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Panel on Environmental Affairs

Meeting on 26 March 2012

**Updated background brief on
management of municipal solid waste in Hong Kong
prepared by the Legislative Council Secretariat
(Position as at 21 March 2012)**

Purpose

This paper sets out progress of management of municipal solid waste (MSW) in Hong Kong, and gives a brief account of the discussions by Members on the subject.

Background

2. Hong Kong relies principally on landfills to treat its waste. At present, about 13 800 tonnes of waste are disposed of at landfills every day, of which the main trunk are 9 100 tonnes of MSW (comprising domestic as well as commercial and industrial (C&I) waste). MSW is collected, transferred and disposed of at the three strategic landfills, namely, the South-East New Territories (SENT) Landfill in Tseung Kwan O, the North-East New Territories (NENT) Landfill at Ta Kwu Ling, and the West New Territories (WENT) Landfill at Nim Wan. These three strategic landfills take up in total 270 hectares of land, cost \$6 billion to construct and more than \$400 million to run annually. The remaining capacities of the three landfills will be exhausted in 2014, 2016 and 2018 respectively.

Strategies on waste management

3. To bring about a major reduction in the volume of waste requiring disposal, the Administration commissioned the Waste Reduction Study in 1994 and consulted the public on recommendations of the Study in mid-1997. On the basis of the public response and taking into account latest policy developments as well as technological renovation, the Administration issued the

10-year Waste Reduction Framework Plan (WRFP) in 1998 with the following objectives -

- to extend the useful life of existing landfills;
- to minimize the amount of waste produced that requires disposal;
- to increase the waste recycling rate;
- to promote education and awareness in the community of the true costs of waste management so that we can review how these costs are met;
- to encourage maximum efficiency in waste management operations and minimize the costs associated with the collection, treatment and disposal of wastes; and
- to help conserve the earth's non-renewable resources;

Policy Framework for the Management of Municipal Solid Waste (2005-2014)

4. To address the serious and imminent waste problem in a holistic manner, the Administration published the Policy Framework for the Management of Municipal Solid Waste (2005-2014) (Policy Framework) in December 2005, which set out a comprehensive waste management strategy to tackle the waste problem ahead and to achieve the following targets -

- Target 1: ***Waste avoidance and minimization*** - to reduce the amount of MSW generated in Hong Kong by 1% per annum up to the year 2014;
- Target 2: ***Reuse, recovery and recycling*** - to increase the overall recovery rate of MSW to 45% by 2009 and 50% by 2014; and
- Target 3: ***Bulk reduction and disposal of unavoidable waste*** - to reduce the total MSW disposed of in landfills to less than 25% by 2014.

5. The emphasis of the way forward on MSW management from 2005 to 2014 is on community participation and the "polluter-pays" principle. The key initiatives in the Policy Framework are as follows -

- (a) expedite the roll-out of territory-wide waste recovery programmes to increase the amount of local recyclables;
- (b) introduce mandatory producer responsibility schemes (PRSs) through new legislation upon completion of detailed studies on product-specific measures;
- (c) examine ways of introducing charging for MSW;
- (d) continue to encourage waste recycling through provision of short-term tenancies of suitable sites for longer duration with conditions for local waste recycling businesses on a case-by-case basis where circumstances warrant;
- (e) continue to develop the EcoPark exclusively for the environmental industry;
- (f) all Government departments to adopt a green procurement policy as far as practicable;
- (g) continue to encourage the development of recycling technology projects through the Environment and Conservation Fund, Innovation and Technology Fund and funds for small and medium enterprises;
- (h) introduce landfill disposal bans to complement PRSs; and
- (i) extend the existing strategic landfills.

Progress of the key initiatives in the Policy Framework

6. Issues relating to the pressing waste problem have been discussed at meetings of Council and the Panel on Environmental Affairs (the Panel), and the Panel has held various meetings to discuss the subject and invited deputations (including relevant trades, professionals and green groups) to express their views. In general, the Panel supports the "3R" principle (i.e. reduce, reuse and recycle) in managing MSW, and the development of the three inter-related components in a coordinated fashion.

Waste avoidance and minimization

7. While acknowledging that the target of reducing the amount of MSW generated in Hong Kong by 1% per annum up to the year 2014 had taken into

account the annual growth rate of 3% for MSW generated in Hong Kong (i.e. the reduction target represents a total gross reduction of 4% of MSW per annum), the Panel held the view that the target was too conservative. It also pointed out that a drastic reduction in waste generation could be achieved once a proper waste reduction policy was put in place as in the case of Taiwan where the waste reduction rate had increased from 2.4% to 50% following the implementation of waste reduction measures.

Product Responsibility Schemes

8. As highlighted in the Policy Framework, the "polluter-pays" principle should be adopted to provide economic incentives for the public to reduce and recycle waste. In line with this principle, PRS will enable manufacturers, importers, retailers and consumers to share the eco-responsibility of reducing, recovering and recycling certain products so as to minimize the environmental impact. The Policy Framework recommends the introduction of PRS for six types of products, namely vehicle tyres, plastic shopping bags (PSB), electrical and electronic (E&E) equipment, packaging materials, beverage containers and rechargeable batteries. These products are accorded priority because they could be a stable source of materials for developing local recycling industry and their diversion from landfills could help save landfill space.

9. In July 2008, the Product Eco-responsibility Ordinance (Cap. 603) (PEO) was enacted to provide a legal framework for implementing PRS in Hong Kong. It also provides for enforcement powers and an appeal mechanism, which can be applied (with or without modification as appropriate) to other PRS when introduced under the primary legislation in future. Each and every new PRS must be implemented through amendments to the principal Ordinance. The legislative approach has been adopted taking into account the Panel's view. The report of the relevant Bills Committee is hyperlinked below.

