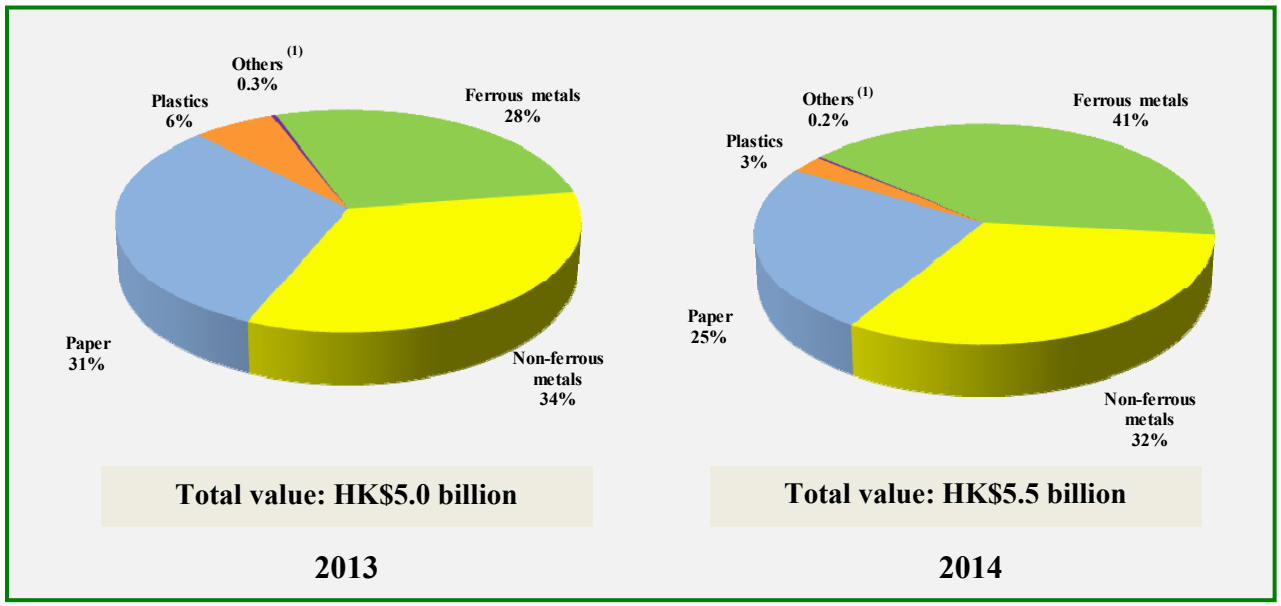


Plate 3.6 Values of exported recyclable materials recovered from MSW in percentages in 2013 and 2014 - By major type of recyclable



Note:

(5) Others include glass, wood, textiles and rubber tyres only.

Plate 3.7 Quantities and values of exported recyclable materials recovered from MSW in 2014 - By major type of recyclable

