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Public Accounts Committee Report No. 51

"Reduction and recovery of municipal solid waste"

PAC Report No. 51 was tabled in the Council on 18 February 2009. One of the chapters in the Report concerns the "Reduction and recovery of municipal solid waste".

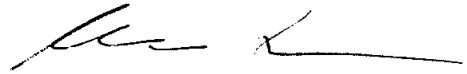
2. In examining the above subject, the Committee notes that Part II of the Waste Disposal Ordinance (Cap. 354) provides a statutory framework for the preparation of waste disposal plans ("WDPs") by the Administration to set out the arrangements for the collection and disposal of solid and semi-solid wastes and all existing and proposed waste disposal sites. The then Secretary for the Environment stated at the moving of the second reading of the Waste Disposal Bill 1979 that the WDP "will form the policy framework in which waste management will be carried out". In 1989, the Administration published a WDP ("1989 WDP") which included a strategy for the disposal of MSW through the provision of landfills and a network of refuse transfer stations.

3. However, PAC finds that the Administration only used non-statutory means, i.e. the Waste Reduction Framework Plan in 1998 and A Policy Framework for the Management of Municipal Solid Waste (2005-2014), to set out its policy framework on certain aspects of waste disposal, despite the statutory WDP-making process stipulated in Part II of the Waste Disposal Ordinance. Moreover, no revision has apparently been made to the 1989 WDP, nor a new WDP made, in spite of the Waste Reduction Framework Plan in 1998 and the 2005 Policy Framework, almost 20 years after the 1989 WDP was made.

4. In view of the above, PAC has urged the Secretary for the Environment to conduct a review on the Administration's practice of using non-statutory means instead of a statutory WDP to set out its policy on waste disposal since the 1989 WDP, and report the results of the review to the Environmental Affairs Panel.

5. PAC has also directed that the Environmental Affairs Panel be informed of its observations and recommendation on the matter.

6. Please find enclosed an extract of the PAC Report, with the relevant parts sidelined, for your necessary actions.



(Ms Miranda HON)
CCS(3)3

Encl.

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A. Introduction

The Audit Commission ("Audit") conducted a review to examine the economy, efficiency and effectiveness of the Environment Bureau ("ENB") and the Environmental Protection Department ("EPD") in managing the disposal of municipal solid waste ("MSW"). The review focused on the following areas:

- strategic management of MSW;
- progress of MSW recovery;
- implementation of domestic waste-recovery programmes; and
- implementation of non-domestic waste-recovery programmes.

2. **Hon Edward YAU Tang-wah, Secretary for the Environment**, made an opening statement at the Committee's public hearing. His statement is in *Appendix 28*. In summary, he said that:

- the management of MSW involved three important aspects, namely the reduction of waste at source, waste recovery and recycling, and the final disposal of waste;
- the reduction of waste at source was the focus of the MSW management policy. The Product Eco-responsibility Ordinance (Cap. 603), enacted in mid-2008, was an important milestone, since it provided the legal basis for implementing producer responsibility schemes ("PRSS") to achieve the objectives of waste reduction and recovery. The environmental levy on plastic shopping bags would be the first PRS under the Ordinance;
- the ENB believed that legislation was essential for putting the concept of producer responsibility into practice. However, it would be a very time-consuming process to implement PRSS if the ENB relied solely on legislative means. Therefore, in parallel with legislative work, the Administration had been encouraging the relevant trades to launch voluntary PRSS;
- to encourage waste recovery and recycling, a number of measures had been introduced. The relevant subsidiary legislation under the Buildings Ordinance (Cap. 123) had been amended to impose a mandatory requirement for the provision of refuse storage and material recovery room on every floor of new domestic buildings and composite buildings;

- the recovery rate of domestic waste had risen from 16% in 2005 to 20% in 2006 and further to 24% in 2007, representing a significant annual increase. However, when compared to the overall waste recovery rate of 45% and the commercial and industrial ("C&I") waste recovery rate of 62%, there was still ample room for improvement in domestic waste recovery. The Environment and Conservation Fund ("ECF") had allocated \$50 million to support District Councils and local organisations to organise public education programmes on environmental protection. Source separation of domestic waste would be one of the main themes;
- to further encourage public participation and support in waste reduction and recovery, the ECF had allocated \$10 million for public education programmes under the Policy Framework for the Management of Municipal Solid Waste (2005-2014) ("2005 Policy Framework"). So far, seven applications for funding support had been approved, covering topics such as plastic shopping bag reduction, simple packaging, food waste reduction, green procurement and the recovery of waste electrical and electronic equipment;
- it was necessary to develop infrastructure to manage waste in a sustainable manner. To this end, a pilot facility at Kowloon Bay had been set up to collect food waste generated by the C&I sectors. In the long run, the Administration would develop Phase 1 of the Organic Waste Treatment Facilities at Siu Ho Wan, North Lantau to convert food waste into useful compost and renewable energy, and the feasibility and environmental impact assessment ("EIA") studies had already started. In addition, the EPD was conducting detailed engineering and EIA studies for the two possible sites of Phase 1 of the Integrated Waste Management Facilities ("IWWMF"). The IWWMF was expected to come into operation in 2014-2015;
- the Director of Audit's Report ("Audit Report") referred to the target set out in the 2005 Policy Framework that the quantity of MSW generated was to be reduced by 1% per annum. This target was forward-looking and difficult to achieve. It might remain unachieved even if all the measures mentioned above were implemented. Overseas experience indicated that it might be necessary to implement a solid waste charging scheme to help reduce waste at source. Although waste charging was controversial, the Administration would commence study in this regard and put forward options for public consultation; and
- the Administration had provided 35 short-term tenancy sites to support the development of the recycling trade. In response to the industry's recent request for more short-term tenancy sites, another 10 sites had been identified and initially assessed to be suitable. They would be made available for use by the trade as soon as possible. While much progress had been made in waste recovery, there were still considerable difficulties in developing

large-scale recycling industry in Hong Kong due to factors such as land and wages. There was room for improvement in the development of the EcoPark. The Administration would maintain close liaison with tenants of the EcoPark and provide as much assistance as possible.