10. The *Environmental Levy Scheme on Plastic Shopping Bags* (the Levy Scheme) is the first PRS under PEO. The implementation details of the environmental levy scheme are set out in Product Eco-responsibility (Plastic Shopping Bags) Regulation which has come into operation on 7 July 2009. In gist, an environmental levy of 50 cents on each PSB distributed by retailers will be implemented by phases. Chain or large supermarkets, convenience stores as well as personal health and beauty stores are covered in the first phase. Registered retailers are required to submit to the Administration quarterly returns reporting the number of PSBs distributed and the levy collected. According to the landfill surveys conducted by the Administration, landfill disposal of PSBs distributed by registered retailers in mid-2010 had decreased over 75% when compared with the same period in mid-2009 before the launch of the Levy Scheme.

11. Riding on the success of the first phase of the Levy Scheme, the Administration released a consultation document in May 2011 to gauge public views on the proposed extension of the mandatory PRS on PSBs to include all retailers regardless of their business scale. Upon implementation, a charge of 50 cents will be required for each PSB distributed at any retail outlets in Hong Kong, except for PSBs that are used directly and solely to carry food for hygiene reasons. The Administration also proposes that charge could be retained by retailers without the need to remit to the Administration (the "retention" approach) to obviate the associated registration and reporting requirements. When the proposed extension was discussed at the Panel meeting on 28 November 2011, members generally supported extending the Levy Scheme to cover all retailers in Hong Kong. However, the Administration was urged to provide clear guidelines on the compliance requirements and exemptions, as well as consider implementing a "dual" system system (i.e. status quo for existing registered retailers and application of "retention" approach to newly covered retailers) under the extended Levy Scheme.

12. The proposal to introduce a *mandatory PRS for waste electrical and electronic equipment* (WEEE) was put up for a three-month public consultation in January 2010. The proposed WEEE Scheme will cover five types of E&E products, i.e. television sets, washing machines, refrigerators, air conditioners, and computer products (including desktops, laptops, printers, scanners and monitors), which account for over 80% of WEEE locally generated in Hong Kong. Taking into account the feedback from the public, the Administration proposes to implement the new mandatory PRS through amendment to PEO and other relevant legislation.

13. Under the proposed WEEE Scheme, retailers will be required to provide mandatory and free take-back service so that used and waste E&E products can be collected more efficiently for treatment at local treatment facilities to be operated by the future WEEE Management Contractor under a "Design, Build and Operate" (DBO) contract through open tender. There will be permit controls for the import and export of used and waste E&E products to guard against dumping of WEEE to Hong Kong, and ensure proper treatment for locally generated used and waste E&E products. To recover the full costs for waste collection, a fee will be collected at the retail level upon purchase of new E&E products. The fee level has to be decided after the DBO contract has been awarded.

14. When the outcome of public consultation was discussed at the Panel meeting on 28 November 2011, members generally supported the principles of PRS for WEEE but raised concerns about the implementation details of the Scheme, particularly on the sharing of cost among stakeholders. Some members were not convinced that the Administration should place the financial burden on consumers and retailers rather than manufacturers, importers and

wholesalers of E&E products who were more capable of bearing the cost. Some other members questioned the possibility of acquiring a WMC through open tender to provide collection and treatment of WEEE. These members pointed out that the requirement for retailers to deliver WEEE to WMC would not only create additional compliance cost and logistical burden, but also affect the livelihood of second-hand dealers and recyclers. Instead of introducing a complicated WEEE Scheme which required extensive participation of retailers and consumers, consideration should be given to just simply requiring second-hand dealers and recyclers to provide treatment for WEEE.

MSW charging

15. MSW charging is a policy tool to encourage waste reduction at source, and has been adopted in many international cities. Given Hong Kong's multi-storey, multi-tenant household setting and the prevailing waste collection arrangement, the Administration conducted a three-month trial scheme in 2007 to examine the logistical requirements for introducing a viable rate charge scheme under different domestic housing settings. A territory-wide Baseline Study to collect key information on the waste generation and waste management of different C&I establishments was also completed in 2010. The information collected will provide a useful reference for the development of a practicable charging scheme for MSW. According to the Administration, the implementation of MSW charging would pose significant challenges due to the unique city fabric of Hong Kong and the way MSW is being collected. Nevertheless, the Administration will engage the public in a discussion of the objectives of implementing MSW charging for waste reduction, the principles and practicalities of various MSW charging options. In line with PRS, the future model of MSW should be formulated with an objective for waste reduction. A broad framework on the principles and pros and cons of MSW charging options would be presented for public engagement so as to consolidate a community consensus before a policy decision on MSW charging is made.

16. When the subject of MWS charging was discussed in the context of the progress of the Policy Framework at the Panel meeting on 24 January 2011, some members raised concern about double levy since part of the Government rates was used for waste treatment. Concessionary arrangement should be worked out to reduce the impact of MSW charging on low-income families. Some other members considered that MSW charging should be revenue neutral in that the levy collected should be ploughed back to assist the development of waste recycling industries. Given that waste from C&I establishments was rising as a result of increased economic activities while waste from residential developments was decreasing because of increased public awareness on waste reduction and recovery, there might be a need to apply a phased approach and/or a separate MSW charging arrangement to cater for the two different scenarios.

