

Reply to PAC further questions on MSW

Reduction in municipal solid waste

- (a) According to paragraph 2.8 (b) of the Audit Report, the Environmental Protection Department ('EPD') conducted annual waste recovery surveys to obtain the related statistics for locally-generated recyclables recovered for local use. Please explain how these surveys are conducted, and the Administration's views on the accuracy and reliability of the data gathered by using these surveys in estimating the quantities of locally-generated municipal solid waste ('MSW') recovered for local use;**

Reply:

The Government is committed to tackling our waste challenges through multiple and concurrent actions. The actions aim to encourage and facilitate prevention, reduction and recycling of waste, with a view to alleviating the burden of pressure on our landfills. We have been studying the results of surveys conducted for various purposes to objectively review effectiveness of our work. These results are also published timely for public view.

2. For quantity of waste disposal, we obtain the relevant statistics compiled based on weighbridge data recorded at entrances of waste treatment facilities, supplemented by data obtained from the Waste Composition Survey on the composition of waste disposed of at landfills by waste type.

3. For quantity of waste recovered, there is no environmental legislation at present mandating the recording and declaration of the quantities of general recyclables collected and processed by the recycling businesses. Therefore, we compile the statistics based on domestic exports statistics of recyclables which measures the quantities of locally-generated recyclables exported for recycling outside Hong Kong. These statistics are supplemented by data obtained from the Waste Recovery Survey (WRS) which measures the quantities of locally-generated wastes recycled locally into recycled products^{1 & 2}. There is no overlapping in these two sets of data.

¹ For example, waste plastic water bottles can be recycled in Hong Kong to become plastic pellets. These pellets (recycled products) can be used by the local manufacturing sector, or exported under product but not recyclable categories for use outside Hong Kong.

² The Audit Report has referred to these quantities as "locally-generated recyclables recovered for local use". This is different from the terminology adopted by EPD. In fact,

4. The EPD commissions a survey contractor every year to conduct the annual WRS. The major operation features of the WRS are highlighted as follows:

- (a) The WRS questionnaire is designed in a way to ensure that the quantities of locally-generated recyclables recycled locally into final recycled products can be accurately captured.
- (b) Prior to data collection, frontline field interviewers receive appropriate training in the presence of the EPD.
- (c) The WRS contractor performs telephone/face-to-face interviews using a well-structured questionnaire to obtain the required recovery data from companies in the recycling industry. Each interview takes about 30 minutes.
- (d) In completing the survey, about 1 500 companies are interviewed. These companies are from the full listing of companies in the local recycling industry updated annually based on the latest Central Register of Establishments maintained by the Census and Statistics Department. The listing is supplemented by the Directory of local Waste Collectors and Recyclers maintained by the EPD. All companies and green groups identified in the survey frame are fully enumerated under the WRS.
- (e) In recent years, the WRS achieved response rates ranged from 75 to 77 per cent, which are statistically acceptable considering that the WRS is a voluntary survey.

5. The accuracy and reliability of the waste statistics related to waste disposal is beyond doubt as they are based on factual weighbridge data recorded at entrances of waste treatment facilities.

6. The accuracy of the quantities of waste recovery mainly depends on the accuracy of the declared domestic exports statistics of recyclables, as most of the locally-generated recyclables are exported for recycling, with only a small portion of them being recycled locally into final recycled products. For instance, for years 2013 and 2014, the proportion of locally-generated recyclables exported for recycling were 93% and 98% respectively of the total quantity of waste recovery. In this connection, the EPD has taken measures jointly with the Customs and the Census and Statistics Department to improve the accuracy of the data collected from export declarants. The measures implemented since April 2014 include preparing additional guidelines and training workshops to help recyclers and export trade declarants to better

the terminology used by Audit may not be able to reflect the actual recycling scene completely since it is possible that locally-generated recyclables locally recycled into products may also be exported after recycling under product categories.

understand the declaration requirements (in particular regarding the definition of 'domestic export' and 're-export' applicable to recyclable materials), strengthening checking of export declarations and collecting additional data from export trade declarants on the source of recyclable plastics declared as domestic export on a sample basis.

7. As for the WRS, the data accuracy very much depends on the provision of sufficient and accurate data by the recyclers concerned. The EPD has no statutory authority to verify the reported data with supporting business documents. Notwithstanding this, the EPD conducts verification checks with the responding companies by selecting a random sample of the survey returns submitted by the survey contractor, which is an important quality control measure. In light of above, we have reasons to be confident on the accuracy and reliability of the WRS to be at least as good as that of other surveys professionally conducted on voluntary basis.

