

## **Trial Scheme on Municipal Solid Waste Charging**

### **Purpose**

This paper briefs members on the findings of the trial scheme on municipal solid waste (MSW) charging and the way forward.

### **Background**

2. At the meeting of 6 July 2006, members were briefed on the progress of the trial scheme and the selection of housing estates for participating in the trial (*Ref. Paper WMSC 8/06*). The trial was designed to (a) examine the logistical arrangement for implementing a “variable rate” charging scheme in different housing settings, (b) study the feasibility of separating food waste from the waste stream in selected housing estates, and (c) identify potential implementation issues associated with a “variable rate” charging scheme.

3. We invited 20 estates of different housing settings including public rental estates, subsidized sales flats, private housing estates and government quarters to participate in the trial scheme. The three-month trial scheme commenced in November 2006 and was completed in February 2007. A list of the 20 estates is attached at *Annex A*.

4. During the trial, residents of the 20 housing estates were given different sizes (15-litre, 10-litre, and 5-litre) of "designated bags" for disposal of non-recyclable domestic waste, while 5 selected housing estates also tried out "food waste bags" to separate food waste from domestic waste. In response to the feedback from some residents that some of the designated bags were too small, during the last month of the trial period, larger 20-litre bags were also provided to the residents in those estates that did not try out the food waste bags, while those residents already given food waste bags were provided with 15-litre bags.

5. Throughout the trial period, we conducted publicity and educational

programmes through video demonstration, display panels, posters/leaflets and guidelines. Enquiry desk and hotline services were also set up for use by the residents. A visit to one of the participating estates, Grand View Garden, was organized on 17 January 2007 for members to see how the trial scheme was working and to listen to the views from the residents and estate management.

6. Useful information was collected through quantitative surveys, questionnaire surveys and a series of view sharing workshops as summarized below.

### **Quantitative surveys**

7. About 69% of the households of the 20 estates collected or received the designated bags. The average usage rate of the designated bags is around 8.6%, and the conformity rate<sup>1</sup> is 50% (see *Annex B*). The highest usage rate was observed in government quarters while the highest conformity rate was observed in private housing estates. A steady increase in the use of designated bags was observed during the trial period (from 5.3% at the initial stage to 12.8% at the end of the survey period).

8. Some 72% of the households collected or received food waste bags. The average usage rate of the food waste bags is around 11.2%, while the conformity rate is 92%. The private housing estates have the highest usage rate and conformity rate (see *Annex B*). An increase in the usage rate was observed during the trial period (from 9.5% at the initial stage to 11.9% at the end of the survey period).

### **Questionnaire surveys**

9. Some 1,350 respondents participated in a simple questionnaire survey on the use of designated bags and food waste bags, while some 1,050 respondents participated in a more comprehensive questionnaire survey. Over 50% of the respondents supported a volume-based charging scheme to achieve waste reduction and more than 65% of the respondents considered the need to strengthen floor-based source separation facilities to complement the introduction of a charging scheme.

---

<sup>1</sup> Conformity rate reflects the extent of the proper use of the designated bags and food waste bags. A higher rate means that the residents used the designated bags properly to contain non-recyclable materials, or they used the food waste bags properly to contain food waste.

10. During the trial period, participating residents have tested out three different designs of designated bags: T-shirt bag, draw tape bag and flat bag. Based on the feedback from the questionnaire survey, most respondents have indicated preference for “draw tape” bags and “T-shirt” bags with a capacity of 10-L or 15-L (see *Annex C*).