17. In January 2012, the Consultation Document entitled "Strengthening Waste Reduction: Is Waste Charging an Option?" was released for a three-month public consultation on the introduction of MSW charging as a direct economic disincentive to reduce waste at source in Hong Kong. Relying on international experiences, the Administration generalizes the following four broad charging approaches for MSW charging -

- (a) **Quantity-based system** – it establishes a direct link between the charge and the quantity of waste (which can be determined by volume, weight or other mechanisms) requiring treatment or disposal. The waste charge could be imposed through means such as mandatory use of pre-paid garbage bags and by weight at the disposal facilities (also known as "gate fee");
- (b) **Proxy system** – it links the waste charge to an indirect indicator of waste generation which reflects the level of human activity in a household such as water consumption. Charges are levied regardless of the quantity of waste actually generated;
- (c) **Fixed charge system** – each waste producer within the same category (e.g. residents of the same district) pays an identical rate regardless of how much waste they produce; and
- (d) **Partial charging system** – only applicable to a defined group of waste producers who will be required to pay a gate fee assessed with reference to the weight of waste when the waste is delivered to the disposal facilities.

18. The Consultation Document was discussed at the Panel meeting on 19 January 2012. Some Panel members were disappointed that the Consultation Document failed to provide certain requisite information, inter alia, the level of MSW charge. These members pointed out that political parties as well as the community would not support MSW charging unless the level of charge was known. Given that the charges for waste collection had already been included in the rates, consideration should be given to offsetting MSW charging by a corresponding reduction in rates (or rents in the case of public rental housing) if MSW charging was not meant to raise revenue. The Administration should conduct a second round of public consultation on the modus operandi (including implementation details) of the charging mechanism. Some other members considered that the Consultation Document should include measures and supporting infrastructure required to improve the collection, segregation and recycling of MSW. In parallel with MSW charging, incentive schemes should be put in place to promote waste reduction and recycling. A waste reduction target should also be set as part of the waste management strategy.

19. On the choice of option for MSW charging, some members supported the quantity-based system which was in line with the "polluter-pays" principle, while others supported a gradual approach starting with options which were easier to implement such as the partial charging system. Noting that different options might give rise to different operational problems (such as the need to withdraw public litter bins from the streets under the quantity-based system to prevent illegal dumping, and the problem of mixed waste in the event of partial charging given the prevalence of composite buildings where both domestic and commercial premises were located within the same neighbourhood), some other members suggested that the Administration should look into the feasibility of adopting a mixed approach. Efforts should also be made to educate the public on the measures to reduce MSW, followed by legislation to mandate separation of waste at source and to ban unauthorized disposal of MSW.

Reuse, recovery and recycling

20. To reverse the rising trend of waste requiring disposal, various measures have been taken to enhance source recovery of waste for recycling, which helps reduce the quantity of waste that requires disposal. As a result, the overall MSW recovery rate rose from 34% to 45% in 2007, 49% in 2008 and 2009, and 52% in 2010. As the MSW recovery rate has overshot the target laid in the Policy Framework (45% by 2009 and 50% by 2014), the Administration is prepared to raise the target of waste recovery rate to 55% by 2015 through the introduction of a series of complimentary measures involving government departments, the estate management trades, the restaurant operators, the public organizations, green groups and social services groups to broaden the participation in waste reduction and recycling. Some of the ideas being explored are as follows –

- (a) expansion of the programme on Source Separation of Waste (see Appendix I) and operate waste recycling activities (say in public market) to facilitate collection of recyclables on the one hand and instill behavioural change on the other;
- (b) taking forward pilot projects to promote on-site waste composing at shopping malls with restaurants, hotels and other premises, and developing of funding schemes under the Environment and Conservation Fund to support the operation of on-site food waste treatment at housing estates; and
- (c) rallying the support of all government departments with close interface with the public in waste reduction programmes as far as possible to demonstrate a visible commitment of the Administration.

Making available land for waste recovery operations

21. The processes of collection, turning recovered materials into useable products and the sale of these products not only add values to the recovered materials but also create a circular economy that brings business and job opportunities. However, of the 2.4 million tonnes recyclable materials recovered from MSW annually, over 90% are exported for recycling. The over-dependence on export as an outlet for recovered materials makes the recycling industry insecure in the long run as the market demand for recyclable materials is highly volatile and the international trend is to increasingly restrict trans-boundary movement of waste, even recyclable waste. To address these problems and to realize the full potential of recycling, there a need to promote the local recycling industry so that recyclable materials can be turned into products that have higher economic values and more stable and reliable markets.

22. As high land and labour costs as well as insufficient recyclable materials collected are the major barriers to the growth of recycling industry in Hong Kong, suitable land on short-term tenancies (STT) has been allocated to the recycling trade with a view to promoting the recycling industry in Hong Kong. There are currently 32 dedicated STT sites, occupying a total area of about 4.8 hectares. Waste recycled through these sites amounts to about 330 000 tonnes, and has an export value of about \$600 million. To encourage long-term investments and provide incentives to establish higher end industries and downstream services, the Administration has set aside 20 hectares of permanent land in Tuen Mun Area 38 for setting up the EcoPark. A management company has been engaged, through open tender, in November 2006, to maintain, manage and market the EcoPark at a monthly fee of about \$600,000. Apart from providing maintenance, cleaning, security control and marketing work, staff of the management company have also provided support and advisory services to the tenants for setting up their plants.

