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Panel on Environmental Affairs

Subcommittee on Refuse Collection and Resource Recovery

Background brief

Purpose

This paper provides background information on refuse collection and resource recovery in Hong Kong. It also gives a brief account of the major views and concerns expressed by Members when related issues were discussed by the relevant committees of the Legislative Council.

Background

Waste Collection

2. At present, about 85% of municipal solid waste ("MSW") from domestic sources is collected by Food and Environmental Hygiene Department ("FEHD") or its contractors for transfer to the landfills without any charges levied on the waste producers.¹ FEHD has a total of 157 permanent off-street public refuse collection points ("RCPs"), 574 village-type RCPs and some 2 200 bin sites. FEHD and its contractors operate 245 refuse collection vehicles, and collect refuse directly or through RCPs in the territory. The waste is then taken to refuse transfer stations

¹ MSW comprises solid waste from households, commercial and industrial sources. This excludes construction and demolition waste, chemical waste and other special waste. The domestic sources refer to residential and institutional premises such as schools.

("RTSs") or landfills,² which are managed by the Environmental Protection Department ("EPD").

3. Commercial and industrial ("C&I") establishments 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. 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 sectors such as street-level shops. Irrespective of how MSW is collected, no waste producer is currently charged for disposing of their MSW at landfills.

Litter containers

4. Two types of litter containers of 70 litres and 130 litres in capacity respectively are placed on streets by FEHD. In 2015, FEHD reviewed the distribution of litter containers on the streets and reduced the number of litter containers in various districts by about 15%. FEHD has also been introducing in batches newly designed litter containers from June 2016. The new designs include smaller openings for litter disposal and bigger warning notices affixed to the containers, so as to educate the public not to discard refuse at the side or on top of litter containers and to dispose of bagged refuse properly at RCPs.

Recycling bins

5. After launching of the Waste Reduction Framework Plan in 1998, the Government has placed three-colour waste separation bins (i.e. recycling bins) in various districts throughout the territory and encouraged the public to separate paper, plastics and metals from other waste for disposal. In 2005, EPD launched the territory-wide Programme on Source Separation of

² At present, there are three strategic landfills at Nim Wan, Tseung Kwan O and Ta Kwu Ling respectively, and seven RTSs in different areas in Hong Kong. RTSs are centralized collection points for the transfer of waste to landfills. The waste from smaller refuse collection trucks is compacted at RTSs and transferred into containers, which are loaded onto lorries or barges for delivery/shipment to landfills. A charge is payable by private waste collectors for MSW delivered to RTSs which was originally imposed to enable the Government to recover at least the marginal cost for handling the waste delivered there by the private waste collectors. Other than that, no charge is required for MSW disposed of at landfills. Separately, individual charging schemes are in place for the disposal of chemical waste, construction waste and clinical waste in Hong Kong.

Domestic Waste to provide additional waste separation facilities on each building floor and in other areas of housing estates to facilitate source separation of waste by residents and broaden the types of recyclables to be recovered. In 2007, EPD extended the Programme to cover C&I buildings.

6. FEHD hires a private contractor through outsourcing to collect waste from recycling bins placed at locations such as pavements, RCPs, public markets, bus terminals and venues managed by schools, the Water Supplies Department and EPD. For recycling bins placed at locations such as country parks, leisure and cultural facilities, public housing estates, government quarters and government office buildings, the maintenance and management are provided and paid for by the Agriculture, Fisheries and Conservation Department ("AFCD"), Leisure and Cultural Services Department ("LCSD"), Housing Department and property management companies of the government buildings respectively.

Municipal Solid Waste charging

7. The Administration published consultation document entitled "Strengthening Waste Reduction: Is Waste Charging an Option?" in January 2012 to consult the public on the introduction of MSW charging and alternative means of charging. According to the consultation findings, there was majority support within the community for the introduction of quantity-based MSW charging to promote waste reduction and recovery. The Administration aims to submit the relevant bill, i.e. Waste Disposal (Charging for Municipal Solid Waste Amendment) Bill, in the second half of the 2016-2017 legislative session.