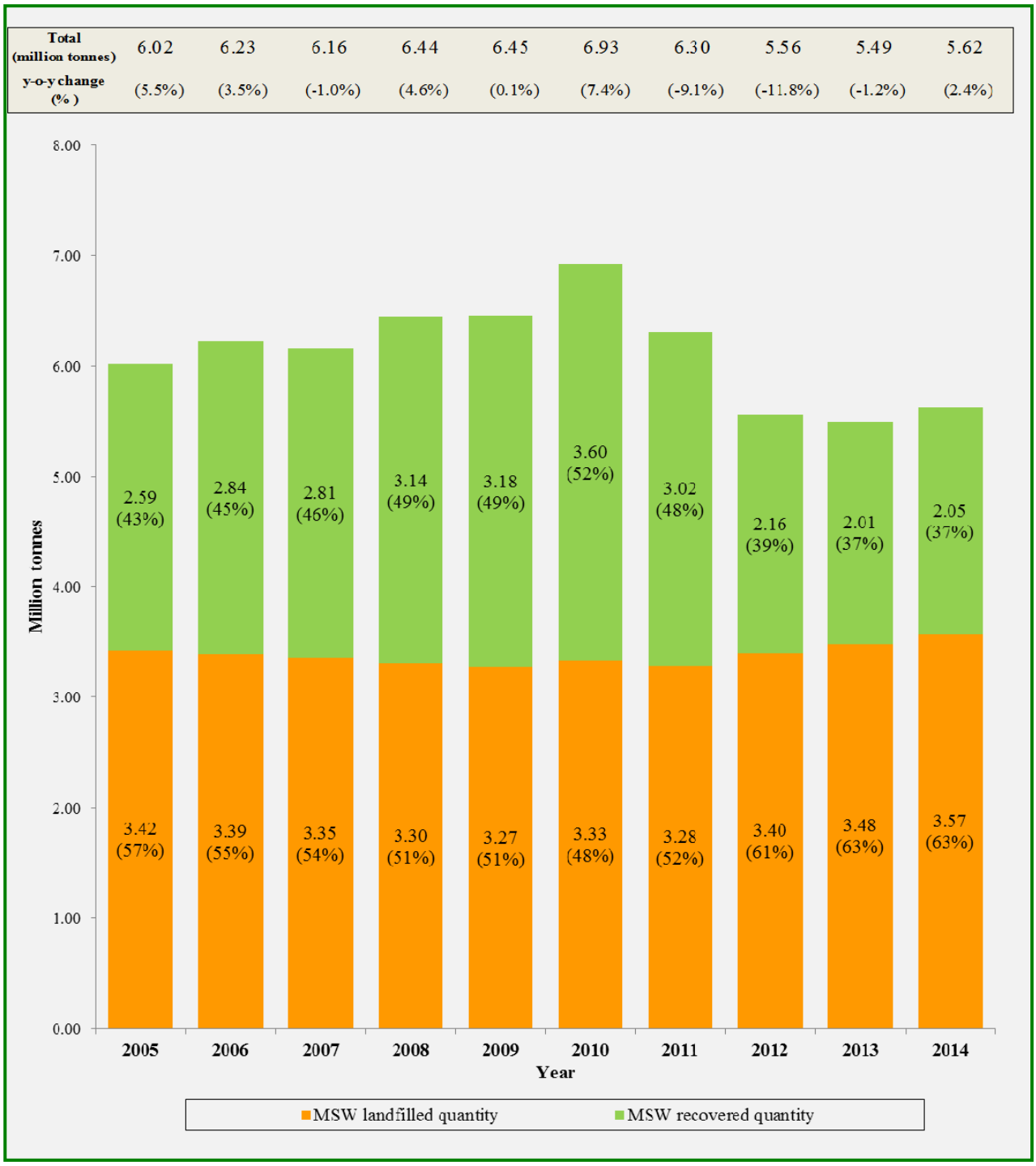
Recyclable type	Quantity (tonnes)		Value ($ thousand)		Value per unit ($ / tonne)
a. Ferrous metals					
- Alloy steel scrap	17,707	(2.1%)	217,361	(9.7%)	12,275
- Pig or cast iron	0	(0.0%)	0	(0.0%)	0
- Tinplate	0	(0.0%)	0	(0.0%)	0
- Other scraps	827,014	(97.9%)	2,025,630	(90.3%)	2,449
(Ferrous metals) Sub-total	**844,721**	(100.0%)	**2,242,991**	(100.0%)	**2,655**
b. Non-ferrous metals					
- Aluminium	41,481	(55.0%)	316,453	(17.9%)	7,629
- Copper & alloys	32,694	(43.3%)	1,152,580	(65.2%)	35,253
- Lead	864	(1.1%)	4,363	(0.2%)	5,051
- Nickel	255	(0.3%)	5,161	(0.3%)	20,209
- Metal ash & residues	114	(0.2%)	1,369	(0.1%)	12,017
- Precious metal	34	(0.0%)	284,661	(16.1%)	8,340,478
- Tin	26	(0.0%)	4,098	(0.2%)	158,343
- Zinc	0	(0.0%)	0	(0.0%)	-
(Non-ferrous metals) Sub-total	**75,468**	(100.0%)	**1,768,684**	(100.0%)	**23,436**
c. Plastics					
- Polyethylene (PE)	10,328	(12.5%)	25,345	(17.6%)	2,454
- Polyethylene terephthalate (PET)	7,930	(9.6%)	16,279	(11.3%)	2,053
- Polypropylene (PP)	3,532	(4.3%)	6,090	(4.2%)	1,724
- Polyvinyl chloride (PVC)	3,144	(3.8%)	4,738	(3.3%)	1,507
- Polystyrene & copolymers (PS)	134	(0.2%)	885	(0.6%)	6,589
- Others[(1)]	57,630	(69.7%)	90,665	(63.0%)	1,573
(Plastics) Sub-total	**82,698**	(100.0%)	**144,003**	(100.0%)	**1,741**
d. Textiles					
- Cotton	13	(0.9%)	146	(1.6%)	10,894
- Man-made fibres	0	(0.0%)	0	(0.0%)	-
- Old clothing & other textile articles, rags, etc.	1,444	(99.1%)	8,766	(98.4%)	6,073
(Textiles) Sub-total	**1,457**	(100.0%)	**8,912**	(100.0%)	**6,117**
e. Wood & paper					
- Paper	947,859	(99.7%)	1,354,709	(99.7%)	1,429
- Wood (include sawdust)	3,122	(0.3%)	3,584	(0.3%)	1,148
(Wood & paper) Sub-total	**950,981**	(100.0%)	**1,358,293**	(100.0%)	**1,428**
f. Glass					
(Glass) Sub-total	**33**	(100.0%)	**20**	(100.0%)	**624**
g. Electrical and electronic equipment					
(Electrical and electronic equipment) Sub-total	**52,563**	(100.0%)	**N/A**		**N/A**

