Paper WMSC 07/09
For discussion

A Review on Increase in Commercial & Industrial Waste Disposal in Recent Years

Purpose

This paper presents the findings of a review on the increase in disposal quantity of commercial & industrial (C&I) waste in recent years.

Background

2. At the Advisory Council on the Environment (ACE) meeting held on 11 May 2009, the progress of key initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)" in 2008 was discussed. Among other issues, the Members expressed particular concern on the significant increase in the disposal quantity of C&I waste in 2008. The Environmental Protection Department (EPD) undertook to investigate the C&I waste data and to inform the ACE Waste Management Subcommittee on the findings. In this connection, we have conducted the captioned review and the findings are set out as below.

The Review Findings

3. The compiled waste statistics indicate that C&I waste disposal at landfills has been rising continuously in the past five years. In particular, the quantities reached 1.12 million tonnes in 2007 and 1.23 million tonnes in 2008, which represent +15.5% and +10.6% over the respective preceding years.

4. Upon a detailed investigation on the landfill transaction records, it was observed that since the implementation of Construction Waste Disposal Charging Scheme (CWDCS) in January 2006, there has been some construction-related materials spilling into the non-chargeable waste stream category received at landfills, which has boosted up the quantity of C&I waste disposal.

5. The most significant source of spillage is waste concrete/plaster/mortar materials generated from concrete batching plants and plaster/mortar production plants not set up inside construction sites. These materials were used to be disposed of at public filling areas together with other suitable inert filling materials for use in reclamation. However, such materials were not covered by the legal

definition of "construction waste" and therefore not subject to charge under the CWDCS. As a result, these materials had been gradually diverted to landfills as industrial waste since early 2007. Their disposal at landfills amounted to some 90,000 tonnes in 2007 and 160,000 tonnes in 2008**.**

6. Setting aside the legal definition, waste concrete/plaster/mortar materials are *de facto* by-products of construction activities. Their presence in the C&I waste stream has caused some degree of distortion to the municipal solid waste (MSW) disposal quantities and precluded a fair comparison with the historical data. If these materials are discounted from the calculation, the adjusted C&I waste disposal quantities in 2007 and 2008 should be 1.03 and 1.08 million tonnes respectively, with their year-on-year increases becoming milder as +6.3% and +4.9%. That should relieve some Members' concern that the growth rate of C&I waste disposal is not commensurate with economic growth. A table on the adjusted MSW disposal statistics is attached at Annex 1.

7. In order to avoid this external factor distorting the C&I waste quantities in future (especially in the coming years when the volume of infrastructural works is anticipated to be escalating) and for the statistics to truly reflect the pattern and trend of waste generated from commercial and industrial activities, we suggest to re-classify these waste concrete/plaster/mortar materials as construction waste and take it out from C&I waste in future statistical calculations and waste monitoring reports. For past waste monitoring reports already issued or to be issued, we also suggest to re-issue them with adjustments to be made in their waste composition tables to take account of the quantities of waste concrete/plaster/mortar materials received as industrial waste.

8. Apart from the above source, there may be other forms of construction-related materials spilling into the C&I waste stream from time to time to avoid charges, but the quantity is believed to be less significant. At site operation level, we will continue to take appropriate enforcement actions under the CWDCS and monitor the disposal quantities of different waste streams.

9. Another part of our review covers the characteristics and composition of the C&I waste received. Basically it is a collection of very mixed and diverse waste types which depend to a large extent on the collection routes and patterns of private waste haulers, and they cannot be readily differentiated by source categories. Composition surveys are conducted regularly on municipal solid waste, including C&I waste, to analyse its characteristics and pattern of changes over time. Based on the survey results in the past years, putrescibles, mostly food waste, have become the biggest single component in C&I waste and have grown substantially in proportion from 23% in 2003 to 31% in 2008. This rising trend generally reflects the growth in restaurant and catering businesses in Hong Kong during the period. Paper and plastics, the second and third largest components accounting for 23% and 18% of C&I waste respectively in 2008, have not varied much in proportion as

compared with 2003. Wood, on the other hand, dropped from 15% to 11% during the period. Details can be seen in Annex 2. Their figures generally accord with our strategy to put focus on the reduction of the escalating food waste, while paper, plastics and wood should remain as our priority targets for reduction and recovery programmes.

Advice Sought

10. Members are invited to note the findings of the review on C&I waste disposal and comment on the suggested approach in paragraph 7 to incorporate the review findings in statistical analysis and reporting.

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Annex 1

Economic Growth and Population Increase

	2004	2005	2006	2007	2008
Economic Growth[(a)]	+8.5%	+7.1%	+7.0%	+6.4%	+2.5%
Population Increase[(b)]	+0.8%	+0.4%	+0.6%	+1.0%	+0.7%

(a) Based on the GDP growth in real terms updated by C&SD on 25.2.2009.
(b) Based on the mid-year population growth rates updated by C&SD on 16.2.2009.

