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**Report of the Subcommittee on Refuse Collection and Resource Recovery
for submission to the Panel on Environmental Affairs**

Purpose

This report reports on the work of the Subcommittee on Refuse Collection and Resource Recovery ("the Subcommittee").

Background

Refuse collection system

2. At present, waste collection services are provided by both the Food and Environmental Hygiene Department ("FEHD") and private waste collectors ("PWCs"). FEHD's services cover mainly residential buildings. In addition, FEHD also collects waste generated from government venues. In larger residential developments (including public housing estates) and other government venues where proper refuse storage chambers are provided, FEHD will provide direct collection service so long as there are access roads for refuse collection vehicles ("RCVs") to reach these refuse storage chambers. An RCV will attend to a number of designated collection points according to the schedule. The RCV will then transport the waste to a designated refuse transfer station or landfill for disposal. However, in some instances, such as when the refuse storage chambers of a residential building is inaccessible by FEHD's RCVs, the owners or the property management companies of the residential buildings may hire a PWC to collect the household waste generated from households and deliver it to the nearby Refuse Collection Points ("RCPs") manually by means of handcarts. Besides, the property management companies of other residential developments and commercial and industrial ("C&I") establishments would also hire PWCs to collect and deliver their waste to RTSs or landfills by RCVs direct.

3. FEHD provides a network of RCPs in Hong Kong. As at 2016, there are some 170 off-street RCPs, 800 village-type RCPs and 1 900 bin sites (adding to a total of some 2 900). RCPs are of different designs and sizes to

meet actual needs and site constraints. They provide temporary storage for household waste deposited by the public and street litter collected by street sweepers. Waste stored in RCPs will be collected by RCVs at least once every day and delivered to RTSs or landfills for disposal.

Recycling bins

4. Currently, some 900 recycling bins ("RBs") are provided in the vicinity of off-street RCPs, village-type RCPs and bin sites for public use. Through its contractors, FEHD is currently collecting recyclables from these RBs. The Environmental Protection Department ("EPD") has launched a free mobile application "WASTE LESS" that locates recyclable collection points at public places all over the territory, and provides the latest news and useful knowledge about waste treatment, reduction and recovery to facilitate public participation.

Reduction of municipal solid waste

5. In December 2005, the Administration published the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)" which set out strategies, targets and action plans on avoidance and minimization; reuse, recovery and recycling; and bulk reduction and disposal of MSW.¹ On the basis of the Policy Framework, the Administration published in May 2013 the "Hong Kong Blueprint for Sustainable Use of Resources (2013-2022)" ("2013 Blueprint") setting out the target to reduce the MSW disposal rate by 40% on a per capita basis by 2022 using 2011 as the base. In "A Food Waste & Yard Waste Plan For Hong Kong 2014-2022" published in February 2014, the Administration states the target to cut down food waste that goes to landfills by at least 40% by 2022.

6. To drive behavioural change to reduce waste, the Administration intends to implement, among other measures, a quantity-based MSW charging scheme. In preparation for the implementation, the Administration set up in February 2016 a Steering Group on the Modification of Recycling and Refuse Collection Facilities in Public Places ("the Steering Group") to review existing situation regarding the provision of recycling and refuse collection facilities and recommend necessary modifications.²

¹ MSW comprises solid waste from households, commercial and industrial sources. This excludes construction and demolition waste, chemical waste and other special waste.

² 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 (Agriculture, Fisheries and Conservation Department, EPD, FEHD, Home Affairs Department and Leisure and Cultural Services Department).

The Subcommittee

7. The Panel on Environmental Affairs ("the Panel") has been following up the subjects of waste reduction, recovery and recycling, and the development of the local recycling industry. To enable more focused discussion on the Administration's efforts in related initiatives, the Panel decided at its meeting on 24 October 2016 to set up a subcommittee to review the existing policies on refuse collection and resource recovery. The Panel also agreed that the Subcommittee should focus its work on the following areas:

- (a) reviewing how to enhance on-site treatment of community refuse, and promote the development of local recycling industry;
- (b) reviewing the design of refuse collection facilities and how to enhance the resource recovery function of refuse collection points; and
- (c) comparing the refuse collection and resource recovery systems of advanced cities overseas; and
- (d) making recommendations on improvement measures for consideration by the Administration.

8. The terms of reference and membership of the Subcommittee are given in **Appendices I and II** respectively.

9. Under the chairmanship of Hon Tanya CHAN, the Subcommittee has held six meetings to exchange views with the Administration, including one meeting to receive views from deputations. The list of deputations which have provided views to the Subcommittee is in **Appendix III**.

Deliberations of the Subcommittee

10. The Subcommittee has studied the following major issues and the respective meeting dates are in **Appendix IV**:

- (a) measures and initiatives to promote and support waste reduction, source separation, and collection of roadside recyclables in Hong Kong;
- (b) refuse collection system in Hong Kong;
- (c) comparison of refuse collection and resource recovery systems in selected places;

- (d) development of technologies for waste separation and resource recovery in Hong Kong;
- (e) progress report and work plan of the Steering Group on the Modification of Recycling and Refuse Collection Facilities in Public Places; and
- (f) management of yard waste.

