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ACE Paper 13/2012
For discussion on 10 December 2012

Waste Reduction Through Municipal Solid Waste Charging: Way Forward

INTRODUCTION

Earlier in 2012, we completed a public consultation on municipal solid waste[1] ("MSW") charging as an option to provide incentive for waste reduction. On the basis of the feedback received, the Government now proposes to affirm the direction of introducing quantity-based MSW charging in Hong Kong and on that basis proceed with a second-stage public engagement on the implementation details through the Council for Sustainable Development ("SDC"). This paper presents our detailed analysis and briefs Members on the way forward.

BACKGROUND

MSW Charging and Waste Reduction

2. MSW charging is a policy tool to encourage waste reduction at source and has been adopted in many cities, though through different charging approaches with reference to waste quantity, a proxy or a fixed charge. Practical experience shows that the effectiveness of these charging approaches differs from one to another; the same applies to the complementary measures required at the community level. In the Chief Executive's Manifesto, it was pledged that the Government will "subject to public consultation, introduce a waste charging scheme".

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[1] There are three sources of MSW in Hong Kong: (i) domestic solid waste, which comes from households and public areas; (ii) commercial solid waste, which comes from shops, restaurants, hotels, offices and markets in private housing estates and (iii) industrial solid waste, which is generated by all industries, but does not include construction and demolition waste, chemical waste or other special waste.

3. Quantity-based MSW charging could create financial incentive if successfully implemented to drive the necessary changes in the public's waste-generating behaviour thus achieving significant waste reduction benefits. As an indication, we note that MSW disposal dropped by about 30% in the initial period in Taipei City and Seoul due to both reduced generation and enhanced recycling after putting in place a quantity-based charging system. With appropriate measures to sustain the impact, there might also be scope to go further in a longer run.

The Public Consultation in 2012

4. That said, the implementation of MSW charging would carry far-reaching implications. The public consultation was intended to engage the community and relevant stakeholders to deliberate the issues pertaining to MSW charging and to explore appropriate solutions. An outline of the public consultation process was set out at **Annex A**. On the whole, there was majority support within the community for the introduction of quantity-based MSW charging as a policy tool to promote waste reduction and recovery. For instance, of the written submissions, 63% indicated support to the introduction of MSW charging in Hong Kong; 57% favoured a quantity-based system in case charging is implemented. On the coverage of MSW charging, 43% of the written submissions supported charging all MSW producers; a telephone survey further revealed that 67% of the respondents supported a phased approach in achieving ultimately a universal coverage. When consulted, the Advisory Council on the Environment ("ACE") advised that consideration could be given to adopting a phased implementation of quantity-based MSW charging in specific sectors first and extending the charging to other sectors to ensure a smooth implementation of the new initiative.

5. Views were fairly mixed when it came to the implementation details, particularly in the case of domestic waste charging. Some stakeholders were optimistic about adapting Taipei City's charging system in the Hong Kong context; others tended to be more cautious expressing concerns about fly-tipping and other compliance issues leading to deterioration in environmental hygiene as well as a fair amount of inconvenience compromising the hitherto efficient (and largely out-of-sight) MSW collection/disposal system. As MSW charging is expected to result in more recyclables being recovered from the waste stream, some stakeholders were concerned about the inadequate support to the local recycling industries and urged for territory-wide logistics support in providing convenient and efficient services for the collection of recyclables. In addition, there were strong calls for expedited actions on the mandatory producer responsibility scheme ("PRS") on glass beverage bottles and enhanced management of food waste. More generally, it was widely shared that continued publicity and public education should

remain key to induce behavioural change.

6. There was active discussion about the specific level of the waste charge (though not being a subject of the public consultation) and the need of relief measures to help the needy to cope with the potential financial impact. Suggestions included prescription of a minimum disposal allowance (free of charge) and provision of free garbage bags (assuming the implementation of a designated garbage bag system) to needy households. There were also comments arguing that the Government has been charging domestic households for MSW collection through Government rates which should be correspondingly adjusted downwards with the introduction of a new MSW charge.

