

Sustainable Waste Management



# Strengthening Waste Reduction: **Is Waste Charging an Option?**

Public Consultation



**Be SMART with  
Less Waste!**

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## **ACRONYMS**

<b>C&amp;I</b>	<b>Commercial and Industrial</b>
<b>ECF</b>	<b>Environment and Conservation Fund</b>
<b>FEHD</b>	<b>Food and Environmental Hygiene Department</b>
<b>MSW</b>	<b>Municipal Solid Waste</b>
<b>PAYT</b>	<b>Pay-As-You-Throw</b>
<b>PMO</b>	<b>Property Management Office</b>
<b>PRS</b>	<b>Producer Responsibility Scheme</b>
<b>PSB</b>	<b>Plastic Shopping Bag</b>
<b>RCP</b>	<b>Refuse Collection Point</b>
<b>RCV</b>	<b>Refuse Collection Vehicle</b>
<b>RTS</b>	<b>Refuse Transfer Station</b>
<b>SBB</b>	<b>Single Block Building</b>
<b>tpd</b>	<b>tonne per day</b>
<b>WEEE</b>	<b>Waste Electrical and Electronic Equipment</b>

# Foreword

The active discussion in our community over the extension of landfills and related issues has served as a reminder of the imminent waste problem our city faces. We are seeking to put in place modern facilities so as to enhance our capacity to handle our Municipal Solid Waste (“MSW”). But it remains the most effective way to tackle the waste problem by reducing the generation of wastes at source.

Hong Kong’s waste recovery rate currently stands at 52%, a decent level compared to many other cities in the world. But our per capita waste generation and disposal figures are still on the high side. The waste management problem facing us is imminent. Together as a community, Hong Kong people need to take action. It starts with changing our habit by practising a greener lifestyle. We also need to maximize our effort in reducing waste and raising the waste recovery rate.

Different cities across the world tackle their waste problems with their own means. But all proposals for waste reduction must be premised on the collective consensus of the community as well as public support. As the community deliberates on the overall waste management strategy, we have heard a clear voice urging for the consideration of introducing MSW charging into Hong Kong as an economic means to reduce the generation of waste at source. As evident from the experience in individual cities with such a charging system in place, waste charging could be effective in achieving waste reduction. But the experience of these cities also suggests that the successful implementation of waste charging requires a basket of complementary measures. For instance, adjustments might be required in the delivery of waste collection services. There should be behavioural changes. We also need legislation. Nowadays, some cities are still in the process of deliberation on this issue, trying to consolidate a community consensus on whether (and how) to implement waste charging.

This Consultation Document outlines the international experience in implementing MSW charging and explains the key issues (including operational matters) in seeking to introduce such a system in Hong Kong. In order to make MSW charging a success, we need community consensus on every aspect of the system. We also need the public’s support in changing their behaviour and habit. Please study this Consultation Document in details and let us have your views so that we could take into account your opinions as we move onto the next phase in developing our waste reduction policies.

**Edward Yau**  
Secretary for the Environment  
January 2012

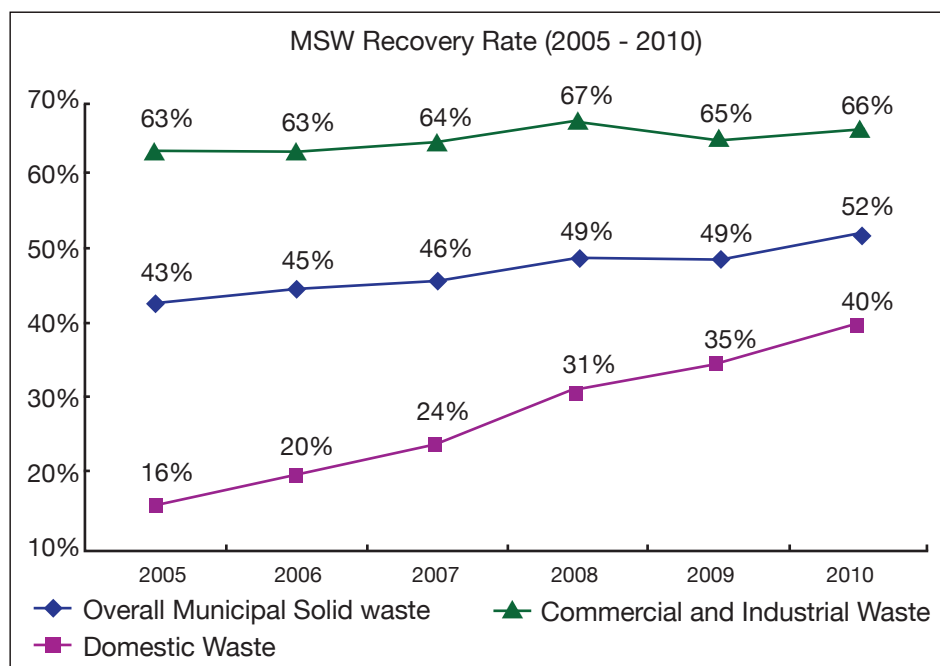
# Sustainable Waste Management in Hong Kong

**1.1** Proper waste management is key to the good management of a city. In recent years, its importance rises as sustainable development assumes higher priority in cities' agenda. Our waste management policy has evolved over the past few decades to a model with an increased focus on sustainability. Reduction of wastes through the promotion of 3Rs, i.e. reduce, reuse and recycle, is the first arm of our strategy, as it serves not only to suppress the volume of wastes that needs to be treated, hence reducing the load of waste treatment facilities, but also to make good use of what is commonly regarded as wastes and turn them into resources.

## Reduction at Source is the Priority Task

**1.2** With the concerted effort of the Government and the community, the waste recovery rate in Hong Kong has been increasing progressively since 2005 (see [Exhibit 1](#)). The Programme on Source Separation of Domestic Waste was launched in January 2005 and has gradually reached over 80% of Hong Kong's population up to now. A sister programme was launched in October 2007 to cover commercial and industrial ("C&I") sector. Other measures also work to reduce the waste that requires disposal at the landfills. For instance, the Construction Waste Disposal Charging Scheme became effective in January 2006 and has resulted in the reduction in construction waste disposal (by 37% in the first year of implementation and cumulatively by 45% up to 2010). A legislative framework for the implementation of mandatory producer responsibility schemes ("PRSs") was put in place in July 2008, enabling the implementation of the environmental levy scheme on plastic shopping bags ("PSBs") in July 2009.

*Exhibit 1:*  
MSW Recovery Rate Since 2005



**1.3** The combined result of the above efforts has brought the municipal solid waste (“MSW”) recovery rate of Hong Kong to 52% in 2010, exceeding our original target laid down in the *Policy Framework for the Management of Municipal Solid Waste (2005-2014)* (“*The MSW Policy Framework*”), i.e. to attain 45% waste recovery rate by 2009. But our effort to reduce waste should continue. **Taking out the 52% of MSW being recovered, the daily quantity of MSW being dumped into Hong Kong’s three strategic landfills still stands at 9 100 tonnes, sufficient to fill up three Olympic-sized swimming pools.** Together with construction wastes, sludge and other wastes, the wastes sent to the landfills add up to 13 800 tonnes a day. At this rate, the annual disposal of wastes to our landfills stands at a staggering 5.04 million tonnes. This exerts tremendous pressure on the demand for landfill space and, at the same time, calls for huge investments in the introduction of modern technology for the proper treatment of the residue waste. We need to continue to redouble our effort in waste reduction.

## What is Municipal Solid Waste?

There are three sources of MSW in Hong Kong –

- Domestic solid waste, which comes from households and public areas, including waste collected from residential buildings, public litter bins, streets, marine areas and country parks.
- Commercial solid waste, which comes from shops, restaurants, hotels, offices and markets in private housing estates.
- Industrial solid waste, which is generated by all industries, but does not include construction and demolition waste, chemical waste or other special waste.

- 1.4** The situation of domestic MSW warrants attention. It is true that waste recovery at household level has increased significantly during the last few years, from 24% in 2007 to 40% in 2010. But this still means that the majority, i.e. 60%, of MSW at household level, goes to the landfills. At present, much of the waste recovery activities does not take place in individual households but is undertaken by garbage collectors. Triggering the behavioural changes by individuals at household level would instill a change of culture which could go a long way in reducing waste in our city.

