

For information  
on 22 June 2010

**Subcommittee on Country Parks (Designation)  
(Consolidation) (Amendment) Order 2010  
Information Paper**

## **PURPOSE**

This paper provides Members with information on the background leading to the proposed South East New Territories (SENT) Landfill extension under the context of the overall waste management strategy for Hong Kong as an integral part of the key initiatives in the “Policy Framework for the Management of Municipal Solid Waste (2005-2014)” (Policy Framework).

## **KEY INITIATIVES IN THE POLICY FRAMEWORK**

2. To manage our municipal solid waste (MSW) (i.e. domestic and commercial and industrial (C&I) waste) in a holistic manner, the Administration published the Policy Framework in December 2005, which sets out a comprehensive waste management strategy for the next ten years. With continuing effort, we have progressively achieved positive results in waste avoidance and reduction at source, waste recovery and recycling, as well as bulk reduction of waste.

3. The continuous expansion of the source separation of MSW and the introduction of the voluntary producer responsibility schemes (PRS's) help improve the waste recovery in Hong Kong. In 2009, the domestic waste recovery rate is 35% which has more than doubled the figure of 16% in 2005. As for C&I waste, the recovery rate has been maintained at a relatively high level of some 60% over the years. Overall, we achieved an MSW recovery rate of 49% in 2009. As compared with equivalent statistics<sup>1</sup> in some other jurisdictions, our MSW recovery rate is higher than United States (33%), United Kingdom (35%) and Singapore (43%), although there are some even better examples such as Germany (62%). However, as the international economic situation remains challenging, the outlook of waste recovery in Hong Kong in the coming years is overshadowed by the uncertainty in the global

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<sup>1</sup> Due to differences in reporting methodology and timing, MSW recovery rates for United States, United Kingdom, Singapore and Germany are calculated from the relevant waste statistics in 2008 published by the respective governments.

demands for recyclable materials. We will continue to support the development of local recycling, including the facilitation for the recycling industry to move to higher-end and value-added operations, and to explore possible outlets for recovered materials and recycled products.

4. The efforts in waste recovery also reduce the quantity of waste which requires disposal at landfills. Since the launch of the Policy Framework, it is the fifth consecutive year recording reduction in landfill disposal of domestic waste with a cumulative decrease of about 14.5%. On a year-by-year comparison, the amount of domestic waste disposed of at landfills dropped by 1.4% in 2009, as compared to 2008, to about 2.20 million tonnes. On C&I waste, in 2009 the quantity of C&I waste disposed of at landfills remained at the 2008 level of around 1.08 million tonnes. The overall landfill disposal of MSW has decreased by 0.9% to about 3.27 million tonnes.

5. The implementation progress of major initiatives under the Policy Framework is set out below.

### **MSW Recovery and Recycling**

6. Launched in 2005, the territory-wide Source Separation of Domestic Waste Programme aims at providing suitable recycling facilities for domestic waste at locations as close as possible to its sources of generation, and at the same time broadening the types of recyclables to be recovered. It also encourages the community's participation in waste recovery and facilitates the provision of a reliable source of materials for the recycling industry.

7. As at end 2009, there were 1 256 (996 in 2008) housing estates participating in the programme, covering some 1.57 million (1.23 million in 2008) households or 67% (53% in 2008) of the population. Around 27% of them have 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 recyclable materials, including paper, plastics, metals, used clothes, small electrical and electronic appliances. We will continue to press ahead with the programme and, in particular, we are seeking to extend the coverage of the programme to some older districts as well as rural areas.

8. In 2009, we achieved a recovery rate of 65% for C&I waste. To press ahead with the recovery of C&I waste, a promotional programme targeting C&I buildings has been operative since October 2007. Some 554 buildings have joined the programme, covering commercial and institutional buildings, industrial buildings, shopping arcades, warehouses and car parks. The programme recognizes and encourages the implementation of source separation

practices in C&I buildings. We will continue to recruit new buildings. With funding support from the Environment and Conservation Fund (ECF), the Environmental Campaign Committee has been providing newly designed waste separation bins to housing estates, C&I buildings, schools, as well as recyclable collection points at public places.