(b) With reference to paragraph 2.12 and Table 2 of the Audit Report –

- (i) Please explain why the aggregates of the quantities of ‘import recyclables’ plus ‘local recyclables recovered for export’ significantly exceeded the quantities of export recyclables in 2009 - 2011 and the action taken, if any, to ascertain the reasons to account for this significant discrepancy;**
- (ii) the Administration’s views, with the support of statistical data where appropriate, on the possibility that a vast quantity of import recyclables have been disposal of at the local landfills in 2009-2011; and**

Reply:

Based on our analysis of the relevant data and with reference to Consultant study commissioned in late 2012 on Comprehensive Review on Estimation of Waste Recovery Rate (the Consultant Study) , we assess the “excess” of “the aggregates of the quantities of ‘import recyclables plus local recyclables recovered for export’” against the “quantities of export recyclables” in 2009–2011 can basically be attributed to the amount of “re-export recyclables” wrongly declared as “domestic-exports of recyclables” by export declarants. Details about the Consultant Study are set out in paragraph 2.16 in the Audit Report.

2. We would like to illustrate our assessment with the following scenario making use of the formula adopted by Audit in Table 2 of the Audit Report:

- (a) = Import recyclables
- (b) = Locally-generated recyclables recovered for export
- (c) = Import plus local recyclables = (a)+(b)
- (d) = Export recyclables
- (e) = Import plus local less export recyclables = (c)-(d) or [(a)+(b)]-(d)

- For years 2009–2011, if significant quantities of ‘re-exports of recyclables’ were erroneously declared and recorded as ‘domestic-exports of recyclables (mis-reporting of trade declarations), column (b) would be significantly over-estimated as a result, since it is compiled mainly based on domestic exports figures. The larger the mis-reporting of trade declarations the larger would be column (b) and also column (e).

- In other words, such mis-reporting of trade declarations would inflate the total quantities of recyclables available and expected to be exported ((a)+(b)), and these total quantities would exceed that of recyclables actually exported (d) **to the extent of such mis-reporting**.
- By way of illustration, if we assume that **all** of the discrepancy in column (e) were caused by mis-reporting of ‘re-export recyclables’ as ‘domestic-exports of recyclables’ and hence being included in ‘locally-generated recyclables recovered for export’ in column (b) from 2009 to 2011, then the possible corrected figures (in square bracket) after adjusting for the mis-reported figures could be shown in the following table.

<i>(Unit: million tonnes)</i>						
Year	Import Recyclables (Actual)	Locally- generated recyclables recovered for export (Adjusted)	Re-export Recyclables misreported as Domestic Export Recyclables	Re-export Recyclables (Actual)	Export recyclables (Adjusted)	Import plus locally- generated recyclables recovered for export (Adjusted)
=	(i)	(ii)	(iii)	(iv)	(v)=(ii)+ (iii)+(iv)	(vi)=(i)+(ii)
2009	5.60	[1.12]	[2.03]	3.49	6.64	6.72
2010	5.72	[1.15]	[2.42]	3.14	6.71	6.87
2011	4.83	[1.42]	[1.56]	3.12	6.10	6.25

Note: Column (iii) shows the quantities of re-exports mis-reported as domestic exports under our assumption. Column (iv) shows the quantities of re-exports reported in trade statistics. Hence the total quantities of re-exports adjusted for mis-reporting will be columns (iii)+(iv). Our assumption implied that about 30 to 40 % of re-exports, i.e. ((iii)/(iii)+(iv)), were mis-reported in the three years.

- The above table assumes that **all** of the shortfall at (e) of Audit’s Table 2 was caused by such mis-reporting. We must emphasize that in reality, there is no practical means to accurately ascertain the extent of mis-reporting of “re-export recyclables” as “locally-generated recyclables recovered for export” by trade declarants.

