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Panel on Environmental Affairs

Meeting on 22 June 2020

Background brief on food waste management in Hong Kong prepared by the Legislative Council Secretariat

Purpose

This paper provides background information on the Administration's strategies and measures for the management of food waste in Hong Kong. It also gives a brief account of the major views and concerns expressed by Members when related issues were discussed by relevant committees of the Legislative Council ("LegCo").

Background

2. Food waste is a major constituent of the municipal solid waste ("MSW") disposed of at landfills in Hong Kong. In 2018, of the 11 428 tonnes of MSW landfilled each day, some 3 565 tonnes was food waste (i.e. about 31% of MSW).¹ Around two thirds of the food waste disposed of daily is generated from households and the remaining comes from the commercial and industrial ("C&I") sectors.

3. Disposal of biodegradable food waste at landfills is unsustainable and environmentally undesirable as it depletes the limited landfill space, creates odour nuisance, generates leachate and landfill gases, and squanders the useful organic contents. To tackle Hong Kong's food waste problem, the Administration has adopted a multi-pronged approach with main focus on avoidance of food waste generation and reduction at source.

¹ In 2016 and 2017, 3 600 tonnes and 3 662 tonnes of food waste was disposed of at landfills each day, accounting for about 35% and 34% of MSW respectively.

Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022

4. In May 2013, the Environment Bureau published the "Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022" ("the Blueprint"), mapping out a comprehensive strategy, targets, policies and action plans for waste management (including food waste management) up to 2022. The Blueprint sets the target to reduce the per-capita MSW disposal rate at landfills by 40% by 2022, using 2011 as the base.

A Food Waste and Yard Waste Plan for Hong Kong 2014-2022

5. The Environment Bureau further issued "A Food Waste and Yard Waste Plan for Hong Kong 2014-2022" ("Food Waste Plan") in February 2014 as a companion document to the Blueprint. The Food Waste Plan outlines the Administration's target of reducing food waste disposal at landfills by 40% by 2022 (using 2011 as the base), and articulates four strategies for handling food waste, namely:

- (a) reduction at source which aims at driving behavioural changes through measures such as the Food Wise Hong Kong Campaign ("Food Wise Campaign"),² and the quantity-based MSW charging scheme proposed to be implemented;³
- (b) reuse and donation aiming at encouraging the commercial sectors such as restaurants, hotels, supermarkets and fresh food markets to donate surplus food to non-governmental organizations, and promoting the use of the Environment and Conservation Fund ("ECF") to support food waste recycling projects;⁴

² Formally launched on 18 May 2013, the Food Wise Campaign is a social mobilization campaign to galvanize the community, from individuals to households to C&I operators, to avoid and reduce food waste at source. As of August 2019, around 840 organizations have signed the Food Wise Charter (established for various trades, non-governmental organizations and government departments to sign and commit to reducing food waste) and another 820 eateries have enrolled in the Food Wise Eateries Scheme, which was launched in 2015 to encourage food eatery outlets in the hotel and food and beverage sectors to reduce food waste at source together with customers through offering portioned meals and adopting food waste reduction measures.

³ The relevant bill (i.e. the Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018) was published in the Gazette on 2 November 2018 and received its first reading at the Council meeting of 14 November 2018. A bills committee has been formed and is currently studying the Bill.

⁴ ECF came into operation in August 1994 after enactment of the Environment and Conservation Fund Ordinance (Cap. 450) in June 1994. Local non-profit making organizations are eligible to apply for funding support to undertake educational, research and technology demonstration projects and activities in relation to environmental and conservation matters, as well as community waste recovery projects.

- (c) recyclable collection; and
- (d) food waste-to-energy aiming at setting up a network of Organic Waste Treatment Facilities (currently known as Organic Resources Recovery Centres ("ORRCs")) to enable food waste to be transported quickly and transformed into energy.

Programmes in relation to reduction and recycling of food waste

Food Waste Recycling Partnership Scheme

6. The "Food Waste Recycling Partnership Scheme" was launched in 2010 with participation of relevant C&I organizations to promote good food waste management practices and to gain experience on food waste source separation and recycling. Under the scheme, the Environmental Protection Department ("EPD") collaborates with District Councils and non-profit making organizations to hold "Food Waste Reduction Activities", which last for three to six months in various shopping malls in different districts on a roving basis, with a view to enhancing public participation and encouraging C&I sectors to reduce food waste at source.