Notes:

(1) Other recyclable plastics include waste, parings and scrap not elsewhere classified.

(2) Figures in brackets refer to percentage shares.

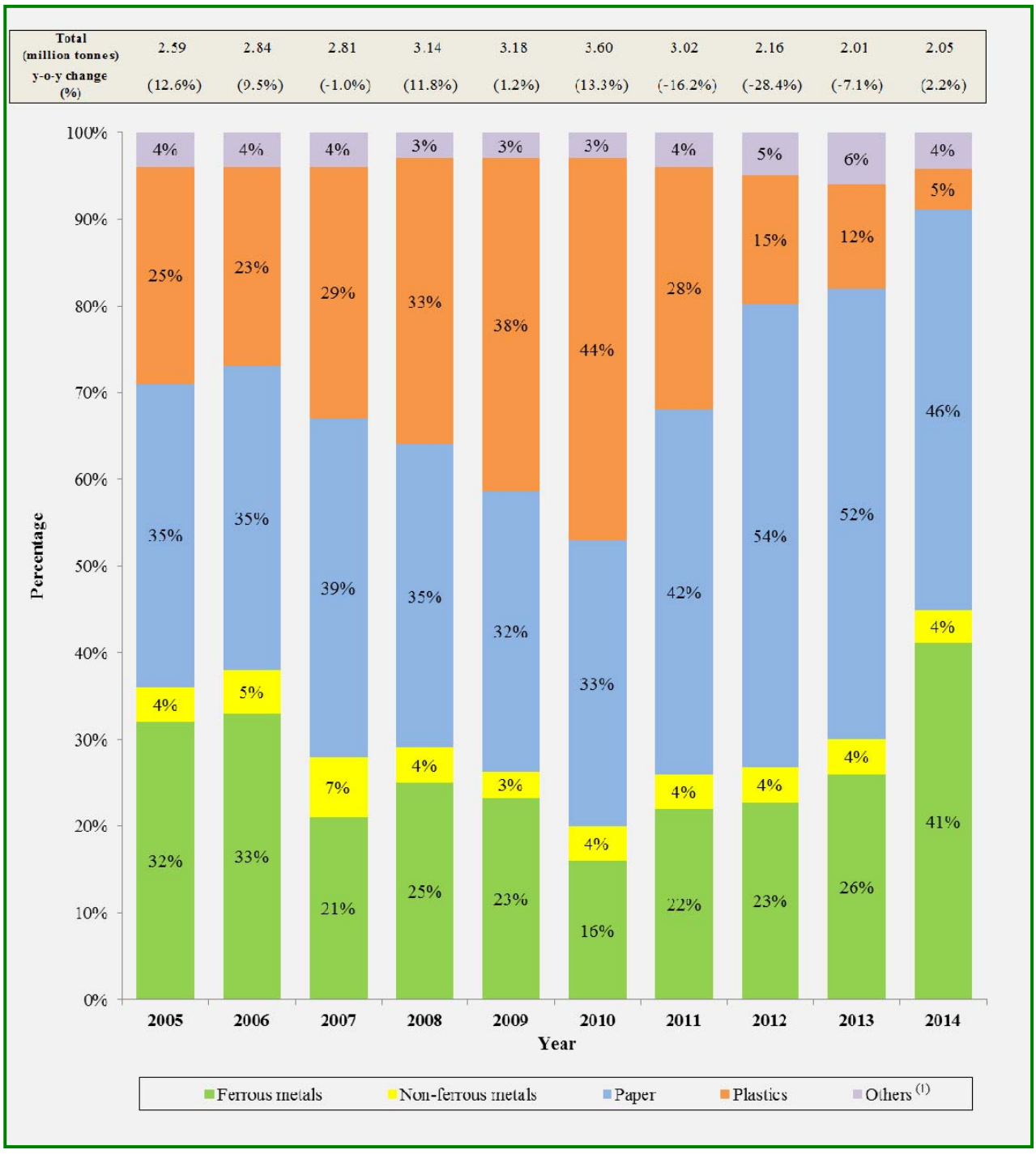
Plate 3.8 Generation, disposal and recovery of MSW from 2005 to 2014



