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Panel on Environmental Affairs

Meeting on 22 November 2010

**Background brief on the development of
the First Phase Organic Waste Treatment Facilities**

Purpose

This paper sets out the background to the development of the First Phase Organic Waste Treatment Facilities (OWTF), and gives a brief account of the views and concerns expressed by the Panel on Environmental Affairs (the Panel).

Background

2. 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 the commercial and industrial (C&I) establishments for biological treatment (such as composting and anaerobic digestion).

3. In 2009, Hong Kong disposed of about 9 000 tonnes of municipal solid waste (MSW) at landfills everyday. The organic fraction of MSW, mainly food waste and yard waste, amounted to over 3 700 tonnes, constituting about 41% and was the largest MSW category. Of the over 3 700 tonnes organic waste generated daily, some 1 000 tonnes were from C&I sources, such as restaurants and food processing industries. The disposal of such biodegradable waste direct to landfills is not sustainable as it leads to rapid depletion of the limited landfill void

space, and the formation of landfill gas and leachate that impose long-term environmental burden on the environment.

Organic Waste Treatment Facilities

4. As there is very limited information on the application of biological treatment technologies in Hong Kong to treat a sizable amount of food waste, the Administration commissioned a consultant in 2006 to design, develop and conduct trials on the Pilot Composting Plant at the Kowloon Bay Waste Recycling Centre for the reception and processing of source-separated food waste from C&I establishments. The development and operation of the pilot plant would provide necessary and useful information for planning of OWTF as part of the long-term waste treatment strategy. The pilot plant consists of an enclosed pre-treatment area, two composting drum units, curing pads, product screens and biofilters. The total treatment capacity is four tonnes of food waste feedstock per day. The final compost products meet the Compost and Soil Conditioner Quality Standard 2005 and could be used for landscaping, organic farming, vegetable and fruit production.

5. With the experience gained from the pilot plant, the Administration plans to develop OWTF in two phases with a total daily treatment capacity of 400 tonnes to 500 tonnes of organic waste. Phase 1 would treat 200 tonnes of organic waste (mostly food waste) for the production of biogas and about 20 tonnes of compost every day. OWTF would adopt biological technologies (composting and anaerobic digestion) to stabilize the organic waste and turn it to useful compost products and biogas for energy recovery. A flowchart showing the entire process is given in the **Appendix**.

Site selection

6. A site search to locate suitable sites for OWTF is completed. The proposed sites for the first phase and second phase are located at Siu Ho Wan of North Lantau and Sha Ling at North District respectively. The Siu Ho Wan site was selected for developing the first phase of OWTF following the completion of the Environmental Impact Assessment study in February 2010. The Administration has also consulted the Tsuen Wan and Islands District Councils which raised no objection to the project. The funding applications for the project will be submitted to the Legislative Council in due course.

Benefit

7. The biogas produced in each phase can be used as renewable energy. It is estimated that for the two phases of OWTF, about 28 million kWh of surplus electricity can be supplied to the power grid per year, which is adequate for use by 6 000 households (some 14 million kWh of electricity from the first phase for use by 3 000 households). This would help reduce 50 000 tonnes per year of greenhouse gas emissions through reduction in use of fossil fuel for electricity generation. In addition, each phase of OWTF would avoid daily disposal of about 190 and 280 tonnes of waste at landfills respectively.

Deliberations at meetings of the Council and the Panel

8. A question on the disposal of food waste in Hong Kong was raised at the Council meeting on 13 January 2010. The question and the Administration's response are hyperlinked below for ease of reference.

9. The development of OWTF was discussed in the context of the progress of key initiatives in the Policy Framework at the Panel meeting on 29 March 2010.

10. Some members expressed concern about the limited capacity of OWTF to be built at Siu Ho Wan which could only handle about 200 tonnes of source-separated food waste, as compared to daily generation of over 3 700 tonnes of organic fraction of MSW in Hong Kong. They also enquired about the means to reduce food waste from domestic sources which accounted for over 70% of the total food waste generated.

Latest development

11. The Administration will brief members on the development of the First Phase OWTF at the Panel meeting on 22 November 2010.

Relevant papers

Information paper provided by the Administration for the Environmental Affairs Panel meeting on 29 March 2010

<http://www.legco.gov.hk/yr09-10/english/panels/ea/papers/ea0329cb1-1443-4-e.pdf>

Minutes of the Environmental Affairs Panel meeting on 29 March 2010

<http://www.legco.gov.hk/yr09-10/english/panels/ea/minutes/ea20100329.pdf>

Question raised by Hon Andrew LEUNG at the Council meeting on 13 January 2010

http://www.legco.gov.hk/yr09-10/english/counmtg/agenda/cm20100113.htm#q_4

Administration reply to question raised by Hon Andrew LEUNG at the Council meeting on 13 January 2010

<http://www.info.gov.hk/gia/general/201001/13/P201001130213.htm>

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Anaerobic Digestion