Food waste recycling projects in housing estates

7. In July 2011, the Administration launched the "Funding Scheme for Food Waste Recycling Projects in Housing Estates" through ECF to fund participating housing estates to install on-site food waste treatment facilities, organize food waste collection and recycling projects and relevant education activities on food waste reduction. As of August 2019, 36 housing estates have been supported by ECF, with a total of \$39.6 million approved.

Pilot Programme on Provision of Small Food Waste Composters at Schools

8. To assist primary and secondary schools in cultivating the "Food Wise" culture among teachers and students, and demonstrate the recycling of food waste into compost for use in planting on campuses, the Administration rolled out the "Pilot Programme on Provision of Small Food Waste Composters at Schools" in 2018 to provide schools with small food waste composters, education kits and information for educative activities. The Administration is planning to introduce the second phase programme in 2020.

Collection and delivery of food waste

9. In accordance with the Food Waste Plan, EPD commenced a consultancy study on food waste collection in March 2017, with a view to reviewing, investigating and exploring options for the collection and delivery of food waste from households, C&I premises, and academic and government

institutions.⁵ A collection plan and the required ancillary facilities will be set up based on the actual local situations to cater for the needs for making future arrangements for large-scale collection and delivery of food waste from domestic and C&I sectors to the relevant treatment facilities.

10. As set out in the Chief Executive's 2018 Policy Address, the Administration has also introduced a pilot scheme to provide food waste collection service for C&I sectors so as to examine the feasibility of implementing government-run free food waste collection services in the long run.

Food waste treatment facilities

Organic Resources Recovery Centres

11. Under the Food Waste Plan, the Administration proposes that a network of five to six ORRCs to be established in phases. ORRC1 in Siu Ho Wan, Lantau Island commenced operation in July 2018, treating source-separated food waste generated by C&I sectors and collected mainly from Lantau, Kowloon and Hong Kong Island, with a daily capacity of 200 tonnes. ORRC2 in Sha Ling, North District is expected to be completed for operation in 2022 with a treatment capacity of 300 tonnes per day.⁶

12. Meanwhile, the Administration is conducting an engineering feasibility study and an environmental impact assessment for ORRC3. Subject to the progress and development of the remaining food waste treatment facilities (including other ORRCs, and food waste/sewage sludge anaerobic co-digestion facilities which may be built in the future), the Administration anticipates that Hong Kong's overall food waste treatment capacity will be increased to about 1 800 tonnes per day (accounting for around 50% of food waste generated at present) by mid-2030s.

⁵ The scope of the study covers the development progress and plan for the food waste treatment and recycling facilities, storage space required to perform food waste separation, the mode and arrangement for food waste collection and delivery, types of delivery vehicles, as well as auxiliary and ancillary facilities for temporary food waste storage on site, etc. The Administration will brief the Panel on Environmental Affairs on the findings of the study at the meeting on 22 June 2020.

⁶ The funding for the design and construction of ORRC1 and ORRC2 was approved by the Finance Committee on 24 October 2014 and 28 June 2019 respectively.

Food waste/sewage sludge anaerobic co-digestion trial schemes

13. The first food waste/sewage sludge anaerobic co-digestion trial scheme was launched at Tai Po Sewage Treatment Works ("STW") in May 2019.⁷ The food waste pre-treatment facilities can process about 50 tonnes of food waste per day. The Administration plans to extend the trial scheme to Sha Tin STW for commissioning in 2022 with a daily food waste treatment capacity of about 50 tonnes.

Director of Audit's Report No. 65

14. In May 2015, the Director of Audit commenced a review of the Government's efforts to reduce and recycle food waste, and the relevant findings were published in the Director of Audit's Report No. 65 ("the Audit Report") on 27 October 2015. The Audit Report identified a number of areas for improvement by the Government to tackle the food waste problem. For instance, it was recommended that the Government should be vigilant in monitoring the generation and disposal of food waste against the relevant targets and take early corrective actions in future. The Government should also strengthen its efforts to encourage more C&I premises and households to participate in food waste recycling schemes.

15. The Public Accounts Committee of LegCo noted the findings and observations of the Audit Report, and emphasized that the Administration must develop a comprehensive plan to encourage both the public and private sectors to handle their food waste in a proper manner so that an adequate amount of food waste would be collected and transported to ORRCs for treatment.