Note:

(1) Generation of MSW is the sum of MSW disposed of at landfills and MSW recovered for recycling.

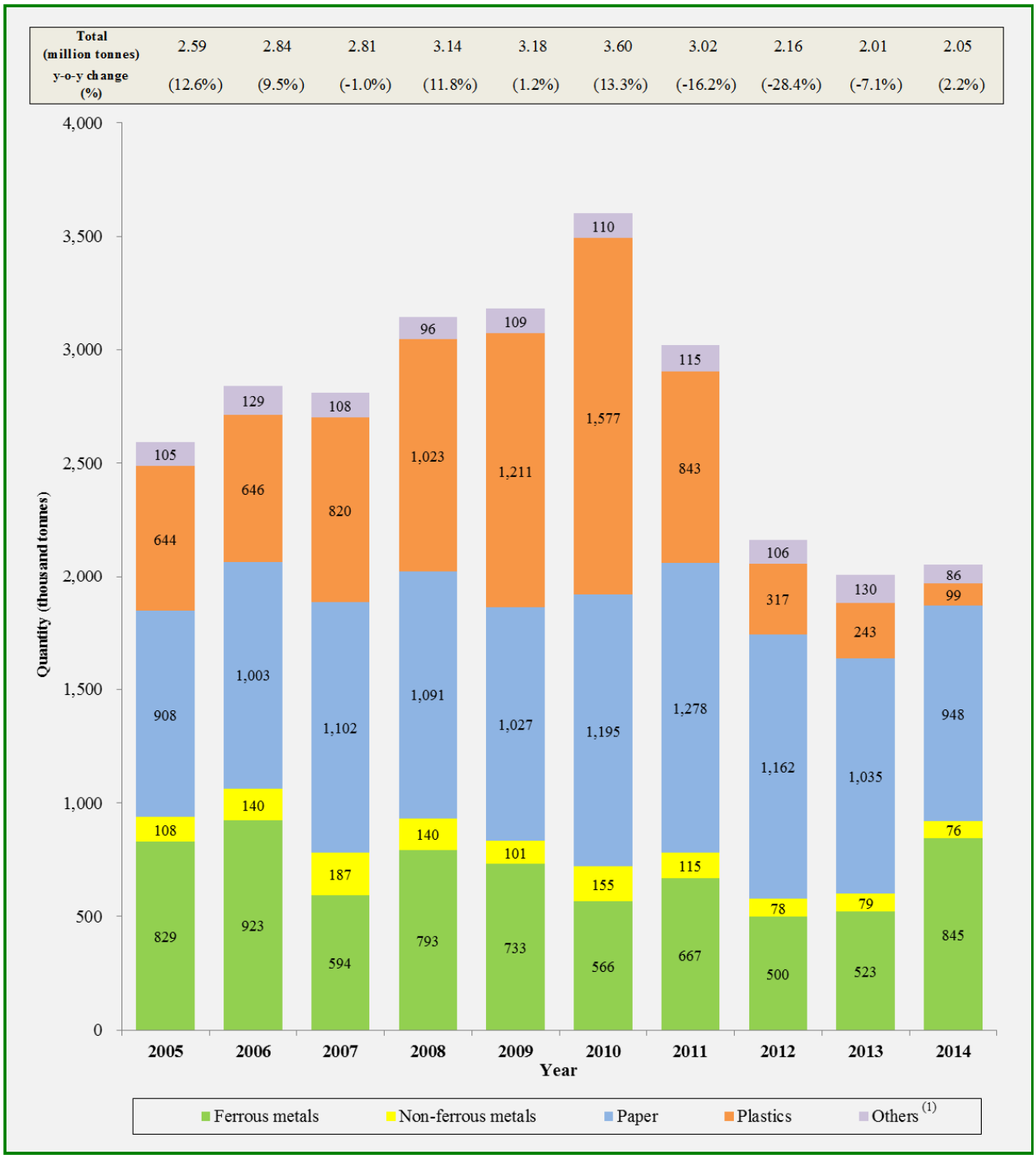
Plate 3.9 Recyclable materials recovered from MSW in percentages from 2005 to 2014 - By major type of recyclable