IMPLEMENTATION OF MSW CHARGING IN HONG KONG

Quantity-based Charging as the Broad Direction

7. The primary objective of MSW charging is to encourage waste reduction through the financial incentive of the MSW charge, which would be most effective if closely linked to the quantity of waste that one generates. A quantity-based system is therefore preferred from an environmental point of view. Now the public consultation also reveals majority support that there should be a quantity-based MSW charging system in Hong Kong (cf. paragraph 4), we ***propose*** to affirm this approach as our broad direction in pursuing the initiative.

Need for Further Public Engagement

8. For the charging mechanism itself, the mixed feedback from the public consultation on the implementation details strongly suggests that we should conduct further public engagement to gauge views from the community. In this regard, the concern on potential fly-tipping and thus impact on environmental hygiene and public health should not be taken lightly. As explained during the public consultation, New York City also deliberated extensively back in the 2000s but made the conscious decision of not to implement quantity-based MSW charging. The city government's explanation for the policy is as follows[2] –

> *User fees are difficult to institute in cities, like New York, where refuse and recycling is funded through general tax revenues. In such cities, residents don't pay directly for trash and recycling collection so therefore perceive of this as a "free" service provided by the city. NYC's preponderance of multi-unit housing also creates obstacles to the implementation of a QBUF [quantity-based user fee] system. Unlike municipalities in which single- and two-family homes predominate, 60% of*

[2] Source: "Why NYC Doesn't Charge for Trash Collection", URL: <http://www.nyc.gov/html/nycwasteless/html/recycling/payt.shtml>.

NYC's housing stock is multi-unit. In apartment buildings, it is generally impossible to enforce waste-related regulation at the tenant level, as waste is deposited, often through chutes, into a common area.

It is obvious that Hong Kong shares fairly similar operational challenges with New York City given our city characteristics (cf. **Annex B**). The characteristics of Taipei City are rather different from Hong Kong, as it has a smaller population with much lower population density and concentration of multi-storey buildings. It is relevant to note that Taipei City used to charge for MSW collection through a proxy system based on water consumption, which might have facilitated the shifting to a quantity-based MSW charging system. On the contrary, the service has been free of charge in both New York City and Hong Kong.

9. On the other hand, there is a case for us to ride on the growing green awareness within our community and aim for a feasible charging mechanism which would be precedent-setting in a metropolitan setting internationally. To make this happen, we ***propose*** to conduct a second-stage public engagement aiming to gauge the community view and foster in-depth, open and cross sector discussion on this important issue which affects all households and C&I operators. To this end, we consider that solid waste management is very fundamental to the sustainable development of an international city and MSW charging is an effective policy tool for sustainable waste management. Also given that the successful implementation of MSW charging would require changes to both the existing systems and individual behaviours, the SDC's public engagement process would provide the mechanism and platform for us to consolidate the community's consensus on what changes might be required and how such changes should be accomplished. The SDC has kindly accepted our invitation and adopted MSW charging as the subject of its next public engagement process.

Issues for Public Engagement

10. During the second-stage public engagement, we would extensively engage relevant stakeholders (including government departments, green groups, chambers of commerce and other trade organizations in areas such as property management, waste collection, recycling and disposal as well as cleansing services) and general members of the public through a series of engagement activities to facilitate the community in reaching consensus on certain fundamental principles which will have a bearing on the formulation of the quantity-based charging system. Subject to the SDC, such issues might include –

(a) whether the public is prepared to accept the reduced convenience in MSW disposal and the risk of degradation in environmental hygiene as well as public health that might arise from the potential increase in fly-tipping[3] and reduced provision of refuse collection points ("RCPs") and public litter bins when charging is implemented;

[3] Generally, fly-tipping refers to the dumping of waste at unauthorised places.

(b) whether we should go for a volume-based system under which MSW not properly wrapped in pre-paid designated garbage bags will be denied for collection, including at RCPs, or a weight-based gate-fee system at the waste disposal facilities such as landfills, refuse transfer stations ("RTSs") and future facilities like incinerators, or a hybrid system of both;

(c) whether charging should apply across-the-board to all domestic and C&I wastes in one go or by phases; and

(d) the principles in determining the level of the MSW charge, and the need of relief measures.