11. Details of the Subcommittee's deliberations and recommendations are set out in the ensuing paragraphs.

Design and use of refuse collection points

Current situation

12. Currently, the provision of RCPs follows the prevailing planning standards and guidelines, having regard to the population and distance from waste-generating sources, and the level of provision may be adjusted to suit anticipated needs. Material recovery areas are set aside in RCPs. In general, off-street RCPs have sufficient space to accommodate RCVs inside the premises for waste collection operation. Some large RCPs can accommodate refuse compactor which will be stationed at RCPs to receive and compact refuse until they are full. Then, refuse compactors will be carried by hook lift lorries to a refuse transfer station or landfill for disposal of waste. Apart from waste collection, off-street RCPs also provide some ancillary facilities for other public cleansing services, such as water filling points for street washing vehicles, roll call points for the street cleansing staff, and logistic support like changing and shower facilities, store rooms, offices, etc.

13. In view of the large amount of waste to be handled, FEHD deploys one non-skilled RCP attendant for each shift in most off-street RCPs to maintain the orderly disposal of waste delivered by the public and PWCs, assist the RCV loaders to load the waste onto RCVs, reject indiscriminate disposal of dangerous waste and construction waste at RCPs, and to maintain the RCPs in a clean, hygienic and safe state of operation. The Subcommittee also notes that FEHD has already been working with non-profit organizations ("NPOs") to provide glass container recovery facilities and services at the RCPs on Luard Road, Peace Avenue and Lan Kwai Fong, and 29 RCPs in the outlying islands.

14. The Subcommittee notes that a common concern raised by members and deputations is the lack of space in RCPs to conduct waste separation and resource recovery activities in respect of domestic MSW, and store the recovered resources before delivery to people in need. While some green

groups have been actively organizing such activities in the community, the locations are limited and scattered. On the other hand, recyclers are facing increasing difficulties to maintain their businesses due to high operating costs associated with shop rentals and transportation of recyclables (in particular bulky recyclables like waste plastics).

Subcommittee's recommendations

15. With the implementation of MSW charging in future which will create incentives towards waste reduction, the Subcommittee envisages that the amount of waste handled at RCPs will likely be reduced, thereby making way for retrofitting existing RCPs with facilities to serve the additional function of resource recovery. In this connection, the Subcommittee recommends that:

- (a) the Administration should make better use of existing or new RCPs to facilitate in-situ source separation, recovery and preliminary recycling of waste collected at RCPs, thereby reducing the quantity of waste delivered to landfills, and facilitating collection of recyclables from the established network of RCPs. This will also help reduce the costs on PWCs in the collection and transportation of recyclables;
- (b) by building additional floors above existing RCPs and improving the manpower support at the facilities, the RCPs can be converted into refuse collection cum resource recovery centres, each floor of which serves specific recovery/recycling activity, whereas the relevant space and facility requirements for new RCPs can be included at the planning stage;
- (c) community groups may make use of the open space, if any, near RCPs to carry out waste-separation activities before the waste is hauled into the RCPs;
- (d) EPD and FEHD should discuss the design and use of RCPs, and select some existing RCPs for trial conversion into refuse collection cum resource recovery centres. A pilot programme on waste collection, separation and recovery may also be launched in Lunar New Year fairs with a view to gathering experiences for implementation of waste separation and resource recovery activities at RCPs;
- (e) issues relating to the suggested design and use of RCPs should be included in the ongoing review of the provision of recycling and refuse collection facilities being conducted by the Steering Group; and

- (f) revenue generated from MSW charging might be deployed to enhance the design and use of RCPs.

Administration's responses

16. The Administration has advised that to facilitate enforcement and enhance recycling support at suitable RCPs in order to complement the implementation of MSW charging, the Administration will conduct improvement and upgrading measures in RCPs, including improving the lighting system to facilitate the checking of designated bags, providing more RBs near or inside RCPs as appropriate to enhance recycling, and provision of notice boards which provide information on waste reduction, recycling and nearby recycling facilities, etc.

17. On the suggestion of converting existing RCPs to also play a resource recovery function, the Administration points out that it remains to be seen whether and how much space at RCPs can be released even if MSW charging will bring down the amount of waste collected at RCPs. There are also practical difficulties in providing preliminary waste treatment/recycling facilities at existing RCPs because:

- (a) in the light of the time and space constraints in RCV and RCP operations, it will be operationally challenging for waste sorting and recycling activities to be carried out throughout the short-lived refuse collection operation;
- (b) it is necessary to provide enough room for RCVs to head in and out of RCPs, having regard to the vehicular and pedestrian flows nearby and the safety of RCP workers;
- (c) the majority of existing RCPs are single-storeyed buildings with limited space and they are generally heavily loaded due to gradual increase in population (and hence the amount of refuse to be collected), as well as the increased number of FEHD's in-house staff or contractors' employees using the ancillary facilities of off-street RCPs; and
- (d) existing RCPs are not purposely built to accommodate preliminary waste treatment/recycling facilities. The scope for viable options for upgrading existing RCPs will also be limited, taking into account a number of factors on the feasibility of constructing additional floors above RCPs, such as the structural stability, the mode of transporting the recycled materials to the upper floors, the feasibility of installation of lifts, availability of operation space,

and the noise and environmental health problems arising from the operation, etc.. Apart from obtaining support from respective District Councils and the local communities on the proposed modification works, identification of suitable sites in the vicinity of RCPs for construction of temporary facilities to provide refuse collection services to the public during the works period are required before the works can be taken forward.