### **View sharing workshops**

11. Five view sharing sessions (with 58 participants from 14 estates) and a workshop (with 42 participants from 18 estates) were conducted in the first quarter of 2007 to collect views from the residents and estate management. The views collected are summarized as follows:

- In developing a practicable charging scheme, the Government should take full account of different types of buildings and their constraints, such as the use of refuse chutes in certain buildings and the lack of space in singleton buildings for communal facilities necessary for source separation and waste recovery.
- Before a charging scheme is implemented, logistical support such as the provision of source separation facilities and/or scheduled collection service for recyclables should be put in place.
- Sustained efforts should be made in promoting source separation through public education, and the programme to extend the floor-based source separation facilities to all housing estates should be expedited. Waste reduction measures should also be exercised by manufacturers/retailers to use less packaging materials.
- The level of charge is one of the most common concerns among participating residents. A “grace period” could be considered for implementation of a charging scheme, for example by introducing a nominal charge initially and increasing the level of charge gradually.
- Free collection of food waste could be considered to gain acceptance by the public to a new MSW charge. However, separate collection of food waste from other domestic waste would have environmental hygiene implications. Suitable complementary measures would be required if this is to be implemented, such as the provision of food waste containers to each household to hold the food waste bags, and the use of communal food waste bins to facilitate separate collection. Suitable outlets should also be

identified to deal with the food waste.

- The mode of charging is also an important consideration, and the charging scheme should generally follow the polluter pays principle. If designated bags are adopted as the vehicle for introducing a variable rate charging scheme, it would be more convenient for residents to buy them from the estate management office.
- Flytipping has been identified as a major problem area if a designated bag system is implemented, given the multi-storey residential setting in Hong Kong. While assistance of estate management could be sought to facilitate enforcement, its effectiveness is doubtful due to potential confrontation with residents. It would also be very difficult and resource demanding to catch offenders red handed. Unless the flytipping problem could be satisfactorily addressed, the public would have reservation in supporting a designated bag system, as law-abiding citizens would effectively be penalized for using the designated bags.
- The Government should fully consult the public on the charging scheme, and the objective should be clearly communicated to all stakeholders. The public would also expect the Government to devote more resources to environmental initiatives.

## **Observations and Consideration**

12. Feedback from participants of the trial scheme indicates that the polluter-pays principle is gradually gaining acceptance among the public, which is most encouraging. We also observe that, with the support of property management companies, it is logistically feasible to implement a designated bag system under a domestic estate type household setting. Nevertheless, their feedback also suggests a number of important issues have to be addressed in developing a practicable, territory-wide MSW charging scheme. We have to consider measures necessary to encourage compliance such as the provision of necessary logistical support for source separation. If designated bags are adopted as the vehicle for introducing a variable rate charging scheme, more consideration has to be given to the design, distribution and collection of the designated bags. Effective enforcement measures are required to deter charge evasion and flytipping. Consideration will also need to be given to possible constraints at different types of buildings, such as the use of refuse chutes in some buildings, and single residential blocks which may have limited space for source separation facilities. Village houses in suburban areas may need a different mode of

collecting recyclables.

13. The high conformity rate of food waste bags indicates that separation of food waste at source from other refuse is possible. Yet, in light of the unique multi-storey living environment, the lack of storage space in most buildings for separate collection of food waste and the associated environmental hygiene concerns, the need to introduce a separate collection and treatment mechanism for domestic food waste, and the absence of secured outlets for the recycled domestic food waste, the cost-effectiveness of source separation and collection of food waste from domestic households is doubtful.

14. Apart from implementation and logistical issues, the level of charge to be levied is of major concern to the public. More effort is required to work out a charging level which is acceptable to the public, yet creating adequate incentives to encourage waste reduction and recovery.

15. It should also be noted the trial scheme only focuses on MSW under a domestic household setting. We will need to consider how to develop a suitable charging scheme for waste generated from commercial and industrial premises, with due consideration to interface issues if differential charging rates are to be applied to different types of wastes (domestic waste, commercial waste, industrial waste and construction waste).

## **Way Forward**

16. Through the trial scheme on MSW charging, we have examined the logistical arrangement for implementing a variable rate charging scheme in different housing settings. We have also identified a number of key issues that need to be addressed in developing a practicable MSW charging scheme for Hong Kong. To take the matter forward, we plan to commission a feasibility study to examine the aforementioned issues with a view to developing practicable charging options. The scope of the study is set out at Annex D.

