

# 立法會

## *Legislative Council*

LC Paper No. CB(1)19/16-17(06)

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### **Panel on Environmental Affairs**

**Meeting on 24 October 2016**

### **Background brief on the strategies and measures to reduce and recycle food waste in Hong Kong prepared by the Legislative Council Secretariat**

#### **Purpose**

This paper provides background information on the Administration's strategies and measures to reduce and recycle 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 the relevant committees of the Legislative Council ("LegCo") in the 2013-2014 to 2015-2016 legislative sessions.

#### **Background**

##### Food waste challenge in Hong Kong

2. Food waste is any waste, whether raw, cooked, edible or associated with inedible parts, generated during food production, distribution, storage, meal preparation or consumption of meals. In Hong Kong, around one third of food waste originates from the commercial and industrial ("C&I") sectors and the remaining comes from households.<sup>1</sup>

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<sup>1</sup> In 2015, 10 159 tonnes of municipal solid waste were disposed of at landfills each day, some 33% (3 382 tonnes) of which were food waste. About 986 tonnes of landfilled food waste were generated daily from C&I sources such as restaurants, hotels, wet markets, and food production and processing industries.

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

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

4. Based on the 2005 Policy Framework on the Management of Municipal Solid Waste (2005-2014) ("the Policy Framework"),<sup>2</sup> the Administration published in May 2013 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 set the targets to reduce the per-capita municipal solid waste ("MSW") disposal rate to landfills by 20% by 2017, and by 40% by 2022, using 2011 as the base.

#### A Food Waste & Yard Waste Plan for Hong Kong 2014-2022

5. In February 2014, the Administration issued "A Food Waste & Yard Waste Plan for Hong Kong 2014-2022" ("Food Waste Plan"). As a companion document to the Blueprint, the Food Waste Plan outlined the Administration's target of reducing food waste disposal at landfills by 40% by 2022 (using 2011 as the base), and articulated four specific strategies for handling food waste, including:

- (a) *reduction at source* which aims at driving behavioural change through measures such as the Food Wise Hong Kong Campaign ("Food Wise Campaign"), and the quantity-based MSW charging scheme to be implemented;<sup>3</sup>

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<sup>2</sup> The Administration published the Policy Framework in December 2005, which set out a comprehensive strategy consisting of a series of tried and proven policy tools and measures to tackle the waste problem, with emphasis of the way forward on municipal solid waste management for the decade from 2005 to 2014 on community participation and the "polluter-pays" principle.

<sup>3</sup> The Administration has set up an inter-departmental working group to supervise and coordinate the preparation work for the implementation of the MSW charging scheme, and aims to get ready the necessary legislative proposals for the implementation within the 2016-2017 legislative session.

- (b) *reuse and donation* aiming at encouraging the commercial sectors to donate food waste to food donation organizations, and promoting the use of the Environment and Conservation Fund to support food waste recycling projects;<sup>4</sup>
- (c) *recyclable collection* aiming at carrying out a study on food waste collection and delivery; and
- (d) *food waste-to-energy* aiming at setting up a network of Organic Waste Treatment Facilities ("OWTFs") to transform food waste into energy.

### Major programmes and infrastructures in relation to reduction and recycling of food waste

#### *Food Waste Recycling Partnership Scheme*

6. The Administration launched the Food Waste Recycling Partnership Scheme together with the C&I sectors in 2010 to promote good food waste management practices and to gain experience on food waste source separation and recycling. Around 12 public or private corporate participants are invited to join the Scheme each year. The participants will practise source separation of food waste and the Environmental Protection Department ("EPD") will collect the source-separated food waste to the Kowloon Bay Pilot Composting Plant for recycling. The Scheme also includes formulating guidelines on food waste management, and hosting discussion sessions, visits, etc., to provide a platform for participants to share experience on food waste reduction.

#### *Food Wise Hong Kong Campaign*

7. 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. The Administration anticipates that this Campaign may help Hong Kong to avoid about 5% to 10% of food waste by 2017-2018.

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<sup>4</sup> The Environment and Conservation Fund 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.

8. Various activities are organized under the Food Wise Campaign, ranging from articulating and disseminating best practices in the C&I sectors to working with government departments, schools and non-governmental organizations ("NGOs") to expand participation. The Campaign is also facilitating food donation for dual purposes of caring for the disadvantaged and waste reduction. Food Wise Ambassadors from the community and organizations are recruited to spread the key messages and practical tips about food waste reduction across the community. A Food Wise Charter has also been established for various trades, NGOs and government departments to sign and commit to reducing food waste.