Major views and concerns expressed by Members

16. Issues relating to food waste management were brought up at various meetings of the Panel on Environmental Affairs ("EA Panel") in the Sixth LegCo. The funding proposal for the design and construction of ORRC2 was considered by the Public Works Subcommittee at its meetings on 14 and 28 November 2018 and 20 March 2019, and the Finance Committee at its meetings on 31 May, 14 June and 28 June 2019. Relevant issues were also raised at the meetings of the Bills Committee on Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018. Members' major views and concerns are summarized in the ensuing paragraphs.

⁷ Under the food waste/sewage sludge anaerobic co-digestion trial scheme, food waste pre-treatment facilities have been built at the Shuen Wan Leachate Pre-treatment Works near Tai Po STW. The pre-treated food waste pulp will be pumped to the sewage sludge anaerobic digestion system at Tai Po STW for co-digestion.

Source separation, collection and delivery of food waste

17. Members stressed the importance of implementing measures and providing incentives to encourage source separation and recovery of food waste by the public. Some members considered that pending the provision of sufficient facilities to promote separation, recovery and treatment of domestic food waste on a territory-wide scale, the implementation of MSW charging at this stage might be ineffective and lead to charge evasion.

18. The Administration advised that it would allocate additional recurrent resources to strengthen its work on waste reduction and recovery, with an additional provision of around \$300 million to \$400 million for the financial year ("FY") 2019-2020 to start with, which would be further increased to no less than \$800 million \$1 billion from the FY when MSW charging was to be implemented. The amount of this annual provision would be commensurate with the estimated gross revenue to be generated from MSW charging in the initial period so as to achieve the effect of "dedicated-fund-for-dedicated-use". Part of the funding would be used to launch a two-year pilot scheme to deliver, free-of-charge, C&I food waste to ORRC1 and Tai Po STW for treatment, thereby promoting source separation of C&I food waste. Meanwhile, a new scheme had been implemented under the Recycling Fund to provide C&I sectors with funds for procuring facilities for treatment of C&I food waste and subsidizing part of the transportation cost for delivering food waste to ORRC1 and other appropriate recycling facilities.

19. The Administration pointed out that the collection of domestic food waste was more complicated than that of C&I food waste, so the current approach was to first deal with C&I food waste and promote source separation of food waste in C&I establishments through the implementation of the proposed MSW charging scheme and the pilot scheme on provision of free collection service for C&I food waste. Making reference to the findings of a study on implementing territory-wide separation and collection of domestic and C&I food waste, a collection plan and a plan for the provision of required ancillary facilities would be formulated based on the actual local situations.

20. The Administration informed members that it would take forward a pilot scheme to treat domestic food waste collected through the free collection service at the Sha Tin STW under the food waste/sewage sludge anaerobic co-digestion trial scheme so as to test the operational and facilitation requirements for carrying out separation at source, collection and recycling of domestic food waste at different types of private and public housing estates, villages and domestic/commercial buildings. If the food waste/sewage sludge anaerobic co-digestion trial scheme was successful, the Administration could start making use of STWs to treat domestic food waste in 2025-2026 at the soonest.

Development of Organic Resources Recovery Centres

21. Members supported the Administration's proposal to establish a network of ORRCs to tackle the food waste problem in Hong Kong but were concerned that the development of ORRCs lagged far behind Hong Kong's pace of food waste generation. Even upon full operation of ORRC1, ORRC2 and ORRC3, only some 800 tonnes of food waste could be recycled on a daily basis. Members sought information about the timetable for completion of the remaining ORRCs and the estimated treatment capacity of each phase of ORRCs.

22. The Administration advised that during the initial stage of ORRC1's operation, the quantity of food waste had to be increased steadily so as to ensure that there was sufficient time for the proliferation of bacteria used for the degradation of food waste in the anaerobic digesters. As such, ORRC1 was treating 110 to 120 tonnes of food waste per day at present. As of April 2019, a total of 27 000 tonnes of food waste had been collected from about 190 C&I establishments and the average amount of food waste treated was about 2 700 tonnes per month. ORRC2 was expected to be completed for operation in 2022 with a food waste treatment capacity of 300 tonnes per day, and a feasibility study and preliminary design for ORRC3 (with a designed daily treatment capacity of 300 tonnes) had been commenced. Given the challenges in identifying suitable sites, there was no concrete timetable for development of the remaining ORRCs at this stage.

