

立法會
Legislative Council

LC Paper No. CB(1)1074/13-14(02)

Ref. : CB1/PL/EA

Panel on Environmental Affairs

Special meeting on 13 March 2014

**Background brief on Organic Waste Treatment Facilities Phase 1
prepared by the Legislative Council Secretariat**

Purpose

This paper sets out the background to the development of the Organic Waste Treatment Facilities ("OWTFs") Phase 1, and gives a brief account of the views and concerns expressed by members on the subject.

Background

Management of municipal solid waste in Hong Kong

2. In 2011, about 13 500 tonnes of waste are disposed of at landfills every day, of which the main trunk are 9 000 tonnes of municipal solid waste ("MSW") (comprising domestic waste as well as commercial and industrial ("C&I") waste). Of the 9 000 tonnes of MSW, some 40% are made up of "putrescibles", which are various types of organic waste that decompose and create odour. The organic waste is mainly made up of food waste (around 90%) but includes some other waste, such as yard waste and personal care cotton products. Food waste is any waste, whether raw, cooked, edible and associated with inedible parts generated during food production, distribution, storage, meal preparation or consumption of meals.

3. In December 2005, the Administration published "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" ("Policy Framework") which set out, among others, the separate collection of biodegradable materials

(such as food waste) at source from C&I establishments for biological treatment (such as composting and anaerobic digestion¹).

4. As Hong Kong has little experience in collecting and treating food waste, a Pilot Composting Plant was developed at the Kowloon Bay Waste Recycling Centre in mid 2008 to acquire experience. A Food Waste Recycling Partnership Scheme with the trades and institutions and Food Waste Reduction Program were also established in late 2009 and mid 2010 respectively to promote food waste reduction and source separation of unavoidable food waste for subsequent collection and treatment.

5. The Administration announced in the 2009-2010 Policy Address its intention to develop an OWTF in phases. The OWTF aims to recycle source-separated organic waste generated from C&I sectors (mostly food waste) to useful products, thereby minimizing requirement for landfill disposal.

6. In February 2014, the Environment Bureau issued “A Food Waste & Yard Waste Plan for Hong Kong 2014-2022”, which maps out four strategies, including –

- (a) ***reduction at source*** which aims at driving behavioural changes through the Food Wise Hong Kong Campaign. The quantity-based MSW charging scheme to be implemented will also reduce food waste;
- (b) ***reuse and donation*** which aim at encouraging 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;
- (c) ***recyclable collection*** which aims at initiating a study on food waste collection and delivery in 2015; and
- (d) ***food waste-to-energy*** which aims at setting up a network of OWTFs to transform waste to energy.

¹ Anaerobic digestion is a process where micro-organisms are used to breakdown organic matter in the absence of oxygen. Recycling food waste using this method is low carbon and produces biogas (a source of renewable energy similar to natural gas) as well as a residue that can be processed for use as compost or fertilizer. The energy produced can be used to run the facility and for the surplus energy to be exported. For example, it is estimated OWTF Phase 1 can produce up to 14 million kWh of surplus electricity, which is equivalent to the electricity used by some 3,000 households. This technology is now mature and the optimal capacity for an OWTF is in the range of 100 to 300 tonnes per day.

Organic Waste Treatment Facilities

7. The Administration plans to develop OWTFs in phases. Biological processes comprising anaerobic digestion and composting technologies will be employed to recycle source-separated food waste into biogas and compost as renewable energy and resource. The first phase of OWTFs with a daily treatment capacity of 200 tonnes will be developed at Siu Ho Wan in North Lantau on a site with an area of about 2 hectares. The second phase of OWTFs with a daily capacity of 300 tonnes will be developed at Sha Ling in the North District on a site with an area of about 2.5 hectares. On top of the main anaerobic digestion and composting treatment units, ancillary facilities such as waste pre-treatment system for removal of inert materials not suitable for biological treatment, environmental control and monitoring systems, visitors and environmental education centre, biogas cleaning and energy export systems, emergency vehicular access, weighbridge, etc. will have to be accommodated within OWTFs sites.

8. The Administration completed the feasibility study and the Environment Impact Assessment ("EIA") study for the first phase OWTFs in 2010 and EIA report for the proposed project was approved in February 2010. The feasibility and EIA studies for the second phase OWTFs were commenced in 2011. EIA report for the second phase OWTFs was submitted to the authority in July 2013 and it was anticipated approval of the report by end 2013.

Deliberations by the Panel on Environment Affairs

9. The Panel on Environment Affairs ("the Panel") discussed the OWTFs Phase 1 project on 22 November 2010 and touched upon the subject of food waste management facilities at the meetings on 29 March 2010, 24 June 2013 and 25 November 2013. The major views and concerns expressed by members at various meetings are set out below.

10. In discussing the development of OWTFs, members were generally concerned about the limited treatment capacity of the planned OWTFs. They pointed out that as food waste constituted 44% of the total waste generated in Hong Kong, there was a need to expand the planned capacities of the two OWTFs in Siu Ho Wan and Sha Ling, which together would only be capable of handling 500 tonnes of food waste per day, as against the generation of over 3 000 tonnes of food waste per day. Whilst noting that there were technical constraints to expand the handling capacities of these two OWTFs, members called on the

Administration to identify suitable sites for further expansion of the facility in Hong Kong. The Administration advised that the two OWTFs, together with the organic treatment facilities at the EcoPark, would be able to treat about one sixth of the food waste generated per day. The Administration would continue to work on the initiative to tackle food waste.