#### *Organic Waste Treatment Facilities*

9. In the Food Waste Plan, the Administration proposed that a network of five to six OWTFs with a total recycling capacity of about 1 300 to 1 500 tonnes per day be established between 2014 and 2024 in phases. OWTF Phase 1 with a daily treatment capacity of 200 tonnes is being developed at Siu Ho Wan in North Lantau, and is scheduled for testing and commissioning in the second quarter of 2017, and full commissioning by end 2017.<sup>5</sup> The facility is government-funded and will be operated under a Design-Build-Operate ("DBO") contract. It will receive and treat source-separated food waste from the C&I sectors. The Administration's plan is to develop OWTF Phase 2 at Sha Ling in the North District. It has also identified a site in Shek Kong of Yuen Long for the development of OWTF Phase 3.

#### Director of Audit's Report No. 65

10. 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 has identified a number of areas for improvement by the Government to tackle the food waste problem. For instance, it was recommended that the Administration should be vigilant in monitoring the generation and disposal of food waste against the relevant targets and take early corrective actions in future. The Administration should also strengthen efforts to encourage more C&I premises and households to participate in food waste recycling schemes.

11. The Public Accounts Committee of LegCo noted the findings and observations of the Audit Report, and emphasized that the Administration

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<sup>5</sup> The funding for the design and construction of OWTF Phase 1 was approved by the Finance Committee of LegCo on 24 October 2014.

must develop a comprehensive plan to encourage 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 OWTF for treatment.

### **Major views and concerns expressed by Members**

12. Issues relating to the policies and measures to tackle the food waste problem were brought up when the Administration briefed the Panel on Environmental Affairs ("EA Panel") on the promotion of the recycling industry at the meetings on 27 January and 23 July 2014, and on the implementation of OWTF Phase 1 at the meeting on 13 March 2014. EA Panel was also briefed on food waste-related environmental initiatives in the annual Policy Addresses at the meetings on 27 January 2014, 26 January 2015 and 25 January 2016. The funding proposal for the design and construction of OWTF Phase 1 was considered by the Public Works Subcommittee at its meeting on 8 April 2014, and by the Finance Committee at its meetings on 11 July, and 17 and 24 October 2014. The Public Accounts Committee held two public hearings on 12 and 29 December 2015 to receive evidence on the findings and observations of the Audit Report. The major views and concerns expressed by Members on the subject of food waste management are summarized in the ensuing paragraphs.

#### Reduction and source separation of food waste

13. Members expressed concern that the Administration's waste management schemes and programmes were carried out in a disconnected and cost-ineffective manner. For instance, the Administration had not taken timely and proactive actions to follow up and monitor the implementation of the Food Wise Campaign. As a result, the participation rate of the Campaign was unsatisfactory and there was insufficient measurable data to compile useful statistics to evaluate its effectiveness.<sup>6</sup> Members urged the Administration to step up its efforts in promoting reduction and source separation of food waste.

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<sup>6</sup> For instance, as of June 2015, there were only 415 Food Wise Charter signees and 2 759 Food Wise Hong Kong Ambassadors under the Food Wise Campaign. Out of the total 1 027 Food Wise Charter signees' returns that should have been called for in the period from 2013 to 2015, EPD had only called for 808 returns and omitted to call for 219 returns. In addition, only 26 returns contained measurable food-waste-reduction data.

14. The Administration stressed that its efforts to tackle food waste were not "piecemeal" as the relevant initiatives had been taken forward in line with the strategies and action items set out in the Policy Framework and the Blueprint, etc., and different waste management experts were engaged in the formulation of the policies and initiatives.

15. The Administration advised that it had been closely collaborating with the C&I sectors on food waste source separation and recycling, such as through the Food Waste Recycling Partnership Scheme. The Administration had also drawn up guidelines on the management and source separation of food waste, and organized training workshops on food waste reduction management practices for the C&I sectors. Through various schemes including the Food Wise Campaign and the Programme on Source Separation of Domestic Waste,<sup>7</sup> the Administration would continue to drive behavioural change in the community to reduce food waste, and to separate their food waste for recycling.

### Recycling of food waste

#### *Food waste collection and recycling capacity*

16. Some Members queried how the guaranteed food waste recycling tonnage of 50 tonnes per day by OWTF Phase 1 could be met. They were concerned whether the Administration would put in place an effective system for separating, collecting and transporting food waste from the C&I sectors and the domestic sector to OWTFs for treatment. Some other Members, on the other hand, were worried that the recycling capacity of about 1 300 to 1 500 tonnes per day of the network of OWTFs would not be adequate to cope with the amount of food waste generated in Hong Kong.