18. Notwithstanding the above considerations, the Administration has advised that it remains open to the proposal of incorporating resource recovery facilities in RCPs, on the premise that the current effective and efficient refuse collection service (particularly at the RCPs) is not affected. This can be further explored in planning for future RCPs. In this connection, FEHD will discuss with EPD on the space and facility requirements of the RCPs. The two departments will also consider the feasibility of implementing enhanced measures for waste collection and separation at Lunar New Year fairs, taking into account operational considerations and manpower resources.

Provision of litter containers and recycling bins

Current situation

19. In 2005, EPD launched the Programme on Source Separation of Waste ("SSW programme") to encourage residents to participate in source separation of waste. Under the SSW programme, RBs are provided by the Environment and Conservation Fund ("ECF") to participating residential estates.³ Since September 2008, the SSW programme has been extended to cover C&I buildings. So far, a total of 7 400 sets of RBs have been given out under the SSW programme free of charge. The programme now covers around 80% of the population in Hong Kong. To provide recycling support for pedestrians and population not being covered by SSW, the Administration has been providing about 2 850 RBs in public places including public streets, RCPs, public markets, bus termini and other venues frequently patronized by the public such as Government clinics and schools.⁴

³ To underpin the SSW programme, the Environmental Campaign Committee distributes one set of recycling bins free-of-charge to each residential block upon request. The owners' organizations concerned may apply for partial funding support from ECF to purchase additional recycling bins to be placed on each floor of the residential block.

⁴ There are also a number of green groups and NPOs operating programmes to collect other types of recyclables, including used clothes and glass beverage bottles, in public places.

20. The Administration has also advised that implementation of waste charging in other cities is usually accompanied by a reduction of the number of litter containers ("LCs") to discourage abusive use of LCs to evade MSW charges. The number of RBs was also adjusted to enhance the RB to LC ratio. To this end, the Steering Group is reviewing the number, distribution and design of RBs and LCs in public places.

Subcommittee's recommendations

21. The Subcommittee considers that the effectiveness of recovering recyclables by passively providing recycling bins at residential estates or in public places is limited. Besides, members of the public may mis-use recycling bins as LCs. It is also noted that recyclers have less incentives to collect certain recyclables like waste plastics due to their low market value, bulkiness and higher transportation costs. The Subcommittee recommends that:

- (a) the Administration should provide compressors or reverse vending machines at residential estates and public areas for the public to compress and reduce the volume of plastic or aluminium containers before deposit into recycling bins;
- (b) recycling bins should include an additional compartment for recovery of waste glass containers;
- (c) measures should be put in place to monitor and complement the implementation of any reduction in the number of LCs, so as to avoid giving rise to illegal disposal of refuse and problems of environmental hygiene; and
- (d) objective criteria should be set for determining the distance between RBs, and between LCs.

Administration's responses

22. The Administration has advised that with support from ECF, it has established a Community Recycling Network ("CRN") over the years, which includes 18 Community Recycling Centres ("CRCs") as well as about 60 collection points located in different premises managed by NPOs. The provision of recycling bins in public places is meant to facilitate resource recovery/recycling in areas not covered by CRN and the SSW programme, and to enhance promotional and educational efforts. Members of the public residing in the target catchment areas are encouraged to bring recyclables to the multiple collection outlets under CRN for recycling. CRCs provide logistical support including baling services for the collection and transportation of

recyclables by the recyclers in the catchment area. The Administration will continue to discuss with relevant stakeholders in the recycling chain with a view to improving the quantity and quality of recyclables recovered, and enhancing the efficiency of the recovery/recycling process. Recyclers may apply for the Recycling Fund to enhance their operation efficiency.

23. The Administration has also advised that the Steering Group has recently completed the first stage of its work on the review of number and distribution of LCs and RBs. Based on a set of planning parameters as identified through a consultancy study, the Steering Group considers that the number of LCs in public places should be gradually reduced by 40% to 24 300 by the time when MSW charging is planned to take effect in 2019. The current RB to LC ratio of 1:14 will be enhanced to 1:6 and the number of RBs in public places will be progressively increased by 45% to 4 000, also by the time when MSW charging is planned to take effect in 2019. The distances between RBs and between LCs are recommended to be reduced to 250 metres ("m") and increased to 150 m respectively. FEHD and the Leisure and Cultural Services Department ("LCSD") will conduct reviews after implementation of MSW charging with a view to further adjusting the number of LCs and RBs in public places, taking into account the situation on the ground, public reaction and other operational considerations. In addition, LCs and RBs should be placed at strategic locations (e.g. entrances and exits of venues and crossroads) to provide the public with greater certainty on their placement, thereby encouraging their use.

24. According to the Administration, FEHD and LCSD will also consider placing specific RBs dedicated to the reception of specific types of recyclables at suitable locations e.g. specific RBs for recyclable plastic bottles and aluminium cans can be placed outside sports facilities and at beaches. Further guidelines will be drawn up on their placement for reference by the relevant departments. Separately, the Administration will explore the feasibility of providing mixed RBs with one single compartment to collect different types of recyclables, which may reduce the demand for space in public places and spare some pedestrians (in particular some tourists who may not be accustomed to separating recyclables at source) the trouble of sorting recyclables at the point of deposit which may help yield a higher overall recovery rate. To this end, a trial run will be conducted alongside an education campaign to promote clean recycling in view of potential contamination of recyclables in a mixed RBs approach.