## Waste Charging: A Way to Strengthen Waste Reduction

- 1.5** Notwithstanding the efforts that we have made and the action plan that we have pledged, our study of overseas experience shows that any further attempts to significantly reduce waste generation would not be possible in the absence of major economic incentives to drive the requisite behavioural change. **Overseas experience also shows that the introduction of MSW charging has been successful in encouraging the reduction in waste for final disposal, increasing recycling rate, and to a more limited extent, encouraging waste minimization.**

- 1.6** As shown in the experience of other cities, the effectiveness of waste charging in achieving waste reduction depends on the relevant basket of complementary measures as well as the underpinning waste collection system. Due consideration should be given to the local context in determining the charging approach and the coverage of the scheme, in developing the legislative framework, in drawing up an appropriate enforcement strategy and in revamping the existing waste collection system. At a community level, the way a building or premises is managed might require some adjustments. And above all, members of the community need to act together in seeking behavioural changes. The imminence of the waste management problem facing Hong Kong has created an opportunity for our community to look together into the issue of MSW charging in a focused manner, so as to determine its role in our overall waste management strategy. In the remainder of this Consultation Document, we will explain the above issues in detail.
- 1.7** The objective of MSW charging is to create an economic incentive to achieve waste reduction. But there could be wider implications leading to changes in our waste collection system and our everyday habit. Even the protection of privacy in waste disposal or other issues with far-reaching impacts could emerge as concerns. In publishing this Consultation Document, we do not mean to rush, but aim to kickstart a deliberation process through which the entire community (especially the relevant stakeholders) could come to a broad direction on the issue of MSW charging. We would then take it from there and proceed to engage the community into further deliberations on the various key aspects of a charging system.



# **An Overview of Hong Kong's Waste Management Policy**

**2.1** The waste management policy of Hong Kong has evolved in tandem with the social development of the city. Up to the early 2000s, the objective of the policy was largely to properly collect and handle MSW. It has since evolved into a multi-pronged approach, with the objective to create a sustainable waste management system in recent years.

## **Realignment of Waste Treatment Facilities in 1989**

**2.2** In 1989, the Government took a major decision to phase out the three outdated incinerators in Kwai Chung, Kennedy Town and Lai Chi Kok; as well as retiring landfills that were scattered across the territory. In replacement, three strategic landfills, in West New Territories, Southeast New Territories and Northeast New Territories came into operation in 1993, 1994 and 1995 respectively. The development of the strategic landfills has taken the benefits of advancement in landfill technology. They are equipped with state-of-art liners, leachate collection and treatment systems, landfill gas management systems, and surface and ground water management systems to respond to the more stringent environmental requirements.

## **The MSW Policy Framework and Subsequent Progress**

**2.3** With a growing awareness for a sustainable waste management policy, the Government issued *The MSW Policy Framework* in 2005, setting out a multi-pronged approach for waste management. The major initiatives include avoidance and reduction of waste; reuse, recover and recycle; as well as reduction of waste volume in disposal.

**2.4** We launched the Programme on Source Separation of Domestic Waste in 2005, targeting domestic buildings across Hong Kong. It encourages and supports property management offices (“PMOs”) in housing estates and individual buildings to provide waste separation facilities in common areas - on each building floor if possible. Over time, the types of recyclables recovered under the programme have been expanded from waste paper, aluminum cans and plastic bottles to a much more diverse range of recyclables, including all types of

plastic waste such as PSBs and compact discs, metal waste, used clothes, waste electrical and electronic equipment (“WEEE”), etc. The programme has been expanding to cover more than 1 700 estates and about 700 rural villages since its launch in 2005, reaching over 80% of Hong Kong’s population. It has also helped to drive recovery rates higher. In 2010, the domestic waste recovery rate was 40%, more than double the rate of 16% in 2005.

**2.5** Experience suggests that source separation is most effective when relevant facilities are provided on each building floor. However, many buildings in Hong Kong do not have enough space to accommodate such facilities and only about 20% of participating estates have floor-based separation. To promote the development of floor-based facilities, the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations (Cap.123H) was amended in 2008 requiring a refuse storage and material recovery room to be provided on every floor of new domestic buildings and the domestic part of composite buildings.

**2.6** In October 2007 we extended our efforts to the C&I sector through the launch of the Programme on Source Separation of Commercial and Industrial Waste. Similar to the domestic sector programme, the property managers of C&I buildings are encouraged to set up and implement mechanisms for separating and recovering waste. Member buildings that meet the Government’s assessment measures are given a commendation certificate; those with an outstanding performance are further recognized with specific awards. In 2010, we achieved a recovery rate of 66% for C&I waste, up from 63% in 2005.

**2.7** Apart from the programmes to separate waste at source for reuse and recycling, the Government has also promoted waste reduction and recovery through such initiatives as –

(a) *Introduction of PRS.* PRSs can help reduce waste by making manufacturers, importers, wholesalers, retailers and consumers share in the responsibility to reduce, recover and recycle certain products. Several voluntary PRSs of different scales have been introduced over the years for rechargeable batteries, computers, fluorescent lamps and glass containers. The Product Eco-responsibility Ordinance (Cap.603) was enacted in July 2008 to provide a legal basis for introducing mandatory PRSs. The first scheme was launched in July 2009 to introduce an environmental levy on PSBs and would be extended to cover the entire retail industry. On the other hand, a second mandatory PRS is being developed for WEEE.

- (b) *Enhancement of Publicity and Public Education.* Public participation is essential to any waste recovery programme. The Government has been supporting the Environment and Conservation Fund (“ECF”) which finances community-wide educational activities on waste recovery. For example, \$10 million was set aside under the ECF to promote environmental initiatives under *The MSW Policy Framework*, including public education. The Government also injected \$1 billion into the ECF in 2008 for educational, research and technology demonstration projects, including those on waste reduction and recovery, as part of its commitment to promote and support public engagement. One of the key recipients of ECF funding is the Environmental Campaign Committee, which has been providing newly designed waste separation bins to housing estates, C&I buildings and schools, as well as collection points for recyclables in public places.
- (c) *Development of the EcoPark.* Recyclable waste needs an outlet. Well over 90% of Hong Kong’s recyclable waste is exported for processing. To encourage the development of the local recycling industry, the Government has established the EcoPark in Tuen Mun, offering long-term land at affordable costs to the local environmental and recycling industries.

## The 2011 Action Agenda on MSW Management

**2.8** The Government announced a specific action agenda in January 2011, comprising a series of waste management initiatives. The action agenda was formulated after reviewing the initiatives launched since 2005 under *The MSW Policy Framework* and re-examining the priority taking into account the imminence of introducing a sustainable strategy in the light of the filling up of the three strategic landfills and the increased burden posed by waste types such as food waste, in addition to individual consumer products. Under the multi-pronged approach of waste reduction; recovery; and proper treatment, we have committed to –

- (a) revising upward the MSW recovery target to 55% by 2015 through stepping up publicity and promotional efforts on waste reduction and recycling;
- (b) expediting legislative proposals to introduce new PRS and extend current PRS to encourage waste reduction;
- (c) engaging the public in continued discussions on possible options to introduce MSW charging as a direct economic disincentive to reduce waste at source;
- (d) stepping up efforts for community-level on-site food waste treatment; and

- (e) seeking funding approval from the Finance Committee of the Legislative Council in early 2012 so that advanced waste treatment facilities and extension of the existing landfills will be commissioned in time to ensure solid waste can continue to be properly managed in an environmentally acceptable manner.

**2.9** So far, we have completed the public consultation on the extension of the Environmental Levy Scheme on Plastic Shopping Bags. Implementation details of the mandatory PRS on WEEE are being developed in conjunction with the relevant trades. Planning of the advanced waste treatment facilities and the extension to existing landfills are underway as scheduled. We are also enhancing our other work in order to achieve the waste recovery target of 55% by 2015.

# An Urgent Need to Suppress Waste Generation

**3.1** As Asia's world city, Hong Kong offers a cosmopolitan quality lifestyle and abundant opportunities. Our city is running efficiently and orderly everyday. One sign of our success has been how our waste management system properly handles the waste generated by everyday living and economic activities. This is fundamental to the maintenance of public health and a quality environment. But looking ahead, the sustainability of the way we manage our waste is under threat.