17. The Administration explained that the guaranteed food waste tonnage for OWTF Phase 1 was meant to share out the risk of waste quantity uncertainty between the Government and the contractor of OWTF Phase 1. As OWTF Phase 1 would recycle food waste from the C&I sector that generated a substantial amount of food waste every day, it was expected that the facility would reach its treatment capacity of 200 tonnes per day soon after its commissioning. Drawing experience from similar treatment facilities in South Korea and Taipei, the proposed network of five to six OWTFs in Hong Kong should be able to cope with the expected recycling

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<sup>7</sup> The Programme on Source Separation of Domestic Waste was launched territory-wide in 2005 and aims to facilitate residents to separate waste at source by encouraging and assisting property management companies to provide waste separation facilities on each building floor, and broaden the types of recyclables to be recovered.

rate of about 50% of the city's food waste. The Administration assured Members that it would put in place a rigorous mechanism for monitoring and assessing the performance of OWTF contractors to avoid under-performance of contract requirements.

18. As regards collection of food waste from different C&I establishments, the Administration advised that it would make reference to the experience gained from the Food Waste Recycling Partnership Scheme. The Administration had been actively engaging sources of food waste in the catchment area of OWTF Phase 1 to work out the food waste delivery arrangements. Besides, the Environment Bureau and EPD had been discussing with the Food and Environmental Hygiene Department the detailed arrangement of food waste collection at wet markets.

#### *Supporting private recyclers*

19. Noting that many private food waste recyclers faced operational difficulties such as keen competition and soaring costs, Members called on the Administration to offer more assistance to these recyclers and the recycling trade in general. For instance, they suggested that the Administration should relax the application thresholds and compliance requirements of the Recycling Fund,<sup>8</sup> and establish a territory-wide waste collection network through Refuse Collection Points, which could help absorb the transportation costs and hence facilitate the development of the local recycling industry.

20. The Administration responded that a Steering Committee to Promote the Sustainable Development of the Recycling Industry had been established to step up efforts in reducing waste at source and promoting the development of the local recycling industry. Further, various initiatives under the Blueprint would create opportunities for the local recycling industry. Such initiatives included developing the EcoPark in Tuen Mun to provide long-term land at an affordable cost as well as short-term tenancy sites to recyclers for their operations. Regarding the effectiveness of the Recycling Fund in assisting the recycling trade, the Administration advised that it would review the implementation of the Fund in 2016.

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<sup>8</sup> The Chief Executive announced in his 2014 Policy Address that \$1 billion was earmarked for setting up a Recycling Fund to promote the recovery and recycling of waste by facilitating the upgrading of the operational capabilities and efficiency of the recycling industry for sustainable development. The Fund was launched in October 2015 with the approval of funding by the Finance Committee in July 2015.

### *Treatment technologies and uses of recycled products*

21. Members enquired about the technologies for recycling of food waste, the energy efficiency of converting food waste into usable energy and resources, and whether resources recovered from food waste could be consumed locally.

22. The Administration responded that as Hong Kong had a strong demand for energy, food waste should best be recycled and converted into energy. OWTF Phase 1 would adopt the anaerobic digestion and composting technologies to turn food waste into biogas and compost. The biogas recycled from food waste would be used to generate about 21 million kWh of electricity each year. It was estimated that after meeting the internal demand of OWTF Phase 1, about 14 million kWh of surplus electricity could be exported upon full operation. The Administration planned to export part of the surplus electricity to nearby government facilities, and part of it to the existing power grid. As regards the compost produced at OWTF Phase 1, it could be fully absorbed by the local market for organic farms and horticulture purposes.

### *Operation of Organic Waste Treatment Facilities*

23. Members asked whether and how the Administration would encourage private sector participation in the provision of organic waste treatment facilities and operations, such as by introducing tax concessions. The Administration advised that the current arrangement of operating OWTF Phase 1 under a DBO contract with public funding was considered more effective in dealing with the situation in Hong Kong where a charging scheme for MSW disposal was not yet in place. However, the Administration would keep an open mind on how the private sector might participate in the operation of organic waste and other waste management facilities in the long run.

### Food donation

24. Members expressed concern about the potential legal liability faced by food donors arising from food donation, and urged the Administration to strengthen its support for NGOs and encourage chain food premises to participate in food donation activities to minimize food waste.

25. The Administration advised that it had been communicating closely with some NGOs to assist them in establishing links with local food manufacturers and suppliers, and facilitate their collaboration in developing



food donation programmes. The Administration explained that the Centre for Food Safety had issued a set of guidelines on food recovery with food safety principles that should be applied to food donation, regardless of the types and sources of food. Some NGOs had also entered into food donation agreements with their donors to deal with food safety liability issues.