Implications of a Quantity-Based MSW Charging System

11. The current MSW collection system, with the co-existence of both public and private services, operates to ensure the speedy and efficient removal of waste to preserve environmental hygiene under the "Keep Hong Kong Clean" mindset. Implementation of MSW charging would effectively require the MSW collection system to serve an additional objective of promoting waste reduction and recycling, which would require adjustments involving all players who have to change their established mindset and/or daily routine in MSW collection/disposal. Such adjustments could be significant and might result in potential lowering of the service quality in terms of convenience and efficiency, as well as the cleanliness of our environment. Before proceeding to the implementation stage and working out the specific operational details, we need the community to be adequately aware of the trade-offs and fully articulate the wide range of pros and cons of the Taipei City model (see **Annex C**) in particular the volume-based MSW charging system applied to domestic waste.

12. A major factor for the success of the Taipei City model is mandating MSW disposal at designated times and venues to help ensure compliance. In Taipei City, they have also extensively closed RCPs and withdrawn public litter bins so as to combat fly-tipping. In Hong Kong, requiring individual households to dump their own waste according to a particular schedule could be seen as too rigid. Collecting MSW only at street level might also cause severe practical problems (including for example traffic impact) particularly in the more densely populated areas where MSW disposal by households at street level would take very long time to complete. The public might also find it difficult to accept the notion of closing all RCPs and removing most or even all litter containers on the streets in view of the perceived implications on environmental hygiene and public health.

13. As a general illustration, Taipei City achieved a compliance rate of over 99.5% in the first year of implementation which is very high. On the basis of the daily MSW disposal through Food and Environmental Hygiene Department ("FEHD"), a fly-tipping problem of similar magnitude could result in about 27 tonne per day ("tpd") of MSW being dumped illegally across the territory, perhaps more vulnerable in areas with old residential buildings having no property

management agents and village houses in the New Territories. That could be roughly translated into some 200 fully loaded 660L refuse bins[4]. From a public health perspective, fly-tipping of MSW without proper management may potentially cause accumulation of uncovered or improperly sealed MSW which may result in infestation of rodents and other pests such as flies and cockroaches and increase the risk of spread of infectious diseases, which is of particular concern given Hong Kong's hot and humid weather condition.

14. In this part of the public engagement, we need to determine the community's "tolerance" level and on that basis devise a detailed implementation scheme that is suitable in the Hong Kong context taking into account also the community's feedback on the other issues referred to in paragraphs 10(b) and 10(c).

The Charging Mechanism and Need of Phased Implementation

15. The Taipei City model is a "hybrid" approach under which a gate fee system operates in parallel with the pre-paid designated garbage bag charging system. More specifically, in line with international practice and as in Hong Kong, C&I waste producers (other than small commercial establishments) in Taipei City are responsible for handling their own waste through engaging private waste collectors. A weight-based gate fee applies when C&I waste is delivered to the waste disposal facilities. Adapting from Taipei City's experience, one option is for us to introduce a pre-paid designated garbage bag system and an MSW gate fee as parallel charging systems. This would mean in practice –

(a) In its collection services and at RCPs under its management, FEHD and its contractors would be authorised by law to accept only domestic waste that is properly wrapped in pre-paid designated garbage bags. It is however up to individual waste producers to comply either by wrapping waste using designated bags of regular sizes, or defer to the coordination of the property management agents or garbage collectors who would use larger designated bags for wrapping of MSW on a whole-building basis.

(b) MSW disposal at landfills and RTSs, which are arranged through a private waste collector, would be levied at the respective reception facilities.

16. An alternative is a phased approach, say starting with the C&I sector and then incrementally dealing with the domestic sector. This alternative was found generally acceptable during the public consultation with the community acknowledging the complexities involved in domestic waste charging. But fairness would be a major counter-argument against a phased approach. On the one hand, C&I waste accounts for only one-third of our MSW disposal, while the recovery rate in the C&I sector has been consistently higher having exceeded 60%.

[4] On the basis of the bulk MSW density of 0.2 kg/litre as adopted by Taipei City for determining the unit rate by volume of their designated garbage bags.

There would be pressure for more comprehensive plans in respect of when and how to extend MSW charging to domestic households so that all MSW producers could be subject to charge ultimately. On the other hand, C&I waste is often mixed with domestic waste particularly in composite buildings[5] (i.e. domestic and commercial premises housed within the same building) and there is no practical way to easily distinguish the waste source. It is relatively easy to disguise C&I waste as domestic waste to circumvent the charging system which would be difficult to guard against and enforce. Having said that, a phased approach could allow the flexibility to first put in place MSW charging in those sectors where implementation of such charging is more feasible.