## Waste Arising in Hong Kong: Current Position

**3.2** Due to population growth and economic development, our daily MSW generation has been increasing gradually to about 19 000 tonnes. Together with other types of waste, there is about 13 800 tonnes of waste disposed of at landfills. As shown in [Exhibit 2](#), the bulk of that waste (9 100 tonnes daily, about 70% of the total) comprises MSW.

*Exhibit 2:  
Different Types of Waste Disposed at Landfills (as at 2010)*

Waste Type	Daily Disposal
Municipal Solid Waste	<b>9 100</b> tonnes
Construction Waste	<b>3 600</b> tonnes
Sludge	<b>900</b> tonnes
Other Waste	<b>200</b> tonnes
Total:	<b>13 800</b> tonnes

**3.3** We have now achieved an MSW recovery rate of 52%, up from 43% in 2005, meaning that over half of the MSW generated in Hong Kong is recovered from the waste stream. We compare favourably with other international cities. Our overall MSW recovery rate is higher than Singapore (48%). Even our MSW recovery rate in the domestic sector (at 40%) compares favourably

with New York City (26%) and London (27%)<sup>1</sup>. As shown in [Exhibit 3](#), although the disposal figure recorded a decline in the same period, the per capita MSW generation in 2010 was 2.69 kg per day, up by about 11% from 2.42 kg per day in 2005. These figures included both landfilled and recovered waste. We should not overlook this trend.

*Exhibit 3:  
Per Capita MSW Generation and Disposal (2005 to 2010)*

Year	Generation (kg / person / day)	Disposal (kg / person / day)
2005	2.42	1.38
2006	2.49	1.35
2007	2.44	1.33
2008	2.52	1.29
2009	2.52	1.28
2010	2.69	1.29

**3.4** Hong Kong now relies principally on landfills to treat its waste, which is not sustainable. Our three strategic landfills are projected to be exhausted in the mid to end 2010s unless effective waste management measures are implemented in a timely manner. Given the scarcity of land resources in Hong Kong, efforts to identify land for developing new landfills or extending the existing ones have proven to be very difficult. The increasing MSW generation contributes to an emerging crisis where Hong Kong might not be able to uphold the high standard of environmental hygiene that the local and international community expects of a world city, without timely provision of adequate and appropriate waste treatment and disposal facilities.

**3.5** While we are actively pursuing the development of advanced waste treatment facilities in Hong Kong (comprising a Sludge Treatment Facility, an Integrated Waste Management Facility and an Organic Waste Treatment Facility), their aggregate treatment capacity falls short of our current MSW disposal. This underlines the importance of a multi-pronged waste management strategy under which we are concurrently stepping up our efforts in waste reduction and recovery.

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<sup>1</sup> The published statistics in New York City and London covers mainly domestic waste plus some trade waste.

## Why We Need to Consider MSW Charging

### Reason 1: Reducing Waste Generation at Source

**3.6** Hong Kong's waste generation is in general higher than that of cities of comparable economic development level, particularly in the domestic sector, before taking into account waste recovery. Our domestic waste generation now stands as high as 1.45 kg per person per day. The corresponding figure in London, Seoul, Tokyo and Taipei City are 1.45 kg, 1.08 kg, 1.03 kg and 0.88 kg per person per day respectively. Even after taking into account our accomplishments in promoting MSW recovery, domestic waste disposal in Hong Kong is only in the midstream internationally. **In comparison, domestic waste disposal in Taipei City and Seoul is significantly lower (see Exhibit 4); MSW charging has been in place in these international cities.**

*Exhibit 4:  
Per Capita Domestic Waste Generation and Disposal in Selected Cities*

	Daily Generation (kg / person / day)		Daily Disposal (kg / person / day)
Taipei City	0.88	Seoul	0.35
Tokyo	1.03	Taipei City	0.41
Seoul	1.08	Tokyo	0.79
<b>Hong Kong</b>	<b>1.45</b>	<b>Hong Kong</b>	<b>0.87</b>
London	1.45	London	1.04

### Reason 2: Increasing Waste Recovery Rate

**3.7** Although our current and planned programmes are helping us to reduce waste, overseas experience suggests further reduction beyond what we have projected will not be possible without a major economic incentive that changes behaviour and leads people to cut down on waste. **In the absence of a major mindset and behavioural change, there is a limit as to how far our community could do in further raising the waste recovery rate by a significant margin.** This has been the consensus among advocates of a greener Hong Kong.

### ***Reason 3: Fostering Behavioural Changes***

- 3.8** As mentioned in paragraph 1.4 above, currently, waste separation is largely conducted at the garbage collectors' level. The introduction of MSW charging could help foster a "think before you throw away" attitude among the people of Hong Kong. **If individual Hong Kong people can lend their support to waste separation, this would add much to the effective recovery of reusable and recyclable materials out of the waste stream.**

### ***Other Considerations***

- 3.9** MSW charging is a major policy that would impact on a wide cross-section of the society and the way MSW is collected. The very nature of the initiative to involve charging could give rise to concerns over the potential cost burden on households and businesses. It could also give rise to concerns over possible regressive effects on low income households. An important principle is that ***such charging should not bear a revenue-generating objective.*** The experience of other cities with a waste charging system is that a community consensus should first be consolidated before charging could be introduced. Implementation of charging could also lead to a series of practical issues. When consulting the public, the Government needs to engage the community and relevant stakeholders to adequately deliberate these issues and to explore practicable solutions. Such deliberation is essential to ensure public support and smooth implementation when the charging scheme commences operation. We therefore need to conduct this public consultation carefully. In addition, once consensus is reached, we also need to look into a number of operational issues in a greater detail, including appropriate mitigation measures for the needy.



- 4.1** Driven by environmental and economic concerns, some overseas jurisdictions have introduced charging schemes for MSW as well as other kinds of waste. Having reviewed the experiences of selected international cities, the charging mechanism can be divided broadly as follows –

## Approach 1: Quantity-based System

- 4.2** A **Quantity-based** system is one in which the waste charge is assessed on the basis of waste quantity. It establishes a *direct link* between the charge and the quantity of waste requiring treatment or disposal, and is regarded as the most effective means for waste reduction. There are several modes of implementation under this broad charging approach –

- (a) the waste quantity could be determined by volume, weight or other mechanisms (e.g. collection frequency);
- (b) the waste charge could be assessed and collected from individual establishments (e.g. households) or collectively from a building, with varying degrees of “directness” insofar as the impact on waste producers is concerned; and
- (c) the charge could be imposed through different means including mandatory use of pre-paid garbage bags<sup>2</sup> and by weight at the disposal facilities such as landfills or refuse transfer stations (“RTS”) (also known as “gate fee”).

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<sup>2</sup> Pre-paid garbage bag: By “pre-paid”, we refer to the waste charge being collected before the disposal of waste through the sales of the designated garbage bag and the price is associated with the size of the bag. Such pre-paid waste charge is therefore directly linked to the quantity of waste generated.

**4.3** Taipei City is one of those cities that have adopted a Quantity-based system where a per-bag MSW charging scheme has been implemented since 2000. Their MSW charging system is premised upon the “Keep Trash Off The Ground” policy<sup>3</sup>, which features the following key requirements –

- (a) MSW generated from households and small commercial establishments<sup>4</sup> has to be handed over to the municipal waste collection fleet in designated garbage bags at designated times and venues.
- (b) In multi-storey buildings, households may use ordinary garbage bags but waste generated by households in the same building (in ordinary garbage bags) has to be bundled together and put into large designated bags by cleansing service operators for collection by the municipal service at designated times and venues.

In Taipei City, coupled with other measures, the implementation of quantity-based MSW charging has resulted in a decline in domestic waste generation from 1.10 kg per person per day in 1999 to 0.88 kg in 2009; domestic waste disposal has dropped from 1.08 kg per person per day to 0.41 kg in the same period. A similar charging system has been implemented in South Korea (including Seoul) since 1995. Save for certain minor variations, it is also based on a designated garbage bag requirement. Waste reduction of a similar magnitude was also achieved in Seoul.

