

For discussion  
on 27 April 2009

## **Legislative Council Panel on Environmental Affairs**

### **Update on the Progress of the Key Initiatives in the “Policy Framework for the Management of Municipal Solid Waste (2005-2014)”**

#### **PURPOSE**

This paper updates Members on the progress of the key initiatives in the “Policy Framework for the Management of Municipal Solid Waste (2005-2014)” (Policy Framework).

#### **BACKGROUND**

2. To address our serious and imminent waste problem in a holistic manner, the Administration published the Policy Framework in December 2005, which sets out a comprehensive waste management strategy for the next ten years. Encompassing initiatives on waste avoidance and reduction at source, waste recovery and recycling and bulk reduction of waste, the Policy Framework aims to achieve the following waste management targets -

- (a) to reduce the amount of municipal solid waste (MSW) (i.e. domestic and commercial and industrial (C&I) waste) generated in Hong Kong by 1% per annum up to the year 2014, based on the 2003 levels;
- (b) to increase the recovery rate of MSW to 45% by 2009 and 50% by 2014; and
- (c) to reduce the total MSW disposed of at landfills to less than 25% by 2014.

3. We have largely been achieving our targets progressively. In particular, with our continuing effort in waste recovery and recycling, the recovery rate of domestic waste almost doubled from 16% in 2005 to 31% in 2008. Meanwhile, the amount of domestic waste disposed of at landfills dropped by another 4.3% in 2008, as compared to 2007, to about 2.23 million tonnes. The reduction in domestic waste disposal was against an increase of about 0.7% in our local population and was the fourth consecutive year recording decrease. Since the

launch of the Policy Framework, the cumulative decrease in landfill disposal of domestic waste has been about 11%. On the C&I side, the recycling rate of C&I waste also maintains at a relatively high level of 63%. Overall, we achieved an MSW recovery rate of 48% in 2008. However, the outlook of waste recovery in Hong Kong in the coming years may be influenced by the current economic downturn which could affect the global demands for recyclable materials. We will continue to strengthen the foundation and momentum for local recycling, including the support for recycling industry, and to explore possible outlets for recovered materials and recycled products.

4. While we will continue to work towards the targets laid down in the Policy Framework, the landfill disposal of C&I waste in 2008 has increased by about 11% to 1.23 million tonnes, as compared to that in 2007. Possible factors contributing to the trend may include the robust economic growth and strong tourism influx in the first three quarters of 2008. As a result, the overall landfill disposal of MSW has increased slightly by 0.5% to about 3.46 million tonnes.

5. Despite the good progress achieved for source separation and recycling, it is necessary for us to speed up the implementation of other waste reduction initiatives and the development of new waste treatment infrastructure to reduce the bulk of unavoidable waste. Against the above background, we set out below the implementation progress of the major initiatives under the Policy Framework.

## **KEY INITIATIVES IN THE POLICY FRAMEWORK**

### **Waste Reduction at Source**

6. As highlighted in the Policy Framework, we should adopt the “polluter pays principle” to provide economic incentives for the public to reduce and recycle waste. In line with this principle, producer responsibility schemes (PRS’s) will enable manufacturers, importers, wholesalers, retailers and consumers to share the eco-responsibility of reducing, recovering and recycling certain products so as to minimise the environmental impact.

7. Enacting the Product Eco-responsibility Ordinance (Cap. 603) in July 2008 provides the legal basis for introducing PRS’s in Hong Kong. In response to Members’ request at an earlier Panel meeting, more information on overseas practices of PRS’s is at **Annex I** for Members’ information.

8. In the light of the broad-based public support and consensus, the environmental levy scheme on plastic shopping bags is the first PRS introduced

under the Ordinance. The Product Eco-responsibility (Plastic Shopping Bags) Regulation is scheduled for approval by the Legislative Council on 22 April 2009 with a view to commencing the scheme in July 2009. We would closely monitor the effectiveness of the first phase of the scheme by conducting dedicated surveys on plastic shopping bags at refuse transfer stations and landfills before the commencement of the levy scheme and annually thereafter. The methodology of the surveys is set out at **Annex II**. In the meantime, we encourage retailers not yet covered by the environmental levy scheme (such as newspaper vendors) to work with green groups to launch voluntary reduction initiatives on plastic shopping bags.