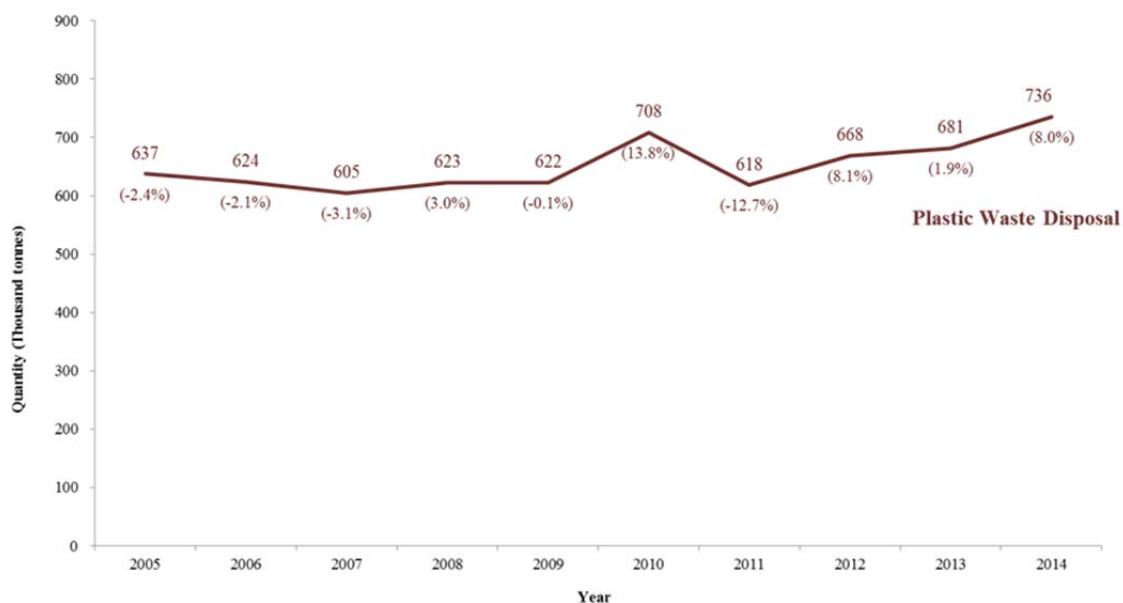
- In the above table, if we add the ‘correctly’ reported ‘locally-generated recyclables recovered for export’ at column (ii), together with the correctly reported ‘re-export recyclables’ (column (iii)+(iv)), then **the adjusted total export recyclables (column (v)) would have closely matched the adjusted ‘Import plus locally-generated recyclables recovered for exports (column (vi))’ in the corresponding years.**
- This illustrates that if the trade declarations were correctly made, **the quantities of ‘import recyclables, column (i)’ would all have been accounted for under the adjusted quantities of ‘export recyclables, column (v)’**, and there would be no question that the aggregates of the quantities of ‘import recyclables’ plus ‘local recyclables recovered for export’ (column (vi)) significantly exceeded the quantities of ‘export recyclables (column (v))’.
- We should emphasize again that there is no practical means to ascertain the exact extent of mis-reporting of re-exports as domestic exports during the three years. Moreover, it is not possible to re-verify the past export declarations with the trade declarants to ascertain the exact extent.

3. It is relevant to note that our assumptions (i.e. 30 to 40 per cent of re-exports were mis-reported³) are conservative in light of the findings of the Consultant Study that a majority of recyclers and traders were actually confused and could not tell the difference between re-exports of recyclables and domestic exports. Another relevant supporting information is the waste disposal statistics in the years of 2009-2011, which is rather stable with minor changes when compared with that in earlier or later years.

4. Amongst the different types of imported recyclables, plastic recyclables constituted the major proportion (about 80% – 84%) in recent years. Despite the rise in the quantities of declared imported recyclables particularly those of plastics recyclables in the range of 4.0 to 4.8 million tonnes in 2009-2011, the annual disposal quantity of waste plastics at landfills had remained relatively stable in the range of 0.6 – 0.7 million tonnes. Disposal quantities at landfills are set out in the chart below.

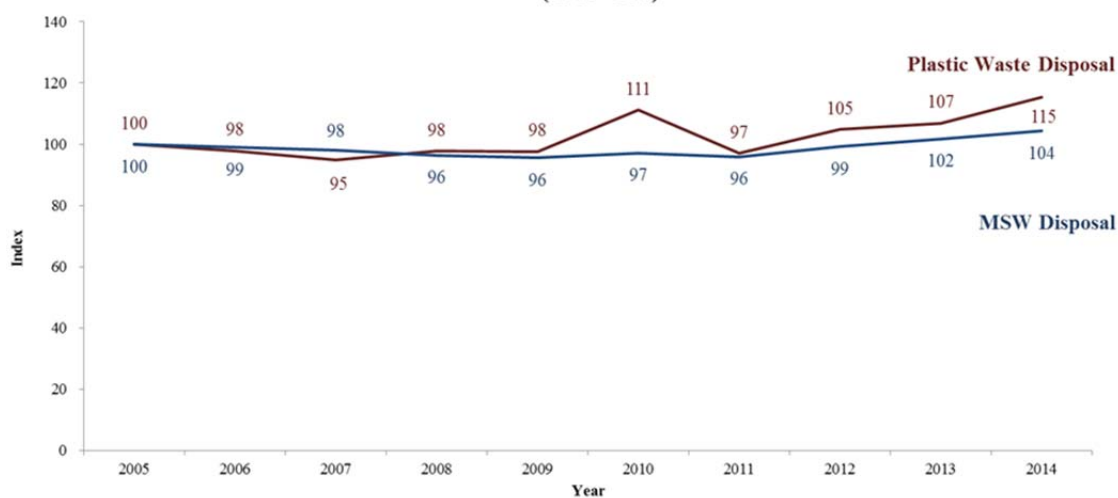
³ If we divide mis-reported re-exports (iii) by rectified total re-exports (iii) + (iv) (i.e. (iii)/((iii)+(iv))) during the three years, we can conclude that about 30 to 40 per cent of re-exports were mis-reported as domestic exports.

Disposal Quantities of Plastic Waste (2005-2014)



Note: Figures in brackets refer to year-on-year percentage changes.