**4.4** The direct link between the charge and the waste quantity under a Quantity-based system on the one hand could create economic incentives for minimization of MSW but on the other hand it might induce littering or fly-tipping. This could be effectively enforced against if the source of waste could be easily traced to the waste producers who are liable to pay the waste charge. Otherwise, a policing mechanism may need to be developed. In Taipei City and Seoul, neighbours and property management have been mobilized to perform intense surveillance and policing against illegal dumping<sup>5</sup>. Issues of privacy and neighbourhood relations might emerge. Taipei City has gone farther to have progressively closed the conventional refuse collection points (“RCPs”) and withdrawn public litter bins so as to avoid illegal dumping. In the case of Hong Kong, following suit might require members of the public to sacrifice some degree of convenience and perhaps to live with some degradation in

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<sup>3</sup> Under the “Keep Trash Off The Ground” policy, no waste is allowed to be left on the conventional RCPs unattended.

<sup>4</sup> In Taipei City, commercial establishments are regarded as “small” in the context of MSW charging if the waste they dispose of is no more than 30kg per day. Other C&I establishments must engage licenced private waste collectors for waste disposal.

<sup>5</sup> Citizens in these two cities are encouraged to report non-compliance to the relevant authority and upon successful prosecution, are eligible for a monetary award (as a fraction of the fines sentenced in the reported cases, 20% in Taipei City and up to 80% in Seoul).

environmental hygiene. At the same time, RCPs are receiving over 15% of all MSW generated in Hong Kong and this involves an issue of practicality which has to be addressed through adjustments to our waste collection system.

## Approach 2: Proxy System

- 4.5** A **Proxy** system links the waste charge to an indirect indicator of waste generation, i.e. a proxy. Water consumption is a common proxy because it can reflect the level of human activity in a household, which in turn is associated with waste generation to some extent. Charges are then levied regardless of the quantity of waste actually generated. A Proxy system has been adopted by Zhongshan of Guangdong Province and the majority of municipalities in Taiwan, though such charging is mainly for cost recovery rather than waste reduction.
- 4.6** Using an existing payment collection system such as water bills, a Proxy system is relatively easy to implement and administer if strictly taken as a charging mechanism. If successfully implemented, it might also encourage conservation of the selected utility at the same time. But the validity of the chosen proxy could be an issue. Arguably, water consumption is not necessarily proportional to waste disposal. It could be best illustrated in the C&I sector where laundry shops and saloons consume a lot of water but do not generate much waste. Following such arguments, this approach might fall short of creating economic incentives for minimizing MSW. Since the charge would not be directly linked to the amount of waste generated, one might perceive it as unfair.

## Approach 3: Fixed Charge

- 4.7** A **Fixed Charge** system is not linked to the quantity of waste generated. Each waste producer within the same category (e.g. residents of the same district) pays an identical rate regardless of how much waste they produce. Singapore and Beijing have adopted this approach for charging in the domestic sector. The analysis on the Proxy System is by and large applicable to a Fixed Charge system. Without any linkage to the actual amount of waste generated, it in essence serves the purpose of cost recovery. It is subject to clear limitations as a policy tool to promote waste reduction.

## Approach 4: Partial Charging

- 4.8** Internationally, it is common that waste producers in the C&I sector are held responsible for handling their own waste through engaging private waste

collectors. A charge at the gate (or “gate fee”), assessed with reference to the weight of waste, usually applies when the waste is delivered to the disposal facilities. A gate fee system has been adopted for C&I waste in the United States, Canada, most European countries, Japan, South Korea and Singapore. Accordingly the norm for the C&I sector is a quantity-based charging system. This holds true even for jurisdictions that do not have a similar system in place for the domestic sector resulting in this fourth approach of partial charging that is applicable to only a defined group of waste producers.

- 4.9** The key advantage of a partial charging system is the flexibility with which we might first put in place MSW charging in those sectors where implementation of such charging is more feasible. Accordingly we might materialize the waste reduction benefits that might come about at an earlier opportunity before a full charging scheme is developed. But in the context of Hong Kong, we have some 11 000 composite buildings where both domestic and commercial premises are located in the same neighbourhood. Some degree of mixing between domestic waste and C&I waste is common. There could be operational issues when implementing partial charging (applicable to C&I establishments) in these buildings.

#### Junk or Bulky MSW Items

The charging arrangement for bulky waste varies across jurisdictions. For example, Taipei City and New York City offer free collection and disposal service for bulky waste but in some jurisdictions such as Seoul, Singapore and London, a disposal charge applies normally on a per piece or per collection basis. In Hong Kong, Food and Environmental Hygiene Department (FEHD) now provides free bulky waste collection service to residential buildings and public RCPs. Whether such service should continue to be provided free of charge in future could be further deliberated when there is a consolidated consensus within our community on the way forward on the broader MSW charging issue.

- 4.10** Annex A briefly sets out relevant examples in international cities that have imposed charging along the above approaches. Of note is that: notwithstanding that MSW charging is being implemented in some international cities, there are also cases in which a charging system on domestic waste is not implemented after due consideration of the local constraints and challenges. For instance, back in the early 2000s, New York City deliberated extensively on whether it should implement quantity-based waste charging under a proposed scheme known as Pay-As-You-Throw (“PAYT”). The city, however, decided to shelve the concept after considering the pros and cons. About 60% of its 8.4 million population lives in multi-storey, multi-tenant buildings and it was considered generally impossible to administer a quantity-based waste charging at the household level in such an environment. Stringent policing of non-compliance is also difficult, especially in buildings installed with refuse chutes. Such practical constraints were cited as the key reasons why PAYT was not adopted. As of now, there is no direct charge for waste collection and disposal service for domestic premises at New York City.

# Existing Waste Collection Services in Hong Kong

**5.1** For the purpose of effectively promoting waste reduction and recovery, MSW charging must be operationally well aligned with our waste collection system. Although MSW has not been subject to charging in Hong Kong, waste charging in general is not new to our city. At present, in line with the “polluter pays” principle, individual charging schemes are in place for the disposal of chemical waste, construction waste and clinical waste. Private waste collectors using RTS are also subject to a charge. Each of these charging schemes is underpinned by a compatible waste collection system. Based on the “polluter pays” principle as opposed to mere cost sharing, our goal is to protect the environment by internalizing social costs and offering incentives to polluters to reduce their pollution.

## The Current MSW Collection System

**5.2** Hong Kong is a city characterized by a very high population density which in many districts is much higher than that of other international cities. For instance, Kwun Tong has a population density of over 50 000 people per square kilometre, while in Manhattan of New York City the figure is around 27 000. Some 88% of Hong Kong people live in multi-tenant buildings with more than 10 storeys. While most of these buildings are served by PMOs, 6% of households are located in buildings without proper building management, mainly single block buildings (“SBBs”) in older districts and more than 30 000 village houses scattered across the New Territories. Annex B sets out some pertinent facts characterizing Hong Kong.

**5.3** The unique characteristics of our city have led to the development of a complex MSW collection system which aims to maximize the efficiency of our municipal services in order to ensure environmental hygiene. At present, about 85% of MSW from domestic sources<sup>6</sup> is collected by FEHD or its contractors for transfer to the landfills without any charges levied on the waste

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<sup>6</sup> Such sources include residential and institutional premises such as schools. Waste collected from public litter bins, streets, marine areas and country parks also comes under this category.

producers. C&I establishments, however, are not serviced by FEHD and have to hire their own collection services. Private waste collectors collect the majority of MSW generated from C&I sources and deliver it directly to landfills for disposal. Irrespective of how MSW is collected, no waste producer is currently charged for disposing of their MSW at landfills.

#### Our Efficient Waste Collection System

FEHD and its cleansing contractors operate some 240 modern refuse collection vehicles. Every day, they collect (directly or through RCPs) about 5 300 tonnes of household waste, including 1 060 tonnes from Hong Kong Island, 1 630 tonnes from Kowloon and 2 610 tonnes from the New Territories and outlying islands. The waste, partly collected from residential buildings direct and partly through RCPs, is taken to the RTSs or landfills.