B. Strategic management of MSW

3. The Committee noted from Table 4 in paragraph 4.2 of the Audit Report that the recovery rate of domestic waste in 2007 was only 24.4%, which was far from satisfactory. The Committee asked about the reasons for the low recovery rate and the measures to boost the rate.

4. **The Secretary for the Environment** responded that:

- the recovery rate of domestic waste was relatively low when compared to the C&I recovery rate. The successful promotion of the recovery of domestic waste hinged on the provision of suitable recycling facilities as well as public participation and education;
- so far, 983 estates had joined the Source Separation of Domestic Waste programme ("SSDW programme"), covering 51% of the population in Hong Kong, which was not too bad. The participating estates were provided with waste-separation facilities. Under the amended subsidiary legislation of the Buildings Ordinance, all new domestic buildings and the domestic part of new composite buildings were required to provide a refuse storage and material recovery room on every floor. In addition, the latest design of three-coloured waste-separation bins had recently been introduced to encourage and facilitate waste recovery;
- funding support was provided by the Administration. Any building that needed to provide additional waste separation facilities on its floors could apply for a subsidy of \$800 per floor; and
- public participation and education were equally important. The Administration aimed to cooperate with District Councils and local organisations in the next year to promote source separation of domestic waste, and allocated \$50 million for this purpose. Also, the Administration would continue to provide funding support to green groups for organising activities to promote waste reduction and recovery.

5. As local organisations and District Councils were helpful partners for disseminating the message of waste reduction and recovery in the community, the Committee asked how the Administration cooperated with them. The Committee further asked about the measures taken by the EPD to promote and facilitate the recovery of computers and electronic products.

6. **Ms Anissa WONG Sean-ye**, Director of Environmental Protection, stated that:

- the Administration welcomed partnership with district and community organisations to promote awareness of environmental protection and conservation, and the ECF provided funding support for them to hold public education programmes. The \$1 billion injected into the ECF in April 2008 would further strengthen the funding support to environmental education and research initiatives, including those on waste reduction and recovery;
- the EPD had all along been working together with District Councils. Apart from informing them of the EPD's work by circulation of documents, she also personally attended meetings with various District Councils on a regular basis and introduced the ECF to them. As mentioned by the Secretary for the Environment, the ECF had allocated \$50 million to strengthen cooperation with District Councils and local organisations in organising environmental protection programmes; and
- with the assistance of the trades concerned, the EPD had implemented four voluntary PRSs to recover and recycle different kinds of products. They were the Rechargeable Battery Recycling Programme, Computer Recycling Programme, Fluorescent Lamp Recycling Programme and Glass Container Recycling Programme. The EPD had also launched a trial scheme to collect waste electrical and electronic products for reuse and recycling. The department hoped that there would be collection points in all the 18 districts throughout the territory to facilitate citizens. Locations of the collection points were published in the department's website. There was also a campaign in Kowloon Bay held by two charitable organisations for collecting waste computers and electrical products. Besides, the EPD worked closely with District Councils in organising district programmes to recover waste electrical appliances, particularly during the period before the Lunar New Year.

7. In response to the Committee's enquiries about the EPD's performance targets for the Rechargeable Battery Recycling Programme and the Computer Recycling Programme, the **Director of Environmental Protection** said that the EPD:

- aimed to collect about 50 tonnes of rechargeable battery and 50,000 computers per year under the programmes. The Computer Recycling Programme was launched in January 2008 and about 20,000 computers had been collected up to November 2008. As for the Rechargeable Battery Recycling Programme, up to October 2008, a total of 155 tonnes of rechargeable battery had been collected; and
- would evaluate the effectiveness of the PRSs regularly and discuss with the trades concerned to extend the programmes when necessary.

8. The Committee noted that there were some district organisations in Hong Kong which launched small-scale yet successful environmental campaigns. For example, a women group in Yan Oi Tong, Tuen Mun ran a project to collect waste oil for producing soap. In Taiwan, there was a very active and influential green group organised by housewives. The Committee asked whether the Administration would publicise the successful experience of these district organisations in order to disseminate the message of environmental protection to the public more effectively.

9. The **Secretary for the Environment** responded that:

- the Administration stood ready to encourage voluntary groups, non-profit-making bodies and social enterprises, etc, irrespective of their size, to organise environmental protection campaigns. They could apply for funding support from the ECF. The Administration would also publicise the successful campaigns organised by them; and
- following the injection of additional fund into the ECF, the Administration had held discussion with members of the ECF on its future mode of operation. It was agreed that the ECF should reach out to local organisations. For example, the ECF would identify some charitable organisations and help to turn them into green organisations. The chairmen and vice chairmen of all District Councils as well as the chairmen of District Councils' relevant committees had already been informed of such a plan.

10. The Committee noted that Part II of the Waste Disposal Ordinance ("WDO") (Cap. 354) provided a statutory framework for the preparation of waste disposal plans ("WDPs") by the Administration to set out the arrangements for the collection and disposal of solid and semi-solid wastes and all existing and proposed waste disposal sites. The WDP-making process included consultation with the Advisory Council on the Environment, gazettal of the plan, public consultation and approval by the Chief Executive in Council. Under section 7 of the WDO, the WDP-making process applied equally to any revision to a WDP.

11. The Committee also noted that in 1989, the Administration published a WDP ("1989 WDP") which included a strategy for the disposal of MSW through the provision of landfills and a network of refuse transfer stations. It appeared that no revision had been made to the 1989 WDP in the past 20 years.

12. Against the above background, the Committee asked:

- about the nature of the Waste Reduction Framework Plan in 1998 ("1998 Framework Plan") and the 2005 Policy Framework vis-à-vis a statutory WDP;
- given the statutory nature of a WDP, whether the use of non-statutory means, i.e. the 1998 Framework Plan and the 2005 Policy Framework, to set out the Administration's policy on waste disposal would circumvent any possible legal consequence in the event of the Administration's failure to have regard to or meet the targets set out in a statutory WDP; and
- as Part II of the WDO was still in force and represented a statutory commitment of the Administration to observe a specific plan-making process, whether the use of non-statutory means to make similar plans would undermine the Administration's commitment.