23. While supporting the establishment of EcoPark to help reduce waste, develop recycling industries and create job opportunities, some Panel members expressed disappointment at the modus operandi of the EcoPark, which in their views was not able to attract potential tenants as evidenced by the withdrawal and termination of tenancies. The tenancy requirements, such as the provision of performance guarantee, were too stringent and had imposed excessive constraints on tenants' cash flow given the limited earnings from recycling operations. Besides, the use of public tender for leasing of lots might not be appealing to the recycling trades as some of them might not be ready to participate in the public tender on the specified dates. Greater flexibility should be allowed in the leasing process to facilitate participation of interested recycling operators. Consideration should also be given to facilitating the development of small-scale waste recycling operations by making available

smaller lots in the EcoPark. Apart from the provision of land, the Administration should also assist in identifying possible sources of recovered materials and outlets for recycled products, as recycling industries would not be viable in the absence of steady supply of waste materials and outlets for recycled products. To this end, consideration should be given to providing working areas within refuse transfer stations to facilitate waste recyclers in segregating and recycling waste.

24. At the Panel meeting on 22 November 2010, members were informed that all six lots in Phase 1 of the EcoPark covering 3.6 hectares had been leased out for recycling of waste cooking oil, waste metals, waste wood, waste computers, waste car batteries and waste plastics. With the experience gained in the tendering of six Phase 1 lots, and taking into account the feedback from project stakeholders and the survey from the trade, adjustments to the types of waste to be processed, lot size, length of tenancy and tender assessment would be made to increase the attractiveness of Phase 2. Some members had reservation on the proposed leasing arrangement for Phase 2 as this had failed to take into account the recommendations in the Public Accounts Committee Report No. 54, particularly in respect of levels of rents. Other members stressed the need to ensure the viability of recycling operations, and that the Administration should put in place a waste recycling strategy and complementary policies.

25. At the briefing by the Secretary for the Environment on relevant policy initiatives in the Chief Executive's 2011-2012 Policy Address on 20 October 2011, the Panel noted that the first batch of EcoPark Phase 2 lots with a total area of five hectares was successfully awarded to six recyclers in August 2011 for recycling waste metals, waste batteries, waste construction materials and glass, WEEE and waste rubber tyres. To add further impetus for the development of recycling and promotion of green lifestyle, the Administration has selected two non-profit making organizations through open tender process to set up two waste recycling centres in EcoPark Phase 2 with funding support from the Environment and Conservation Fund. The two centres provide secured outlets for waste materials from the Source Separation of Waste Programme (including waste plastics and WEEE).

Bulk reduction and disposal of unrecyclable waste

Integrated Waste Management Facilities

26. As the reliance on landfills as the sole means of disposing of waste is not sustainable, there is a need to identify an alternative approach to properly manage the wastes generated. In late April 2002, the Administration launched an expression of interest (EoI) exercise to invite local and overseas suppliers and facility operators to propose waste treatment technologies for the development

of integrated waste management facility (IWWMF) in Hong Kong. A total of 59 submissions were received, in which six technology types, namely composting, anaerobic digestion, incineration, gasification, a combination of mechanical and biological treatment as well as combustion of fuel derived from waste for the production of cement, were identified. Based on these technologies, the Advisory Group on Waste Management Facilities (AG) set up to assist in assessing EoI concluded that in the light of the heterogeneous nature of MSW in Hong Kong, IWWMF should adopt a multi-technology approach with incineration as the core waste treatment technology.

27. Some Panel members were skeptical that the Administration was trying to push forward incineration as the way forward for resolving the waste problem. They remained of the view that separation of waste at source and the development of recycling industry were best for Hong Kong. Other members stressed the need to use the most advanced technology for incineration even if this might entail a higher cost. Efforts should also be made to reduce the amount of waste to be incinerated. As a consolidated view on the way forward for the management of MSW, the Panel passed the following motion at the meeting on 5 July 2005 -

"That this Panel urges the Administration to include in parallel in the upcoming strategy document on municipal solid waste management a holistic and comprehensive plan, targets and timeframes for measures on waste avoidance and minimization; recovery, recycling and reuse; as well as bulk reduction and disposal of unrecyclable waste."

28. In March 2007, the Panel was informed that thermal treatment would be adopted as the core technology for developing IWWMF while biological treatment would be used for source-separated biodegradable waste and mechanical sorting and recycling for clean mixed recyclables. Following a site search exercise, two sites at Shek Kwu Chau (SKC) and Tsang Tsui Ash Lagoons were identified as potentially suitable for IWWMF, which would be developed in phases having regard to the size of the overall waste problem. The first phase would have a treatment capacity of about 3 000 tonnes per day. Detailed engineering and environmental impact assessment (EIA) studies for both sites would be carried out to ascertain their ultimate suitability. Subject to the study findings, a final decision on the choice of site would be made with a view to commencing construction as soon as practicable for commissioning in mid 2010. There were dissenting views on the use of thermal technologies for treatment of MSW. Some Panel members opined that with the adoption of the incineration option, the Administration's efforts to reduce and recycle waste would be diminished. Some other Panel members however considered that more should be done to convince the public of the advantages of using non-polluting incinerators as a means of waste treatment, given that the use of landfills for disposal of MSW was not sustainable in the long run. There were also questions on the impacts

on ash disposal and the drug rehabilitating centre in the event that Tsang Tsui Ash Lagoons and Shek Kwu Chau were chosen as the site for IWMF respectively. Some members expressed concern about the placing of a large share of obnoxious facilities in Tuen Mun. To this end, consideration should be given to providing facilities for the betterment of the district.