9. Further to the environmental levy scheme, we pledged in the Policy Address 2008-09 to examine the feasibility of introducing mandatory PRS for used electrical and electronic products, including the scope of the PRS and the possible forms that it may take. We aim to consult the public and the trades on the feasible options within 2009.

10. MSW charging is considered another effective measure to promote waste reduction and recovery. Given Hong Kong's multi-storey, multi-tenant household setting and the prevailing waste collection arrangements, we conducted a three-month trial scheme in 2007 to examine the logistical requirements for introducing a variable rate charging scheme under different domestic housing settings. Currently, we are conducting a territory-wide Baseline Study to collect key information on the waste generation and waste management practices of different C&I establishments. The information collected would provide a useful reference for the development of a practicable charging scheme for MSW. The findings of the trial scheme and the details of the Baseline Study are at **Annex III**.

### **MSW Recovery and Recycling**

11. Launched in January 2005, the source separation of domestic waste programme is a territory-wide programme which aims at providing suitable recycling facilities for domestic waste at locations as close as possible to their generation sources, and at the same time broadening the types of recyclables to be recovered. It encourages the community's participation in recycling and facilitates the provision of a reliable source of materials for the recycling industry.

12. As at March 2009, there were 1 071 housing estates participating in the programme, covering some 1.3 million households or 56% of the population. Around 30% of them have implemented a floor-to-floor mode of waste

separation, while the remaining set up waste separation facilities on the ground floor to collect different types of recyclable materials, including paper, plastics, metals, used clothes, small electrical and electronic appliances, etc. We will continue to press ahead with the programme with a view to achieving the Policy Framework's target of covering 80% of the population by the end of 2010.

13. While source separation has proven to be effective in enhancing waste recovery and recycling, the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulation (Cap.123H) was amended in 2007-08 to mandate the provision of refuse storage and material recovery room on every floor of new domestic buildings and the domestic part of composite buildings, with certain exemptions for small-scale developments and buildings intended for used as hotels, guest-houses, etc. The amended regulation came into effect on 1 December 2008.

14. As for C&I waste, the recovery rate has been maintained at a relatively high level of some 60% over the years. Notwithstanding, C&I waste disposed of at landfills continues to increase. In view of the trend, we see a strong case to stage targeted promotion on source separation for C&I buildings. Since the launch of a promotional programme in October 2007, some 460 buildings have signed up to the programme, covering commercial and institutional buildings, industrial buildings, shopping arcades, warehouses and car parks. The programme recognizes and encourages the implementation of source separation practices in C&I buildings. As at March 2009, 423 of the 460 participating buildings have passed the assessment and were awarded a three-year certificate. We would continue to recruit participating buildings. With funding support from the Environment and Conservation Fund (ECF), the Environmental Campaign Committee has been providing newly designed waste separation bins to housing estates, C&I buildings, schools, as well as recyclables collection points at public places.

15. In the course of pursuing PRS's under the Product Eco-responsibility Ordinance, we continue to promote and support the voluntary recycling programmes to recover and recycle specific products. Further to the Rechargeable Battery Recycling Programme launched in 2005, three more voluntary programmes were implemented in 2008. Launched in January 2008, the Computer Recycling Programme (CRP) targets to recover annually 50 000 units of used computer equipment in the first two years of its operation. The Fluorescent Lamp Recycling Programme followed in March 2008, with an annual recovery target of 400 000 pieces of fluorescent lamps. Furthermore, the Glass Container Recycling Programme for Hotel Sector commenced in November 2008. All three voluntary programmes are funded and administered by the respective trades. We will continue to promote the introduction of

voluntary PRS's in light of the experience gained from the above-mentioned programmes.

16. The continual expansion of the source separation of MSW and the introduction of the voluntary PRS's would help lay a solid foundation for the recycling operations in Hong Kong, whereby our waste could be turned into useful products and channeled back to the economic chain. To add further impetus to the development of the recycling industry, the EcoPark in Tuen Mun provides long term land at affordable costs for the local environmental and recycling industries. The 20-hectare EcoPark is developed in two phases. In Phase I, all six lots have been leased. We are reviewing the leasing arrangements of Phase II in the light of the experience gained in Phase I, feedback from the stakeholders and the recycling trades as well as other relevant factors. The infrastructure works of Phase II started in December 2008 and are anticipated to be completed by end 2009.