13. In his letter of 7 January 2009 in *Appendix 29*, the Secretary for the Environment responded that:

- the WDP published by the Administration in December 1989 dealt with the collection and disposal aspects of waste management. It also set out a tentative programme for the development of new facilities, namely the three strategic landfills and the transfer station network, and the closure of old incinerators and small landfills. Given its focus on waste disposal and treatment, the WDP was not the most suitable vehicle to address the other aspects of waste management strategies, namely waste avoidance, reuse, recovery and recycling;
- A Waste Reduction Study was commissioned by the EPD in 1994 to identify ways to encourage waste avoidance, minimisation, recovery and recycling. The findings were presented to the Panel on Environmental Affairs of the Legislative Council, which requested the Administration to provide a total picture of its waste reduction targets and implementation timetable. The Administration subsequently consulted the public on the draft Waste Reduction Plan in May 1997, and published the 1998 Framework Plan to set out the waste reduction strategy and targets;

- since then, there had been a continuing and rising public aspiration for a sustainable waste management strategy which placed primary emphasis on waste reduction, reuse and recovery. In response to this public aspiration, in particular the Report on the Engagement Process for a First Sustainable Development Strategy published by the Council for Sustainable Development ("SDC") in May 2005, the Administration published the 2005 Policy Framework in December 2005, setting out a comprehensive waste management strategy for the next ten years. Enshrining the "polluter-pays" principle, the 2005 Policy Framework proposed policy tools to encourage the public to recycle more and discard less. It also covered the adoption of latest technologies for waste management facilities. The 2005 Policy Framework had adopted the waste management targets laid down in the SDC Report; and
- the waste management targets set out in the 2005 Policy Framework were the results of the SDC's extensive public engagement process. The Administration remained committed to achieving these targets as set out in the 2005 Policy Framework as soon as practicable and would continue to report to the Legislative Council on the progress made.

C. Progress of MSW recovery

14. According to paragraph 3.11 of the Audit Report, in 2007, 1.36 million tonnes of putrescible waste (mainly food waste) were produced, accounting for 22% of the total MSW. Almost all the putrescible waste was disposed of at landfills. This would shorten the life spans of the three landfills in Hong Kong, and generate leachate and landfill gas, which were harmful to the environment if not controlled properly.

15. The Committee noted from the Secretary for the Environment's opening statement that only a pilot facility had been set up at Kowloon Bay to collect food waste generated by the C&I sectors. The Organic Waste Treatment Facilities at Siu Ho Wan, North Lantau were still at the stage of undergoing feasibility and EIA studies. Possible sites of the IWMTF were still undergoing engineering and EIA studies, and the expected commissioning of the IWMTF would be as late as 2014-2015. Given that the continued disposal of food waste at the landfills was undesirable, the Committee queried whether:

- the Administration understood the urgency of the problem and whether the planned programme of the construction of large-scale management facilities was too slow;
- the Administration had any alternative plans in case the result of the pilot facility at Kowloon Bay was unsatisfactory; and

- the three existing landfills would be exhausted before the IWMF was commissioned in 2014-2015.

16. In response, the **Director of Environmental Protection** stated that:

- food waste constituted a significant proportion of the waste disposed of at landfills. More than 3,300 tonnes of putrescible waste were generated in Hong Kong every day, with the main bulk generated by the domestic sector. The C&I sectors also generated 870 tonnes a day;
- the Administration did not rely on the IWMF alone to resolve the waste problem. It also aimed to develop organic waste treatment facilities to manage waste in a sustainable manner. To build up experience and information on the collection and treatment of organic waste, a small-scale pilot plant with a capacity of 4 tonnes per day had been set up at Kowloon Bay to process source-separated food waste from more than 20 C&I premises, such as food factories, hotels and restaurants. The Administration's target was to deal with putrescible waste from the C&I sectors first as this would be easier to collect and process;
- in addition, as part of the long-term waste treatment strategy, an Organic Waste Treatment Facility would be developed in two phases, with each phase handling 200 tonnes of source-separated organic waste from the C&I sectors per day. The first phase of the facility was to be built in Siu Ho Wan of Lantau Island, and the target commission date was early 2013. At present, EIA studies were being conducted. The second phase would be of a similar capacity and built in Sha Ling of the North District; and
- extension of the existing landfills was also necessary. The Administration had already completed the feasibility and EIA studies on the extension of two of the three landfills.

17. The **Secretary for the Environment** added that:

- his opening statement highlighted that the Administration tackled the problem of waste management through enactment of legislation, cooperation with the trades, public participation and education, provision of infrastructure and allocation of resources; and
- the support of the Legislative Council and the community was indispensable. For instance, a number of legislative proposals would be put up for consideration by the Legislative Council in the coming year, and successful implementation of the voluntary PRSs relied on the participation of the

relevant trades and the public. Additional resources had been allocated through injection to the ECF. The Administration was also identifying more short-term tenancy sites to meet the need of the recycling industry. The ENB would submit funding application for the several waste treatment infrastructure projects mentioned in his opening statement to the Legislative Council for approval in the near future.

18. Regarding the treatment of food waste, the Committee noted that the EPD and the commercial sector had implemented programmes for recovering and recycling food waste. The Committee asked:

- about the effectiveness and experience of the programmes;
- whether the Administration would consider providing economic incentives to encourage more commercial organisations to participate in food waste reduction and recovery; and
- the reason why the Administration aimed to deal with food waste from the C&I sectors first instead of that from the domestic sector, even though the main bulk of food waste in Hong Kong was generated by the domestic sector.