Indexes On Disposal Quantities of MSW and Plastic Waste (2005-2014) (2005=100)



Year	Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
MSW Disposal	Thousand tonnes	3,423	3,387	3,352	3,302	3,271	3,327	3,283	3,396	3,485	3,570
	y-o-y % changes (%)	0.7	-1.0	-1.0	-1.5	-0.9	1.7	-1.3	3.4	2.6	2.5
Plastic Waste Disposal	Thousand tonnes	637	624	605	623	622	708	618	668	681	736
	y-o-y % changes (%)	-2.4	-2.1	-3.1	3.0	-0.1	13.8	-12.7	8.1	1.9	8.0

Note: The indexes of the two variables shown above will depict accurately their movements over the past 10 years relative to the base year of 2005.

- (iii) actions that have been/would be taken by EPD to prevent the disposal of import recyclables at local landfills;**

Reply:

In line with the international practices adopted by other countries/ places, Hong Kong laws strictly prohibit the disposal of imported waste locally. It is an offence to import waste for disposal in Hong Kong. The EPD has close surveillance at landfills and refuse transfer stations on all incoming waste loads to prevent illegal disposal of imported recyclables. All vehicles entering a waste disposal facility must stop at the weighbridge for weighing and inspection. The drivers are required to open hood covers of their vehicles to facilitate inspection of the waste transported via closed circuit television system (CCTV). If it is suspected that imported recyclables are delivered to the landfill for disposal, the EPD will not only intercept and trace the source but also contact the owners to facilitate recycling of the waste so as to effectively prevent the disposal of imported recyclables at landfills. On interception of any attempt to dispose of imported recyclables in landfills, enforcement action will be taken. In the execution of the above control, the EPD has not found loads of imported recyclables disposed of at landfills.

- (c) According to paragraph 2.16 of the Audit Report, EPD commissioned Consultant A to review the abnormal fluctuations of MSW-recovery rates in 2012 and Consultant A reported in February 2014 that the fluctuations were likely due to the incorrect treatment of import recyclable plastics as locally-generated waste plastics recovered for export. In this regard, the follow-up actions that EPD and/or other government departments have/has taken, if any, to rectify the incorrect treatment by the relevant traders and exporters, such as issuing of guidelines in reporting the recyclable plastics as re-exports or domestic exports;**

Reply:

The relevant departments including the EPD, Census and Statistics Department and the Customs and Excise Department have implemented enhancement measures in the collection of export data of recyclables, which include preparing additional guidelines and training workshops to help recyclers and export trade declarants to better understand the declaration requirements (in particular regarding the definition of ‘domestic export’ and ‘re-export’ applicable to recyclable materials), strengthening checking of export declarations and collecting additional data from export trade declarants on the source of recyclable plastics declared as domestic export on a sample basis. The essence of these measures has been captured in the Audit Report (paragraphs 2.20-2.21).

(d) Import and export recyclable statistics on metals and papers in the past five years;

Reply:

The statistics based on trade declarations on metal recyclables are as follows:

Metals (ferrous and non-ferrous metals)					
(Thousand Tonnes)					
	2010	2011	2012	2013	2014
Import	596	541	492	464	445
Domestic Export	930	982	881	913	1,000
Re-export	331	341	390	435	410

The statistics based on trade declarations on paper recyclables are as follows:

Paper					
(Thousand Tonnes)					
	2010	2011	2012	2013	2014
Import	186	215	103	18	25
Domestic Export	1,195	1,278	1,162	1,033	949
Re-export	6	8	9	2	2

- (e) With reference to Figure 6 in paragraph 2.18, the reason for per-capita-per-day domestic MSW generation of Hong Kong was higher than those of Taipei City, Seoul City and Metro Tokyo in 2011, and the updated figures for 2014, if available;**

Reply:

As different cities have different geographical, social, economic and cultural circumstances, it would be extremely difficult to draw definitive conclusions on reasons for variations in their communities' behaviour. It is also relevant to note that the compilation of statistics of different cities may vary due to the differences in definitions and methodologies. That said, we agree it is useful to examine the trend of waste arising in these cities based on comparable parameters and relate this with the implementation of specific policies or programmes. For this purpose we have plotted the trend of domestic/household MSW disposal in the three places below and highlighted on the same chart their waste related policy developments. We have the following observations:

- (a) In both Taipei and South Korea, development of incinerators and landfills proceeded before the implementation of mandatory MSW charging. This may have reflected the sense of urgency or critical situation felt by the community concerned on the waste situation, which might have driven waste reduction behaviour.
- (b) The implementation of volume based MSW charging created the most significant impact on waste reduction. Other mandatory measures targeting at specific waste types helped to further reduce waste generation but the impacts were less significant. In Hong Kong, the domestic MSW disposal rate showed reduction in 2004 and the trend continued until 2012, after which the rate remains stable and at the relatively low level as compared with 2003. That could be attributed to a series of education and publicity measures that have been launched since 2004 (details of these programmes are shown on the chart below), as well as discussion on the critical situation of waste management and the need for additional treatment facilities such as incineration, extension of landfills, which started in 2005 along with the publication of a strategy-based Policy Framework document and consultation. Updates and more focused plans for engaging the community attention to the imminent waste issues were made in the subsequent years, including the announcement of strategy on "Reduction, Recycle and Proper Waste Management in 2011 and the issue of the Blueprint on Sustainable Use of Resources in 2013.