**5.4** Summarized in [Exhibit 5](#) is the existing MSW collection system in Hong Kong. For domestic premises, there are different types of waste collection modes operating in Hong Kong, which show varied practices –

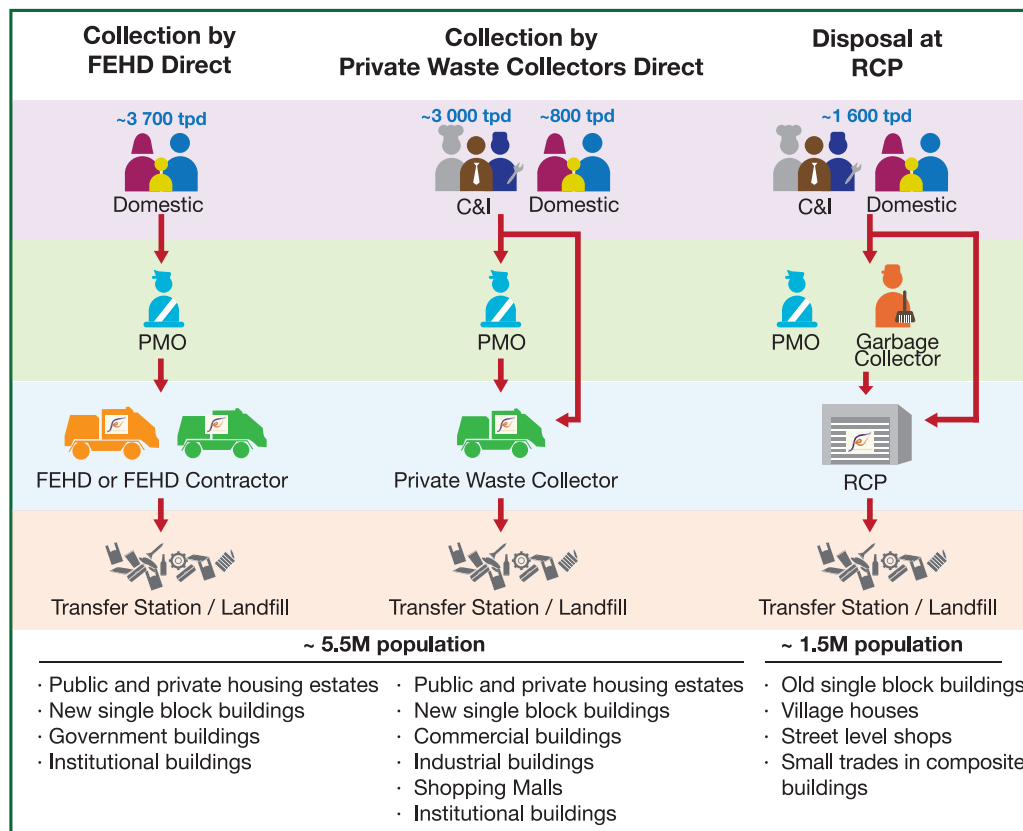
- (a) *Direct Collection by FEHD.* FEHD’s collection fleet provides a direct, daily waste collection service to residential buildings at no charge. The service covers nearly all public and private housing estates as well as newly developed SBBs. Some 3 700 tonnes per day (“tpd”) of domestic waste are currently collected by FEHD’s collection fleet or its contractors.
- (b) *Direct Collection by Private Waste Collectors.* Private waste collectors collect a small portion of domestic waste (~800 tpd) mainly from private housing estates and newly developed SBBs which are not accessible by FEHD waste collection vehicles or do not fit in with FEHD’s waste collection schedules. The main service of private waste collectors is to collect C&I waste (~3 000 tpd) and they normally charge the waste producers for such services. It is a common practice for private waste collectors to collect both domestic and C&I wastes in the same trip, resulting in the mixing of wastes.
- (c) *Disposal at RCP Directly or through Garbage Collectors.* Some 1.5 million people use RCPs<sup>7</sup> for disposing of their household waste (~1 600 tpd). They mainly live in buildings located in old districts or village houses scattered around suburban / rural areas. In the former case, the buildings are mostly old SBBs that have no management body to coordinate waste collection activities and that cannot accommodate refuse

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<sup>7</sup> Waste delivered to RCPs direct includes street waste collected by street sweepers.

collection vehicles (“RCVs”) for direct waste collection. MSW generated in these buildings is delivered to the nearby RCP by the waste producers or through the waste collection service (at a charge) provided by garbage collectors. Some occupants of these buildings may also choose simply to drop their own waste into public litter bins, which will eventually end up in an RCP. In suburban / rural areas, households living in village houses dispose of their waste at village-type RCPs or bin sites operated by FEHD.

*Exhibit 5:  
Existing MSW Collection System in Hong Kong*



**5.5** For C&I waste, most C&I buildings will engage cleansing contractors to collect and deliver the waste to RTs or directly to landfills since FEHD does not provide this service to them. There is some degree of mixing between domestic waste and C&I waste during the collection process in the case of composite buildings. In addition, there are also cases of waste disposal through RCPs in the C&I sector. Relevant examples include street-level shops.



## The Impacts of Charging on MSW Collection

**5.6** On the whole, MSW collection services in Hong Kong are jointly operated by both the Government and private collectors. This co-existence has led to a complex service network (see the illustration at [Exhibit 5](#)) that operates efficiently to high standards of hygiene. Based on the experience from outside Hong Kong, the introduction of a charging system must be considered in full context of the established waste collection system. This is because many aspects of the latter, including the garbage collectors, collection mode, cost sharing and level of convenience, etc. As far as the entire community is concerned, these impacts would not only incur additional costs; they might even impinge on efficiency thus undermining the quality of services ultimately enjoyed by members of the public. Accordingly, the successful implementation of any charging initiative has to be premised upon the general support by the community. In particular, it would require a commitment from the community to make certain behavioural changes, as well as public acceptance of the impacts on different fronts.



# Key Issues for Introducing Waste Charging in Hong Kong

**6.1** Internationally there is no one-size-fits-all approach to implementing MSW charging. Individual jurisdictions adopt their own preferred approach depending on what works best within their circumstances. The feasibility and effectiveness of charging hinge largely on the implementation of complementary measures that are tailor-made to the specific circumstances of the jurisdictions concerned. Compared to the cities that have been discussed in Chapter 4, Hong Kong faces an even more challenging situation. This Chapter summarizes the references that can be drawn from overseas experience as a background to discussion of Hong Kong's future direction in Chapter 7.

## The Case Studies: A Summary

**6.2** New York City's case (see paragraph 4.10) underlines the complexity of introducing MSW charging in a populated city like Hong Kong. We have also followed the developments in London where under the former Labour administration, proposals for regional pilot scheme with financial incentives were sought to encourage households to reduce and recycle their waste. The first proposal was submitted in March 2010 but was put on hold in the same year when the Conservative-Liberal Democrat coalition formed a new government.

**6.3** As a highly-populated city, Taipei City's unique approach of requiring households in multi-storey buildings to wrap their waste in ordinary garbage bags and put it into large designated bags on a building basis can be a useful reference for Hong Kong. Another key feature of Taipei City's charging system is to require individual waste producers to hand over their waste "at designated times and venues" to the municipal waste collection fleet, which is duly authorized to perform checks and deny collection service where waste is not placed in designated bags.

- 6.4** In Seoul, people living in multi-storey apartment complexes must bring their waste (wrapped in designated bags) to communal collection containers located in open spaces outside their buildings. This practice enables non-compliance to be easily spotted. In addition, community surveillance plays an important role in making MSW charging successful in Seoul (and also in Taipei City). Metropolitan Tokyo allows individual districts to determine their own system and some suburban cities have chosen to implement quantity-based waste charging through a designated bag requirement.
- 6.5** Waste charging in Singapore seeks to recover costs through privatized waste collection services. In parallel there are other measures to promote waste reduction and recycling, e.g. the provision of recyclable collection services, but these could be considered as initiatives independent of (rather than complementary to) the waste charge itself.
- 6.6** On the whole, MSW charging requires a high degree of compatibility with the municipal service systems and is mostly implemented at a city level. Taiwan provides a vivid illustration: while Taipei City has successfully implemented MSW charging through a designated garbage bag requirement, Kaohsiung as the second biggest city continues to follow a proxy approach. To provide further information, [Annex C](#) depicts the generic MSW charging approaches of different jurisdictions and the schemes adopted by local municipalities in Taiwan, South Korea and the United States.