19. **The Director of Environmental Protection and Dr Ellen CHAN Ying-lung, Assistant Director (Environmental Infrastructure), EPD, replied that:**

- before the SSDW programme was implemented, the EPD had conducted a pilot scheme at four housing estates in the Eastern District which focused on the separation of wet waste (i.e. food waste) and dry waste (i.e. recyclable materials like paper, aluminium cans and plastic bottles). Under the scheme, the dry waste was not further separated. The result of the scheme indicated that the recovery rate was raised slightly, but the handling cost was high because the waste had to be separated at the waste collection points. Given this experience, the Administration launched the SSDW programme in 2005 to provide waste separation facilities on each building floor, which would be more convenient to residents and would encourage them to separate waste at source;
- some commercial organisations were keen to take measures to treat the food waste generated by them. The Hong Kong Disneyland had installed a machine to process food waste, which was similar to the one in the plant at Kowloon Bay, with a capacity of about one to two tonnes per day. The machine operated satisfactorily, but it was only of a small scale. To process several hundred tonnes of food waste a day would require different technology. A shopping arcade at Kowloon Tong had installed a similar

machine at its carpark to process the food waste generated by the food premises there. In addition, the Airport Authority had installed several similar machines; and

- food waste could not be stored and had to be transported to the treatment plant immediately after collection. Food waste generated by the C&I sectors was easier to collect, hence the EPD's aim was to deal with the C&I sectors first. As for food waste from the domestic sector, ultimately it would have to be incinerated by the IWMF.

20. The Committee noted from paragraph 2.15 of the Audit Report that according to the 2005 Policy Framework, the quantity of MSW generated was targeted to be reduced by 1% per annum, from 2005 up to 2014, based on the 2003 level of 5.83 million tonnes. However, Audit found that the actual quantity of MSW generated was increasing. In 2007, 6.25 million tonnes of MSW were generated, exceeding the target quantity of 5.66 million tonnes by 10.4%.

21. The Committee further referred to the Secretary for the Environment's remarks that the MSW reduction target of 1% per annum was forward-looking and difficult to achieve. In view of the Secretary's remarks and the Administration's apparent reluctance to set more aggressive performance targets for its initiatives such as the SSDW programme, the Committee questioned:

- the Administration's commitment to achieving the MSW reduction target; and
- whether the Administration would set more objective and quantifiable targets for its different MSW reduction initiatives, such as public education programmes, so as to provide the Legislative Council and the public with a basis for evaluating their effectiveness.

22. **The Director of Environmental Protection** responded that:

- the Administration had been working towards achieving the three waste management targets set out in the 2005 Policy Framework, including reduction of the amount of MSW generated in Hong Kong by 1% per annum, although this was indeed a challenging target. The Administration had been trying to achieve the targets through legislative means where necessary, educational and publicity campaigns, as well as provision of waste treatment infrastructure;

- the Administration believed that the implementation of an MSW charging scheme based on the "polluter-pays" principle could effectively help to reduce waste at source. Overseas experience indicated that volume-based charging would be more effective for achieving waste reduction. However, it might not suit the situation in Hong Kong where the waste of some individual households was not collected by waste collectors, rendering it difficult to monitor the volume of waste disposed of by them and determine the charge. The Administration would continue to examine the issue with a view to identifying measures that could address the needs of Hong Kong. Progress had also been made in implementing PRSs with the enactment of the Product Eco-responsibility Ordinance. This would provide economic incentive to reduce waste at source. Apart from the levy on plastic shopping bags, the Administration would also study the implementation of PRSs for other products; and
- although the community's awareness of environmental issues had enhanced, the actual quantity of MSW generated had been increasing. While the amount of domestic waste generated had remained relatively stable at about 3 million tonnes a year, the amount of C&I waste generated had increased from 2.55 million tonnes in 2005 to 2.9 million tonnes in 2007. During the period from 2005 to 2007, population growth remained at about 1% a year, and there was robust economic growth (i.e. 7.5% in 2005, 6.8% in 2006 and about 6% in 2007). This meant that the increase in C&I waste generation was probably driven by the significant growth in economic activities.

23. **The Secretary for the Environment stated that:**

- the 2005 Policy Framework was a blueprint setting out the Administration's major initiatives and specific targets for MSW management for the years from 2005 to 2014. It was a policy framework that suited the circumstances of Hong Kong. The Administration had already achieved a recovery rate of 45% back in 2006, three years ahead of the target laid down in the 2005 Policy Framework, but it would not be complacent. The Administration was lagging behind with regard to the MSW reduction target;
- he considered that in the short run, the Administration should not spend efforts on setting targets which were different from those in the 2005 Policy Framework. Instead, the Administration should make its best efforts to achieve or exceed the targets as laid down in the policy framework;
- the Audit Report highlighted the difficulties faced by the Administration. Without a charging scheme, it was doubtful whether the MSW generated could be decreased. For instance, if the Administration were to collect domestic food waste, Hong Kong citizens would have to change the way they

disposed of waste. It was inevitable that a levy would have to be introduced to provide incentive for change. It would be ideal if the amount of MSW generated in Hong Kong could be reduced by 1% per year. In that case, Hong Kong would not have any rubbish after 99 years; and

- the Audit Report also highlighted the need for modern IWMF with incineration as the core technology to substantially reduce the volume of unavoidable waste. The Administration was taking forward the waste treatment infrastructure projects and would submit proposals to the Legislative Council soon.

24. Regarding the promotion of the recovery and recycling industries, the Committee noted Audit's recommendation in paragraph 3.16(b) of the Audit Report that the EPD should take further measures to improve the recovery of paper waste and plastic waste. However, the Director of Environmental Protection only responded that the EPD had commissioned the Hong Kong Business Environment Council to carry out a "Study on Waste Paper and Plastics Generation and Recovery in the C&I Sector in Hong Kong", which appeared to be less than a positive response.

25. The Committee also noted from the Secretary for the Environment's opening statement that there were considerable difficulties in developing large-scale recycling industry in Hong Kong due to factors such as land and wages, and there was room for improvement in the development of the EcoPark.