## **Producer Responsibility Schemes**

9. In the Policy Framework, we highlighted the “polluter-pays principle” to provide economic incentives for the public to reduce and recycle waste. In line with this principle, PRS’s will enable manufacturers, importers, distributors, retailers and consumers to share the eco-responsibility of reducing, recovering and recycling, as well as contributing to the treatment and disposal of certain spent products so as to minimise the environmental impact. The Product Eco-responsibility Ordinance (Cap. 603) (PERO) was enacted in July 2008 to provide the legal basis for introducing mandatory PRS’s in Hong Kong.

10. With general public support and consensus, the Environmental Levy Scheme on Plastic Shopping Bags (the Levy Scheme) was launched in July 2009 as the first PRS introduced under the Ordinance. We have undertaken to review the effectiveness of the scheme one year after implementation having regard to its effectiveness. In the meantime, we are closely monitoring the impact of the Levy Scheme through conducting disposal surveys and vetting returns by prescribed retailers, and encourage the relevant trades and the public to continue in reducing the indiscriminate use of plastic shopping bags.

11. Further to the Levy Scheme, we have identified waste electrical and electronic equipment (WEEE) as the next target product for mandatory PRS. WEEE contains hazardous components that could be harmful to the environment and human health if not properly treated or disposed of. Around 70 000 tonnes of WEEE is generated in Hong Kong annually and the volume has been on the rise in recent years. By introducing a mandatory PRS for the proper management of WEEE, we could on one hand avoid the negative impact that WEEE might bring to the environment, and on the other hand promote the recycling of waste and the reuse and recovery of useful materials. At the same time, it would help to boost the development of the local environmental industry. We published a consultation document on 18 January 2010 for the purpose of soliciting the public’s views on the proposed PRS on WEEE. The public consultation period ended on 30 April 2010. We are in the process of examining more than 2 700 submissions collected from the public consultation for developing the details of the WEEE Scheme.

We would continue to properly engage the stakeholders concerned in mapping out the way forward.

12. Apart from pursuing PRS's under the PERO, we have been promoting and supporting the voluntary recycling programmes funded and administered by the respective trades to recover and recycle certain products. The Rechargeable Battery Recycling Programme was launched in 2005. Besides, the Computer Recycling Programme, the Fluorescent Lamp Recycling Programme and the Glass Container Recycling Programme for the Hotel Sector were launched respectively in January, March and November of 2008.

### **Towards a More Sustainable Waste Management Approach**

13. Among other initiatives, we are developing a proposal to introduce MSW charging in Hong Kong to promote waste reduction and recovery. On the domestic side, we conducted in 2007 a three-month trial scheme to examine the logistical requirements for waste recovery and disposal in different domestic housing settings. We are about to complete a Baseline Study to collect information on the waste generation and waste management practices of different C&I establishments. The information collected from the trial scheme and the baseline study would facilitate the development of possible MSW charging options, having regard to the policy objective of providing economic incentives for the public to avoid, reduce, reuse and recycle waste as stated in the Policy Framework.

14. While waste reduction and recycling will always be our priority, pursuing them alone will not resolve our waste problem. We need to adopt a more comprehensive and sustainable approach to reduce the volume of waste that requires disposal. As set out in the Policy Framework, we will develop the Integrated Waste Management Facilities (IWMF) with incineration as the core technology and extend the existing landfills as the final repositories for non-recyclable waste, residual waste and inert waste that cannot be further treated.

15. The IWMF will be developed in phases having regard to the size of overall waste problem. The first phase will have a waste-to-energy treatment capacity of about 3 000 tonnes per day, producing 460 000 megawatt-hours (MWh) electricity per annum. It will also incorporate a small-scale sorting and recycling plant to recover recyclable materials from mixed MSW. The first phase of the IWMF will occupy an area of about 10 hectares. The result of our comprehensive site search exercise concludes that the sites at Shek Kwu Chau and Tsang Tsui Ash Lagoons are suitable for consideration as potential

sites. We are conducting the detailed engineering and Environmental Impact Assessment (EIA) studies for both sites to ascertain their suitability. Subject to the study findings to be available in the second half of 2010, we aim to make a decision on the choice of site and to commence construction with a view to commissioning the facilities by the mid-2010s.

16. Food waste constitutes some 37% of our MSW disposed of at our landfills in 2009. To gather experience and information on the collection and treatment of organic waste, we commissioned a pilot composting plant in mid-2008. The pilot composting plant is capable of receiving up to 4 tonnes per day of source-separated food waste from C&I premises. It also provides us with useful information in developing the Organic Waste Treatment Facilities (OWTF). Biological treatment technology, like composting or anaerobic digestion, will be adopted. The first phase of the OWTF is planned to be built in Siu Ho Wan on the Lantau Island and will handle about 200 tonnes of source-separated food waste from the C&I sector per day. It is also a waste-to-energy facility producing 14 000 MWh electricity per annum. The EIA study was completed in February 2010. We have consulted the Tsuen Wan and Islands District Councils which raised no objection to this project. We aim to consult the Legislative Council on the scope of this project in the latter half of this year.