17. In this part of the public engagement, we need to gauge the community's views on (i) whether different charging systems could apply to MSW from different sources and (ii) if affirmative what should be applied to what. We will also need to reaffirm the community's preference for a phased implementation and accordingly gauge views on how the line is drawn (for instance in the cases of street-level shops or composite buildings).

Principles in Determining the MSW Charge

18. Although the level at which the MSW charge should pitch has not been a subject of the earlier public consultation, various stakeholders have expressed views and the community is keen to know the Government's position at an early opportunity. To this, in line with the Government's general charging policy, the MSW charge should be commensurate with the "polluter pays" principle though the specific level of charge should be determined taking into account a basket of relevant factors. And with the aim to promote waste reduction, the MSW charge should be pitched at a meaningful level that could trigger behavioural change. We notice that in several cities (including Taipei City and Seoul) where MSW charging has been successfully implemented through a designated garbage bag system, the retail price for a designated garbage bag converges at the region of $0.1 per litre. On the basis of the bulk MSW density of 0.2 kg/litre as adopted by Taipei City for determining the unit rate by volume of their designated garbage bags, this volume-based charge could be represented on a weight basis at $500 per tonne.

19. The exact level of the MSW charge however would need to be determined in the light of wider considerations given the objective of MSW charging is to provide economic incentive to reduce waste disposal but is **not** aimed merely for the recovery of cost. But on the whole, we consider the indicative level and the principles of discouraging waste disposal and differential charging to encouraging source separation and recycling mentioned above are a good starting point for more focused deliberations on the suitable level of charge in Hong Kong during the second-stage public engagement. As an illustration, at a price of $0.1 per litre, MSW charging would incur an expenditure of about $40 per month for a typical three-member household assuming the current disposal level at 0.87 kg/person/day.

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[5] We have some 11,000 such composite buildings in Hong Kong.

20. Certainly, savings could however be achieved with enhanced recycling and waste reduction at home. For instance, we note that MSW disposal dropped by about 30% in the initial period in Taipei City and Seoul due to both reduced generation and enhanced recycling after putting in place a quantity-based charging system. If a similar reduction rate is achieved in Hong Kong with progressive implementation of PRS initiatives, strengthened recycling support and other efforts on waste reduction, the MSW charge payable by a typical three-member household could be reduced to about $30 per month. After all, the actual MSW charge incurred by MSW producers would depend on how far they reduce waste and recycle in response to the charging initiative.

21. In this part of the public engagement, we would seek to consolidate the community's consensus on the charging principle. On the one hand the MSW charge should be consistent with "polluter pays" and should be sufficient to trigger behavioural changes for waste reduction. On the other hand it should not be seen as revenue-generating or merely serving a cost-recovery purpose. With reference to an indicative charge and the engagement response, we would also seek to explore the feasibility of different mechanisms for relief measures.

22. In addition to the above, implementation of MSW charging could potentially generate revenue and reduce the volume of MSW to be disposed of and thus the cost associated with the disposal of MSW. On the other hand, there will be major operational changes to RCPs and waste disposal facilities to support the implementation of a quantity-based MSW charging system, such as modifications to the facilities to weigh the incoming MSW and additional staff to check compliance of the system before accepting the MSW. The community at large should be engaged in an informed discussion of the cost-benefits perspectives which would be taken into account in determining the ultimate implementation scheme.

23. For the avoidance of doubts, MSW charging now being discussed does not apply to domestic bulky waste which is now accepted at RCPs for FEHD's collection and ultimately disposal at landfills at no charge. In 2011, the disposal of domestic bulky waste at landfills was about 480 tpd accounting for 9% of the total daily domestic waste disposal. It comprises mainly durable household items such as mattresses and furniture. Since the handling of bulky waste is significantly different given its size, we would defer in-depth consideration of the need of charging until we have put in place a charging mechanism for MSW in general. This is in line with the practice in Taipei City where the disposal of bulky waste is free of charge.