Note:

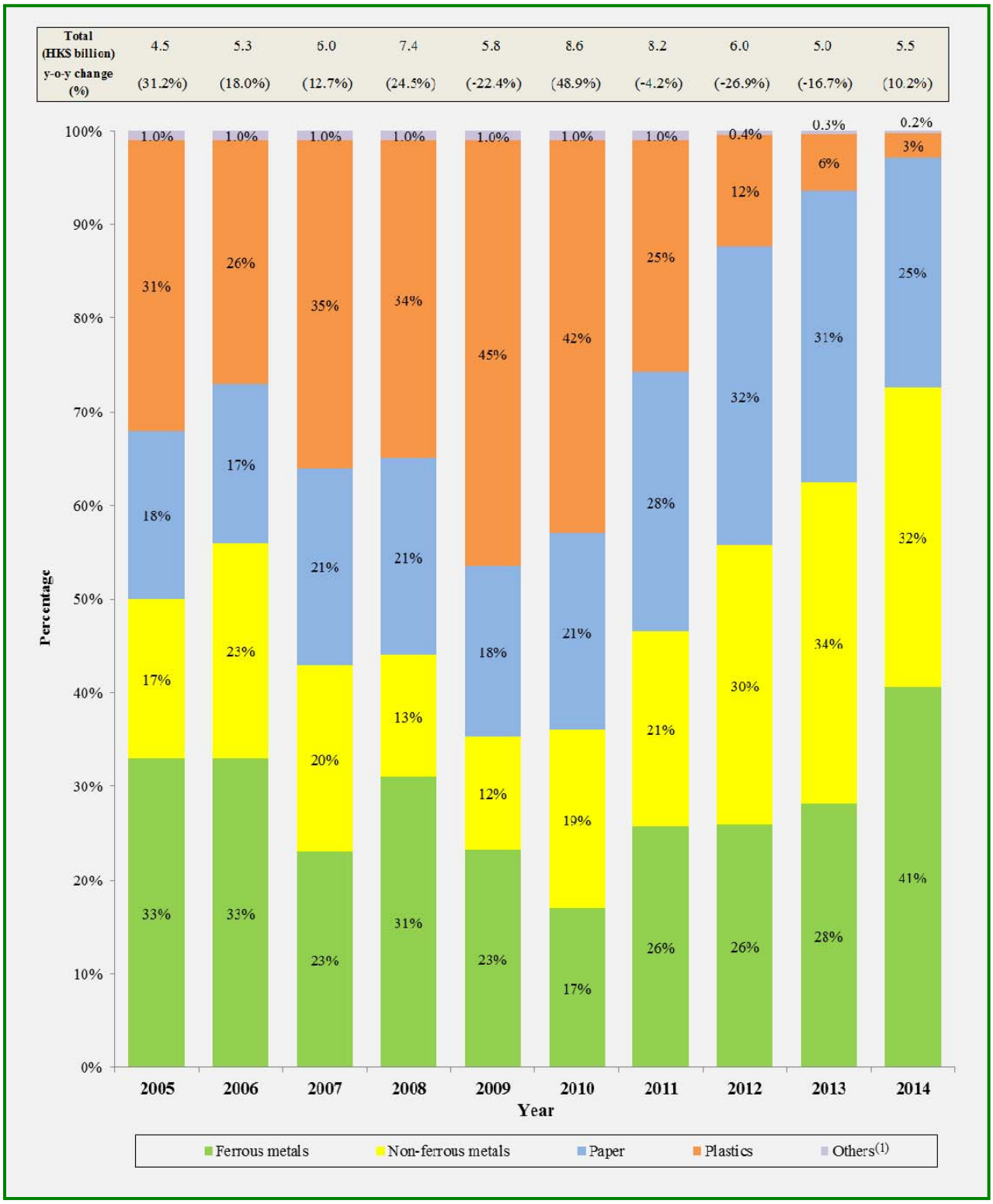
(1) Others include glass, wood, rubber tyres, textiles, food waste, and electrical and electronic equipment.