29. The EIA report on the development of IWMF Phase 1 was approved on 17 January 2012. Taking into account the EIA report results, other factors relating to site selection and Hong Kong's overall waste management strategy as a whole, the Administration identified the artificial island near SKC as the preferred site for developing the first modern IWMF.

Organic Waste Treatment Facilities

30. As food waste constitutes some 28% of C&I waste disposed of at landfills, a pilot composting plant was commissioned in mid-2008 to gather experience and information on the collection and treatment of organic waste. In view of the positive feedback on the use of compost for organic farming, and as a part of the long-term waste treatment strategy, the Administration will develop the Organic Waste Treatment Facilities (OWTF) in two phases, with a combined capacity of handling about 500 tonnes of source separated food waste from the C&I sector per day. Anaerobic digestion and composting technologies will be adopted to recycle organic waste into biogas and compost products. The first phase of OWTF is planned to be built in Siu Ho Wan on Lantau Island, and is targeted to be commissioned in mid 2010s. The second phase will be built in Sha Ling in North District by late 2010s.

31. At the Panel meeting on 22 November 2010, members were informed that the Administration would proceed with tendering for the design-build-operate contract of OWTF Phase 1 in the second quarter of 2011 with a view to seeking funding approval of the Finance Committee by early 2012. Some members were concerned about the limited treatment capacity of some 200 tonnes per day of OWTF Phase I as compared to daily generation of over 3 000 tonnes of food waste generated daily. There were also concerns about the remote location of OWTF in Siu Ho Wan which would mean that the food waste had to travel a distance covering various districts before this could be treated.

Landfills

32. As set out in the Policy Framework, the Administration's target is to commission the landfill extensions before the exhaustion of the existing landfills. In this connection, the engineering feasibility and EIA studies on the extension of the NENT Landfill, SENT Landfill and WENT Landfill have been completed. When the environmental impacts associated with the proposed extension of

SENT Landfill to the Clear Water Bay Country Park (CWBCP) was discussed at the Panel meeting on 27 October 2008, members noted that the proposal did not have the support of the Sai Kung District Council (SKDC) or Tseung Kwan O (TKO) residents as the extension would further aggravate the odour nuisance. They also found it difficult to accept that the extension of SENT Landfill would encroach into CWBCP. The Administration was urged to work out a solution to tackle the waste management problem and odour nuisance at the same time. On 4 June 2010, the Country Parks (Designation) (Consolidation) (Amendment) Order 2010 was published in the Gazette to replace the original approved map in respect of CWBCP with a new approved map under which five hectares of land would be used for the extension of SENT Landfill. Given the strong opposition from SKDC, and that the Administration was not able to address the odour problem, the Subcommittee formed to study the Order passed a resolution to move a motion to repeal the Order. The motion was passed at the Council meeting on 13 October 2010. The report of the Subcommittee is hyperlinked below for ease of reference.

33. On 4 January 2011, the Administration announced that it would scale down the SENT Landfill extension into TKO Area 137 to 13 hectares without encroaching into five hectares of CWBCP. The proposed extension might allow the lifespan of the SENT Landfill to last until 2020 to tie over the planning of new permanent waste transfer facility in South-East New Territories so that construction waste in this region could be sorted and bulk transferred to other landfills. The relevant Legislative Council Brief is hyperlinked below.

34. Even with the new waste reduction and recovery measures as well as modern incineration facilities, landfills are still needed to cater for unavoidable and non-recyclable wastes, non-combustible waste and incineration ashes. Hence, it is necessary to include landfill extension as part of the waste treatment package. The Administration plans to present funding applications for the first IWMF, the first OWTF and the extension of the three existing landfills as a package to the LegCo in early 2012 so that an overall picture on the provision of essential waste treatment facilities to tackle the urgent waste problem can be presented and clarified as soon as possible.

Enhancing publicity and education

35. The Panel has noted that publicity and public education programmes, including exhibitions, seminars, visits by a theme van on waste problems and solutions to shopping centres, schools and housing developments etc., have been organized to promote waste prevention and recovery. Workshops for teachers to enhance their knowledge and teaching skills in waste issues have also been organized. A hotline service has also been put in place to provide information and advice on waste reduction and separation.

Government to take a leading role

36. According to the Administration, all government bureaux and departments are urged to reduce photocopying paper consumption by 10% by 2006-07 i.e. an annual reduction of 2.5%, using 2002-03 as the base year. The recycled content required in the specification of recycled photocopying paper has also been revised from 50% to 80%. Also, the use of retreaded tyres has been extended to all government medium and heavy vehicles. Where practicable, departments involved in greening work are encouraged to use compost made from organic waste. In addition, the Government Logistics Department (GLD) has developed a set of guidelines on green procurement for government departments and the amount of purchases under the green procurement policy has amounted to over \$40 million per year. Apart from government departments, the Panel has opined that the guidelines should also be applied to public works projects so that more environment friendly materials could be used for construction works.

Closer cooperation with the business sector

37. The Panel has noted that business sector, particularly management companies, restaurants and hotels, are encouraged to take a more active role in waste prevention. Examples include leftover food donation programme, furniture and plastic bottles and textile recycling programmes specially designed for hotels, plastic bag recovery programmes involving supermarket chains and mooncake containers recovery trial involving property management companies and restaurants.

Closer cooperation with District Councils

38. According to the Administration, collaboration with District Councils in carrying out various types of district-based waste prevention and recovery will continue as they are in a better position to assess the needs of the districts, and at the same time can mobilize the support of local residents.