8. To enhance the Government's waste reduction and resource recovery efforts in preparation for the implementation of MWS charging, a Steering Group on the Modification of Recycling and Refuse Collection Facilities in Public Places ("the Steering Group") was set up on 1 February 2016, chaired by the Secretary for the Environment.³ The Steering Group is tasked to review existing situation regarding the provision of recycling and refuse facilities and recommend necessary modifications.

9. The Government announced on 8 November 2016 that the first-stage consultancy study commissioned by the Steering Group in April 2016 has

³ The Steering Group comprises members drawn from the relevant sectors including design and planning, academia, business, non-profit groups and district personalities, as well as relevant government departments (AFCD, EPD, FEHD, Home Affairs Department and LCSD).

completed. The study shows that there is a general call from the public to increase the provision of recycling bins in public places and support for reducing the number of litter containers to complement MSW charging. The consultant has recommended some general planning parameters for the future provision of the said facilities. The relevant press release is attached in **Appendix I**.

Community Green Stations

10. The Chief Executive announced in the 2014 Policy Address the plan to develop a Community Green Station ("CGS") in each of the 18 districts to enhance environmental education and help collect different types of recyclables (especially those of low economic value recyclables including electrical appliances, computers, glass beverage bottles, compact fluorescent lamps/tubes and rechargeable batteries) in the local community.⁴ Materials collected by CGSs are delivered to qualified recyclers for proper treatment and turning waste into resources.

Producer responsibility schemes

11. Producer responsibility schemes ("PRSs") are a key policy tool in the waste management strategy in Hong Kong.⁵ Enshrining the principle of "polluter pays" and the element of "eco-responsibility", the PRS concept requires manufacturers, importers, wholesalers, retailers and consumers to share the responsibility for the collection, recycling, treatment and disposal of end-of-life products with a view to avoiding and reducing the environmental impacts caused by such products at the post-consumer stage. With the passage of the Promotion of Recycling and Proper Disposal (Electrical Equipment and Electronic Equipment)(Amendment) Bill 2015 and the Promotion of Recycling and Proper Disposal (Product Container) (Amendment) Bill 2015, legislative frameworks for the implementation of

⁴ EPD is progressively developing CGSs in the districts. Sha Tin CGS and Eastern CGS have been opened to the public since 12 May 2015 and 23 September 2015 respectively.

⁵ The Product Eco-responsibility Ordinance (Cap. 603), enacted in July 2008, is a piece of umbrella legislation which provides the shared core elements of all PRSs and the fundamental regulatory requirements in respect of individual types of product, with operational details to be set out in the Ordinance and its subsidiary legislation.

PRs targeting certain regulated electrical equipment ("REE") and glass beverage containers respectively have been put in place.⁶

12. To support the implementation of the PRS on REE, a Waste Electrical and Electronic Equipment Treatment and Recycling Facility is being built in EcoPark at Tuen Mun to provide collection and proper treatment services of regulated e-waste. The facility is expected to be commissioned in mid-2017. As for the mandatory PRS on glass beverage containers, the Government will appoint up to three glass management contractors ("GMCs") to collect and arrange for recycling of glass containers, each serving the catchment regions of Hong Kong Island, Kowloon and the New Territories respectively. Within its responsible catchment region, a GMC will be required by contract to coordinate with CGS to manage the glass container collection services provided to residential buildings/estates in the catchment region. The GMCs should also maintain a sufficient network of collection points so that waste producers (mainly pubs and bars and other catering services) may conveniently participate in waste glass container recycling.

Organic Waste Treatment Facilities

13. In the "A Food Waste & Yard Waste Plan for Hong Kong 2014-2022" issued in February 2014, the Administration proposed that a network of five to six Organic Waste Treatment Facilities ("OWTFs") be established between 2014 and 2024 in phases. OWTF Phase 1 is being developed at Siu Ho Wan in North Lantau, and is scheduled for full commissioning by end 2017. The facility will receive and treat source-separated food waste from the C&I sectors.