2. Though the scale of reduction in domestic MSW arising in Hong Kong is smaller when compared with the other two places, we have a similar trend of decline. We are of the view that with the implementation of the mandatory schemes which are either being considered by LegCo (PRS on WEEE and glass beverage bottles) or under preparation (MSW charging); we could drive behavioural change to reduce MSW disposal rate by 40% on a per capita basis by 2022.

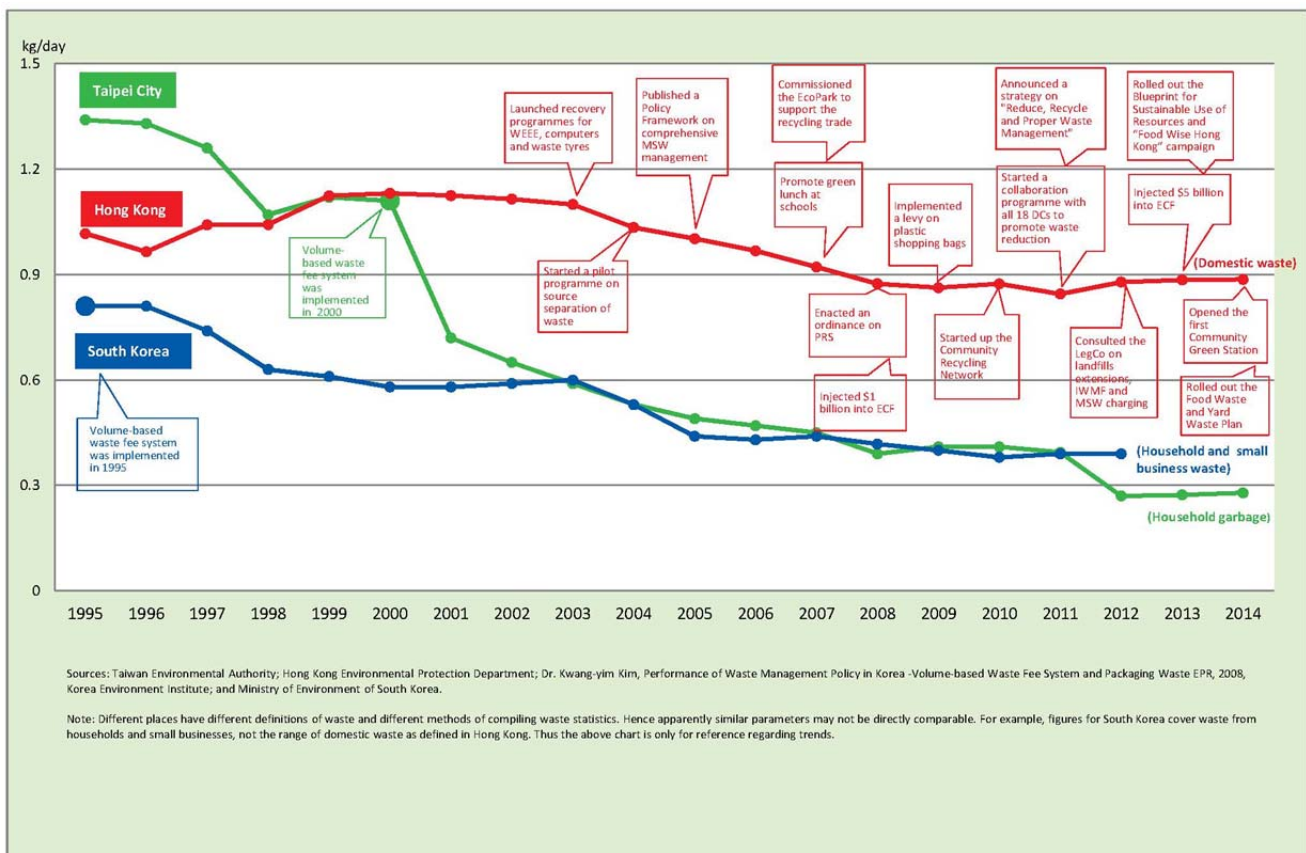
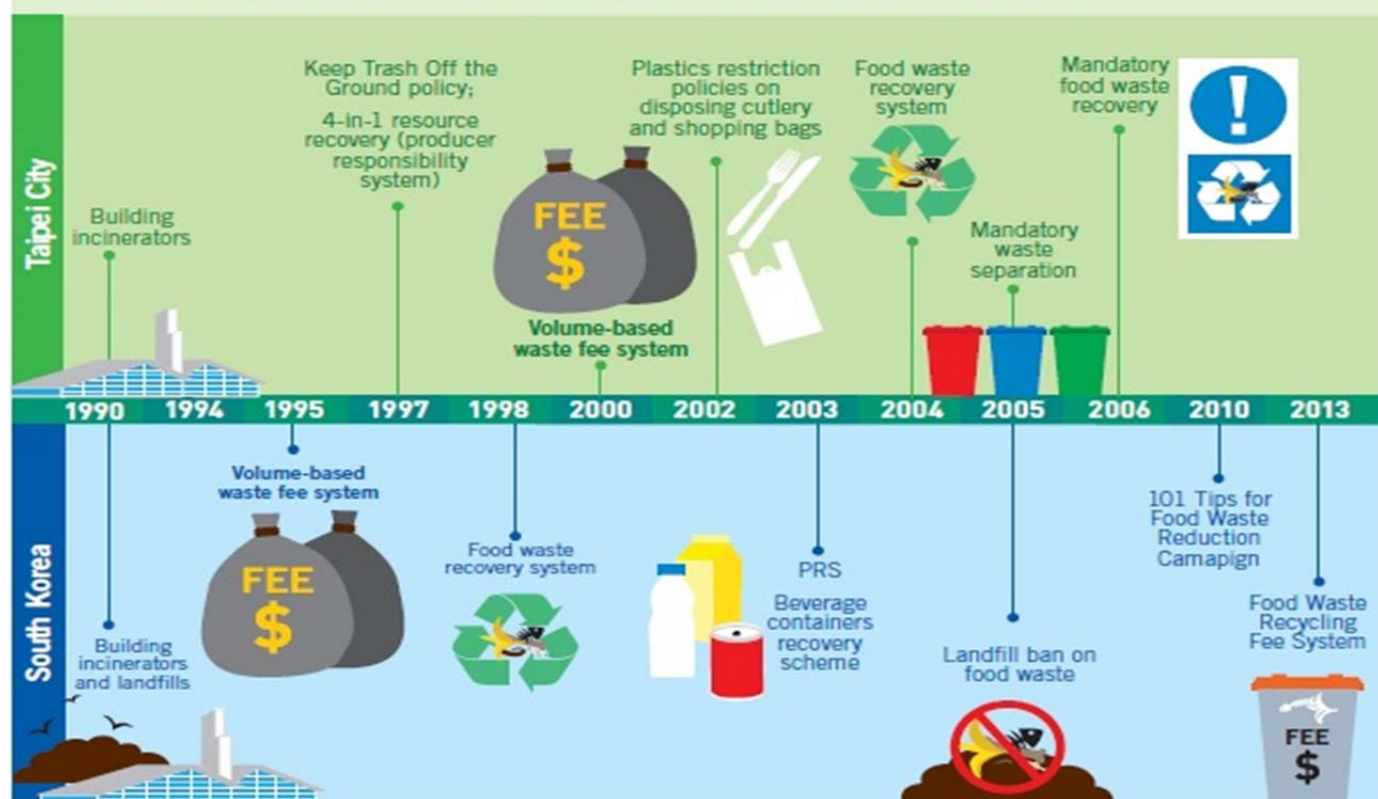