Council questions

39. Hon Frederick FUNG, Hon Andrew LEUNG, Hon WONG Kwok-hing, Hon Jeffrey LAM, Hon Vincent FANG and Hon LEE Wing-tat have raised questions on issues relating to MSW at Council meetings. A motion on "Promoting the waste recycling industries" moved by Hon Vincent FANG as amended by Hon IP Wai-ming, Hon KAM Nai-wai, Hon Tanya CHAN, Hon CHAN Hak-kan and Hon Jeffrey LAM was carried at the Council meeting on 24 November 2010. Details of the Council questions and the motion carried are hyperlinked below for ease of reference.

Latest development

40. The Administration proposes to report on the progress of the action plan under the theme of "Reduce, Recycle and Proper Waste Management" announced in January 2011, including the latest development of IWMF and landfill extension projects, at the Panel meeting on 26 March 2012. Deputations have been invited to attend for discussion of the subject.

Relevant papers

41. A list of relevant papers is in the **Appendix II**.

Council Business Division 1
Legislative Council Secretariat
21 March 2012

Programme on Source Separation of Waste

Back in 1998, following the publication of WRFPP, the Administration commenced a programme of placing three-coloured separation bins at housing estates, schools and public places to collect waste paper, aluminum cans and plastic bottles for recycling. In 2004, 140 000 tonnes of waste were collected for recycling through this scheme. In addition to the above programmes, three-coloured waste separation bins are placed at public places and Government venues by a number of departments, including the Food and Environmental Hygiene Department, Leisure and Cultural Services Department, Agriculture, Fisheries and Conservation Department and Government Property Agency. As at November 2008, some 28 500 three-coloured waste separation bins have been placed at various locations. To promote glass bottle recycling, the Administration joined hand with the Hong Kong Hotels Association to launch the Glass Container Recycling Programme for the hotel sector in 2008. A 12-month Pilot Programme on Source Separation of Glass Bottles was subsequently launched in mid December 2010 at six public rental housing estates in East Kowloon. Glass bottle recycling bins were placed alongside the existing three-coloured separation bins in the participating estates to facilitate the separation and recycling of glass bottles. While supporting waste reduction and recycling, the Panel expressed concern about the effectiveness of the three-coloured bin scheme. Some Panel members opined that segregation of domestic waste at source could not be further advanced given the space constraints of most households in Hong Kong. Consideration should be given to providing financial assistance to encourage more innovative recycling initiatives, such as incorporation of new features in building design to facilitate waste segregation. Legislation might also be required to mandate the provision of waste segregation facilities in new buildings.

2. In parallel to placing three-coloured separation bins, a 16-month Wet/dry Waste Separation Pilot Programme was carried out in four housing estates from April 2003 to July 2004. Participating households separated wastes into wet and dry wastes which were then gathered at Refuse Collection Points of the estates by cleansing workers. Contractors of the Food and Environmental Hygiene Department then delivered the wastes to Island East Refuse Transfer Station for sorting. The sorted dry wastes were sold to recyclers. Revenue generated was used to offset the sorting cost. While the Programme in tandem with the three-coloured bin scheme in the four participating estates recovered 12% more recyclables than the three-coloured bin scheme alone in non-participating estates, it was considered not sustainable as the processing cost was high.

3. With the experience gained, a 12-month pilot programme on Source Separation of Waste was launched in August 2004 in 13 housing estates in the Eastern District covering about 37 000 households and a population of about 120 000. The pilot programme aimed to make it more convenient for residents to separate domestic waste at source by encouraging and assisting property management companies to provide waste separation facilities on each floor of the building. It also aimed to expand the types of recyclables to be collected to include all plastics, all metals and other types of recyclables such as old clothing and waste electrical products. Under the pilot programme, recyclables were separated within each estate and sold to recyclers direct without having to be transported to a central location for additional sorting, which makes the operation more cost-effective. Initial results of the pilot scheme showed that the volume of recovered recyclables had increased significantly. In view of the encouraging results, the Administration rolled out a territory-wide campaign in January 2005 to promote separation of domestic waste at source. The number of participating housing estates reached 833 housing estates in January 2008 and further increased to 1 071 housing estates in March 2009, covering about one million and 1.3 million households or some 45% and 56% of the population respectively. Of the participating housing estates, around 30% had implemented a floor-to-floor mode of waste separation, while the remaining set up waste separation facilities on the ground floor to collect different types of recyclables. The target was to cover 80% of the population by the end of 2010.

4. According to the Administration, certain new building developments are required under the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulation (Cap. 123H) to provide refuse storage and material recovery chamber or material recovery chamber, and to specify the minimum floor space of such chamber based on the total usable floor space of the building. To encourage developers to provide waste segregation facilities on each floor of a building, the Building (Planning) Regulation has been amended to allow refuse storage and material recovery rooms to be disregarded in the gross floor area calculation. Subsequent to the rolling out of the territory-wide source separation of domestic waste programme, the Administration has proposed to further amend Cap. 123H to mandate the provision of refuse storage and material recovery room on every floor of new domestic buildings and the domestic part of composite buildings to facilitate source separation for material recovery. When the legislative proposal was discussed by the Panel on 25 February 2008, members emphasized the need to ensure that the space allocated for refuse storage and material recovery facilities should be used for the said purpose and not other purposes for the benefit of developers. There was also a need for the owners' corporations and/or management companies to encourage residents to make better use of the segregation bins for separation of waste. The amended Regulation was enacted in July 2008 and came into effect on 1 December 2008.