14. In preparation for recycling food waste on a large scale, EPD started a Food Waste Recycling Partnership Scheme with C&I participants to collect source-separated food waste for delivery to the Kowloon Bay Pilot Food Waste Composting Plant. Separately, the Housing Authority has conducted food waste recycling trial schemes at public housing estates by phases since 2011, and EPD has launched the Food Waste Recycling Projects in Housing Estates since 2011, with a view to cultivating food waste separation habits and food waste recycling. An inter-departmental working group led by EPD has been set up to explore suitable arrangements to source separate, collect and deliver for off-site recycling, the food waste generated from the C&I

⁶ REE includes air-conditioners, refrigerators, washing machines, television sets, computers, printers, scanners and monitors. The two PRs mentioned in paragraph 11 have not commenced operation as the operational details have yet to be prescribed by way of subsidiary legislation.

food waste generating establishments under the management of FEHD and the Housing Authority/Housing Department including markets, cooked food venues and shopping malls.

Development of recycling industry

Development of EcoPark

15. In operation since 2007, the EcoPark in Lung Mun Road, Tuen Mun is Hong Kong's first recycling-business park, and aims to provide long-term land at affordable costs and a whole package of amenities for use by the recycling and environmental industry with a view to alleviating the expenditure of recyclers on infrastructure, thereby encouraging their investment in advanced technologies and recycling processes.

Recycling Fund

16. In the 2014 Policy Address, the Chief Executive announced that \$1 billion had been earmarked for the establishment of a Recycling Fund. The relevant funding proposal was approved by the Finance Committee in July 2015, and the Recycling Fund was launched in October 2015. The Fund aims to support projects which can raise the quantity and quality of recyclables recovered from the waste stream as well as those of recycled products from their treatment; promote markets for recycled products; and enhance the overall capability, capacity, efficiency and skills as well as market information of the recycling industry.

Major views and concerns expressed by Members

17. Issues relating to refuse collection, recovery and recycling were brought up at the meetings of the Panel on Environment Affairs in the last term of the Legislative Council during discussion of waste management facilities such as CGSs, and development of the recycling industry. Related issues were raised at the meetings of the relevant bills committees or subcommittees on legislative proposals relating to the introduction of PRSs for REE and glass beverage containers, and arrangements for implementing waste diversion plan. Members also asked various questions on waste management during examination of Estimates of Expenditures in recent years. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

Refuse Collection Points

18. Some Members suggested that the Administration should consider enhancing the design of RCPs by providing waste compaction facilities (e.g. mobile refuse compactors), or leachate treatment/disposal facilities for Refuse Collection Vehicles ("RCVs") to discharge leachate properly en route to RTSs or landfills. The Administration advised that FEHD would consider the provision of mobile refuse compactors in individual RCPs, including those under planning, on the basis of operational needs and where the site situation permitted. The Administration also pointed out that most of FEHD's off-street RCPs were situated in residential areas, the design and capacity of which were not built to cater for other purposes. Allowing RCVs to discharge leachate in FEHD's RCPs, for instance, would hinder the normal operation of RCPs, increase the road traffic in the vicinity of RCPs, and give rise to hygiene and other problems. Furthermore, FEHD's RCPs did not have waste water treatment facilities to handle leachate from RCVs and the discharge of leachate there would not be able to comply with the discharge standards allowed.

19. There was a suggestion that more collection points for recyclables such as glass beverage containers should be provided near RCPs to facilitate return of these containers by the public. Consideration could be given to making use of the existing refuse collection network to build up a central collection network for recyclable resources. The Administration responded that, taking the PRS on glass beverage containers as an example, the glass management contractors to be appointed by the Government under the PRS could decide how to collect waste glass containers, and whether to provide incentives to waste producers or private collectors with a view to encouraging return of more waste glass containers from them.