### **Council questions**

26. At the Council meetings of 17 December 2014, 2 December 2015, 20 April 2016 and 25 May 2016, Hon Frederick FUNG, Hon SIN Chung-kai, Dr Hon Priscilla LEUNG and Hon IP Kwok-him raised questions respectively on food waste management. Issues covered in the questions include the effectiveness of the food waste recycling trial scheme launched in public housing estates and outcome of the relevant review, how the Administration would encourage the donation of food waste by commercial organizations, and whether the Administration would support the commercialization of products recycled from food waste through innovative technology. The questions and the Administration's replies are hyperlinked in the **Appendix**.

### **Latest development**

27. The Administration will brief EA Panel on the progress and manpower arrangements in relation to the implementation of measures to reduce and recycle food waste at the meeting on 24 October 2016.

### **Relevant papers**

28. A list of relevant papers is in the **Appendix**.

## Strategies and measures to reduce and recycle food waste in Hong Kong

## List of relevant papers

Date	Event	Paper
27 January 2014	Meeting of the Panel on Environmental Affairs ("EA Panel")	<p>Administration's paper on "Promotion of recycling industry" (LC Paper No. <a href="#">CB(1)500/13-14(03)</a>)</p> <p>Administration's supplementary paper on "Promotion of recycling industry" (LC Paper No. <a href="#">CB(1)787/13-14(03)</a>)</p> <p>Administration's paper on "2014 Policy Address – Policy initiatives of Environment Bureau: Environmental protection" (LC Paper No. <a href="#">CB(1)744/13-14(01)</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">CB(1)1291/13-14</a>)</p>
13 March 2014	Meeting of EA Panel	<p>Administration's paper on "5172DR – Organic Waste Treatment Facilities Phase 1: Information Note on Project Cost Estimate" (LC Paper No. <a href="#">CB(1)1074/13-14(01)</a>)</p> <p>Administration's supplementary paper on "5172DR - Organic Waste Treatment Facilities Phase 1" (LC Paper No. <a href="#">CB(1)1140/13-14(01)</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">CB(1)1616/13-14</a>)</p>
8 April 2014	Meeting of the Public Works Subcommittee	<p>Administration's paper on "172DR – Organic waste treatment facilities phase 1" (<a href="#">PWSC(2014-15)1</a>)</p> <p>Minutes of meeting (LC Paper No. <a href="#">PWSC74/13-14</a>)</p>

Date	Event	Paper
11 July 2014	Meeting of the Finance Committee ("FC")	Administration's paper on "172DR – Organic waste treatment facilities phase 1" <a href="#">(FCR(2014-15)49)</a>  Minutes of meeting (LC Paper No. <a href="#">FC44/14-15</a> )
23 July 2014	Meeting of EA Panel	Administration's paper on "Measures to promote the recycling industry and establishment of the Recycling Fund" (LC Paper No. <a href="#">CB(1)1814/13-14(03)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)61/14-15</a> )
17 October 2014	Meeting of FC	Administration's paper on "172DR – Organic waste treatment facilities phase 1" <a href="#">(FCR(2014-15)49)</a>  Minutes of meetings (LC Paper No. <a href="#">FC128/14-15</a> ) (LC Paper No. <a href="#">FC129/14-15</a> )
24 October 2014	Meeting of FC	Administration's paper on "172DR – Organic waste treatment facilities phase 1" <a href="#">(FCR(2014-15)49)</a>  Minutes of meetings (LC Paper No. <a href="#">FC139/14-15</a> ) (LC Paper No. <a href="#">FC140/14-15</a> )
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. <a href="#">CB(1)436/14-15(01)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)674/14-15</a> )

Date	Event	Paper
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. <a href="#">CB(1)459/15-16(03)</a> )  Minutes of meeting (LC Paper No. <a href="#">CB(1)739/15-16</a> )

**Hyperlinks to relevant documents:**

Government bureau/department	Document
Environment Bureau	<a href="#">Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022</a>  <a href="#">A Food Waste &amp; Yard Waste Plan for Hong Kong 2014-2022</a>

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

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

**Hyperlinks to relevant Council questions:**

<b>Date</b>	<b>Council question</b>
17 December 2014	<a href="#">Press release</a> on Council question (written) raised by Hon Frederick FUNG
2 December 2015	<a href="#">Press release</a> on Council question (oral) raised by Hon SIN Chung-kai
20 April 2016	<a href="#">Press release</a> on Council question (written) raised by Dr Hon Priscilla LEUNG
25 May 2016	<a href="#">Press release</a> on Council question (written) raised by Hon IP Kwok-him