Appendix II

Management of Municipal Solid Waste in Hong Kong

List of relevant papers

Council/ Committee	Date of meeting	Paper
EA Panel	24 February 2003	<p>Information paper on "Measures to Promote the Prevention and Recovery of Municipal Solid Waste in Hong Kong" provided by the Administration (LC Paper No. CB(1) 958/02-03(03)) http://www.legco.gov.hk/yr02-03/english/panels/ea/papers/ea0224cb1-958-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1201/02-03) http://www.legco.gov.hk/yr02-03/english/panels/ea/minutes/ea030224.pdf</p>
EA Panel	23 February 2004	<p>Information paper on "Measures to Promote the Prevention and Recovery of Municipal Solid Waste in Hong Kong" provided by the Administration (LC Paper No. CB(1) 1031/03-04(03)) http://www.legco.gov.hk/yr03-04/english/panels/ea/papers/ea0223cb1-1031-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1213/03-04) http://www.legco.gov.hk/yr03-04/english/panels/ea/minutes/ea040223.pdf</p>
EA Panel	28 February 2005	<p>Information paper on "Management of Municipal Solid Waste in Hong Kong" provided by the Administration (LC Paper No. CB(1) 960/04-05(07)) http://www.legco.gov.hk/yr04-05/english/panels/ea/papers/ea0228cb1-960-7-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1132/04-05) http://www.legco.gov.hk/yr04-05/english/panels/ea/minutes/ea050228.pdf</p>
EA Panel	23 May 2005	<p>Information paper on "Technical Aspects of the Management of Municipal Solid Waste" provided by the Administration (LC Paper No.</p>

Council/ Committee	Date of meeting	Paper
		<p>CB(1) 1544/04-05(15)) http://www.legco.gov.hk/yr04-05/english/panels/ea/papers/ea0523cb1-1544-15-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1824/04-05) http://www.legco.gov.hk/yr04-05/english/panels/ea/minutes/ea050523.pdf</p>
EA Panel	15 December 2005	<p>Information paper on "A Policy Framework for the Management of Municipal Solid Waste in Hong Kong" provided by the Administration (LC Paper No. CB(1) 486/05-06(04)) http://www.legco.gov.hk/yr05-06/english/panels/ea/papers/ea1215cb1-486-4-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 723/05-06) http://www.legco.gov.hk/yr05-06/english/panels/ea/minutes/ea051215.pdf</p>
EA Panel	19 January 2006	<p>Information paper on "A Policy Framework for the Management of Municipal Solid Waste in Hong Kong" provided by the Administration (LC Paper No. CB(1) 486/05-06(04)) http://www.legco.gov.hk/yr05-06/english/panels/ea/papers/ea1215cb1-486-4-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1120/05-06) http://www.legco.gov.hk/yr05-06/english/panels/ea/minutes/ea060119.pdf</p>
EA Panel	26 March 2007	<p>Information paper on "Update on the Progress of the Key Initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)"" provided by the Administration (LC Paper No. CB(1) 1182/06-07(06)) http://www.legco.gov.hk/yr06-07/english/panels/ea/papers/ea0326cb1-1182-6-e.pdf</p> <p>Supplementary information paper on "Proposed Mandatory Provision of Refuse Storage and Material Recovery Room on Each Floor of New Residential Buildings" provided by the Administration (LC Paper No. CB(1) 2210/06-07(01))</p>

Council/ Committee	Date of meeting	Paper
		<p>http://www.legco.gov.hk/yr06-07/english/panels/ea/papers/ea0326cb1-2210-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1372/06-07)</p> <p>http://www.legco.gov.hk/yr06-07/english/panels/ea/minutes/ea070326.pdf</p>
EA Panel	25 February 2008	<p>Information paper on "Update on the Progress of the Key Initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)" provided by the Administration (LC Paper No. CB(1) 844/07-08(03))</p> <p>http://www.legco.gov.hk/yr07-08/english/panels/ea/papers/ea0225cb1-844-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1215/07-08)</p> <p>http://www.legco.gov.hk/yr07-08/english/panels/ea/minutes/ea080225.pdf</p>
Council Meeting	9 July 2008	<p>Report of the Bills Committee on Product Eco-responsibility Bill (LC Paper No. CB(1) 2075/07-08)</p> <p>http://www.legco.gov.hk/yr07-08/english/bc/bc04/reports/bc040709cb1-2075-e.pdf</p>
EA Panel	27 October 2008	<p>Information paper on "Possible Environmental Impacts associated with the Proposed Extension of South East New Territories Landfill to the Clear Water Bay Country Park" provided by the Administration (LC Paper No. CB(1) 88/08-09(06))</p> <p>http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea1027cb1-88-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 222/08-09)</p> <p>http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20081027.pdf</p>
House Committee	2 April 2009*	<p>Report of the Subcommittee on Product Eco-responsibility (Plastic Shopping Bags) Regulation (LC Paper No. CB(1) 1218/08-09)</p> <p>http://www.legco.gov.hk/yr08-09/english/hc/papers/hccb1-1218-e.pdf</p>