Community Green Stations

20. Some Members expressed concerns about potential competition or overlapping of roles between CGSs and private recyclers in the collection of recyclables. The Administration explained that CGSs and private recyclers could complement each other's role on the recycling front. While private recyclers would more likely collect recyclables of higher values under market forces, CGSs could provide logistical support for the collection of recyclables which had relatively lower commercial values (such as electrical appliances, compact fluorescent lamps, fluorescent tubes, glass bottles and rechargeable batteries, etc.) for delivery to qualified recyclers for proper treatment.

21. Members suggested that the sites and premises of CGSs could be better utilized as centralized hubs for large-scale processing of recyclables from private recyclers and collection points operated by local organizations, which would maximize the cost effectiveness of recycling through economies of scale. Further, with government support, CGSs should be in a better position than private recyclers to invest in advanced recycling technologies to improve the recycling process and to support the collection of more recyclables.

22. The Administration advised that one of the main functions of CGSs was to enhance environmental education to promote green living and "Use Less, Waste Less" culture at the community level. Taking into account the site constraints of CGSs, and potential adverse environmental impacts (such as noise impact arising from crushing and grinding of waste glass containers) on nearby residents, CGS sites would not be suitable for large-scale processing of recyclables.

Expansion of recycling network

23. Members enquired about how the Administration would expand the recycling network in the community. There was a suggestion that the Administration should explore with the Hong Kong Housing Authority the feasibility of engaging the latter's cleansing contractors in segregating recyclable materials from household refuse at a designated area within individual public rental housing estates as there might not be sufficient space in households for waste separation.

24. Taking note of Members' suggestions, the Administration advised that apart from the development of CGSs in each of the 18 districts, there were other programmes on waste reduction and recycling. For example, under the territory-wide Programme on Source Separation of Domestic Waste, recycling bins were placed in participating housing estates to facilitate source separation of waste by residents. The Administration was also conducting food waste recycling trial schemes at public housing estates, and launched the Food Waste Recycling Projects in Housing Estates since 2011, with a view to cultivating food waste separation habits and food waste recycling.

Producer responsibility schemes

25. Members queried whether the arrangements under PRSs were cost-effective for the proper collection and management of related recyclables (e.g. glass beverage containers). There might be possible loss of

economic efficiency to finance contractors with public funds under PRSs to collect recyclables from waste producers or private recyclers.

26. The Administration pointed out that there would be operational difficulties in directly financing private recyclers or paying waste producers for depositing recyclable waste. A mandatory PRS would better ensure economy of scale for collection and treatment of the waste items concerned, and hiring contractors to complement the implementation of PRSs could better support recycling on a territory-wide scale. For instance, with the provision of waste glass collection services by GMCs, producers of construction materials made from recycled glass would not have to face a significant cost difference arising from the collection and treatment of waste glass.

Collaboration among government departments in waste management

27. Members suggested that FEHD should take on a greater role in waste management such as recycling and collaborate further with the relevant government departments such as EPD. For instance, FEHD might consider providing space and staff in each public market to facilitate food waste recycling. The Administration responded that FEHD would continue to consider how to better co-ordinate its work on refuse collection with EPD's work on waste management, particularly in respect of food waste recycling and MSW charging.

Measures to support the recycling industry

28. Members generally considered that the Administration should formulate a comprehensive strategy and implement measures on multiple fronts to support the recycling industry. For instance, it should further promote waste reduction and separation at source, consider legislating for source separation of waste, expedite the implementation of CGSs, expand the Community Recycling Network,⁷ make available information on recyclable collection points in housing estates, step up public education, and provide tax incentives or financial assistance for waste recyclers.

⁷ To facilitate source separation of waste at single-block buildings where recycling bins may not be conveniently accessible, the Community Recycling Network was rolled out in 2011 with more recyclable collection points set up in local districts. Through waste-gift exchange and face-to-face promotion activities, the initiative aims at arousing public awareness about recycling, and encouraging public participation in waste recovery.