25. As regards recovery of waste glass containers, the Administration has pointed out that currently there are some 800 RBs designated for the collection of glass containers in the territory, and a number of non-profit organizations are engaged to drive glass container recycling in the community. CRCs and Community Green Stations ("CGSs") also collected low-value recyclables

including waste glass containers for recycling. A mandatory producer responsibility scheme ("PRS") for glass beverage containers will be implemented, for which contractors would be appointed to provide glass management services in the territory.

Reduction of waste generated from Lunar New Year fairs

26. The Administration has provided for the Subcommittee's reference a list of measures to support waste reduction and recycling at Lunar New Year fairs.⁵ Among other measures, EPD hires a contractor to run a peach blossom tree recycling programme under which members of the public and C&I organizations may deliver their peach blossom trees to designated collection points. The peach blossom trees so collected will be processed for producing mulches, composting materials, etc. The public is encouraged to replant other small potted plants (such as kumquat trees), and store the festive decorations for reuse in other occasions in order to reduce waste and save resources.

Subcommittee's observations and recommendations

27. The Subcommittee notes the concerns expressed by a number of deputations about the limited scope of recyclables under the peach blossom tree recycling programme and inconvenient locations of the relevant collection points. The Subcommittee recommends that:

- (a) the Administration should devise measures to facilitate recovery of more resources from Lunar New Year fairs;
- (b) the peach blossom tree recycling programme can be expanded to include small potted plants;
- (c) the collection points for recovery of peach blossom trees and potted plants including Christmas poinsettias should be increased and located in more convenient locations; and
- (d) CGSs or CRCs can be open during the Lunar New Year public holidays to facilitate temporary storage of resources recovered from Lunar New Year fairs which are pending transfer to people in need.

28. The Subcommittee notes that in response to the views raised by deputations, operators of all four operating CGSs, namely Sha Tin, Eastern, Kwun Tong and Yuen Long, have coordinated with the respective groups of volunteers and opened their sites on Lunar New Year's Day in 2017 for

⁵ Please refer to Annex of the Administration's paper issued for the Subcommittee meeting on 11 April 2017 (LC Paper No. CB(1)787/16-17(01)).

temporary storage of materials recovered by the volunteer groups. With the coordination by the volunteers groups, all materials have been transferred to people in need or collected by visiting public shortly after. Based on this experience, the Administration will also review and explore future collaboration opportunity with a view to enhancing CGSs' service on the premise that the core operation of CGSs is not affected.

Administration's response

29. The Administration has advised that the current collection points for recovery of abandoned Christmas trees and potted plants is considered sufficient to facilitate delivery of such items from the C&I sector, which is the major source of such waste. The Administration will continue to encourage the C&I sector to reduce the use of real Christmas trees and potted plants, and use artificial ones if necessary to facilitate reuse.

Refuse collection services provided by contractors of Food and Environmental Hygiene Department

Current situation

30. FEHD has put in place a contract management mechanism under which FEHD staffs conduct regular and surprise checks to monitor the performance of the contractors who collect recyclables from RBs. Among all obligations, these contractors are strictly prohibited from disposing of the collected recyclables at landfills or other waste treatment facilities. To enhance the quality of the collection service, FEHD has imposed additional obligations on these contractors since August 2014. In the event of any breach of contract provisions, these contractors will be subject to punitive actions including verbal warnings, written warnings and default notices. According to the Administration, no serious non-compliance on the part of the contractors has come to the attention of FEHD in the past three years. In collaboration with EPD, FEHD monitors the performance of the contractors and keeps the monitoring regime under review with a view to identifying the need and room for enhancement to the recyclables collection service.

31. The Subcommittee notes that some institutions/organizations such as the Chinese University of Hong Kong ("CUHK") have put in place a comprehensive programme for waste management in their premises, including imposing waste reduction requirements in the relevant waste management contract. On 15 May 2017, the Subcommittee conducted a visit to the refuse collection and resource recovery facilities of CUHK to obtain first-hand information on its programme.

Subcommittee's recommendations

32. The Subcommittee considers that FEHD's outsourced waste collection workers can play a greater role in waste reduction by participating in monitoring of illegal disposal and in resource recovery when performing their duties. The Subcommittee recommends that:

- (a) performance targets in terms of a minimum quantity should be set for FEHD's contractors to collect recyclables from RBs; and
- (b) relevant requirements or incentives should be imposed to facilitate or encourage recovery of resources by RCP workers from refuse deposited at RCPs.

33. The Administration has advised that as the supply/demand and prices of recyclables are subject to different factors, it will be impractical to impose performance targets on the contractors to collect a minimum quantity of recyclables from RBs. Besides, FEHD does not agree to, on public health ground, undertaking resource recovery by unwrapping and picking from the properly wrapped bags of refuse or allowing RCP attendants to pick from refuse and waste collected in RCPs.