## **Hong Kong's Exploration in MSW Charging**

- 6.7** Hong Kong has already started to test the ground in developing a practicable MSW charging scheme here. We conducted case studies of relevant experiences outside Hong Kong which have been discussed at length in Chapter 4. In addition, in 2007, the Environmental Protection Department conducted a trial scheme in 20 housing estates to examine the logistical requirements for waste recovery and disposal in different domestic housing settings. In 2010, we further completed a baseline study to collect information on waste generation and management practices in different C&I establishments.

**6.8** As revealed from these studies, the unique city fabric of Hong Kong and the way our MSW is currently collected could pose significant challenges if we were to implement MSW charging. Summarized below are the challenges we have identified given the characteristics of the existing waste collection system in Hong Kong –

### ***Unique Multi-storey and Multi-tenant Building Setting with a Mix of Domestic and C&I Occupants***

**6.9** In Hong Kong, 88% of households live in multi-tenant buildings of more than 10 storeys. Some 94% of C&I buildings surveyed under the Baseline Study also have multiple occupants. Many buildings house both domestic and C&I occupants and their waste can get mixed together easily. This unique building setting in Hong Kong makes it very difficult to trace waste to individual households or C&I premises which is a necessity when a charging scheme is based on the quantity of waste generated by individual establishments.

### ***Space Constraints for Storing Waste in Buildings***

**6.10** Many buildings do not have space to store waste and recyclables. Waste is usually left in staircase landings, refuse rooms or communal areas for collection, or dropped down refuse chutes. In addition, there is very little door-to-door collection. Both add to the difficulties in tracing waste to its source.

### ***Absence of Property Management in Some Buildings***

**6.11** Property management could play a coordinating role in organizing waste disposal activities and administering (including monitoring) compliance in a waste charging scheme. While over 90% of households live in properties with management service, most village houses and many single-block residential multi-storey buildings in Hong Kong do not have property management bodies. A practicable charging scheme should be able to cater for both situations – with or without management.

### ***Mix of Private and Public Waste Collection***

**6.12** FEHD collects some 85% of domestic waste. Private waste collectors collect mainly C&I waste and a small portion of domestic waste. Some garbage collectors collect both domestic and C&I waste especially in buildings without management. As explained in paragraph 5.3, MSW collection services in Hong Kong are delivered with an emphasis on efficiency and high hygiene standards. Our waste collection network has not been operated in a way that facilitates the collection of a quantity-based waste charge. Any charging scheme will need

to consider how to administer charges for waste generated at different sources and collected through different means.

### ***RCPs and Public Litter Bins***

**6.13** Hong Kong has over 3 000 RCPs (mostly unmanned) and over 20 000 public litter bins, which could become potential hotspots for fly-tipping under any charging scheme. Taipei City closed nearly all RCPs and removed public litter bins to control fly-tipping under their waste charging scheme. However, in Hong Kong, the closure of RCPs and withdrawal of public litter bins could cause serious concern over environmental hygiene standards and should only be implemented after due consideration is made of the social implications, particularly until community support for MSW charging is consolidated and the public generally displays the aptitude of “bringing the trash home for disposal”.

**6.14** Summarizing paragraphs 6.9 to 6.13, our ability to trace waste to individual households and C&I establishments (who are liable to pay especially in a quantity-based system) would affect the effectiveness of MSW charging as an economic incentive to encourage waste reduction and recovery. But MSW collection services in Hong Kong are delivered with an emphasis on efficiency and high hygiene standards. Our waste collection network has not been operated in a way that facilitates the collection of a quantity-based waste charge; neither does it facilitate the tracing of waste. Accordingly, the successful implementation of charging requires proper legislation for the public to comply with. There should also be suitable complementary measures by which the existing services in property management, waste collection and etc could provide adequate support in terms of the system and work practices. In the event that the implementation is unsatisfactory, illegal dumping might arise and could have an impact on environmental hygiene. Our community should be aware of such implications in deliberating on the introduction of a Quantity-based system. On the other hand, the alternatives of a Proxy system and a Fixed Charge system are operationally less challenging. There should be community consensus on whether such charging approaches should be considered for the purpose of putting in place MSW charging in Hong Kong.

- 7.1** In order to navigate through the complex considerations that pertain to the implementation of MSW charging in Hong Kong, we should first develop a community consensus on our objectives and priorities. We set forth below broad guiding principles for this purpose and discuss how we might adapt the experiences of other selected jurisdictions in implementing a charging scheme in Hong Kong.

## The Guiding Principles

### *Create Effective Economic Incentives to Reduce Waste*

- 7.2** First and foremost, we **propose** that if implemented, MSW charging in Hong Kong should primarily seek to create economic incentives for waste reduction and recovery. It should not be taken as a means to raise revenues for the Government.

### *Maintain Effective Waste Collection System in line with the Clean City Objective*

- 7.3** Whereas the current handling of MSW (as described in paragraphs 5.2 to 5.5) is efficient and serves us well, we also **propose** that the charging mechanism should as far as reasonably practicable be built upon the existing waste management system, including practices, infrastructure and waste reduction and recovery schemes. While it should be designed to drive behavioural change towards waste reduction and recovery, disturbance to the existing waste management practices and compromise of the existing hygiene standards should be minimized as far as possible as a matter of principle. This approach will facilitate us in preserving our existing system which has been a proven success. It will also commit us to properly managing any changes that might affect the lifestyle of our people and minimizing possible impact on the livelihoods of certain stakeholders.

## ***Be Practicable, Cost Effective, Enforceable and Acceptable to the Public***

**7.4** With the unique challenges facing Hong Kong as analyzed in paragraphs 6.9 to 6.13, we **propose** that the charging mechanism should be drawn up with due regard to its practicability, cost effectiveness and enforceability. There should be a fair and equitable basis for levying any charge. Effective enforcement should be organized against illegal dumping and other attempts to circumvent the system. On the one hand, the charges should reflect the “polluter pays” principle. On the other hand, we should also ensure that MSW charging is also acceptable to the community as a whole.

## **Wider Considerations**

### ***Partial Charging for C&I Waste***

**7.5** If MSW charging were to be introduced in Hong Kong, there would be benefits in charging both the domestic and C&I sectors as it would be most consistent with the spirit of shared responsibility in which all waste producers contribute their part. Yet the experience of some jurisdiction is to apply charging to some specific sectors first. This alternative approach, “partial charging” as discussed in Chapter 4, would allow us to gain some charging experience before extending MSW charges to other waste producers under our complex waste management system. Indeed, in the other jurisdictions that we have reviewed, waste producers in the C&I sector are commonly held responsible for engaging their own private waste collectors. Singapore is an example.

**7.6** In Hong Kong, private waste collectors now collect the majority of C&I waste and they could be charged a gate fee at disposal facilities for that waste. The gate fee is quantity-based and could create an economic incentive for waste collectors and encourage them to practice waste reduction and recovery. Some of them might work with waste producers at source, thus magnifying the impact. While this has advantages, it is not foolproof. For instance, domestic and C&I waste in some places is collected through a mixed system. If there is no charge for domestic waste, fly-tipping of C&I waste in domestic premises might emerge as a problem. An alternate charging mechanism would also need to be developed for C&I waste not collected by private waste collectors (e.g. disposed of at RCPs). The issue is more complicated when C&I waste is mixed and disposed of alongside domestic waste, as they are hard to distinguish and it would be difficult to enforce charges and act against illegal dumping.

## **Mandatory Source Separation**

- 7.7** MSW charging is not the only way to promote waste reduction and recycling at source. As mentioned in Chapter 1, we have achieved certain results through the Programme on Source Separation of Domestic Waste which is implemented on a voluntary basis. A similar programme is being extended to the C&I sectors. We are also stepping up publicity and promotional efforts about our higher MSW recovery target.
- 7.8** Internationally, some cities have implemented mandatory source separation which requires households to remove recyclables from the waste stream, thereby achieving waste reduction on the one hand and promoting the recycling industry on the other. Mandatory source separation is not a necessary condition for the successful implementation of MSW charging, but the two are not mutually exclusive. Our analysis is that waste reduction and recovery works best if there are appropriate economic incentives to help drive the requisite behavioural change. Such economic incentives are a feature of MSW charging, but not mandatory source separation of waste.
- 7.9** It follows that in order for mandatory source separation of waste to quickly take effect, there should be effective enforcement to create adequate deterrence against non-compliance. In the context of Hong Kong, ensuring compliance in buildings with a multi-storey, multi-tenant setting would be a challenge – similar to the case of MSW charging. Cities like Seoul and Taipei City where mandatory source separation has been implemented, have addressed the challenge through neighbourhood surveillance, checking of MSW at the point of disposal and rejection of non-compliant wastes. But issues of privacy, neighbourhood relations, fly-tipping and environmental hygiene might cause major concerns if such measures were implemented in Hong Kong.