Plate 3.10 Recyclable materials recovered from MSW in quantities from 2005 to 2014 - By major type of recyclable



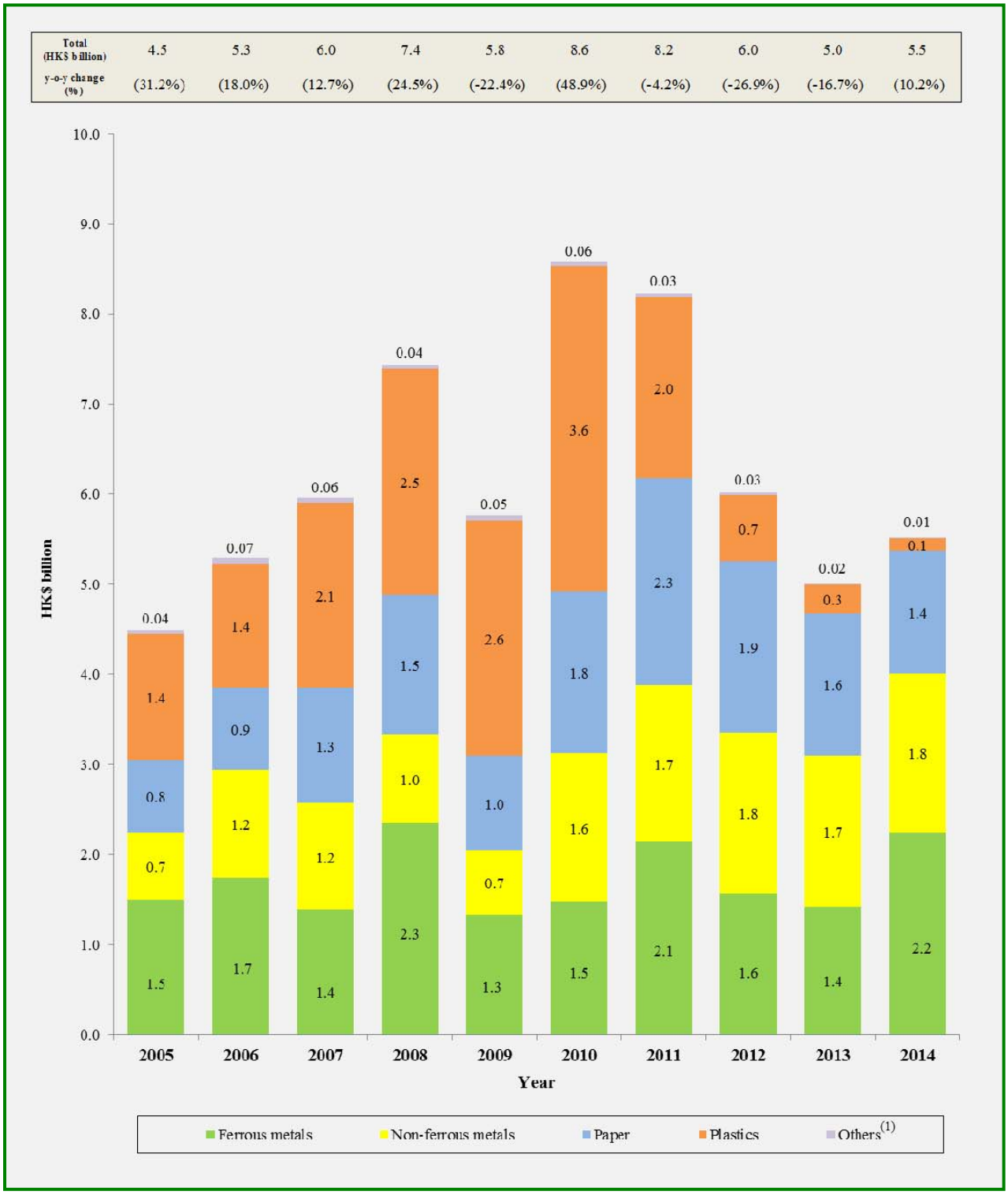
Note:
(1) Others include glass, wood, rubber tyres, textiles, food waste, and electrical and electronic equipment.