### **Towards a More Sustainable Waste Management Approach**

17. Notwithstanding our efforts and progress in waste reduction and recycling, there remains unavoidable waste that needs to be disposed of properly. Our three strategic landfills would start to approach their capacity one by one in the early to mid 2010s and their extension would be necessary to provide the final repository for our waste. In this connection, the feasibility and environmental impact assessment studies on the extension of the North East New Territories Landfill and the South East New Territories have been completed, while that for the extension of the West New Territories Landfill are in progress and will be completed later this year. As set out in the Policy Framework, our target is to commission the landfill extensions by early to mid-2010s.

18. Pursuing waste reduction and recycling and extending the landfills alone will not resolve our waste problem. We need to adopt a more sustainable approach to reduce the volume of waste that requires disposal and conserve our landfill space as the final repository for residue waste or inert waste that cannot be further treated. As laid out in the Policy Framework, we will develop the Integrated Waste Management Facilities (IWMF) with incineration as the core technology to substantially reduce the volume of unavoidable waste, thereby extending the life span of the existing landfills and their extension.

19. The IWMF will be developed in phases having regard to the size of the overall waste problem. The first phase will have a treatment capacity of about 3 000 tonnes per day (tpd). It will also incorporate a small scale sorting and recycling plant to recover recyclable materials from mixed MSW. The first

phase of the IWWMF will occupy a total area of about 10 hectares. The result of our comprehensive site search exercise concludes that the sites at Shek Kwu Chau and Tsang Tsui Ash Lagoons are suitable for consideration as potential sites for its development. We are conducting the detailed engineering and EIA studies for both sites to ascertain their ultimate suitability. Subject to the study findings to be available in 2010, we aim to make a final decision on the choice of site and to commence construction as soon as possible with a view to commissioning the facilities in mid-2010s.

20. Food waste constitutes some 28% of our C&I waste disposed of at our landfills. To gather experience and information on the collection and treatment of organic waste, we commissioned a pilot composting plant in mid-2008. The pilot composting plant is capable of receiving up to 4 tpd of source-separated food waste from C&I premises. Furthermore, as part of our long-term waste treatment strategy, we will develop the Organic Waste Treatment Facilities (OWTF) in two phases, with each phase handling about 200 tonnes of source-separated food waste from the C&I sector per day. Biological treatment technology, like composting or anaerobic digestion, will be adopted. The first phase of the OWTF is planned to be built in Siu Ho Wan on Lantau Island, and is targeted to be commissioned in mid 2010s. The second phase will be built in Sha Ling in the North District by late 2010s.

21. To encourage diversion of source-separated food waste from landfills to these waste treatment facilities, complementary measures shall be in place when these facilities are commissioned with a view to further promoting waste reduction and recycling. This may include creating economic incentives through appropriate MSW and food waste charging options to be identified under the proposed charging scheme for MSW.

### **Public Education and Partnership**

22. The successful implementation of the initiatives under the Policy Framework ultimately hinges on public support and participation. We have therefore continued to press ahead with public education programmes on waste reduction and recovery. For example, through the Hong Kong Green School Award and the Student Environmental Protection Ambassador Scheme, training sessions, education programmes and topic specific seminars were organized to encourage teachers, students and parents to adopt a greener lifestyle, such as the use of reusable or recyclable lunch boxes and the reduction of plastic shopping bags.

23. In end 2006, the Environment and Conservation Fund (ECF) Committee

agreed to reserve \$10 million for a dedicated public education programme to promote environmental initiatives under the Policy Framework. So far, 16 applications with a total funding of about \$6.5 million have been approved. These projects cover a wide range of topics, including reduction of plastic shopping bags, green procurement, green festive packaging, and the recovery and recycling of WEEE, etc.

24. As part of the Government's commitment to promote and support public engagement, we injected \$1 billion into the ECF to give new impetus to environmental education and research, including those on waste reduction and recovery. The Environmental Campaign Committee (ECC) continues its partnership with the District Councils and non-governmental organisations in promoting waste reduction and recycling initiatives, and low-carbon lifestyle.