26. The Committee enquired:

- when the EcoPark tenants would commence operation and about the difficulties faced by them;
- about the direction in reviewing the tenancy requirements for Phase II of the EcoPark and the specific measures to assist the recovery and recycling industries, particularly in the face of the difficulties brought about by the financial tsunami, e.g. whether the Administration would further extend the term of the tenancy and reduce the rent, and construct the plants for the tenants; and
- whether the Administration would consider developing the recycling industry in the Lok Ma Chau Loop where there would be more land and more manpower at lower wages to cater to the industry's need.

27. The Secretary for the Environment and the Director of Environmental Protection said that:

- there were a total of six lots in Phase I of the EcoPark. Four lots had been awarded for recycling of waste wood, used cooking oil, computers and waste plastic. The tenants were preparing for the construction of plants. Of the remaining two lots, tender evaluation in respect of the one designated for recycling scrap iron was at the final stage, while invitation for tender for the one designated for recycling various materials would be issued by the end of 2008. Apart from providing land at affordable rent, the Administration also assisted tenants of the EcoPark in market development and liaison with suppliers. The ECF provided funding support to the recycling industry for technology development;
- the rent of the EcoPark was already very low, even cheaper than that of short-term tenancies. The term of tenancy was 10 years, which was very long, and the tenancy could be renewed upon expiry. The problem was that there might not be suitable recycled products for use in Hong Kong or tenants who were willing to make long-term investment. The paper recycling industry was an example. While waste paper was recovered in Hong Kong, the recycling plants were set up in the Mainland. The experience in the past few years indicated that Hong Kong might not be able to attract large-scale recycling industry to develop locally. Moreover, some higher-end recyclers might choose to operate in the Hong Kong Science and Technology Parks rather than the EcoPark;
- despite the difficulties, the Administration had continued to support the recycling industry. If the operators had problems in administration, the EPD would help them to liaise with the government departments concerned. The Administration would also try to provide assistance if they lacked the requisite technologies. However, it was important that they were committed to operation and production instead of, say, using the land for storage of their goods;
- the Hong Kong and Shenzhen authorities were considering the land use of the Lok Ma Chau Loop, including higher education, and the research and development of new high technology. The development of the Loop was more remote than that of the EcoPark; and
- regarding the development of Phase II of the EcoPark, the Administration had set up a committee to study how to improve the attractiveness of the EcoPark. Some members of the committee had proposed that the Administration might build some standard plants for use by the tenants. The Administration would consider this option but was concerned that a standard design might not suit the differing requirements of tenants. The Administration would continue to

discuss with representatives from the recycling industry and other relevant organisations such as the Hong Kong Science and Technology Parks and Hong Kong Productivity Council.

D. Implementation of domestic waste-recovery programmes

28. According to paragraphs 4.5 and 4.8 of the Audit Report, the SSDW programme for recovering domestic waste at housing estates had been implemented since 2005. The ENB had set the following performance targets under the programme: (a) to have 80% of Hong Kong's population enrolled in the programme by 2010; (b) to extend the programme to cover all public rental housing ("PRH") estates by 2012; and (c) to increase the domestic waste recovery rate from 16% in 2005 to 26% in 2012. It appeared to the Committee that the performance targets were conservative. The Committee asked:

- the reason why the Administration only targeted to extend the SSDW programme to all PRH estates by 2012 but not earlier, despite that it should be easier to implement the programme in PRH estates which were under the control of the Hong Kong Housing Authority;
- as the domestic waste recovery rate already reached 24% in 2007, whether the Administration would set a higher target in this regard instead of adhering to the original target of 26% in 2012, so as to provide a greater impetus to its work; and
- the respective recovery rates of MSW, domestic waste and non-domestic waste in other advanced cities of the world and how the rates compared to those in Hong Kong.

29. The Committee further referred to paragraph 4.18(b) and (c) of the Audit Report in which the Director of Environmental Protection stated that through promotion of the SSDW programme, the message of source-separation of waste was widely disseminated in the community, and that the programme had improved waste recovery in Hong Kong. It appeared to the Committee that the Administration was complacent about the progress of the SSDW programme and doubted its determination in achieving a more aggressive target.

30. On the extension of the SSDW programme to PRH estates, the **Director of Environmental Protection** explained that although the EPD would like to expedite the progress, it had to work together with the Housing Department. To implement the programme, the Housing Department needed to identify suitable locations for providing waste-separation facilities and make corresponding arrangements, such as with its cleansing contractors.

31. The **Secretary for the Environment** responded that:

- the Administration should be able to meet the target of raising the domestic waste recovery rate to 26% by 2012. Nevertheless, he agreed that the Administration should make even greater efforts to improve domestic waste recovery. To achieve a higher recovery rate, the Administration had to work together with management companies and residents' associations;
- regarding facilities for waste recovery, as most existing domestic buildings had neither a refuse storage and material recovery room on each floor nor sufficient space for waste-separation facilities, the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations (Cap. 123 sub. leg. H) were amended in May 2008 to require such facilities to be provided on every floor of new domestic buildings. More than 800 new three-coloured waste-separation bins would be provided at public places to raise the environmental awareness of the general public; and
- funding support was provided for the installation of recycling facilities. Besides, the Administration also aimed to encourage residents to participate in source separation at home through community participation and education. For instance, many large housing estates had taken the initiative to place a collection box for waste clothes, apart from collecting paper, metal and plastic waste. The Administration would commend these estates and publicise their good experience. He also personally introduced the newly-designed three-coloured waste-separation bins to enhance publicity. The Administration would also launch programmes periodically, such as those for the recovery of computers and electrical appliances, to boost the recovery rate.

32. Regarding the recovery rates of other advanced cities, the **Assistant Director (Environmental Infrastructure)**, EPD replied at the public hearing and in her letter of 6 January 2009 (in *Appendix 30*) that overseas data were only available for MSW. Based on the latest accessible and comparable data, Hong Kong's MSW recovery rate was 45% in 2007, as compared to some major cities such as Tokyo (18% in 2007), Sydney (26% in 2003), New York (30% in 2003), London (35% in 2006-2007), Singapore (54% in 2007), Taipei (61% in 2007) and Seoul (64% in 2007).