Issues relating to the Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)

Subcommittee's concerns and recommendations

34. Currently, section 22 of the Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK) ("PCPNR") stipulates the respective requirements for disposal of trade waste under or exceeding 100 litre ("L") in quantity. The Subcommittee observes that the disposal cap has not been strictly enforced at RCPs, which may be due to the limited manpower resources of RCPs. The Subcommittee also notes that the current prohibition under section 11 of PCPNR on raking and picking of refuse may discourage the public from recovering resources from refuse deposited at RCPs and other places.

35. In the above connection, the Subcommittee recommends that:

- (a) the Administration should review the manpower requirements for RCPs to strengthen enforcement of section 22 of PCPNR; and
- (b) considerations should be given to amending section 11 of PCPNR with a view to protecting recycling practitioners from potential legal liabilities for picking from refuse and waste collected in RCPs, etc. and encouraging public participation in resource recovery; or to

granting exemptions under the legislation for raking and picking of refuse by RCP workers within the facility, so as to remove the constraint on turning RCPs into refuse collection cum resource recovery centres, if any, in future.

Administration's responses

36. The Administration observes that shops/premises of small-sized business normally do not generate a large amount of trade waste, and usually hire private collectors who will collect trade waste from clusters of premises and deliver them to nearby RCPs manually by means of handcarts. The amount of trade waste delivered to RCPs each time from individual premises is normally less than 100 L and abusive use of RCPs for disposal of large volume of trade waste is not serious.

37. FEHD has indicated that it does not agree to, on public health ground, undertaking resource recovery by unwrapping and picking from the properly wrapped bags of refuse or allowing RCP attendants to pick refuse and waste collected in RCPs. FEHD maintains the view that there is genuine operational need to keep section 11 intact so that FEHD staff could be empowered to take enforcement action against people who impair the environmental hygiene condition in the course of raking over the waste in public places. FEHD also points out that enforcement actions in respect of section 11 will be taken only after preliminary actions, such as issue of verbal advice or warning, are futile. If FEHD approves any person or designated organizations to carry out resource recovery activities, including waste separation and selection, in RCPs, such activities will not contravene section 11 of PCPNR.

Community Green Stations

Current situation

38. The Administration has been developing a network of CGSs in each of the 18 districts to promote environmental protection education and enhance recycling support for the local community for low-value recyclables, such as electrical appliances, computers, glass beverage bottles, compact fluorescent lamps and tubes, rechargeable batteries, with a view to promoting green living at the community level. Four CGSs, operated by NPOs, in Sha Tin, Eastern District, Kwun Tong and Yuen Long have commenced operation.

Subcommittee's recommendations

39. Some members consider that individual CGSs are too small vis-à-vis their target catchment areas to provide sufficient recycling support for the local community. There is also a view that the role of CGS in community recycling

is unclear, in particular as there are other initiatives concurrently undertaken by NPOs or volunteer groups to drive community recycling. The Subcommittee recommends that:

- (a) recycling targets (e.g. minimum or targeted annual amount of recyclables recovered) should be set to measure the performance of CGSs;
- (b) the role and functions of CGSs could be enhanced to include in-situ preliminary treatment of recyclables;
- (c) revenue generated from MSW charging might be deployed to develop CGSs; and
- (d) the Administration should closely monitor development of waste treatment and recycling technologies (such as crushing of waste glass containers) and consider their adoption in CGSs.

Administration's responses

40. The Administration has advised that it will continue to monitor the performance of CGSs and the latest developments in recycling technologies. It should be noted that CGSs are only one of the initiatives for waste management. For instance, the Administration is developing PRSs for certain types of products. At the same time, the recycling trade is encouraged to apply for funding support from the Recycling Fund with a view to enhancing their operational efficiency. Besides, the effectiveness of CGSs should be assessed holistically, having regard to its role to promote environmental education and enhance recycling support for the local community for low-value recyclables. While MSW charges will be credited into the General Revenue and not dedicated specifically for waste management initiatives, the Administration will continue to enhance the resources for taking forward these initiatives, including enhancement of CGSs, to complement the implementation of MSW charging.

41. The Administration has advised that CGSs and other ECF-funded programmes would complement one another. CGS operators are required to set out in their operation plans the specific arrangements to complement services provided by other local recyclers, local recycling shops, and other recycling programmes sponsored by both the private sector and the Government in delivering their services, including in particular educational services and recyclables collection services. The operation plans will have to be approved by EPD, which will monitor their implementation. The Administration will evaluate the effectiveness of individual CGSs based on their respective operational statistics. Up to the 4th quarter of 2016, both operators of Sha Tin CGS and Eastern CGS have established an extensive service network, with a

coverage rate of up to 90% of the population in their districts, providing support to the collection of low-value recyclables in the community. The Administration will, having regard to different views from various sectors, review from time to time the work of CGSs on environmental education and recycling support, and make adjustment as appropriate.

Price subsidies for recyclables

Current situation

42. The fluctuating prices of recyclables is considered one of the major obstacles to stabilizing the development of the recycling industries, as well as finding a market for the recyclables. To a certain extent, the lacklustre recycling performance is attributable to the sluggish global market for recycled products in recent years. Yet there are also concerns that the local recycling industry does not receive enough support to remain financially sustainable.