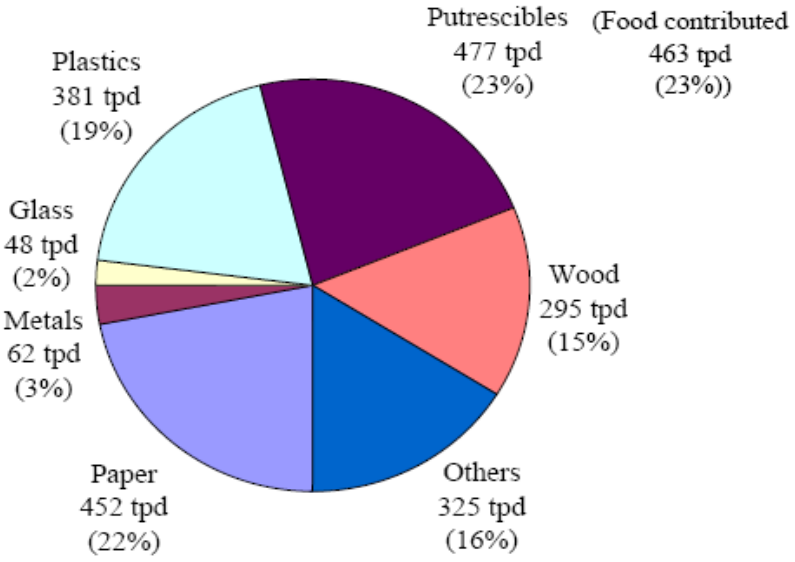
Municipal Solid Waste Disposal Statistics

Year	**2004** (million tonnes)	**2005** (million tonnes)	**2006** (million tonnes)	**2007** (million tonnes)	**2008** (million tonnes)
Domestic Waste	2.57	2.49	2.42	2.33	2.23
Annual change	- 5.0%	- 2.9%	- 2.8%	- 3.9%	- 4.3%
C&I Waste	0.83	0.93	0.97	1.03 *(1.12)*[(1)]	1.08 *(1.23)*[(1)]
Annual change	+11.8%	+11.8%	+3.8%	+6.3% *(+15.5%)*[(1)]	+4.9% *(+10.6%)*[(1)]
Municipal Solid Waste	3.40	3.42	3.39	3.35 *(3.44)*[(1)]	3.30 *(3.46)*[(1)]
Annual change	- 1.4%	+0.7%	- 1.0%	- 1.0% *(+1.6%)*[(1)]	- 1.5% *(+0.5%)*[(1)]

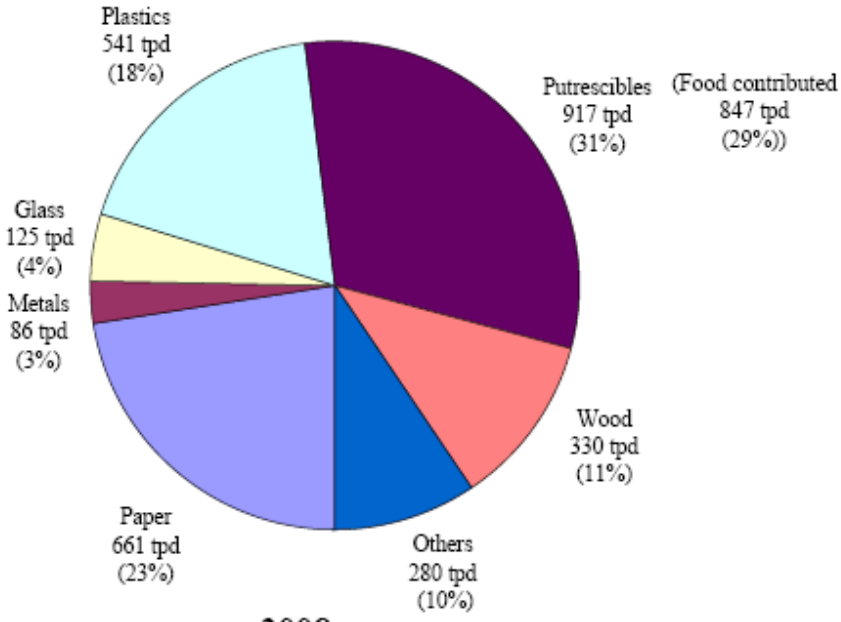
(1) The figures in brackets denote waste quantities and annual changes before deduction of concrete/plaster/mortar materials from concrete batching plants and plaster/mortar production plants.

Annex 2

Composition of C&I Waste Disposal in 2003 and 2008



2003
(total 2,040 tpd)



2008
(total 2,940 tpd)