29. The Administration assured Members that it would continue to take forward different programmes and initiatives to promote waste recovery and recycling. For instance, the "Hong Kong Blueprint for Sustainable Use of Resources 2013-2022" had set out an action plan for the promotion of source separation of waste and "clean recycling" (so that recyclables collected from recycling bins would be contamination-free) in the community to increase the quantity and quality of recyclables available, and the EcoPark was developed to provide affordable land to recyclers. The implementation of new PRSs on various products would also benefit the local recycling industry. Apart from the Recycling Fund, financial assistance had been offered to recyclers and related parties through the Innovation and Technology Fund and the Environment and Conservation Fund. In addition, the Administration had been coordinating with training institutions in providing training courses to enhance the knowledge and skills of employees of the recycling industry.

Council questions

30. In the 2015-2016 legislative session, Hon Kenneth LEUNG, Hon Frankie YICK, Hon IP Kwok-him, Hon CHAN Hak-kan, Dr Hon KWOK Ka-ki and Hon KWOK Wai-keung raised questions about waste recovery and recycling at the Council meetings of 28 October 2015, 2 December 2015, 16 December 2015, 25 May 2016 and 6 July 2016. Issues covered in the questions include measures to support the recycling of waste plastics and car batteries, and management of recycling bins and their effectiveness in recovering waste. The questions and the Administration's replies are hyperlinked in **Appendix II**.

Relevant papers

9. A list of relevant papers is in **Appendix II**.

Press release of the Government of
the Hong Kong Special Administrative Region on 8 November 2016

**Steering Group on Modification of Recycling and Refuse Collection Facilities in
Public Places convenes third meeting**

Chaired by the Secretary for the Environment, Mr Wong Kam-sing, the Steering Group on the Modification of Recycling and Refuse Collection Facilities in Public Places (the Steering Group) held its third meeting today (November 8) to review the provision and design of recycling and refuse collection facilities in public places.

A consultancy study was commissioned earlier to review the number and distribution of recycling bins (RBs) and litter containers (LCs) in public places. The consultant has recently completed the study and reported the key findings and recommendations for the provision of such facilities at today's meeting.

Among other things, the study showed that there is a general call from the public to increase the provision of RBs in public places and support for reducing the number of LCs to complement the future implementation of municipal solid waste (MSW) charging.

The consultant noted that the Government has been promoting recycling at home and in the workplace through the Programme on Source Separation of Waste (SSW), which already covers 80 per cent of the population. While the recyclables collected from the RBs in public places contribute to less than 1 per cent of total recyclables collected, their provision should be increased in future to provide enhanced recycling support for pedestrians and the population currently not served by the SSW programme. Given that the primary function of LCs is to collect litter from pedestrians, there is room to reduce their provision.

Based on the study findings and making reference to overseas practice, the consultant recommended some general planning parameters for the future provision of RBs and LCs in public places, which would result in an overall increase in the number of RBs and reduction in LCs. The consultant also recommended that such changes should be implemented in phases and reviews be conducted from time to time to make necessary adjustments having regard to public feedback and reaction.

In addition to the general planning parameters, the consultant recommended that additional specific RBs dedicated to collect certain types of recyclables (e.g. paper) should be provided at appropriate locations (e.g. exits of

MTR stations where typically more waste paper has been collected) to facilitate resource recovery. Moreover, it was recommended that RBs and LCs should be placed at strategic locations (e.g. crossroads, entrance and exits of venues, etc) to provide the public with greater certainty on their placement, which would help encourage their use.

Apart from the number and distribution of the RBs, the consultancy study also suggested some key parameters for their future design. A flexible approach was recommended for the design of RBs in terms of their size, types and deployment to achieve their optimal use. The shape of the opening should match those of the recyclables to reduce misplacement of recyclables, while the design of the LC opening should help to avoid dumping of household and trade waste.

"The consultancy study provides some useful guidelines for planning the future provision of RBs and LCs. While they are general parameters, the actual provision of the bins would have to be considered with regard to the unique characteristics of different localities (e.g. tourist spots), site constraints and other operational factors. We also have to pay due consideration to the need to maintain environmental hygiene. The relevant departments will further consider the recommendations and report to the Steering Group on how the future provision of RBs and LCs could be adjusted," said Mr Wong at the meeting.