Waste recycling in Taiwan

43. Pursuant to the Waste Disposal Act amended in 1997, "producers" including both manufacturers and distributors in Taiwan have to take back, recycle and dispose of a wide range of 33 "regulated" products and packaging items in 13 categories based on considerations of recyclability and environmental impacts.⁶ For this purpose, Taiwanese producers of these regulated products need to report and label such products and pay an item-specific levy⁷ to a centralized Recycling Management Fund ("RMF") managed by the Taiwan Environmental Protection Administration.⁸ The levy will then be used to subsidize private companies or government for household waste collection and their recycling. This recycling system is called "four-in-one" in Taiwan, signifying the close collaboration amongst local

⁶ As an illustration, these regulated products include waste aluminium containers, waste paper containers, waste plastic containers, waste dry batteries, waste cars and motorcycles, waste tires, waste lead-acid batteries, waste lubricants and waste home appliances.

⁷ The levy rates are determined by a Fee Rate Review Committee comprising representatives from business, green groups and consumer protection bodies. The rate level depends on the type of materials, volume or weight, recyclability, market situations, etc.

⁸ RMF is set up under government account with stringent supervision. The recycling system comprises of six main bodies, including (a) managing committee; (b) consumers; (c) responsible industries; (d) collection and treatment agents; (e) fee reviewing committee; and (f) auditing agents. Recycling facilities are independently audited to confirm the actual amount of materials recycled and assure that operations meet the regulations.

residents, local governments, recycling businesses and RMF in waste management. The system appears to have provided necessary support to the recycling industry in Taiwan. For instance, the annual quantity of recycled waste under its extended producer responsibility systems had surged by 240% to over 980 000 tonne during 1998-2015, accounting for about 30% of all recyclable waste collected in Taiwan in 2015. The recycling rates of some waste types considered to be less economical for recycling have improved.

Subcommittee's recommendations

44. The Subcommittee considers that the Administration should consider means to raise the commercial value of recyclables to help improve the recovery and recycling rates of low-value recyclables such as waste plastics. This can be done partly by facilitating collection and transportation of bulky recyclables and reducing the associated costs, as suggested in paragraphs 15(a) and 21(a) above. To stabilize the development of the recycling industry in face of the fluctuating prices of recyclables, the Subcommittee also recommends that the Administration make reference to Taiwan to provide price subsidies in respect of recyclables. The price subsidies may be calculated on the basis of, among other factors, the costs of disposing of the recyclables in question at landfills if the recyclables are not recovered/recycled.

Administration's response

45. The Administration has advised that 2013 Blueprint published in May 2013 has laid out a clear strategy for taking multiple and concurrent actions to encourage waste reduction at source, enhance reuse and recovery of resources as well as promote clean recycling. The Administration has indicated that it is committed to implementing various initiatives in the 2013 Blueprint to facilitate the long-term sustainable development of the recycling industry. Amongst other things, it will continue to support the recycling businesses to upgrade their operational efficiency through the Recycling Fund, so that the industry as a whole would become more resilient to market fluctuations. The Administration has advised that it will continue to keep track of the market prices of recyclables. The Administration considers that a "pay-per-tonne" kind of subsidy would require the determination of the price baseline and the appropriate level of subsidy. Due to the changing market situations as well as the variation in the costs of collection and recycling, it is difficult to determine such level of subsidy. In fact, the Government has set up a \$1 billion Recycling Fund, which aims to upgrade the operational capabilities and efficiency of the recycling industry, with a view to increasing the quality and quantity and in turn the value of the recyclables, thereby recovering more useful resources from waste. As such, the Administration has no plans to provide direct price subsidies on individual recyclables.

Publicity and education

Clean Recycling Campaign

46. The Subcommittee considers that the Administration should step up efforts to educate the public on and enhance their participation in waste recovery and clean recycling, and proper use of waste recovery/recycling facilities such as recycling bins, as part of the preparation for implementing MSW charging. In particular, the Administration should enhance the public's understanding of benefits of recovery and recycling of waste by providing to the public information such as the quantities and outlets of waste recovered/recycled, and avoided from disposal at landfills.

47. The Administration has advised that in collaboration with EPD, the Environmental Campaign Committee ("ECC") has launched the Clean Recycling Campaign since 2015 to promote source separation of waste for clean recycling. A series of activities to raise awareness have been launched, including roving exhibitions and TV episodes. ECC has engaged NPOs to carry out education and promotional activities on clean recycling at around 100 private housing estates to raise residents' awareness about clean recycling. More intensive training and information sharing activities have been provided to frontline staff of property management offices and residents' associations to enhance their capability to commit and sustain long-term efforts in clean recycling.

48. The Administration has further advised that EPD has continued to disseminate food wise messages to the community through the Big Waster (大嘍鬼) Facebook page and the website of Food Wise Hong Kong Campaign (<http://www.foodwisehk.gov.hk/en/>). A series of publicity, educational and supporting activities have been carried out to promote food waste avoidance and reduction, including launching of announcements in the public interest, conducting roving exhibitions, organizing training seminars, production of publicity materials and Good Practice Guides. As in October 2016, about 620 organizations and companies have signed the Food Wise Charter to demonstrate their commitment to food waste reduction. About 650 eatery outlets have enrolled in the "Food Wise Eateries" scheme and pledged, among other things, to offer portioned meals so that customers may order the right amount of food according to their appetites. Since 2010, the Administration has been working with the C&I sectors through the Food Waste Recycling Partnership Scheme to prepare them for large-scale collection and delivery of source-separated food waste to the Organic Waste Treatment Facilities which are being developed. Under the scheme, over 250 C&I establishments and their front-line staff have received training on food waste source separation and collection.