FIGURE 5 Schedule of waste policies and measures imposed in Taipei City and South Korea



(f) With reference to paragraphs 2.24 and 2.26 of the Audit Report –

- (i) the reasons for not meeting the time targets of producer responsibility schemes (“PR schemes”) on waste electrical and electronic equipment, vehicle tyres, glass beverage bottles, packaging materials and rechargeable batteries;**

Reply:

Under A Policy Framework for the Management of Municipal Solid Waste published in 2005 (“The 2005 Policy Framework”), it was the target to introduce three PR schemes into the Legislative Council (“LegCo”) in 2007 for plastic shopping bags (“PSBs”), waste electrical and electronic equipment (“WEEE”) and vehicle tyres respectively, two in 2008 for glass beverage bottles and packaging materials respectively and one in 2009 for rechargeable batteries.

2. We introduced the legislative proposals for the first PR scheme for PSBs in 2007 as part of the Product Eco-responsibility Bill (which was subsequently enacted in 2008 as the Product Eco-responsibility Ordinance (Cap. 603)). The original legislative approach was that Cap. 603 would provide the framework for PR scheme whereas product-specific measures would be subsequently introduced through subsidiary legislation. This proposed approach echoed the ambitious timetables as set out in the Framework.

3. However, the Environmental Affairs Panel (“the EA Panel”) did not support this legislative approach. Instead it requested that each PR scheme should be implemented through legislative amendment to the enabling legislation and subject to the three-reading scrutiny of the LegCo. More time was therefore needed to implement the various PR schemes under the latter legislative approach.

4. Furthermore, the actual experience also demonstrated that it was impracticable to complete the necessary preparatory work in relation to research, analysis, trial (if needed), consultation and law drafting for a PR scheme within the target timeframe as originally proposed under The 2005 Policy Framework. Having reviewed the implementation of the PR schemes having regard to the latest development and the experience we gained, we have accorded priority to the PR schemes on the extension of PSBs, WEEE and glass beverage bottles for which the legislative proposals have been introduced into the LegCo in May 2013, March 2015 and July 2015 respectively.