25. We have also been promoting general awareness on waste reduction and recovery through local media. In addition to a series of TV and radio announcements of public interests (APIs) under the theme of "I love Hong Kong, I love Green", other APIs on source separation, simple packaging and reduction of plastic shopping bags have also been rolled out. We will continue our publicity drive to enhance public awareness of the four R's: Reduce, Reuse, Recycling and Responsibility. We also encourage the public and the business sector to practise waste reduction and recycling through the Hong Kong Awards for Environmental Excellence under which "Wastewi\$e Label" will be presented to companies/organisations.

## **ADVICE SOUGHT**

26. Members are invited to note the progress of implementing the key initiatives under the Policy Framework.

**Environmental Protection Department**  
**April 2009**

**Supplementary Information on  
Overseas practices of Producer Responsibility Schemes**

Producer responsibility schemes (PRS's) are a policy tool adopted by many countries to reduce the environmental impact of a product, in particular at the post-consumption stage. Enshrining the principle of "polluter pays" and the element of "eco-responsibility", PRS requires manufacturers, importers, wholesalers, retailers and consumers to share the responsibility of reducing, recovering, recycling and proper disposal of certain products.

2. Drawing upon overseas experience, we have included the relevant sections in the Product Eco-responsibility Ordinance (Cap 603) to provide for the following schemes or measures:

- (a) a product take-back scheme under which a manufacturer, importer, wholesaler or retailer is required to take back certain products for proper waste management;
- (b) a deposit-refund system under which a consumer is required to pay a deposit to be refunded on the return of certain products to a specified collection point;
- (c) the charging of a recycling fee to finance the proper waste management of certain products;
- (d) an environmental levy to discourage the use of certain products; and
- (e) restricting the disposal of certain products at designated waste disposal facilities.

3. The above measures, together with a brief summary of overseas PRS legislation, have been set out in Paper CB(1) 1300/05-06(04) discussed at the Panel meeting on 24 April 2006. The measures employed vary from product to product, and each jurisdiction may consider adopting one or a combination of the measures according to the unique local circumstances and other relevant considerations. In practice, some of the PRS's are introduced voluntarily in some jurisdictions, while the mandatory approach by means of legislation has also been applied in some other jurisdictions.

**Voluntary PRS's**

4. Voluntary PRS's have been implemented in the United States of America (USA) to recover electrical and electronic products. Similar industry-led efforts have also been maneuvered in Australia and New Zealand. For instance, the Environmental Protection Agency of USA launched a voluntary programme<sup>1</sup> in collaboration with 25 manufacturers and retailers of electronic products, which facilitates consumers to donate or recycle their used products, including computer equipment, televisions and mobile phones. Under the programme, the manufacturers and retailers fund the collection of the electronic products through various means such as online and in-store take-back or trade-in programmes, and community collection and recycling events. In 2007, the participants of this programme recycled or reused over 21 400 tonnes of consumer electronic products.

5. In addition to electronic products, rechargeable batteries are also recovered for recycling in USA and Canada. The relevant programme is organised and promoted by a non-profit-making organisation<sup>2</sup>, and funded by more than 350 manufacturers and traders. Over 50 000 retail, business, and community collection points are set up to recover rechargeable batteries. The quantity of rechargeable batteries recovered under the programme had progressively increased from about 900 tonnes in 1997 to some 2 800 tonnes in 2007.

6. In other voluntary PRS's, specific waste management targets may be defined through voluntary agreement or covenant between the relevant authority and the industry. For instance, the industrial sectors in Australia are encouraged to draw up covenants to run voluntary PRS's to offset the need for introducing mandatory PRS's. An example of the voluntary covenants is the National Packaging Covenant of Australia. Introduced in 1999 and revised in 2005, the Covenant has specific goals, targets and performance indicators towards minimising the environmental impact of consumer packaging waste. Meanwhile, non-signatories of the Covenant may be subject to regulatory requirement by the relevant authority.

## **Regulatory PRS's**

7. Regulatory PRS's have been increasingly adopted in recent years in Europe and some Asian countries. Many European countries, especially the member states of the European Union (EU), have adopted regulatory measures

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<sup>1</sup> The Plug-In to eCycling Program.