11. Members were also concerned about the possible environmental nuisances associated with the operation of OWTF particularly in the transport of organic waste. They requested the Administration to formulate appropriate mitigation measures to deal with the problems.

12. On the treatment technologies, noting that anaerobic digestion and composting technologies would be adopted to recycle organic waste into biogas and compost products, some members expressed concern as to whether there were sufficient outlets for the huge amount of compost to be generated daily from OWTF. The Administration advised that the compost generated from the Pilot Composting Plant at the Kowloon Bay Waste Recycling Centre was used by Government departments and other non-governmental organizations in greening and agricultural activities. The many parks and estates in Hong Kong which required some 35 000 tonnes of composting materials each year would provide outlets for the compost generated from OWTF.

13. Some other members noted that apart from internal use by OWTF Phase 1, the biogas generated could be used to generate surplus electricity up to 28 million kWh for export to the grid each year. There was also concern about arrangements for grid connection that had been made with the power companies. The Panel noted that the Administration had been liaising with the power companies on the export of the surplus electricity to the electricity grid and members would be informed of the outcome in due course. Regarding on-site treatment of food waste, members opined that efforts should be made to encourage residential developments to provide on-site treatment facilities for food waste with reference to the experience of Park Island at Ma Wan.

14. At the Panel meeting on 22 November 2010, members did not raise objection to the proposed OWTF project.

Council questions

15. Hon Andrew LEUNG, Hon KAM Nai-wai and Hon WONG Kwok-kin raised questions relating to OWTFs at the Council meetings on 13 January 2010,

25 April and 27 June 2012. Details of the Council questions are hyperlinked in **Appendix** for ease of reference.

Latest development

16. The Administration will brief the Panel on the proposed development of OWTF Phase 1 at the special meeting on 13 March 2014.

Relevant papers

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

Council Business Division 1
Legislative Council Secretariat
12 March 2014

List of relevant papers

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	29 March 2010	<p>Administration's paper on "Update on the Progress of the Key Initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)"" (LC Paper No. CB(1)1443/09-10(04)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0329cb1-1443-4-e.pdf</p> <p>Updated background brief on "Management of municipal solid waste in Hong Kong" prepared by the Legislative Council Secretariat (LC Paper No. CB(1)1443/09-10(05)) http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0329cb1-1443-5-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)1922/09-10) http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100329.pdf</p>

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	22 November 2010	<p>Administration's paper on "5172DR – Development of Organic Waste Treatment Facilities – Phase 1 in Siu Ho Wan, North Lantau" (LC Paper No. CB(1)461/10-11(04)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1122cb1-461-4-e.pdf</p> <p>Background brief on the development of the First Phase Organic Waste Treatment Facilities prepared by the Legislative Council Secretariat (LC Paper No. CB(1) 479/10-11(02)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1122cb1-479-2-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)961/10-11) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20101122.pdf</p>
Panel on Environmental Affairs	24 June 2013	<p>Administration's paper on "Monitoring the outsourcing of the collection of recyclable materials and promotion of the recycling trade" (LC Paper No. CB(1)1332/12-13(05)) http://legco.gov.hk/yr12-13/english/panels/ea/papers/ea0624cb1-1332-5-e.pdf</p> <p>Administration's supplementary paper on "Monitoring the outsourcing of the collection of recyclable materials and promotion of the recycling trade" (LC Paper No. CB(1)195/13-14(01)) http://www.legco.gov.hk/yr12-13/english/panels/ea/papers/ea0624cb1-195-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)1807/12-13) http://legco.gov.hk/yr12-13/english/panels/ea/minutes/ea20130624.pdf</p>

Council/ Committee	Date of meeting	Paper
Panel on Environmental Affairs	25 November 2013	<p>Administration's paper on "Council for Sustainable Development's Public Engagement on Municipal Solid Waste Charging - 'Waste Reduction by Waste Charging . How to Implement?'" (LC Paper No. CB(1)314/13-14(03)) http://legco.gov.hk/yr13-14/english/panels/ea/papers/ea1125cb1-314-3-e.pdf</p> <p>Updated background brief on "Municipal solid waste charging in Hong Kong" prepared by the Legislative Council Secretariat (LC Paper No. CB(1) 314/13-14(04)) http://legco.gov.hk/yr13-14/english/panels/ea/papers/ea1125cb1-314-4-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1)772/13-14) http://legco.gov.hk/yr13-14/english/panels/ea/minutes/ea20131125.pdf</p>
Panel on Environmental Affairs	20 February 2014*	<p>"A Food Waste & Yard Waste Plan For Hong Kong 2014-2022" issued by the Environment Bureau (LC Paper No. CB(1)956/13-14(01)) http://legco.gov.hk/yr13-14/english/panels/ea/papers/ea0224cb1-956-1-e.pdf</p>

*Date of issuance of papers

Hyperlinks to relevant Council Questions:

Date	Council Question
13 January 2010	<p>Council question raised by Hon Andrew LEUNG http://www.info.gov.hk/gia/general/201001/13/P201001130213.htm</p>

25 April 2012	Council question raised by Hon KAM Nai-wai http://www.info.gov.hk/gia/general/201204/25/P201204250243.htm
27 June 2012	Council question raised by Hon WONG Kwok-kin http://www.info.gov.hk/gia/general/201206/27/P201206270253.htm