- (ii) **with reference to the studies mentioned in paragraph 2.24 of the Audit Report, details, scope and timeframe of the studies;**
- (iii) **the progress and revised time targets for implementing the remaining three PR schemes on vehicle tyres, packaging materials and rechargeable batteries (“three remaining products”);**
- (iv) **whether consideration would be given to implementing the PR schemes on the three remaining products concurrently with a view to expediting the implementation process and**

Reply:

As committed under Hong Kong: Blueprint for Sustainable Use of Resources 2013-2022 (“the 2013 Blueprint”), the Government will conduct studies on the PR schemes for other products between 2016 and 2018. In conducting the studies, we will take stock of the present position of the relevant products as an environmental problem in Hong Kong including their current waste generation rate and effectiveness of the existing recycling efforts. We will then assess the need of any enhanced efforts to promote their recycling and proper disposal and whether a PR scheme should be introduced. In 2014, about 21 tonnes per day (“tpd”) of waste vehicle tyres was disposed of at the landfills. Rechargeable batteries are counted towards household hazardous wastes (HHWs) alongside paints, pesticides, fuels, cylinders, electrical appliances, computer products, mercury-containing fluorescent lamps and medicines, etc. and about 160 tpd of HHWs was landfilled in the same year. As regards packaging materials, we do not have specific disposal figures as we are unable to trace the source or uses of the waste at the landfills solely on the basis of the nature of materials.

2. In case a PR scheme is considered necessary and appropriate for a particular product, we will conduct further research with a view to drawing up the initial proposals for the regulatory framework and other complementary measures for public consultation and trade engagement as soon as practicable. The actual timetable for introducing the legislative proposals into the LegCo will depend on complexity of individual PR schemes, including the applicability of experience accumulated through the first three schemes. In case more than one PR scheme is pursued and if circumstances permit, we will aim to expedite actions and will not rule out the possibility of an omnibus bill which may carry legislative proposals for multiple PR schemes.

- (v) **current measures adopted by the Administration to encourage the recycling of the three remaining products before the relevant legislation is enacted;**

Reply:

With the support of the relevant trades, a voluntary PR scheme has been in place to promote the recycling and proper disposal of rechargeable batteries since April 2005⁴. Since 2013, following targeted publicity through the Voluntary Agreement on Management of Mooncake Packaging⁵, we have been monitoring the eco-friendliness of packaging methods of mooncake products through periodic surveys. As for vehicle tyres, we have been monitoring the waste generation and our annual waste statistics shows that its landfill disposal dropped drastically from a daily average of 49 tonnes per day (“tpd”) in 2005 to 21 tpd in 2014 (and at one point less than 2 tpd in 2011). On the other hand, a piece of land in the EcoPark has been leased to a private recycler to develop a rubber vehicle tyre treatment plant, which is scheduled for commissioning in early 2016.

4 A similar voluntary PR scheme for compact fluorescent lamps has been in place since March 2008.

5 We operated the Voluntary Agreement scheme between 2008 and 2012. Through the scheme, we invited mooncake manufacturers to sign a voluntary agreement, under which the participating manufacturers commit to conserving resources through better design and production processes, facilitating the re-use and recycling of used packaging materials, and minimising the adverse environmental impact arising from the disposal of used packaging in their manufacturing and retail operations.

(g) Timeframe for completing the post-implementation review of the 2005 Policy Framework and reporting the review results to the Legislative Council Panel on Environmental Affairs (“EA Panel”) (paragraphs 2.34(e) and 2.35 of the Audit Report refer)

Reply:

To address the waste problem in a holistic manner and gather public support, we have publicised comprehensive strategy and policy tools and measures in major policy documents on waste management. We have also updated various initiatives timely in light of the society’s development and closely engaged the public and the relevant stakeholders.

2. In the Policy Framework for the Management of Municipal Solid Waste (2005-2014) (“the 2005 Policy Framework”), we set out targets to reduce waste generation, increase recovery rate and reduce disposal quantity. In light of the initial achievements and in experience gathered, we thoroughly reviewed our positions and updated the targets and actions plans in 2011 (the 2011 Review) to cope with the latest challenges. We had briefed EA Panel of the progress of the various targets and actions plans of the 2005 Policy Framework and the 2011 Review at its meetings of April 2009, January 2011 and March 2012. Taking stock of the experience gained in the implementation of the Policy Framework and the 2011 Review, as well as the latest development in Hong Kong and elsewhere, we had consolidated past actions and updated the relevant policy tools and implementation strategy in the 2013 Blueprint. In this regard, we had briefed the EA Panel on the 2013 Blueprint in May 2013. We do not consider that the 2005 Policy Framework, the 2011 Review and the 2013 Blueprint are unrelated documents. While the multi-pronged strategies in waste management remain unchanged, the Blueprint represents continued refinement of the action plans and their timetables in the light of our experience and the social, economic and political developments. In our view it would be more fruitful to focus on the implementation of the 2013 Blueprint at this stage. We would brief the EA panel on the progress and initial achievements of our waste management measures promulgated in the 2013 Blueprint in 2016 when the waste statistics for 2015 is available.