Food donation

23. Some Members observed that many local food businesses were reluctant to donate their excess food due to concerns about food safety and associated legal liabilities. As a result, many food businesses were dumping loads of edible food each day. The Members urged the Administration to introduce relevant policies, and/or legislation similar to the Good Samaritan Food Donation Act in the United States, to promote food donation and minimize food waste.

24. The Administration stressed that one of the four strategies for handling food waste under the Food Waste Plan was "reuse and donation", which aimed at encouraging the commercial sectors to donate food, and promoting the use of ECF to support food redistribution projects. Besides, the Centre for Food Safety of the Food and Environmental Hygiene Department ("FEHD") had issued the Food Safety Guidelines for Food Recovery in August 2013, setting out food safety principles on donating food regardless of the types and sources of food. If organizations applied for funding from ECF to finance food recovery projects, at least one full-time employee in the project team should possess a health manager or hygiene supervisor qualification recognized by FEHD to oversee the food safety issues of the operation of the entire project.

Since legislation on exempting legal liability of food donors was related to food safety, the Administration considered that a cautious approach must be adopted in this regard. At this stage, the Administration had no plan to introduce Good Samaritan laws but would keep in view the situation and implement suitable measures as and when necessary.

Council questions

25. Members had raised questions relating to food waste management at various Council meetings. The questions and the Administration's replies are hyperlinked in the **Appendix**.

Latest development

26. At the meeting on 22 June 2020, the Administration will brief EA Panel on the findings of the consultancy study on examining and exploring modes of food waste collection and delivery for Hong Kong, and the latest progress of the pilot trial on free collection of food waste.

Relevant papers

27. A list of relevant papers is set out in the **Appendix**.

Food waste management in Hong Kong

List of relevant papers

Date of meeting	Event	Paper
6 April 2016	Special meeting of the Finance Committee ("FC") for examination of Estimates of Expenditure 2016-2017	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB068, 070, 072, 089, 098, 140, 332, 347)
24 October 2016	Meeting of the Panel on Environmental Affairs ("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)) Background brief on "Strategies and measures to reduce and recycle food waste in Hong Kong" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)19/16-17(06)) Administration's follow-up paper (LC Paper No. CB(1)182/16-17(02)) Minutes (LC Paper No. CB(1)210/16-17)
23 January 2017	Policy briefing cum meeting of EA Panel	Administration's paper on "2017 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)451/16-17(01)) Minutes (LC Paper No. CB(1)683/16-17)

Date of meeting	Event	Paper
5 April 2017	Special meeting of FC for examination of Estimates of Expenditure 2017-2018	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB040, 041, 042, 065, 068, 085, 099, 162, 245, 264, 277)
30 October 2017	Policy briefing cum meeting of EA Panel	<p>Administration's paper on "2017 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)75/17-18(01))</p> <p>Administration's paper on "Implementation of municipal solid waste charging" (LC Paper No. CB(1)126/17-18(02))</p> <p>Updated background brief on "Introduction of municipal solid waste charging in Hong Kong" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)126/17-18(03))</p> <p>Minutes (LC Paper No. CB(1)399/17-18)</p>
17 April 2018	Special meeting of FC for examination of Estimates of Expenditure 2018-2019	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB066, 076, 079, 097, 098, 116, 118, 132, 137, 145, 169, 185, 312)
19 July 2018	Meeting of EA Panel	<p>Administration's paper on "5173DR-Organic Resources Recovery Centre Phase 2" (LC Paper No. CB(1)1249/17-18(03))</p> <p>Background brief on "Implementation of Organic Resources Recovery Centres" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1249/17-18(04))</p>