33. The Committee noted from paragraph 4.14 of the Audit Report that the EPD only relied on the Census and Statistics Department's statistics collected from recycling traders to evaluate the performance of the SSDW programme. However, such statistics might not represent the actual quantities of MSW recovered under the programme as some recyclable waste might be directly taken to recycling traders without going through the programme.

The Committee enquired whether the EPD would directly estimate the quantities of recyclable waste recovered under the SSDW programme, as recommended by Audit.

34. The **Director of Environmental Protection** and the **Assistant Director (Environmental Infrastructure)**, EPD replied that:

- the EPD did not collect data on the quantities of recyclable waste recovered through the SSDW programme from the participating housing estates directly because the quantities as reported by them might only reflect a portion of the actual quantities recovered. Residents might choose to put recyclable waste into the waste-separation bins provided by their buildings/estates or take recyclable waste directly to the recycling traders. The EPD considered such practices desirable as they were conducive to environmental protection. Hence, the department used the Census and Statistics Department's data for evaluating the SSDW programme; and
- in future, apart from using the statistics from the Census and Statistics Department, the EPD would also implement Audit's recommendation and conduct surveys in the estates and buildings which had joined the SSDW programme to obtain information about the quantities of domestic waste recovered under the programme.

E. Implementation of non-domestic waste-recovery programmes

35. According to paragraphs 5.4 to 5.6 of the Audit Report, the EPD launched a Source Separation of Commercial and Industrial Waste (SSCIW) programme in October 2007. Under the programme, the management offices of C&I buildings were encouraged to implement measures for waste separation and recovery, and to provide quarterly returns on the quantities of waste recovered. Paragraph 5.8 of the Audit Report revealed that the EPD did not obtain statistics of recyclable waste recovered under the SSCIW programme from management offices of the participating buildings for evaluating the effectiveness of the programme. Paragraph 5.11(a) also reported that only 40% of participants of the programme submitted regular returns on recyclable waste recovered.

36. The Committee asked the EPD to explain:

- why it did not obtain statistics from management offices of the participating buildings; and
- why the return rate of participants of the programme was so poor and the actions that it would take to improve it.

37. **The Director of Environmental Protection and the Assistant Director (Environmental Infrastructure), EPD** replied that:

- similar to the SSDW programme, the EPD had all along used the Census and Statistics Department's statistics collected from recycling traders to evaluate the performance of the SSCIW programme because the information was more comprehensive. However, in view of Audit's recommendation, the EPD would also collect statistics on recyclable waste recovered under the SSCIW programme directly from management offices of the participating buildings for reference;
- the submission of quarterly returns on the quantities of waste recovered was voluntary. The EPD would, through further communications with the participants, endeavour to encourage better response. The EPD would also introduce a commendation scheme similar to the one for the SSDW programme to commend those participants who submitted returns and achieved a high recovery rate; and
- the SSCIW programme was only launched in October 2007 and was still in an early implementation phase. Up to November 2008, about 420 C&I buildings had joined the programme. In order to attract more participants, waste-separation bins would be provided free of charge to participating C&I buildings.

38. The Committee noted from paragraphs 5.12(a) and 5.14 of the Audit Report that since 2000, the Education Bureau, the EPD and the Environmental Campaign Committee ("ECC") had implemented a waste-recovery programme at schools to enhance students' awareness of the importance of resource conservation and waste separation. However, up to July 2008, only 67% of schools in Hong Kong had been provided with waste-separation bins. The Committee enquired why not all schools were provided with waste-separation bins and how the Administration would improve the situation.

39. **The Director of Environmental Protection** said at the public hearing and the **Assistant Director (Environmental Infrastructure), EPD** stated in her letter of 6 January 2009 that:

- the ECC launched two one-off campaigns of "Waste Separation and Recycling Scheme in Schools" ("the Schemes") in 2000 and 2003 respectively. Under the Schemes, all primary and secondary schools were invited to participate on a voluntary basis. With the concerted efforts of the ECC, the EPD and the then Education Department, 1,100 sets of waste-separation bins were provided to all participating schools, covering about 70% of primary and secondary school premises. The Schemes had successfully raised the

awareness of schools in waste separation and recycling. It was noted that some schools had elected not to join the Schemes but had procured waste-separation bins at their own expenses;

- since the introduction of the Schemes, the ECC had continued to proactively offer assistance and support to new schools or newly participating schools by providing new waste-separation stickers for the bins, as well as referring the participating and non-participating schools to the Food and Environmental Hygiene Department ("FEHD") for recyclable collection service on a free-of-charge basis. In parallel, the ECC had also reviewed the design of waste-separation bins to cater for the expanded scope of recyclables;
- as many of the old sets of waste-separation bins distributed under the Schemes were approaching the end of their natural life span, the ECC had obtained funding support of \$6 million from the ECF in early 2008 for procurement of newly designed waste-separation bins for distribution to primary and secondary schools. In November 2008, the ECC invited all primary and secondary schools to apply for the new bins. As at the end of December 2008, over 220 applications had been received and, among them, about 140 had never received recycling bins under the Schemes. All such requests would be entertained within the current school year, boosting the coverage rate of three-coloured waste-separation bins in school premises to around 83%; and
- while participation of schools in the Schemes remained voluntary, the ECC was prepared to entertain all applications and, in this connection, the EPD would reach out to those schools yet to join the Schemes to proactively invite them again to join or to ascertain their reasons for not joining.

40. Paragraph 5.23 of the Audit Report revealed that as at June 2008, only 17% of the refuse collection points ("RCPs") in rural areas were provided with waste-separation bins. The Committee asked about the reason for the small percentage and the FEHD's action plan to improve the situation.