Mandatory Source Separation

24. As revealed from the public consultation, there was majority support in favour of new legislation to mandate the separation of recyclables at source out of the waste stream, i.e. mandatory source separation. As a matter of principle, recyclables should not be mixed with waste for disposal but should be properly segregated for reuse or recovery. Our voluntary source separation programmes

have laid down solid foundation for potentially a mandatory measure. But in practice, mandating source separation on a territory-wide scale will probably require enforcement through extensive surveillance which is very challenging and the tracing of the sources of MSW will be involved. Checking the contents of MSW will also lead to considerable privacy concerns. Our current priority is to put in place MSW charging in Hong Kong (which was implemented in advance of mandatory source separation in both Taipei City and Seoul). In our assessment, mandating MSW charging will create the necessary incentive to source separate wastes for recycling. Introducing mandatory source separation concurrently with MSW charging will therefore substantially delay the implementation timetable of the latter. We would however review from time to time the readiness of mandatory source separation in Hong Kong, either on a territory-wide or sectoral basis.

OTHER OPTIONS

25. Our proposal entails quantity-based MSW charging system which according to overseas experience is more effective than the other charging mechanisms that have been ruled out, i.e. a ***proxy*** system by which the MSW charge on each MSW producer is linked to an indirect indicator (such as water consumption) that in practice might not necessarily reflect the actual quantity of waste that one disposes of; and (ii) a ***fixed charge*** system under which there is a fixed charge for each MSW producer within the same category (e.g. residents of the same district), regardless of the waste quantity that individual MSW producer produces.

26. The option of a ***partial charging*** system in effect represents a phased approach by sectors through which the waste charge only applies to a defined group of waste producers, say those in the C&I sector before we seek to fully extend to all MSW producers. Through the second-stage public engagement we would listen to views as to whether or not to go for phased implementation.

COMPLEMENTARY MEASURES

27. With the growing community demand for support measures to assist waste recovery and recycling, we have already amended the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations (Cap.123H) 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. Over time, there would be increasingly more domestic buildings equipped with floor-based recycling facilities which would encourage public participation in the separation of waste at source. In line with the Government's "reduction first" waste management strategy and in support of the future implementation of MSW charging, we plan to roll out a number of measures to encourage the recovery of recyclable materials from the waste stream which will also assist the development of the recycling industries.

Progressive Implementation of PRSs

28. Amongst other things, as a key policy tool and economic means in promoting waste reduction at source, PRSs act as a constant reminder to businesses and members of the public their share of eco-responsibility. At this stage, we are preparing the legislative proposals in respect of the extension of the Environmental Levy Scheme on Plastic Shopping Bags as well as the new scheme on waste electrical and electronic equipment ("WEEE"); once ready, they would be introduced into the LegCo as soon as practicable. In addition, we have been promoting and supporting the various trade-led voluntary recycling programmes covering computers, fluorescent lamps, glass containers and rechargeable batteries. Through the funding support from the Environment and Conservation Fund ("ECF"), a number of voluntary recycling programmes on glass container recycling are in operation. These schemes have achieved notable results in recovering used items for recycling. Looking ahead, we would continue to expedite the progressive implementation of PRSs, with priority accorded to glass containers.

Enhanced Support to Recycling

29. As the practical experience from the various voluntary recycling programmes could tell, high logistics cost is one of the key impediments to collection of recyclables and thus further enhancement of our recovery rate as well as further growth of our recycling industry. To this end, we appreciate that facilities at local community level to collect recyclables of low economic values, e.g. waste plastics, glass and small WEEE items could go a long way to facilitate waste reduction, as otherwise they will be left in the waste stream. As a demonstration of the Government's commitment to the "reduction first" waste management strategy, we are exploring possible pilot initiatives to provide visible and well-managed facilities where members of the community can deposit their recyclables for appropriate recycling. Such facilities might also undertake wider functions such as (i) reaching out to the community for the collection of recyclables where services by private recycling operators are unavailable and (ii) conducting on-site or out-reaching publicity and public education programmes for different target groups to encourage behavioural change on waste reduction and recycling. Meanwhile we would continue to promote the existing source separation programmes, extend the Community Recycling Network and implement other measures to promote the separation of waste at source. Please see **Annex D** for details.

30. In addition, the 20-ha EcoPark in Tuen Mun provides long term land at affordable costs for the local environmental and recycling industries. It adds impetus to the development of the recycling industry with value-added processes in Hong Kong. Developed in two phases and let to private recyclers, the EcoPark is now housing 12 recycling operations for waste cooking oil, waste metals, waste wood, waste plastics, waste batteries, waste construction materials / waste glass, WEEE and waste rubber tyres. Besides, the Government has supported two non-profit organizations through subsidy from the ECF to run waste recycling

centres for waste plastics and WEEE in EcoPark Phase 2.