<sup>2</sup> The Rechargeable Battery Recycling Corporation.

due to the required compliance with the EU Directives. For example, in light of the Waste Electrical & Electronic Equipment (WEEE) Directive, the Netherlands introduced the WEEE Regulations in 2004 to mandate producers to take back the used products free of charge. The manufacturers and importers in the Netherlands have therefore jointly undertaken their responsibility on various WEEE products (including information and technology equipment) through two non-profit-making organisations<sup>3</sup>. The two organisations organise collection and recycling programmes funded by some 1 400 manufacturers and importers. The programmes generate income either from imposing “disposal levies” on new purchases, or from charging the manufacturers. In 2007, about 73 800 tonnes of WEEE and 18 000 tonnes of IT equipment were processed by the two organisations.

8. In Japan, the Home Appliance Recycling Law came into effect in 2001. It requires the manufacturers and retailers of four types of domestic appliances (televisions, washing machines, air-conditioners and refrigerators) to take back the same type of appliance in return when they supply a new product to consumers. With the retailers as the intermediary, the collection and recycling fees (around HK\$180 to 350) are payable by the consumers when they return the used appliances to the retailers. The retailers will then transfer the collected appliances to the manufacturers/importers, who would subsequently take over and recycle the products in accordance with the legal requirement. In 2006, about 11.6 million units of old appliances were processed under this arrangement.

9. Apart from home appliances, the manufacturers of personal computers and portable rechargeable batteries are required to collect and recycle their products in Japan under the Law for Promotion of Effective Utilization of Resources. For rechargeable batteries, some 30 000 collection points have been set up at retail outlets, municipal facilities and schools, etc. For personal computers, the manufacturers collaborate with the Japan Post Office to provide collection service for used products. The consumers may either return the products to a nearby post office or request for a pickup service by the post office. The manufacturers are responsible for the collection and recycling costs for all products out on the market after 1 October 2003, while the cost for collection and recycling of computer products sold before this date would have to be borne by the final-holder of the product.

## **Implementation of PRS's and their effectiveness**

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<sup>3</sup> The two organizations are ICT-Milieu (for information technology equipment) and the Dutch Association for the Disposal of Metal and Electrical Products (for other equipment).

10. Regulatory PRS's are more common in Europe. Throughout the last decade, the European Commission has issued several waste management directives for certain products such as WEEE and batteries. As a result, many EU member states introduced regulatory PRS's for such products in the past few years.

11. Voluntary PRS's are in general less expensive than regulatory schemes because the latter usually entails higher administrative and enforcement costs to ensure compliance. In addition, voluntary PRS's could allow more flexibility for the industry to achieve the waste management objectives in the most cost-effective way. Some countries would start off with the voluntary approach, only when the voluntary approach is not feasible or effective enough would regulatory schemes be introduced to take the place.

12. In both voluntary and regulatory approaches, the presence of a mediating organisation (mostly non-governmental) is usually necessary for launching and operating the recycling programme. In addition, the active participation of the trade is needed for implementing measures such as product take-back or deposit-refund. They play an important role in managing the collection logistics and keeping the associated costs to the minimum.

13. Most of the PRS's practised in overseas countries are designed to provide a convenient collection system in order to divert waste products from the waste stream for recycling. The collection and recycling arrangement for some of the products, such as WEEE, is intended to complement, but not compete with, the existing second-hand market. An effective PRS should therefore be designed to avoid interception of the used products that would otherwise enter the second hand market for reuse.

14. Members are invited to note the practices of implementing PRS's in overseas countries.

**Environmental Protection Department**  
**April 2009**

**Supplementary Information on  
Methodology of Dedicated Surveys on Plastic Shopping Bags**

As part of the annual waste survey by the Environmental Protection Department (EPD), a dedicated survey was conducted between October and December 2005 to estimate the number and identify the sources of plastic shopping bags disposed of at landfills. For the purpose of the dedicated survey, plastic shopping bags refer to plastic bags with carrying handles, holes or devices. A total of 142 waste samples, involving some 10 tonnes of waste, were randomly selected from waste collection vehicles at refuse transfer stations and landfills. Of these waste samples, 103 were collected from domestic sources, whereas 21 and 16 samples are from commercial and industrial sources respectively. The distribution is approximately in line with their corresponding proportions in the municipal solid waste generated in Hong Kong. Plastic shopping bags in the waste samples were manually picked out and sorted by a team of about 10 workmen<sup>4</sup>. An EPD inspectorate staff supervised the survey on the spot to ensure that the plastic shopping bags were properly picked out from each waste sample and correctly sorted.