Environment and Conservation Fund

49. ECF has been supporting NPOs to organize education and promotion activities relating to waste reduction and recycling. In 2016-2017, ECF has earmarked \$85 million to support waste reduction projects, including \$20 million for food waste reduction projects and \$65 million for general waste reduction projects in the community. Separately, ECF has earmarked \$25 million to support general education projects, of which \$5 million will be used to support, as a priority, projects using innovative means to drive behavioral change towards waste reduction and clean recycling, and another \$10 million to support food wise-related initiatives. Furthermore, ECF has earmarked \$30 million for research, technology demonstration and conference projects, with waste reduction and recycling being one of the priority research areas.

50. The Administration will provide assistance to recycling operators should they encounter difficulties in meeting the relevant requirements under the Town Planning Ordinance (Cap. 131) and other regulations when making applications for ECF.

District collaboration

51. The 18 District Councils ("DCs"), the Home Affairs Department, EPD and ECC have been collaborating to implement the Community Participation Programme to jointly promote environmental protection at the district level. In 2015-2016, EPD provided \$3.5 million to DCs for implementing district promotional activities on waste reduction and recycling according to the needs of DCs. Over 37 local organizations and NPOs were invited to co-organize the activities participated by more than 100 000 members of the public. In 2016-2017, \$3.6 million have been provided to DCs for implementing the Programme.

Government taking the lead

52. The Subcommittee has urged the Administration to take the lead to promote waste reduction and recycling. According to the Administration, Government bureaux and departments are encouraged to take initiatives to enhance staff awareness about environmental protection and waste reduction and to implement, as far as possible and practicable, green housekeeping measures, such as to reduce paper consumption in the first place and recycle paper products as much as possible; to exercise care in choosing materials used in events such that they can be reused in future occasions; and to avoid using disposable tableware and containers when hosting meetings, conferences or receptions.

53. To promote waste reduction and recycling, all new Government office buildings are required to provide a material recovery room and associated facilities on every floor of the building for separation of waste, sorting of reusable and recyclable materials and temporary storage of such materials. Moreover, since 2015, all new Government buildings with canteens or catering facilities have to allow adequate space for installation of food waste composting systems or temporary storage of food waste for off-site treatment.

Green procurement

54. The Government has been adopting a green procurement policy for promoting waste reduction and recycling. It has encouraged Government departments to purchase green products as far as possible and where economically rational. The Government's Green Procurement List now covers 150 items with updated green specifications and is being promoted to quasi-government organizations as well as the private sector. In 2015, the Government consumed over 3 800 tonnes of B5 diesel in replacement of convention diesel, contributing to the recycling of around 210 tonnes of locally-generated waste cooking oil. The Government has also encouraged a wider use of recycled and other green materials in public works projects whenever the technical performance of the green products is proven to be satisfactory, subject to adequate market supply. For instance, the Highways Department has mandated the use of paving materials with 10% to 30% of reclaimed asphalts pavement by weight for road maintenance applications, contributing to the avoidance of some 20 000 tonnes of asphalts waste in 2015. Looking ahead, the Government will continue to lead by example, review the above measures timely, and step up efforts to promote an environmentally-conscious and sustainable culture in delivering public service.

Other issues

Yard waste

55. The Subcommittee has urged the Administration to reduce yard waste disposal at landfills.

56. The Administration has advised that yard waste makes up only about 1% of Hong Kong's total MSW going to landfills. Currently, yard waste generated from premises (e.g. country parks) managed by the Agriculture, Fisheries and Conservation Department ("AFCD") and LCSD are treated through natural degradation or composting where space permitted. Not all yard waste can be treated in situ, given their large volume, the considerable space and time required for the decomposition process, and the physical constraints to install composting or other treatment facilities at certain existing premises. The Subcommittee has suggested EPD set up a dedicated working group comprising

representatives from AFCD and LCSD to enhance and expedite the measures for reducing yard waste disposal at landfills. The Administration takes note of the suggestion and assures members that EPD will continue to liaise with the relevant departments with a view to raising the efficiency in the treatment of yard waste.

Way forward

57. Subcommittee members have agreed that the Subcommittee should conclude its work and submit a report to the Panel. The Panel will follow up relevant policy measures to be formulated by the Administration in future, including the report and recommendations of Steering Group regarding the provision of refuse collection and recycling facilities. The Subcommittee strongly urges the Government and the Steering Group to take into consideration the concerns and recommendations expressed by Subcommittee members on the various issues set out in this Report in reviewing the existing situation regarding the provision of refuse collection and recycling facilities to complement the implementation of MSW charging and enhance sustainability of the recycling business.

Advice sought

58. Members of the Panel are invited to note the deliberations and recommendations of the Subcommittee set out above.

Panel on Environmental Affairs

Subcommittee on Refuse Collection and Resource Recovery

Terms of Reference

"To study and review the existing policies on refuse collection and resource recovery, including the design, functions and distribution of related facilities, the sorting and logistic flow of refuse, and discuss with the Administration and make timely recommendations."