Enhanced Food Waste Management

31. Tackling the food waste problem is also one of the priorities of the Government's waste management strategy. We have all along adopted a multi-pronged approach to tackle the problem, emphasizing avoidance and reduction of food waste. To this end, the Government has announced the launch of a food waste reduction campaign, namely "Food Wise Hong Kong", and the setting up of a steering committee under the leadership of the Secretary for the Environment to formulate and oversee the implementation of food waste reduction strategies. In parallel, the Government would continue with the existing efforts in promoting food waste reduction and source separation of inevitable food waste for recycling through partnerships and ECF funding schemes. We are also planning to introduce advanced treatment facilities to turn organic waste into reusable resources.

32. Apart from the above, the Government recognizes the importance of public support and participation. We will continue to promote and support public engagement, through the ECF, to give new impetus to environmental education and research, including those on waste reduction and recovery. The Environmental Campaign Committee ("ECC") will also continue its partnership with District Councils and non-governmental organisations in promoting waste reduction and recycling initiatives, and low-carbon lifestyle.

WAY FORWARD AND ADVICE SOUGHT

33. Members are invited to offer views and comments on the foregoing. Subject to Members' advice, we would provide necessary support to the SDC for the conduct of the second-stage public engagement. In parallel, we would develop the relevant complementary measures.

Environment Bureau / Environmental Protection Department
December 2012

Annex A

Outline of the Public Consultation Process

We conducted a public consultation between January and April 2012, aiming to engage the community and relevant stakeholders to adequately deliberate the issues pertaining to MSW charging and to explore appropriate solutions. We presented the four broad charging approaches generalized from relevant overseas experience (viz. a Quantity-based system, a Proxy system, a Fixed Charge system and a Partial Charging system). While maintaining an open position without tying to any specific charging option, we invited stakeholders and members of the public to offer views to the following questions –

(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?*

2. During the public consultation, we briefed and listened to views from the LegCo Panel on Environmental Affairs, 12 District Councils and relevant boards and committees including the Advisory Council on the Environment, the Council for Sustainable Development and the Business Facilitation Advisory Committee. We attended 13 meeting sessions, having met seven other organisations and stakeholder groups. At the community level, we organized a public forum with an audience of about 80 persons and four sessions of community-level focus group discussions. The subject matter was also included in the Public Affairs Forum managed by the Home Affairs Bureau for collating views. Lastly, we conducted a telephone survey towards the end of the consultation period. By the end of the public consultation, we received over 2,300 written submissions.

Annex B

Challenges for Implementing MSW Charging in Hong Kong

(a) Unique multi-storey and multi-tenant building setting with mix of domestic and C&I occupants

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

(b) Space constraints for storing waste in buildings

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 through refuse chutes. In addition, there is very little door-to-door collection. Both add to the difficulties in tracing waste to its source.

(c) Absence of property management in some buildings

Property management could play a coordinating role in organising waste disposal activities and administering (including monitoring) the compliance of a waste charging scheme. While over 90% households are living in properties with management, 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.

(d) Mix of private and public waste collection

FEHD collects some 85% of domestic waste. Private waste collectors collect mainly C&I waste and a small portion of domestic waste. Some garbage men collect both domestic and C&I waste especially in buildings without management. Any charging scheme will need to consider how to administer charges involving different collection groups.

(e) RCPs and public litter bins

There are over 3,000 RCPs mostly unmanned and over 20,000 public litter bins in Hong Kong which could become potential loopholes 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, withdrawal of RCPs and public litter bins could cause serious environmental hygiene concern and should only be implemented after due consideration of the social implications, particularly until the community support for MSW charging is consolidated and the public generally displays the behaviour of "bringing the trash home for disposal".