2. The sources of plastic shopping bags in each waste sample were identified by the brand names, logos, markings or descriptions printed on the bags and placed into separate buckets which were labeled by different retail categories. The respective numbers of plastic shopping bags in each retail category were then projected pro-rata based on the total weights of the respective domestic, commercial and industrial waste disposed of at landfills<sup>5</sup> as compared to the total weights of respective waste samples<sup>6</sup>. The outcome of the dedicated survey is set out below:

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<sup>4</sup> These workmen were involved in selecting waste collection vehicles at weight bridges, collecting waste samples from such vehicles, sorting and data recording.

<sup>5</sup> The total weights of domestic, commercial and industrial waste disposed of at landfill sites in 2005 were 7 014, 1 673 and 601 tonnes per day respectively.

<sup>6</sup> The total weights of waste samples collected from domestic, commercial and industrial sources in 2005 survey were 6 553, 2 321 and 1 337 kilograms respectively. The number of plastic shopping bags collected from waste samples of domestic, commercial and industrial wastes is 20 050, 2 234 and 1 650 respectively.

<b>Types of Retailers</b>	<b>Million / year</b>	<b>%</b>
Supermarkets and Convenience Stores	1 766	20.3
Bakeries and Cake Shops	530	6.1
Restaurant and Cooked Food Shops	387	4.5
Newspaper & Magazine Bags	298	3.4
Medicare and Cosmetic Shops	195	2.2
Department Stores and Home Accessories Shops	158	1.8
Fashion and Footwear Shops	106	1.2
Book, Stationery, Gifts and Novelties Shops	61	0.7
Electrical, Electronic and Telecommunications Shops	35	0.4
Others <sup>7</sup>	5 155	59.3
<b>Total:</b>	<b>8 691</b>	<b>100</b>

In gist, the dedicated survey indicated that more than 8 billion plastic shopping bags were disposed of at landfills every year. That is more than 3 plastic shopping bags per person per day. Some 20% of these plastic shopping bags come from supermarkets, convenience stores, and medicare and cosmetic shops.

3. To facilitate the review of the effectiveness of the environmental levy scheme after its implementation, another survey on plastic shopping bags of similar methodology would be carried out before the commencement of the scheme to provide a “snapshot”, and henceforth be conducted on annual basis for comparison purpose. To address potential issues on switching to alternative carriers, we would also count, as far as technically feasible, the number of non-woven bags, paper shopping bags (with carrying handles, holes or devices) and plastic garbage bags.

4. In addition to dedicated surveys, it was also suggested that the number of plastic shopping bags used in Hong Kong be estimated by the import and export data from the Census and Statistics Department (C&SD). It is, however, not practicable because only data on the weights of generally described items, such as “packing bags of polymer of ethylene” or “sacks and bags of plastics”, are available from C&SD. Such data are therefore of limited use to some extent of confirming the trend, rather than the scale, of plastic shopping bag usage.

**Environmental Protection Department  
April 2009**

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<sup>7</sup> These were plastic shopping bags for which the types of retailers were not readily identifiable.

**Supplementary Information on  
Trial Scheme and Baseline Study on Municipal Solid Waste Charging**

In November 2006, the Environmental Protection Department (EPD) launched a trial scheme to examine the logistical requirement for introducing a variable rate charging scheme with the use of designated garbage bags under different domestic housing settings. Twenty housing estates, including public rental estates, subsidised sales flats, private housing estates and government quarters, participated in the trial. The participating estates are set out at the table below:

<b>List of 20 Participating Housing Estates of the MSW Charging Trial Scheme</b>	
<b><u>Public Rental Estates:</u></b>	11. King's Park Hill
1. Yiu Tung Estate	12. Ocean Shores*
2. Oi Tung Estate	13. Royal Peninsula *
3. Chun Shek Estate *	14. Heng Fa Chuen *
4. Wah Fu (II) Estate	15. Parc Palais
5. Fu Tai Estate	16. Seaview Crescent
6. Chun Seen Mei Chuen	17. Scenic View
7. Sun Tin Wai Estate	<b><u>Government Quarters:</u></b>
<b><u>Subsidized Sales Flats:</u></b>	18. Broadcast Drive No.87-91
8. Wo Ming Court	19. Wong Tai Sin Disciplined Services Quarters
9. Grand View Garden *	20. Mansfield Road, 2-8, 9-11
<b><u>Private Housing Estates:</u></b>	<i>Note</i>
10. Ocean View	* Also participated in source separation of food waste.