41. **Mr CHEUK Wing-hing, Director of Food and Environmental Hygiene,** stated at the public hearing and in his letter of 31 December 2008 (in *Appendix 31*) that:

- village-type RCPs in rural areas were usually situated in rather remote places, serving only a small local population. The FEHD started to provide waste-separation bins in village-type RCPs in 2000. In general, the waste recovering yield from these bins had been low compared with that from bins set up in urban areas. Nevertheless, to help promote the concept of waste

separation and recovery, the FEHD had progressively increased the number of RCPs provided with waste-separation bins. For more effective use of resources, priority was given to village-type RCPs with potentially higher "pitching-in" rate, having regard to factors such as the size of the local population, convenience of the RCP location and proximity to tourist spots. The percentage of village-type RCPs provided with waste-separation bins had now been raised to 25%; and

- the FEHD would continue to support the EPD in further promoting public awareness of and participation in waste separation. To this end, waste separation-bins would be provided at 300 new sites across the territory in the first quarter of 2009. Subject to the outcome of the EPD's consultation with District Councils, some of the new sites would include village-type RCPs.

F. Conclusions and recommendations

42. The Committee:

Strategic management of municipal solid waste ("MSW")

- expresses deep regret and sadness that the Secretary for the Environment lacks a sense of urgency and is not proactive enough in tackling the problem of MSW, as reflected by the following:
 - (a) despite the target of reducing the quantity of MSW generated by 1% per annum as laid down in the document "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" ("2005 Policy Framework"), 6.25 million tonnes of MSW were generated in 2007, exceeding the target quantity of 5.66 million tonnes by 10.4%, and the Secretary for the Environment has failed to demonstrate the Administration's commitment to achieve the MSW reduction target;
 - (b) while the MSW recovery rate target of 45% (originally set for achievement by 2009) was achieved as early as 2006, the Secretary for the Environment made no further commitment to raise the target; and
 - (c) definite timetables have not been formulated for the provision of large-scale waste management facilities. Only a pilot scheme is being implemented to collect food waste generated by the commercial and industrial sectors. The Organic Waste Treatment Facilities at Siu Ho Wan, North Lantau are still at the stage of undergoing feasibility and environmental impact assessment ("EIA") studies. Possible sites of the Integrated Waste Management Facilities ("IWWMF") are still undergoing

engineering and EIA studies and the expected commissioning of the IWMF will be as late as 2014-2015;

- expresses serious concern that:
 - (a) the daily per capita MSW generated increased from 1.99 kilogrammes in 1998 to 2.47 kilogrammes (a 24% increase) in 2007;
 - (b) in 2007, while other Asian cities disposed of small percentages (3% to 16%) of their MSW at landfills, 55% of Hong Kong's MSW was disposed of at landfills; and
 - (c) the three landfills will reach their full capacities in six to ten years' time;
- notes that:
 - (a) Part II of the Waste Disposal Ordinance (Cap. 354) provides a statutory framework for the preparation of waste disposal plans ("WDPs") by the Administration to set out the arrangements for the collection and disposal of solid and semi-solid wastes and all existing and proposed waste disposal sites. The WDP-making process includes consultation with the Advisory Council on the Environment, gazettal of the plan, public consultation and approval by the Chief Executive in Council, and applies equally to any revision to a WDP;
 - (b) the then Secretary for the Environment stated at the moving of the second reading of the Waste Disposal Bill 1979 that the WDP "will form the policy framework in which waste management will be carried out"; and
 - (c) in 1989, the Administration published a WDP ("1989 WDP") which included a strategy for the disposal of MSW through the provision of landfills and a network of refuse transfer stations;
- expresses serious concern that:
 - (a) the Administration has provided no satisfactory explanation for the concern referred to in sub-paragraph (b) below when asked to do so in writing;
 - (b) the Administration used non-statutory means, i.e. the Waste Reduction Framework Plan in 1998 and the 2005 Policy Framework, to set out its policy framework on certain aspects of waste disposal, despite the statutory WDP-making process; and

- (c) no revision has apparently been made to the 1989 WDP, nor a new WDP made, in spite of the Waste Reduction Framework Plan in 1998 and the 2005 Policy Framework, almost 20 years after the 1989 WDP was made;
- acknowledges that the Secretary for the Environment and the Director of Environmental Protection have agreed to implement the audit recommendations in paragraph 2.25 of the Director of Audit's Report ("Audit Report");
- urges the Secretary for the Environment to:
 - (a) adhere to the MSW reduction target laid down in the 2005 Policy Framework and proactively take measures to achieve it;
 - (b) raise the target on the recovery rate of MSW;
 - (c) formulate definite timetables and action plans to expedite the provision of large-scale waste management facilities; and
 - (d) conduct a review on the Administration's practice of using non-statutory means instead of a statutory WDP to set out its policy on waste disposal since the 1989 WDP, and report the results of the review to the Environmental Affairs Panel of the Legislative Council;

Progress of MSW recovery

- expresses serious dismay that:
 - (a) in 2007, almost all of the 1.36 million tonnes of putrescible waste were disposed of at landfills, which would shorten the life spans of the landfills and generate leachate and landfill gas; and
 - (b) in 2007, only 56% of paper waste and 57% of plastic waste were recovered, which means that significant quantities of paper waste and plastic waste have been disposed of at landfills;
- notes the Director of Environmental Protection's stated agreement to implement the audit recommendations in paragraph 3.16 of the Audit Report, but urges the Director to formulate definite timetables for their implementation;

Implementation of domestic waste-recovery programmes

- expresses serious concern that the Environmental Protection Department ("EPD") has only relied on the Census and Statistics Department's statistics collected from recycling traders to evaluate the performance of the Source Separation of Domestic Waste programme ("SSDW programme"), which might not represent the actual quantities of MSW recovered under the programme;
- expresses great dissatisfaction that some of the performance targets set by the Environment Bureau under the SSDW programme are too conservative (i.e. extending the programme to cover all public rental housing estates by 2012 but not earlier, and increasing the domestic waste recovery rate from 16% in 2005 to 26% in 2012 but not higher), reflecting a lack of resolve on the part of the Bureau to vigorously extend the programme;
- acknowledges that the Director of Environmental Protection has agreed to implement the audit recommendations in paragraph 4.17 of the Audit Report;
- urges the Director of Environmental Protection to set more aggressive performance targets under the SSDW programme and formulate specific measures to achieve them;