At the meeting today, the Steering Group also discussed the framework proposal for conducting the second-stage consultancy study, which will review the design of recycling facilities and LCs in public places having regard to the parameters suggested in the current study. Public engagement will form an important part of the second-stage consultancy study, and the consultant will solicit views from different stakeholders in undertaking this study.

The current consultancy study was commissioned in April this year. The consultant organised field visits and a sampling study to assess the utilisation of recycling facilities and LCs in different settings, and conducted a questionnaire survey and focus group meetings to gather feedback from the public and stakeholders.

Under the chairmanship of the Secretary for the Environment, the Steering Group comprises members from the design and planning sectors, academia, business sector, non-profit making groups, district personalities, as well as relevant government departments.

[Source: Website of the Environment Bureau]

Subcommittee on Refuse Collection and Resource Recovery

List of relevant papers

Date	Event	Paper
4 April 2014	Special meeting of the Finance Committee for examination of Estimates of Expenditure 2014 - 2015	Written questions raised by Members and the Administration's replies (Reply serial number: FHB(FE)160)
23 July 2014	Meeting of the Panel on Environmental Affairs ("EA Panel")	Administration's paper on "Measures to promote the recycling industry and establishment of the Recycling Fund" (LC Paper No. CB(1)1814/13-14(03)) Minutes of meeting (LC Paper No. CB(1)61/14-15)
26 January 2015	Policy briefing cum meeting of EA Panel	Administration's paper on "2015 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)436/14-15(01)) Minutes of meeting (LC Paper No. CB(1)674/14-15)
25 February 2015	Meeting of EA Panel	Administration's paper on "Framework proposal for implementation of municipal solid waste charging" (LC Paper No. CB(1)560/14-15(08)) Minutes of meeting LC Paper No. CB(1)726/14-15)
30 March 2015	Special meeting of the Finance Committee for examination of Estimates of Expenditure 2015 - 2016	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB046 , 087 , 099 , 314 , 350 , 380)

Date	Event	Paper
17 July 2015	Meeting of Finance Committee	Administration's paper on "Recycling Fund" (FCR(2015-16)25) Minutes of meeting (LC Paper No. FC65/15-16)
25 January 2016	Policy briefing cum meeting of EA Panel	Administration's paper on "2016 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)459/15-16(03)) Minutes of meeting (LC Paper No. CB(1)739/15-16)
6 April 2016	Special meeting of the Finance Committee for examination of Estimates of Expenditure 2016 – 2017	Written questions raised by Members and the Administration's replies (Reply serial number: FHB(FE)186)
24 October 2016	Meeting of EA Panel	Administration's paper on "Implementation of measures to reduce and recycle food waste - progress and manpower arrangements" (LC Paper No. CB(1)19/16-17(05)) Minutes of meeting (LC Paper No. To be confirmed)

Hyperlink to Report of the Bills Committee on Promotion of Recycling and Proper Disposal (Product Container)(Amendment) Bill 2015:

Date of issuance	Report
14 April 2016	Report of the Bills Committee on Promotion of Recycling and Proper Disposal (Product Container)(Amendment) Bill 2015

Hyperlinks to relevant documents:

Government bureau/department	Document
Environment Bureau	Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022 A Food Waste & Yard Waste Plan for Hong Kong 2014-2022
Environment Bureau	Public consultation paper on Sustainable Waste Management – Strengthening Waste Reduction: Is Waste Charging an Option?

Hyperlinks to relevant Council questions:

Date	Council Question
28 October 2015	Press release on Council question (written) raised by Hon KWOK Wai-keung
2 December 2015	Press release on Council question (written) raised by Hon KWOK Ka-ki
16 December 2015	Press release on Council question (written) raised by Hon CHAN Hak-kan
25 May 2016	Press release on Council question (written) raised by Hon IP Kwok-him Press release on Council question (written) raised by Hon Frankie YICK
6 July 2016	Press release on Council question (written) raised by Hon Kenneth LEUNG