Residents of the participating estates were provided with designated bags of different sizes for disposal of non-recyclable domestic waste, while five of the estates were also provided with food waste bags for separating food waste from other domestic waste.

2. During the trial period, we arranged publicity and educational programmes through video demonstration, display panels, posters/leaflets and guidelines. Enquiry desks and hotline services were also set up. Feedback on the trial scheme was collected through questionnaires and a series of sharing workshops. The trial was completed in February 2007.

## Findings and observations of the trial scheme

3. About 69% of the households in the 20 estates collected or received the designated bags. A steady increase in the use of designated bags was observed, from 5.3% at the initial stage to 12.8% at the end, averaging at 8.6% throughout the entire trial period. Some 72% of the households collected or received food waste bags. The average usage rate of the food waste bags was around 11.2%, with a similar increase in the usage rate from 9.5% at the initial stage to 11.9% at the end of the survey period.

4. A number of issues on the feasibility of a variable rate charging scheme were raised by the residents and management of the participating estates through questionnaires and sharing workshops. In particular, fly-tipping was considered a major problem if a designated bag system were to be implemented. The potential confrontation with residents might reduce the willingness and effectiveness for the estate management to assist in the enforcement. It would also be difficult and resource demanding to make on-site arrests. As regards the separate collection of food waste, while respondents considered it theoretically feasible, the arrangement might have considerable environmental hygiene implications. Overall, participants opined that the Government should take into account the different types of buildings and their varying waste management practices (such as the use of refuse chutes in certain buildings) when developing a practicable charging scheme. Furthermore, logistical support such as the provision of source separation facilities should be in place before implementing a charging scheme.

5. Given the findings of and the feedback on the trial scheme, and drawing reference from overseas experience, we note that a key prerequisite for a successful variable rate charging scheme is the readiness to trace MSW to its source. In this regard, over 95% of some 2.3 million households in Hong Kong are living in multi-storey, multi-tenant buildings. Waste collection mode also varies across different housing settings. For example, communal refuse chambers/bins or refuse chute systems are usually adopted by private housing estates. Yet, some public housing estates and old tenement buildings do not have any floor-based refuse collection facilities and residents have to discard their MSW in public area (along the corridor on each floor or at the staircase) for subsequent collection by garbage men.

6. A variable rate charging scheme at household level would likely be subject to implementation difficulties in terms of ascertaining the amount and sources of MSW generated by individual households. It is because Hong Kong's multi-storey, multi-tenant household setting and the prevailing waste collection arrangements do not facilitate tracing MSW to its source. As such, we are examining the possibility to suitably adjust the variable rate charging system in

view of the restraints in Hong Kong. Consideration may also be given to other prevalent charging approaches, such as the gate fee, fixed charge or flat rate system, which are also widely practised in other jurisdictions, while building in appropriate incentives to encourage waste reduction and recycling.

## **The Baseline Study**

7. Commercial and industrial (C&I) establishments were not covered in the above trial scheme. Yet when examining various possible MSW charging options, there is a need to take into account the waste generation and waste management practices of different C&I establishments. In this regard, we are conducting a Baseline Study (the Study) to collect and analyze the necessary data and information, and develop a practicable MSW charging scheme for the C&I sector.

### Scope of Study

8. The Study comprises a desktop review, a baseline survey, examination of possible charging options and development of a practicable charging scheme for the C&I sector. The Study seeks to:

- (a) review the existing available information on MSW charging, including the findings of the trial scheme and overseas experience reviews;
- (b) conduct a baseline survey to collect data and information on the waste generation pattern and waste management practices among different types of C&I establishments;
- (c) examine possible charging options, including the feasibility of a volume-based approach for levying a MSW charge for C&I establishments on a per building basis; and
- (d) recommend a practicable charging scheme which provides the C&I sector with direct economic incentive for waste avoidance and recovery.

## **Way forward**

9. The Study will last for eight months and is scheduled to be completed in the second half of 2009. Based on the findings, we will draw up possible MSW charging options and plan for public consultation.

**Environmental Protection Department**  
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