Implementation of non-domestic waste-recovery programmes

- expresses disappointment that:
 - (a) the EPD did not obtain statistics of recyclable waste recovered under the Source Separation of Commercial and Industrial Waste ("SSCIW") programme from management offices of the participating buildings for evaluating the effectiveness of the programme;
 - (b) the return rate of participants of the SSCIW programme on the quantities of waste recovered was only 40%, which is far from satisfactory;
 - (c) up to July 2008, only 67% of schools in Hong Kong had been provided with waste-separation bins for waste recovery and recycling despite the launching of two campaigns of the Waste Separation and Recycling Scheme in Schools in 2000 and 2003 respectively;
 - (d) some waste-separation bins at public places overflowed and there were instances where rubbish bins were not provided near waste-separation bins; and
 - (e) up to December 2008, only 25% of refuse collection points in rural areas had been provided with waste-separation bins;

- acknowledges that:
 - (a) the Director of Environmental Protection and the Secretary for Education have agreed to implement the audit recommendations in paragraph 5.24 of the Audit Report, and the coverage rate of waste-separation bins in schools will be increased to around 83% in the 2008-2009 school year;
 - (b) the Director of Food and Environmental Hygiene has agreed to implement the audit recommendations in paragraphs 5.25 and 5.26; and
 - (c) the Director of Leisure and Cultural Services has agreed to implement the audit recommendation in paragraph 5.26;

- urges:
 - (a) the Director of Environmental Protection to proactively follow up with those schools that have not joined the Waste Separation and Recycling Scheme in Schools or applied for new waste-separation bins, with a view to further boosting the coverage rate of waste-separation bins in schools; and
 - (b) the Director of Food and Environmental Hygiene to expeditiously increase the number of waste-separation bins provided at refuse collection points in rural areas; and

Follow-up actions

- wishes to be kept informed of:
 - (a) the progress made in achieving the MSW reduction target laid down in the 2005 Policy Framework and the measures taken to achieve it;
 - (b) the Administration's decision on raising the target on the recovery rate of MSW;
 - (c) the definite timetables and action plans to expedite the provision of large-scale waste management facilities;
 - (d) the Administration's decision regarding the proposed review of its practice of using non-statutory means instead of statutory WDPs to set out its policy on waste disposal;
 - (e) the definite timetables for implementing the audit recommendations in paragraph 3.16 of the Audit Report;

- (f) the Administration's decision on setting more aggressive performance targets under the SSDW programme and any specific measures formulated to achieve them;
- (g) the progress made in providing waste-separation bins at all schools in the territory;
- (h) the progress made in increasing the number of waste-separation bins provided at refuse collection points in rural areas; and
- (i) the progress made in implementing other audit recommendations.

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7 January 2009

Ms Miranda Hon
Clerk to Public Accounts Committee
Legislative Council Building
8 Jackson Road
Central, Hong Kong
(Fax: 2537 1204)

Dear Ms Hon,

**The Director of Audit's Report on the
results of value for money audits ("Report No. 51")**

Reduction and recovery of municipal solid waste (Chapter 11)

Thank you for your letter of 22 December 2008.

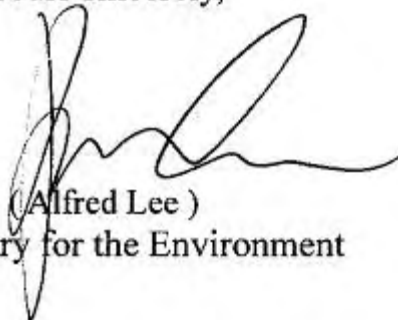
Part II of the Waste Disposal Ordinance (Cap. 354) provides for the preparation of waste disposal plans to set out the arrangements for the collection and disposal of all solid and semi-solid wastes and all existing and proposed waste disposal sites. The Waste Disposal Plan (WDP), which was published by the Government in December 1989, dealt with the collection and disposal aspects of waste management. It also set out a tentative programme for the development of new facilities, namely the three strategic landfills and the transfer station network; and the closure of old incinerators and small landfills. Given its focus on waste disposal and treatment, the WDP is not the most suitable vehicle to address the other aspects of waste management strategies, namely waste avoidance, reuse, recovery and recycling.

A Waste Reduction Study was commissioned by the Environmental Protection Department in 1994 to identify ways to encourage waste avoidance, minimisation, recovery and recycling. The findings were presented to the LegCo Environmental Affairs Panel, which requested the Administration to provide a total picture of its waste reduction targets and implementation timetable. The Government subsequently consulted the public on the draft Waste Reduction Plan in May 1997, and published the Waste Reduction Framework Plan in November 1998 to set out the waste reduction strategy and targets.

Since then, there has been a continuing and rising public aspiration for a sustainable waste management strategy which places primary emphasis on waste reduction, reuse and recovery. In response to this public aspiration, in particular the Report on the Engagement Process for a First Sustainable Development Strategy published by the Council for Sustainable Development (SDC) in May 2005, the Government published "A Policy Framework for the Management of Municipal Solid Waste (2005-2014)" (Policy Framework) in December 2005, setting out a comprehensive waste management strategy for the next ten years. Enshrining the polluter-pays principle, the Policy Framework proposes policy tools to encourage the public to recycle more and discard less. It also covers the adoption of latest technologies for waste management facilities. The Policy Framework has adopted the waste management targets laid down in the SDC Report.

The waste management targets set out in the Policy Framework are the results of the SDC's extensive public engagement process. The Administration remains committed to achieving these targets as set out in the Policy Framework as soon as practicable and will continue to report to the Legislative Council on the progress made.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Alfred Lee', written in a cursive style.

(Alfred Lee)
for Secretary for the Environment

c.c. Secretary for Financial Services and the Treasury (fax: 2147 5239)
Director of Audit (fax: 2583 9063)