Plate 3.11 Values of exported recyclable materials recovered from MSW in percentages from 2005 to 2014 – By major type of recyclable



Note:
(1) Others include glass, wood, textiles and rubber tyres only.

Plate 3.12 Values of exported recyclable materials recovered from MSW from 2005 to 2014 - By major type of recyclable



Note:

(1) Others include glass, wood, textiles and rubber tyres only.

Appendix 1: Classification of Solid Waste and Monitoring Methodology

Waste Classification and Terminology

Solid waste is classified into three main categories by making reference to the sources of waste and the institutional arrangements for waste collection and disposal. These three main categories of solid waste are municipal solid waste, overall construction waste and special waste. The detailed interpretations of some commonly used terms are described below.

Municipal solid waste includes three categories: domestic waste, commercial waste and industrial waste.

- **Domestic waste** refers to household waste, waste generated from daily activities in institutional premises (e.g. schools, government offices) and refuse collected from public cleansing services. Public cleansing waste includes dirt and litter collected by the Food and Environmental Hygiene Department, marine refuse collected by the Marine Department and waste from country parks collected by the Agriculture, Fisheries and Conservation Department.

- **Commercial waste** is waste arising from commercial activities taking place in shops, restaurants, hotels, offices, markets in private housing estates, etc. It is collected mainly by private waste collectors.

- **Industrial waste** is waste arising from industrial activities and does not include construction waste and chemical waste. It is usually collected by private waste collectors. However, some industries may deliver their industrial waste directly to landfills for disposal.

- Municipal solid waste contains a small portion of bulky items like furniture and domestic appliances which cannot be handled by conventional compactor type refuse collection vehicles. These items are regarded as bulky waste and are usually collected separately.