17. Members are invited to note the findings of the Trial scheme and to comment on the scope of the feasibility study.

Waste Management Policy Division  
Environment Protection Department

April 2007

**List of 20 Housing Estates invited to join  
the MSW Charging Trial Scheme**

**Public Rental Estates:**

1. Yiu Tung Estate 耀東邨
2. Oi Tung Estate 愛東邨
3. Chun Shek Estate 秦石邨 \*
4. Wah Fu (II) Estate 華富(二)邨
5. Fu Tai Estate 富泰邨
6. Chun Seen Mei Chuen 真善美邨 #
7. Sun Tin Wai Estate 新田圍邨 #

**Subsidized Sales Flats:**

8. Wo Ming Court 和明苑
9. Grand View Garden 宏景花園 \*

**Private Housing Estates:**

10. Ocean View 海典灣
11. King's Park Hill 京士柏山
12. Ocean Shores 維景灣畔 \*
13. Royal Peninsula 半島豪庭 \*
14. Heng Fa Chuen 杏花邨\*
15. Parc Palais 君頤峰
16. Seaview Crescent 海堤灣畔
17. Scenic View 曉輝花園 #

**Government Quarters:**

18. Broadcast Drive No.87-91 廣播道 87-91 號政府宿舍
19. Wong Tai Sin Disciplined Services Quarters 黃大仙紀律部隊宿舍
20. Mansfield Road, 2-8, 9-11 文輝道 2-8, 9-11 號 #

Note

\* also participated in source separation of food waste

# source separation facilities only available in the common area while the rest of the estates has floor-based facilities in place

**The use of Designated bags and Food waste bags  
Usage Rate and Conformity Rate observed during the trial period**

*Table 1: Usage Rate and conformity rate\* in the use of designated bags*

Type of Estates	Average usage rate	Conformity
1. Public rental estates	7.7%	44%
2. Subsidized sales flats	10.0%	48%
3. Private housing estates	7.4%	57%
4. Government quarters	12.6%	47%
Average	8.6%	50%

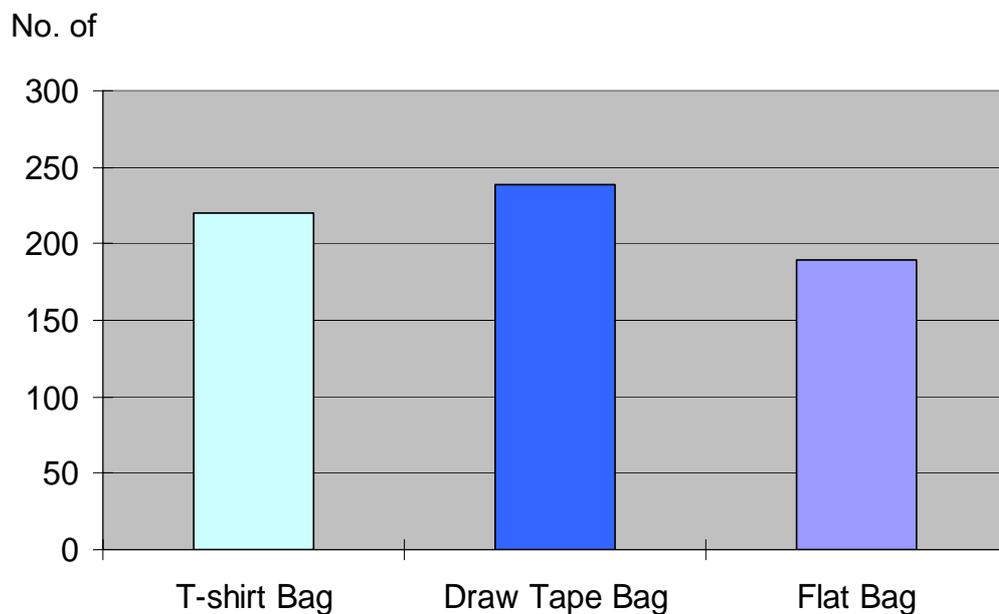
*Table 2: Usage Rate and conformity rate\* in the use of food waste bags*