Council/ Committee	Date of meeting	Paper
EA Panel	27 April 2009	<p>Information paper on "Update on the Progress of the Key Initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)"" provided by the Administration (LC Paper No. CB(1) 1357/08-09(03)) http://www.legco.gov.hk/yr08-09/english/panels/ea/papers/ea0427cb1-1357-3-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1943/08-09) http://www.legco.gov.hk/yr08-09/english/panels/ea/minutes/ea20090427.pdf</p>
EA Panel	29 March 2010	<p>Information paper on "Update on the Progress of the Key Initiatives in the "Policy Framework for the Management of Municipal Solid Waste (2005-2014)"" provided by the Administration (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>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 Meeting	13 October 2010	<p>Report of the Subcommittee on Country Parks (Designation)(Consolidation)(Amendment) Order 2010 (LC Paper No. CB(1) 3017/09-10) http://www.legco.gov.hk/yr09-10/english/hc/sub_leg/sc09/reports/sc091013cb1-3017-e.pdf</p>
EA Panel	22 November 2010	<p>Information paper on "Development of EcoPark" provided by the Administration (LC Paper No. CB(1) 461/10-11(03)) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea1122cb1-461-3-e.pdf</p> <p>Information paper on "5172DR – Development of Organic Waste Treatment Facilities - Phase I in Siu Ho Wan, North Lantau" provided by the Administration (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>

Council/ Committee	Date of meeting	Paper
		<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>
EA Panel	24 January 2011	<p>Legislative Council Brief issued by the Environment Bureau/Environmental Protection Department on 4 January 2011 (EP 86/03/175A) http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea-ep8603175a-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 1509/10-11) http://www.legco.gov.hk/yr10-11/english/panels/ea/minutes/ea20110124.pdf</p>
EA Panel	21 February 2011*	<p>Legislative Council Brief issued by the Environmental Protection Department in February 2011 http://www.legco.gov.hk/yr10-11/english/panels/ea/papers/ea-epd201102-e.pdf</p>
EA Panel	20 October 2011	<p>Paper on "2011-2012 Policy Address and Policy Agenda - Policy Initiatives of Environment Bureau" provided by the Administration (LC Paper No. CB(1) 41/11-12(01)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea1020cb1-41-1-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 422/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/minutes/ea20111020.pdf</p>
EA Panel	28 November 2011	<p>Information paper on "A New Producer Responsibility Scheme for Waste Electrical and Electronic Equipment" provided by the Administration (LC Paper No. CB(1) 424/11-12(03)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea1128cb1-424-3-e.pdf</p> <p>Paper on a new producer responsibility scheme for waste electrical and electronic equipment prepared by the Legislative Council Secretariat (updated background brief) (LC Paper No.</p>

Council/ Committee	Date of meeting	Paper
		<p>CB(1) 424/11-12(04)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea1128cb1-424-4-e.pdf</p> <p>Information paper on "Extension of the Environmental Levy Scheme on Plastic Shopping Bag" provided by the Administration (LC Paper No. CB(1) 424/11-12(05)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea1128cb1-424-5-e.pdf</p> <p>Paper on Environmental Levy Scheme on Plastic Shopping Bags prepared by the Legislative Council Secretariat (updated background brief) (LC Paper No. CB(1) 424/11-12(06)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea1128cb1-424-6-e.pdf</p> <p>Minutes of meeting (LC Paper No. CB(1) 853/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/minutes/ea20111128.pdf</p>
EA Panel	19 January 2012	<p>Consultation Document on "Strengthening Waste Reduction: Is Waste Charging an Option?" provided by the Administration (LC Paper No. CB(1) 819/11-12(01)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0119cb1-819-1-e.pdf</p> <p>Information paper on "Public Consultation on Municipal Solid Waste Charging" provided by the Administration (LC Paper No. CB(1) 855/11-12(05)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0119cb1-855-5-e.pdf</p> <p>Paper on management of municipal solid waste in Hong Kong prepared by the Legislative Council Secretariat (updated background brief) (LC Paper No. CB(1) 855/11-12(06)) http://www.legco.gov.hk/yr11-12/english/panels/ea/papers/ea0119cb1-855-6-e.pdf</p>

Council/ Committee	Date of meeting	Paper
		Minutes of meeting (LC Paper No. CB(1) 1219/11-12) http://www.legco.gov.hk/yr11-12/english/panels/ea/minutes/ea20120119.pdf

* Issue date

Hyperlinks to relevant Council Questions:

Date	Council Questions
2 July 2008	Council question raised by Hon Frederick FUNG http://www.info.gov.hk/gia/general/200807/02/P200807020216.htm
6 January 2010	Council question raised by Hon Jeffrey LAM http://www.info.gov.hk/gia/general/201001/06/P201001060173.htm
13 January 2010	Council question raised by Hon Andrew LEUNG http://www.info.gov.hk/gia/general/201001/13/P201001130213.htm
3 November 2010	Council question raised by Hon WONG Kwok-hing http://www.info.gov.hk/gia/general/201011/03/P201011030148.htm
10 November 2010	Council question raised by Hon Jeffrey LAM http://www.info.gov.hk/gia/general/201011/10/P201011100203.htm
19 January 2011	Council question raised by Hon WONG Kwok-hing http://www.info.gov.hk/gia/general/201101/19/P201101190176.htm
26 January 2011	Council question raised by Hon Vincent FANG http://www.info.gov.hk/gia/general/201101/26/P201101260184.htm
2 March 2011	Council question raised by Hon Andrew LEUNG http://www.info.gov.hk/gia/general/201103/02/P201103020202.htm
1 February 2012	Council question raised by Hon LEE Wing-tat http://www.info.gov.hk/gia/general/201202/01/P201202010268.htm

Hyperlinks to relevant Motions:

Date	Motions
24 November 2010	Motion on "Promoting the waste recycling industries" moved by Hon Vincent FANG Kang as amended by Hon IP Wai-ming, Hon KAM Nai-wai, Hon Tanya CHAN, Hon CHAN Hak-kan and Hon Jeffrey LAM Kin-fung http://www.legco.gov.hk/yr10-11/english/legco_rpt/legco_motion11261-e.pdf