### **Landfill Extensions**

17. Our three strategic landfills are approaching their capacities in around mid to late 2010s and their extensions are essential. In this connection, the feasibility and EIA studies on the extensions of the North East New Territories (NENT) Landfill, the South East New Territories (SENT) Landfill and the West New Territories (WENT) Landfill have been completed. The amendment Outline Zoning Plan to facilitate the implementation of the NENT Landfill extension has been approved while that of the SENT Landfill extension has been gazetted and is currently under public inspection.

18. For the SENT Landfill extension, as the project will encroach upon about 5 hectares of land in the Clear Water Bay Country Park (CWBCP), the Country Parks (Designation) (Consolidation) (Amendment) Order 2010 (the Designation Order) for the new approved map of the CWBCP to excise the affected land from the country park is being considered by the Legislative Council. The target is for the Designation Order to take effect in November 2010. On the whole, our target is to commission the landfill extensions by mid to late-2010s before the exhaustion of the existing landfills.

19. In respect of the SENT Landfill extension, the EIA studied the impacts of air quality, ecology, noise, water quality, waste management, landscape and visual aspects and landfill gas hazard. Mitigation measures were proposed for all identified impacts. Odour impact and ecological impact were the two issues with significant attention. For the odour impact, the EIA recommended a number of mitigation measures which include –

- (a) limiting active tipping area to 30m x 40m;
- (b) no disposal of sludge from sewage treatment works;
- (c) covering non-active areas by impermeable liners;
- (d) enclosing the entire weighbridge area;
- (e) enhancing the landfill gas management system by installing vertical and horizontal landfill gas extraction wells;
- (f) providing mobile cover to special waste trenches; and
- (g) enhancing odour patrols by independent odour panelists, etc.

For the ecological impact, the recommended mitigation measures include –

- (a) adoption of surface water, groundwater, leachate and landfill gas management systems;
- (b) good construction practices and provision of off-site screen planting near the country park hiking trail;
- (c) mixed woodland planting of some 18 hectares of the extension site, including a compensation for the loss of 6 hectares of shrubland due to the landfill extension; and
- (d) provision of a mosaic of grassland and shrubland in the remaining areas of the extension site.

20. In addition, in response to the Country and Marine Parks Board's recommendation for enhancing the facilities of the CWBCP to provide better enjoyment for park visitors as compensatory measures for the loss of 5 hectares of country park land, the Country and Marine Parks Authority has suggested, and the Environmental Protection Department (EPD) has agreed, to inter-plant native species in some 5 hectares of exotic woodland in the CWBCP for supporting various forms of wildlife; upgrade educational displays in the CWBCP Visitor Centre; set up interpretative signs at Tai Hang Tun to provide better education facilities for park visitors; and provide guided tours at the Visitor Centre for the public.

21. Also related to the SENT Landfill extension, the Sai Kung District

Council (SKDC) has been consulted on the proposed extension scheme on a number of occasions since April 2004. Upon being consulted, the SKDC has expressed their main concern on odour, traffic and environmental problems associated with the existing SENT Landfill, and on this basis objected to the SENT Landfill extension. The SKDC has since set up a dedicated working group to work closely with the EPD on odour control at the existing SENT Landfill. The EPD has also supported the SKDC in conducting an independent consultancy study on odour complaints in Tseung Kwan O with a view to identifying all possible sources of odour and to suggest further mitigation measures. The EPD has also implemented additional odour control enhancement measures at the existing SENT Landfill and assist the district inter-departmental working group convened by the District Officer (Sai Kung), with a view to enhancing joint efforts in odour abatements.

### **Public Education and Awareness**

22. The successful implementation of the initiatives under the Policy Framework hinges on public support and participation. We will continue to press ahead with public education and awareness programmes on waste reduction and recovery. To this end, the EPD has in May 2010 launched a publicity campaign titled “Minimising Waste, Maximising the Future” with a view to further engaging members of the public to play a part in reducing waste in their daily lives.

**Environmental Protection Department**  
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