Type of Estates	Average usage rate	Conformity
1. Public rental estates	4.7%	85%
2. Subsidized sales flats	12.5%	80%
3. Private housing estates	12.9%	98%
Average	11.2%	92%

\* *Conformity rate reflects the extent of the proper use of the designated bags and food waste bags. A higher rate means that the residents used the designated bags properly to contain non-recyclable materials, or they used the food waste bags properly to contain food waste.*

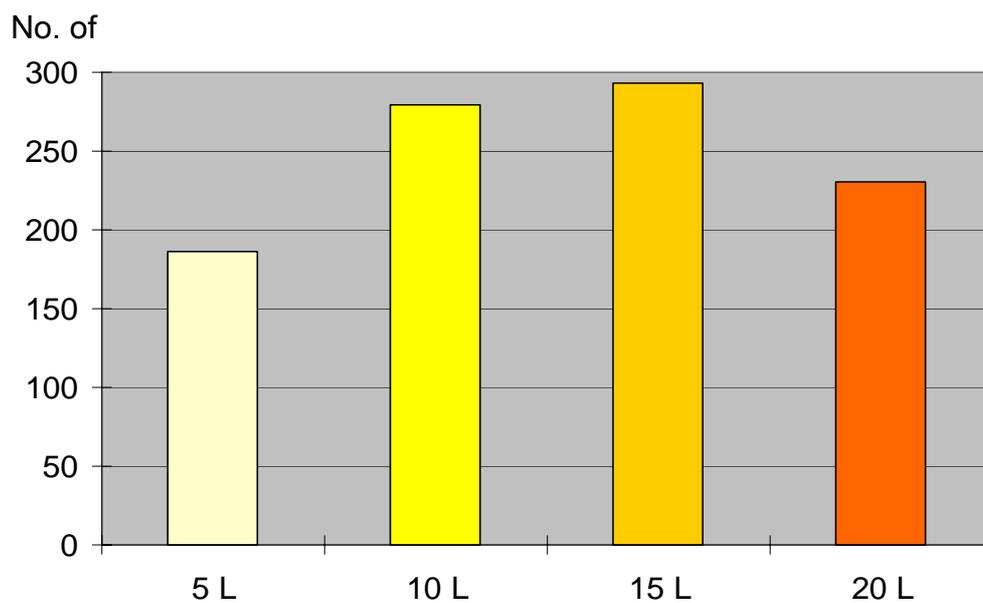
**Preference on the Design and Size of Designated Bags**

Figure 1. Preference on the Design of Designated Bags



*\* Based on feedback from 714 respondents of a questionnaire survey*

Figure 2. Preference on the Size of Designated Bags



*\* Rated as "suitable" or "very suitable" based on feedback from 772 respondents of a questionnaire survey*

## **Feasibility Study on Introducing a Charging Scheme for Municipal Solid Waste (MSW)**

Scope of the feasibility study :

- To study the existing waste collection modes and practices for domestic waste and commercial & industrial (C&I) waste
- To draw up possible options for introducing a charging scheme for MSW (including domestic waste and C&I waste), and evaluate their pros and cons for application in Hong Kong, taking into account our waste collection modes and practice, overseas experience, and the following issues which are critical to the implementation of a variable rate charging scheme –
  - characteristics of singleton buildings without building management;
  - characteristics of composite buildings;
  - logistical and infrastructural support needed to facilitate source separation and waste recovery;
  - enforcement considerations; and
  - the role played by cleansing contractors and private collectors.
- To recommend the most practicable option for MSW charging. If separate schemes are recommended for domestic waste and C&I waste, it will be necessary to address the interface issue to reduce the incentive for charge evasion if differential charging rates are adopted for different types of wastes
- To develop a charging formula for the recommended option and an implementation plan