Date of meeting	Event	Paper
		<p>Administration's follow-up paper (LC Paper No. CB(1)142/18-19(02))</p> <p>Minutes (LC Paper No. CB(1)1428/17-18)</p>
22 October 2018	Policy briefing of EA Panel	<p>Administration's paper on "2018 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)10/18-19(01))</p> <p>Minutes (LC Paper No. CB(1)276/18-19)</p>
14 November 2018	Meeting of the Public Works Subcommittee ("PWSC")	<p>Administration's paper on "173DR-Organic Resources Recovery Centre Phase 2" (PWSC(2018-19)32)</p> <p>Administration's supplementary paper (LC Paper No. PWSC27/18-19(01))</p> <p>Administration's follow-up paper (LC Paper No. PWSC36/18-19(01))</p> <p>Minutes (LC Paper No. PWSC61/18-19)</p>
28 November 2018	Meeting of PWSC	<p>Letter dated 22 November 2019 from Hon HUI Chi-fung (LC Paper No. PWSC32/18-19(01))(Chinese version only)</p> <p>Administration's supplementary paper (LC Paper No. PWSC36/18-19(02))</p> <p>Administration's follow-up paper (LC Paper No. PWSC105/18-19(01))</p> <p>Minutes (LC Paper No. PWSC121/18-19)</p>

Date of meeting	Event	Paper
5 December 2018	Meeting of the Bills Committee on Waste Disposal (Charging for Municipal Solid Waste) (Amendment) Bill 2018 ("Bills Committee")	Legislative Council Brief (File Ref: EP CR/9/65/3) Administration's follow-up paper (LC Paper No. CB(1)563/18-19(01)) Minutes (LC Paper No. CB(1)530/18-19)
18 February 2019	Meeting of Bills Committee	Administration's follow-up paper (LC Paper No. CB(1)737/18-19(04)) Minutes (LC Paper No. CB(1)870/18-19)
20 March 2019	Meeting of PWSC	Administration's follow-up paper (LC Paper No. PWSC178/18-19(01)) Minutes (LC Paper No. PWSC194/18-19)(Chinese version only)
9 April 2019	Special meeting of FC for examination of Estimates of Expenditure 2019-2020	Written questions raised by Members and the Administration's replies (Reply serial numbers: ENB049, 062, 077, 086, 098, 114, 120, 142, 159, 171, 234, 291, 314, 319, 320)
20 May 2019	Meeting of Bills Committee	Minutes (LC Paper No. CB(1)1340/18-19)
31 May 2019	Meeting of FC	Letter dated 16 May 2019 from Hon CHU Hoi-dick (LC Paper No. FC184/18-19(01))(Chinese version only)

Date of meeting	Event	Paper
		Administration's supplementary paper (LC Paper No. FC186/18-19(01)) Administration's follow-up paper (LC Paper No. FC196/18-19(01)) Minutes (LC Paper No. FC238/18-19)
14 June 2019	Meeting of FC	Minutes (LC Paper No. FC12/19-20)
28 June 2019	Meeting of FC	Minutes (LC Paper No. FC35/19-20)
28 October 2019	Policy briefing cum meeting of EA Panel	Administration's paper on "2019 Policy Address - Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. CB(1)31/19-20(03)) Minutes (LC Paper No. CB(1)251/19-20)
11 November 2019	Meeting of Bills Committee	Minutes (LC Paper No. CB(1)240/19-20)

Other relevant documents:

Government bureau	Document
The Environment Bureau	"Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022" "A Food Waste and Yard Waste Plan for Hong Kong 2014-2022"

Hyperlinks to Director of Audit's Report No. 65 and Public Accounts Committee report:

Date of issuance	Report
27 October 2015	Director of Audit's Report No. 65 Chapter 2 on "Reduction and recycling of food waste"
17 February 2016	Public Accounts Committee Report No. 65 Chapter 2 of Part 8 on "Reduction and recycling of food waste"
25 May 2016	The Government Minute in response to the Report of the Public Accounts Committee No. 65 of February 2016

Hyperlinks to relevant Council questions:

Date	Council Question
7 December 2016	Press release on Council question (written) raised by Hon Kenneth LEUNG
14 December 2016	Press release on Council question (written) raised by Hon CHAN Hak-kan
22 March 2017	Press release on Council question (oral) raised by Hon CHAN Hak-kan
10 May 2017	Press release on Council question (written) raised by Hon Ip Kin-yuen
21 June 2017	Press release on Council question (oral) raised by Ir Dr Hon LO Wai-kwok
30 May 2018	Press release on Council question (oral) raised by Hon CHAN Hak-kan
5 December 2018	Press release on Council question (written) raised by Hon CHAN Hak-kan

16 January 2019	Press release on Council question (written) raised by Hon CHAN Hak-kan
19 June 2019	Press release on Council question (written) raised by Hon WU Chi-wai