

Pilot Plant Development of Biodegradable Waste Treatment Facilities

Purpose

This paper informs Members of the background and the latest progress of the pilot plant development of biodegradable waste treatment facilities (Pilot Plant) at the Kowloon Bay Waste Recycling Centre.

Background

2. At present, Hong Kong disposes of about 9,300 tonnes of municipal solid waste (MSW) at landfills everyday. The organic fraction of the MSW, mainly food waste and yard waste, amounts to over 3,600 tonnes, constituting about 38% and is the largest MSW category. Of the over 3,600 tonnes of organic waste generated daily, some 700 tonnes are from the commercial and industrial (C&I) sources such as restaurants and food processing industries. The disposal of such biodegradable waste direct to the 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 our environment.

3. In December 2005, the government published “A Policy Framework for the Management of Municipal Solid Waste (2005-2014)” (Policy Framework). As laid out in the Policy Framework, biodegradable materials such as food waste from C&I establishments can be separately collected at source for biological treatment such as composting and anaerobic digestion. To apply these biological treatment technologies in Hong Kong to treat a sizable amount of food waste, local factors need to be considered. These include the high oil and

grease contents of the restaurant food waste, potential environmental nuisance, pertinent development and operation requirements, quality and marketability of the treated products. However, there is very little such information at present.

4. We are planning for the setting up of the Organic Waste Treatment Facilities (OWTF) as part of our long-term waste treatment strategy. The OWTF development comprises two phases, with each phase handling 200 tonnes of source separated organic waste from C&I sector per day. The first phase of the OWTF is planned to be built in Siu Ho Wan of Lantau Island, and the target commission date is mid 2010's. The second phase will be of similar capacity and to be built in Sha Ling of the North District by late 2010's.

5. To gather experience and information on the application of biological treatment for source separated food waste in Hong Kong, it is planned to develop a Pilot Plant at the Kowloon Bay Waste Recycling Centre in 2008 for the reception and processing of source-separated food waste from the C&I establishments. The development and operation of the Pilot Plant would provide necessary and useful information for our planning of the OWTF.

Pilot Plant

6. We appointed a consultant in 2006 to design, develop and conduct trials on the Pilot Plant and to evaluate the quality and market potential and applicability of the compost products.

7. The Pilot Plant will consist of two separate in-vessel composting units of a total treatment capacity of about 4 tonnes of food waste per day. The process flow of the Pilot Plant is illustrated in the flow diagram in Figure 1. We aim to commission the Pilot Plant in mid 2008.

8. The trial operation of the Pilot Plant would span over more than

one year, covering food waste from different categories of C&I establishments. After commissioning, the Pilot Plant will first receive the food waste generated at the Equestrian Venue during the Olympic and Paralympic Equestrian Events in August and September 2008 respectively. After that, a 12-month trial operation covering different categories of C&I waste producers will commence. It is intended that the C&I waste producers will include bakery industry, bean curd industry, catering industry, food production industry, hotels, wholesale market, yard waste and restaurants.

9. The trial operation programme is designed to collect useful information and local experience on collection and treatment of food waste. It will also aim to determine the resulting quality of compost products. Market response to the use of the compost product will also be explored in this Pilot Plant project. The information collected will be used for the detailed planning and design of the OWTF in Hong Kong.

Progress

10. The contract for the first in-vessel composting unit was awarded in November 2007. Installation of the first in-vessel composting unit and other accessories at the Kowloon Bay Recycling Centre was completed in April 2008. At present, the Pilot Plant is under testing and commissioning. After successful commissioning, it will first receive the food waste generated at the Equestrian venues during the Olympic and Paralympic Equestrian Events in August and September 2008.

11. Members are invited to note the background and progress of the Pilot Plant project.

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