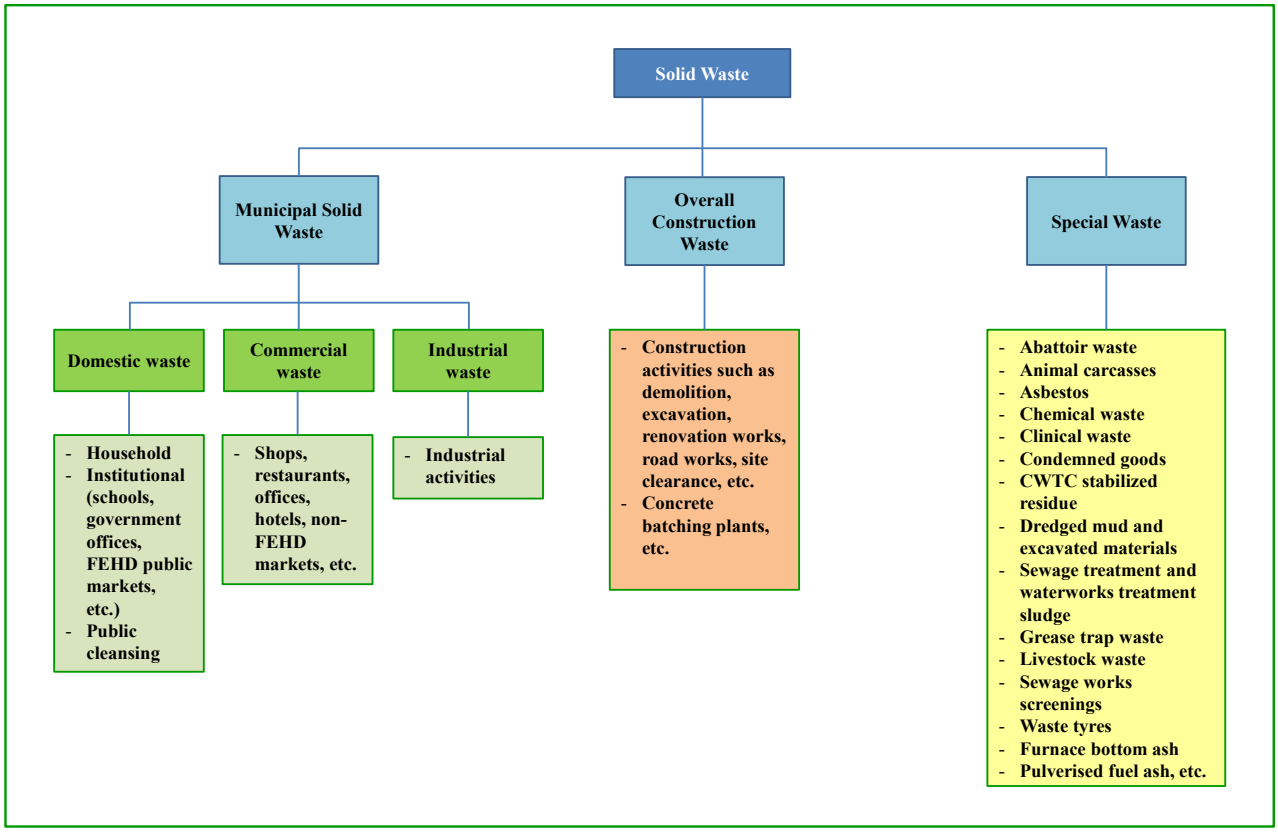
Overall construction waste is a mixture of waste or surplus materials arising from construction activities such as site clearance, excavation, refurbishment, renovation, demolition and road works. It also includes waste concrete that is generated from concrete batching plants and cement plaster/mortar manufacturing plants not set up inside construction sites. Overall construction waste may comprise a fraction of inert materials such as debris, rubble, earth and concrete, which, after proper sorting, can be recycled for use in site formation, land reclamation and construction.

Special waste is waste that requires special disposal arrangement. It includes abattoir waste, animal carcasses, asbestos, chemical waste, clinical waste, condemned goods, CWTC stabilized residue, dredged mud and excavated materials, sewage treatment and waterworks treatment sludge, grease trap waste, livestock waste, sewage works screenings, waste tyres, furnace bottom ash, pulverised fuel ash, etc.

Chemical waste is defined in the Waste Disposal (Chemical Waste) (General) Regulation

under the Waste Disposal Ordinance (Cap. 354). Chemical waste can be any substance arising from any process or trade activity which contains chemical in such form, quantity or concentration that can cause pollution to the environment or become a risk to health.

Current classification of solid waste



Methodology

Solid waste data are mainly collected from the following sources:

- Waste intake records taken at waste management facilities;
- Results of annual survey on waste composition conducted at landfills and RTSs;
- Results of waste recovery survey conducted on the local recycling industry;
- Statistics provided by relevant groups of EPD; and
- Statistics provided by other departments including FEHD, CEDD and C&SD.