Panel on Environmental Affairs

Subcommittee on Refuse Collection and Resource Recovery

Membership list for the 2016-2017 session*

Chairman Hon Tanya CHAN

Deputy Chairman (Vacant)#

Members Hon LEUNG Yiu-chung
Hon WU Chi-wai, MH
Hon Charles Peter MOK, JP
Hon CHAN Chi-chuen
Dr Hon Elizabeth QUAT, BBS, JP
Ir Dr Hon LO Wai-kwok, SBS, MH, JP
Hon Andrew WAN Siu-kin
Hon CHU Hoi-dick
Dr Hon Junius HO Kwan-yiu, JP
Hon HUI Chi-fung

(Total : 11 members)

Clerk Ms Angel SHEK

Legal Adviser Miss Winnie LO

*Changes in membership are shown in **Annex**.

#According to the Judgment of the Court of First Instance of the High Court on 14 July 2017, LEUNG Kwok-hung, Nathan LAW Kwun-chung, YIU Chung-yim and LAU Siu-lai have been disqualified from assuming the office of a member of the Legislative Council, and have vacated the same since 12 October 2016, and are not entitled to act as a member of the Legislative Council.

Annex to Appendix II

Panel on Environmental Affairs

Subcommittee on Refuse Collection and Resource Recovery

Changes in membership

Member	Relevant date
Hon LAU Kwok-fan, MH	Up to 20 November 2016
Hon CHAN Han-pan, JP	Up to 15 December 2016

Subcommittee on Refuse Collection and Resource Recovery

**List of deputations and individuals
who have submitted views to the Subcommittee**

- *1. Baguio Green Group Limited
- *2. Business Environment Council Limited
3. Chi Fu Fa Yuen Limited
4. Christian Family Service Centre
5. Chun Shing Development (Hong Kong) Limited
6. Democratic Alliance for the Betterment and Progress of Hong Kong
7. Designing Hong Kong
8. E5 Campus
9. Eco Community Network
- *10. Environmental Campaign Committee
11. Food for Thought
12. Friends of Hoi Ha
- *13. Friends of Sai Kung
14. Friends of the Earth (HK)
15. Go green Hong Kong
16. Good Neighbour North District Church
17. Green Council
18. Green Sense
19. Greeners Action
20. Hong Kong Council of Social Service
21. Hong Kong Environmental Protection Association
22. Hong Kong General Association of Re-cycling Business
23. Hong Kong Green Strategy Alliance
- *24. Hong Kong Organic Waste Recycling Centre
25. Hong Kong Recycling Chamber of Commerce
- *26. K & S Enterprise Company Limited
27. Kwai Tsing Bonding
28. Land Justice League
29. Leave no Waste
30. Living Lamma
31. Makara Surf Company Limited
32. Miss CHEUNG Kai-yin
33. Miss MA Ka-po
34. Mr Harrison LO Kai-yuen
- *35. Mr Ivan IP
36. Mr Ken LO Kin-man
37. Mr LAM Kai-sun
38. Mr LAW Yip-man

39. Mr LEUNG Kwok-ho
40. Mr Michael Felix LAU Hoi-man
- *41. Mr NG
42. Mr Samuel LAI
- *43. Mr Tony CHAN
44. Ms Christine FONG Kwok-shan
45. Ms HO Yee-ling
46. Ms KO Chun-heung
47. North District Out Source Concern Group
48. North District Road Safety Concerns Group
49. Oh yes It's free
50. Plastic Free Seas
51. Po Leung Kuk
52. Rights for Out Sourcing Janitor Concern Group
53. Secure Information Disposal Services Limited
54. Shiny Glory Services Limited
55. The Civic Party
56. The Conservancy Association
57. The Green Earth
58. Tin Shui Wai Community Development Network
59. Yuen Long Community Green Station
60. 結束一桶專棄
61. 趙寶琴小姐
62. 執嘢
63. 杜卓軒先生
64. 不是垃圾站
65. 梁曉詩小姐
66. 何雅宜小姐
67. 物料藝術交流協會
68. 元朗不是垃圾站
69. 鄧淑嫻小姐
70. 莫皓光先生
- *71. 香港泥頭車司機協會
- *72. 受深水埔私營「環保署受管制電器」回收業滋擾之居民盤先生
- *73. 天水圍婦女關注垃圾徵費小組

* submitted written views only

Appendix IV

Subcommittee on Refuse Collection and Resource Recovery

Major issues studied

	Issue	Date of meeting
(a)	Measures and initiatives to promote and support waste reduction, source separation, and collection of roadside recyclables in Hong Kong	13 December 2016
(b)	Comparison of refuse collection and resource recovery systems in selected places	13 December 2016
(c)	Refuse collection system in Hong Kong	11 April 2017
(d)	Development of technologies for waste separation and resource recovery in Hong Kong	5 June 2017
(e)	Progress report of the Steering Group on the Modification of Recycling and Refuse Collection Facilities in Public Places	5 June 2017
(f)	Management of yard waste	5 June 2017
(g)	Proposal to provide a community recycling centre at the reprovisioned refuse collection point in Hau Cheung Street	11 September 2017