## **The Questions**

### ***Question 1: Does Hong Kong need to introduce MSW charging?***

- 7.10** Hong Kong is facing an imminent waste problem. The Government has devised a multi-pronged strategy to tackle the situation and is gradually achieving results. Still, 48% of our MSW generated (or 9 100 tonnes per day) ends up in the landfills. In order to come to a sustainable solution to the waste problem, we need to maximize our effort in raising the waste recovery rate. Experience from selected international cities suggests that MSW charging could be an effective economic incentive that changes behaviour and leads people to cut down on waste. As a rough indication, in Taipei City and Seoul where MSW charging is in place, the per capita domestic waste disposal is around half of



the figure in Hong Kong. If MSW charging could enable Hong Kong to achieve the disposal level in the two cities, the waste requiring landfill disposal would be significantly reduced<sup>8</sup>. More details of the problem we face and the potential benefits of MSW charging have been presented in Chapters 1 to 3.

**Question 2: Should Hong Kong go for a waste charging system for all sectors or a partial charging system?**

**7.11** Hong Kong has experience in imposing charges on the disposal of specific waste types. But MSW charging definitely requires a system that could be more complex and might affect a wider group of stakeholders. Internationally, there are examples of partial charging (see paragraphs 4.8 and 4.9). In Hong Kong, there are benefits of first imposing the charge on the disposal of C&I waste as we have just discussed in paragraph 7.5 above. This is however subject to the community consensus in Question 1 on the need to introduce MSW charging in Hong Kong, and also the public acceptance of the potential drawbacks as discussed in paragraph 7.6. At this stage, the Government would like to hear the public's views on the pros and cons of a partial charging system.

**Question 3: Should Hong Kong go for a Quantity-based system, a Proxy system or a Fixed Charge system?**

**7.12** This question essentially involves with a trade-off between operational challenges and waste reduction benefits. A Quantity-based system could provide a strong economic incentive to reduce waste through a direct link between the amount of waste that is generated and the cost to be paid for the disposal of such waste. But such a system could be difficult to administer and enforce. Either a Proxy or Fixed Charge system could be more easily implemented. But the effectiveness in waste reduction could as a result be discounted in view of a weakened link between the charge and the quantity of waste being generated. Our detailed analysis is contained in Chapter 4.

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<sup>8</sup> As an illustration, at an enhanced waste recovery target of 55%, it is estimated that about 8 500 tpd of MSW (after recovery) would require treatment. With one Integrated Waste Management Facility (at the capacity of 3 000 tpd) and one Organic Waste Treatment Facility (at the capacity of 200 tpd), it is estimated that 5 300 tpd of MSW would require landfill disposal.

If MSW charging and other waste reduction measures could achieve reduction of domestic waste disposal in Hong Kong from the current 0.87 kg per person per day to about 0.40 kg per person per day (i.e. more or less the disposal rate of Taipei City and Seoul), the estimated amount of MSW requiring treatment would be reduced to about 5 800 tpd. The estimated amount of MSW requiring landfill disposal would correspondingly be reduced to 2 600 tpd once the above treatment facilities are in place.



**Question 4: Are you prepared to change your behaviour in waste disposal if an MSW charging system is introduced?**

**7.13** Reduction of waste at source is all about a “think before you throw” attitude and putting this attitude into practice. The MSW charging system in Taipei City and Seoul would not have been successful if the people there did not comply or simply chose to fly-tip. Take Taipei City as an illustration. If we are to implement a similar system, Hong Kong people would have to queue up to hand over MSW to designated collectors at designated hours and venues. They have to wrap MSW in designated garbage bags which would not otherwise be collected. Would our community support having to buy designated garbage bags for their waste? To what extent would our community accept the practice of collecting MSW at designated hours and venues for the purpose of putting in place a similar charging mechanism in Hong Kong? We need to ascertain how the community views these changes.

**Question 5: Do you agree that the Government should introduce legislation to mandate the separation of waste at source and accordingly ban unauthorized disposal of MSW?**

**7.14** By a ban on unauthorized MSW disposal, we effectively refer to a mandatory source separation initiative. We have discussed the effectiveness of such a mandatory initiative in paragraphs 7.8 and 7.9. In general, mandatory source separation could work on its own or as a supplementary measure to MSW charging to drive the requisite behavioural change to achieve enhanced waste reduction. Our analysis is that it is not infeasible to implement mandatory source separation independent of MSW charging. But in that case, our community would likely see a lower starting point for the compliance rate. Publicity and public education could drive the compliance rate up, albeit through a longer process. On the whole, the way forward on MSW charging would have bearing on our position in respect of mandatory source separation; therefore we also welcome the community’s views on mandatory source separation in this exercise.

- 8.1** Hong Kong is facing an imminent waste management problem. The Government is committed to promoting waste avoidance and minimization as an integral part of our multi-pronged waste management strategy and has revised upward the MSW recovery target (from 52% now) to 55% by 2015. This will be achieved by stepping up publicity and promotional efforts on waste reduction and recycling. Yet, significantly, raising our waste recovery rate further will not be possible in the absence of major economic incentives such as MSW charging. At the same time, internationally there is no one-size-fits-all approach to implementing MSW charging; individual jurisdictions adopt their own preferred approach depending on what works best within their circumstances.
- 8.2** In the context of Hong Kong, our unique city fabric and the way our MSW is collected pose significant challenges in putting in place a practicable MSW charging scheme. Irrespective of which charging approach to adopt, some costs would inevitably be incurred. Our society should deliberate in the full context of the pros and cons of these options and collectively decide the proper way forward after balancing the relevant costs and benefits.
- 8.3** This Public Consultation will last for three months starting from **10 January 2012 (Tuesday)**. We wish to listen to views from stakeholders and members of the public on a number of specific issues as follows –
- (a) **Question 1:** Does Hong Kong need to introduce MSW charging?
  - (b) **Question 2:** Should Hong Kong go for a waste charging system for all sectors or a partial charging system?
  - (c) **Question 3:** Should Hong Kong go for a Quantity-based system, a Proxy system or a Fixed Charge system?
  - (d) **Question 4:** Are you prepared to change your behaviour in waste disposal if an MSW charging system is introduced?
  - (e) **Question 5:** Do you agree that the Government should introduce legislation to mandate the separation of waste at source and accordingly ban unauthorized disposal of MSW?

- 8.4** We aim to take into account the outcome of this Public Consultation and draw up the recommended way forward as soon as possible within 2012.

## When and How to Respond

- 8.5** MSW charging is a strategic issue that requires input from different stakeholders in the community. From now until **10 April 2012 (Tuesday)**, we will accept submissions from stakeholders and members of the public, which could be sent to us by post, email or facsimile. Details are as follows –

By Post: Environmental Protection Department  
Waste Management Policy Division  
Room 4522, 45<sup>th</sup> Floor, Revenue Tower  
5 Gloucester Road, Wanchai  
Hong Kong

By Email: [mswcharging@epd.gov.hk](mailto:mswcharging@epd.gov.hk)

By Facsimile: 2318 1877

For the ease of responding to this Public Consultation and to facilitate subsequent analysis, a standard response form is provided at [Annex D](#).

- 8.6** The Government may wish, either in discussion with others or in any subsequent report, whether privately or publicly, to be able to refer to and attribute views submitted in your response. Any request to treat all or part of a response in confidence will be respected, but if no such request is made, it will be assumed that the response is not intended to be confidential.