Annex C

The Taipei City Model

Taipei City adopts a "hybrid" system of a volume-based MSW charging through requiring all domestic waste to be wrapped in pre-paid designated garbage bags, and a weight-based charging for C&I waste through gate-fees at waste disposal facilities. To complement the charging system, a policy of "Keep Trash Off The Ground" is implemented, under which no MSW could be left unattended on kerbside or the conventional RCPs so as to encourage reduction in waste generation as well as better recycling. Specifically, the Taipei City model for domestic waste involves the following:

(a) MSW generated from domestic households and small commercial establishments has to be handed over to the municipal waste collection fleet in pre-paid designated garbage bags at designated times and venues. Members of the collection fleet are duly authorised such that MSW not contained in designated garbage bags could be rejected[6].

(b) Notwithstanding (a), households in multi-storey buildings could continue to use ordinary garbage bags provided that arrangements have been made for all MSW generated by households in the same building (wrapped in ordinary garbage bags) would be bundled together and put into large designated bags by cleansing service operators for collection by the municipal service at designated times and venues.

[6] In Taipei City, mandatory separation of waste at source has been implemented. Therefore MSW not properly sorted would also be rejected.

Annex D

Measures to Promote Waste Reduction at Source

Source Separation of Waste Programmes

Launched in January 2005, the territory-wide Source Separation of Domestic Waste Programme aims at providing suitable recycling facilities for domestic waste at locations as close as possible to its sources of generation, and at the same time, broadening the types of recyclables to be recovered. It also encourages the community's participation in waste recovery and facilitates the provision of a reliable source of materials for the recycling industry.

2. As at end of October 2012, over 1,900 housing estates / residential buildings and 700 rural villages have signed up to join the SSW Programme. The Programme now covers over 80 per cent of Hong Kong's population. On the C&I side, we also have a Source Separation of Commercial and Industrial Waste Programme targeting C&I buildings. It now covers some 800 buildings including commercial and institutional buildings, industrial buildings, shopping arcades, warehouses and car parks. We will continue to recruit new buildings to join the two Programmes. With funding support from the ECF, the ECC has been providing newly designed waste separation bins to housing estates, C&I buildings, schools, as well as recyclable collection points at public places.

Community Recycling Network

3. On the success of the SSW Programmes, we are establishing a wider recycling network at the community level, i.e. the CRN. At present, the key components of the CRN include:

(a) 16 Community Recycling Centres funded by the ECF and operated by NGOs in 12 districts. These centres are located in rented shop units in old districts, providing waste-exchange service, collection of waste plastics from single-block buildings and baling of the collected waste plastics for bulk transport;

(b) 4 Community Recycling Booths operated once a week at busy locations at Cheung Chau and Lamma Island. Environmental Protection Department ("EPD") promoters and volunteers carry out extensive face-to-face promotion and souvenirs are offered to the public visiting the booths;

(c) 21 NGO Collection Points set up in the premises of participating NGOs, with promotion information and souvenirs/commodities given to participants who bring recyclables to the collection points;

(d) over 290 primary and secondary schools joined a school environmental awareness campaign. The campaign aims to enhance students' awareness on waste reduction and proper recycling of unavoidable waste;

(e) over 180 public rental housing estates where waste-commodities-exchange booths are held regularly to collect recyclables from residents; and

(f) the Material Transfer Centre set up at the Kowloon Bay Waste Recycling Centre which serves as a regional hub to transfer recyclable materials collected in the nearby community recycling centres to the EcoPark for further processing.

(g) a district-based collaboration programme organized by EPD, ECC, Home Affairs Department and 18 District Councils, to enhance community participation in environmental protection through environmental education, waste reduction, recycling and other promotion activities.

Other Measures

4. Apart from placing 3-coloured waste separation bins in public places, the Government has been distributing, via the ECC, newly designed waste separation bins on a free-of-charge basis to residential and C&I buildings upon request. As at end of October 2012, the ECC have received over 1,800 applications from housing estates and C&I buildings, and have given out more than 5,400 sets of bins.

5. For buildings that are suitable for installing waste separation facilities on each floor, the building owners' organizations can apply to the ECF for partial funding support to purchase and install waste separation facilities. Successful applicants receive a subsidy of 50% of the total cost, up to a maximum of $1,000 per building floor. As at end of October 2012, 113 housing estates have been awarded grants worth a total of $4.86 million.

6. Moreover, we have also sought the assistance from government departments with close interface with the public to promote reduction of waste at source. Besides implementing waste recycling initiatives at the venues managed, these departments also appeal to their venue users to practise waste reduction and recycling at the venues under their management.