## Summary of MSW Charging in Selected Jurisdictions

Charging Approach	Jurisdiction and Scope	Charging Details
Quantity-based - Designated garbage bags	Taipei City (Domestic and small commercial)	<p>The use of designated bags (3 to 120 litres) to dispose of MSW is compulsory. The cost is about NTD 0.45 (HKD 0.12) per litre.</p> <p>The authority requires citizens to hand over the designated bags to the municipal waste collection fleet at designated hours and venues. Only MSW contained in designated bags will be accepted.</p> <p>The authority allows the use of non-designated bags within a multi-storey building before it is repackaged in a bigger designated bag by cleaners. This is to ease enforcement against non-compliance within multi-storey buildings.</p>
	Seoul (Domestic and small commercial)	<p>The use of designated bags (2 to 100 litres) to dispose of MSW is compulsory, costing about KRW 16.50 (HKD 0.11) per litre.</p> <p>Compliance checks rely on mutual surveillance by households. Successful reports will be awarded a maximum sum of 80% of the total fine. In suburban areas, instead of using designated bags, the waste charge is levied on the whole community and shared by each household. This is a compromise against illegal dumping.</p>
	Western peripheral Cities of Metropolitan Tokyo (Domestic)	<p>19 out of the 26 peripheral Cities of Metropolitan Tokyo (e.g. Hachioji 八王子市) required households to purchase designated bags, costing about JPY 1.00-1.80 (HKD 0.10-0.18) per litre depending on the district.</p>
Quantity-based - Gate fee	Singapore (C&I)	<p>In Singapore, C&amp;I waste delivered to public disposal facilities is charged with gate fees ranging from SGD 77-81 (HKD 461-485) per tonne, depending on the location of the facilities.</p>

Charging Approach	Jurisdiction and Scope	Charging Details
Proxy	Majority of municipalities in Taiwan (Domestic and small commercial)	Most municipalities of Taiwan (except Taipei City, New Taipei City and Shihkang 石岡) adopt water consumption as a proxy to determine the waste charge (subject to regional variance). The charge ranges from NTD 1.85-4.40 (HKD 0.47 -1.13) per m <sup>3</sup> of water consumed.
Fixed Charge	Singapore (Domestic)	Households are subject to monthly fixed charges with regional variance (SGD 4.31-7.35 / HKD 26-44). The charges are collected by public waste collectors engaged by the government for the nine districts in Singapore.
	Beijing (Domestic)	A fixed charge of RMB 3.00 (HKD 3.67) per household per month. For non-locals, RMB 2.00 (HKD 2.44) per head per month.
	Guangzhou (Domestic)	A fixed charge of RMB 5.00 (HKD 6.11) per household per month. For non-locals, RMB 1.00 (HKD 1.22) per head per month.

Note:

1. Exchange rates as at 29 November 2011.
2. Notwithstanding the above charging cases, some major international cities have not implemented MSW charging in respect of domestic waste –
  - (a) Central special Wards of Metropolitan Tokyo: In the 23 special Wards (e.g. Shinjuku 新宿區) where multi-storey buildings predominate, there is no domestic waste charging system. Households must separate their waste into combustible waste and non-combustible waste before putting it into containers with lids, transparent bags or designated bags. Waste will not be collected by the authority if not properly separated.
  - (b) New York City: There is no direct charge for waste collection and disposal for domestic premises in New York City. The “Pay-As-You-Throw” scheme was considered in the early 2000s but has not been implemented due to non-compliance and enforcement concerns among the preponderance of multi-unit buildings in New York City.
  - (c) London: There is no specific waste charge and the domestic waste services are financed by the council tax.
  - (d) Shanghai: There is no official charge for domestic waste collection and disposal. The Shanghai government is exploring the issue.

# City Characteristics of Hong Kong: Some Quick Facts

## Highly Populated

- *Around 7 million people, 2.3 million households in 1 104 square kilometres (only 25% of land is developed).*
- *Population density ranges from 838 people per square kilometre (Islands District) to 52 742 people per square kilometre (Kwun Tong District).*

## Predominated by High-Rise Buildings

- *Around 67 000 residential buildings in total, including:*
  - *some 34 000 residential blocks (including 13 000 single block buildings, SBBs).*
  - *some 33 000 blocks of village housing.*
- *88% of households live in buildings over 10-storeys.*
- *95% of households live in buildings over 3-storeys.*

## Good but Not Comprehensive Coverage of Property Management

- *6% of households live in buildings without PMO, mainly in SBBs and village housing:*
  - *among the SBBs, 14% of households are without a PMO, mainly in low-rise SBBs.*
  - *among village houses, 89% of households are without a PMO.*
- *Around 320 000 C&I establishments are mainly located in:*
  - *Some 4 000 pure C&I buildings.*
  - *Some 11 000 composite buildings.*

## Generic MSW Charging Approaches in Different Jurisdictions

- Taiwan:** All municipalities in Taiwan implemented a Proxy system based on the “water fee” in 1991 (this switched to “water consumption” in 1994). Different municipalities have their own rates calculated based on waste management costs. Starting from 2000, some municipalities including Taipei City switched to per-bag waste charging. At the end of 2010, the per-bag waste charging was extended to New Taipei City. Still, per-bag waste charging is applied to only 28.2% of Taiwan’s population and a proxy system continues to be implemented in such places as Kaohsiung.
- South Korea:** In South Korea, the central government has a national waste management plan and provides relevant technical and financial support to local governments. Local municipalities have a responsibility to develop and operate their own waste management systems. In 1995, a national MSW charge through a designated garbage bag requirement was implemented in South Korea to replace the conventional fixed charge system. Each municipality sets their own bag rates and designs a system that best fit their unique situation. In rural areas, where houses are scattered and illegal dumping is common, residents are not required to use designated bags. Instead, community waste collection bins are installed and the waste charge is levied on the whole community and shared by each household.
- United States:** In the United States, the federal Environmental Protection Agency has for decades advocated PAYT but among the major cities, some 70% are still non-PAYT communities. Those that are PAYT communities tend to be smaller cities with an average population of 385 000. A hybrid system is the most common form of PAYT implemented in the United States, in which residents pay a basic fixed charge (which may or may not cover basic waste collection service) plus a PAYT component (e.g. bin size).

# Response Form

## Part I (Note)

This is a  corporate response (representing the views of a group or an organization),  
 private response (representing the views of an individual),

by

\_\_\_\_\_ (name of person or organization)

at

and

\_\_\_\_\_ (telephone)

\_\_\_\_\_ (email)

**Note:** *The Government may wish, either in discussion with others or in any subsequent report, whether privately or publicly, to be able to refer to and attribute views submitted in this response. Any request to treat all or part of a response in confidence will be respected, but if no such request is made, it will be assumed that the response is not intended to be confidential.*

## Part II

### Specific Questions for Consultation

**Q1: Does Hong Kong need to introduce MSW charging?**

- Hong Kong NEEDS to introduce MSW charging.
- Hong Kong DOES NOT NEED to introduce MSW charging.
- Other views (Please elaborate below).

Views: \_\_\_\_\_  
 \_\_\_\_\_

**Q2: Should Hong Kong go for a waste charging system for all sectors or a partial charging system?**

- Hong Kong should go for A WASTE CHARGING SYSTEM ON ALL SECTORS.
- Hong Kong should go for A PARTIAL CHARGING SYSTEM.
- Other views (Please elaborate below).

Views: \_\_\_\_\_  
 \_\_\_\_\_

**Q3: Should Hong Kong go for a Quantity-based system, a Proxy system or a Fixed Charge system?**

- Hong Kong should go for A QUANTITY-BASED SYSTEM.
- Hong Kong should go for A PROXY SYSTEM.
- Hong Kong should go for A FIXED-CHARGE SYSTEM.
- Other views (Please elaborate below).

Views: \_\_\_\_\_  
 \_\_\_\_\_

**Q4: Are you prepared to change your behaviour in waste disposal if an MSW charging system is introduced?**

<i>Strongly unprepared</i>	<i>Unprepared</i>	<i>Neutral</i>	<i>Prepared</i>	<i>Strongly Prepared</i>

Views: \_\_\_\_\_  
 \_\_\_\_\_

**Q5: Do you agree that the Government should introduce legislation to mandate the separation of waste at source and accordingly ban unauthorized disposal of MSW?**

<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly agree</i>

Views: \_\_\_\_\_  
 \_\_\_\_\_





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「進一步減廢方案：廢物收費是否可行？」  
公眾諮詢回應表格

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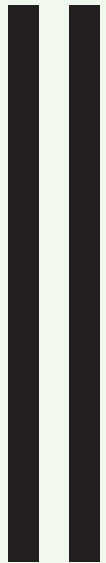
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Waste Management Policy Division

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