(h) Measures to strengthen the gathering of reliable statistics in assessing the effectiveness of PR schemes (paragraph 2.53(b) of the Audit Report refers);

Reply:

Since we have extended the PR scheme on PSBs to cover the entire retail sector with effect from 1 April 2015, Audit's concern that some "pertinent PSBs" were distributed by registered retail outlets is no longer relevant. We plan to strengthen our efforts in assessing the effectiveness of the extension in the PR scheme through –

- (a) conducting periodic telephone surveys to gauge information on consumers' attitude and behavioural change in response to the PR scheme;
- (b) reviewing the information published by the Hong Kong Retail Management Association which has agreed to coordinate the voluntary reporting of the relevant statistics by its members;
- (c) commissioning dedicated surveys to assess the likely sources of the PSBs classified under the "Others" category.

As for the new PR schemes for WEEE and glass beverage bottles, their effectiveness will mainly be assessed on the basis of the amount of WEEE and glass containers recovered through the respective schemes. The relevant statistics can be compiled directly from the records that will be submitted by the management contractors.

Recovery of municipal solid waste

- (i) Given the drastic decline of the MSW-recovery rates, from 52% in 2010 to 37% in 2013 and 2014, possibly as a result of the erroneous inclusion of import materials in the statistics, whether EPD would consider setting a new target for MSW-recovery rate (Figure 8 of the Audit Report refers);**

Reply:

Unlike the approach adopted in the 2005 Policy Framework, the 2013 Blueprint adopts a single target of reducing per-capita MSW disposal rate by 40% by 2022. This target is measurable in that it is based on direct weighbridge data recorded at the waste disposal facilities, and it is also more embracing as it quantifies the combined effect of the different action plans for reducing waste generation at source and enhancing waste recovery and recycling. Achieving the MSW disposal rate reduction target set in the Blueprint would largely be contingent upon the implementation of various waste reduction measures in particular the completion of Phases 1 and 2 of OWTF, the effectiveness of the Food Wise Campaign in changing the behaviour of the business sector and the general community, and the implementation of the MSW charging by 2022. The 55% recovery rate mentioned in the 2013 Blueprint is not a target in itself. Rather it illustrates the different composition of the waste management structure in 2022 as compared with the base year of 2011 where the then recovery rate was 48%, if we are able to achieve the various waste reduction measures set out in the 2013 Blueprint. If the recovery rate for 2011 needs to be adjusted due to mis-reporting by recyclers, then corresponding adjustment should be made for that in 2022 by using the same methodology. The end result is likely that the proportion of different components would remain the same. As we are now implementing in full steam the 2013 Blueprint action plans and mobilizing the community's participation in these plans, we consider that it serves no meaningful purpose to focus on past overtaken actions and to set a recovery target for the 2013 Blueprint when the emphasis should be on the more measurable MSW waste disposal rate

(j) Measures to raise the recovery rate of waste plastics (paragraph 3.18 of the Audit Report refers).

Reply:

We shall continue to take multiple measures to promote recovery of waste plastics, including:

- (a) To step up communication with property management companies and concerned parties to take initiatives to enhance the collection arrangement of recyclables. These initiatives include enlisting their support for active participation in recycling, proper sorting of waste by their types, and rinsing the recyclables where possible. This is conducive to saving transportation and processing costs by recyclers. The hygienic condition of the recyclables handling process will also be improved.
- (b) To continue to carry out promotional and publicity work under the Clean Recycling Campaign to drive behavioural change so as to enhance the cleanliness and the hygienic condition of waste plastics and other source separated recyclables. An enhancement in the quality and quantity of the recyclables increases their value and thereby reducing resource from being dumped at the landfills.
- (c) To leverage on the Recycling Fund to assist recyclers, including those which are small and medium-sized enterprises, in upgrading and expanding local recycling operations and network in the form of a matching fund. Through upgrading their operation e.g. install plastic washing and pelletizing machine to enhance the value of recycled materials, they will be in a better position to tackle challenges posed by market fluctuations. These enhancements will raise the recovery rate of waste plastics.

2. We are committed to maintaining close contact and communication with the local recycling industry and relevant stakeholders. We will also monitor closely the market situation of plastic recyclables and refine our support measures timely.

(k) With reference to paragraph 3.34 of the Audit Report, measures by EPD to review the effectiveness of the source-separation programme.

Reply:

The EPD, in collaboration with various stakeholders, has been taking multiple actions to raise public awareness of source separation of waste and clean recycling. These actions include promotion of the three-colour recycling bins system, educational and promotional activities to targeted recipients and publicity programmes on different themes to reach out to community members. All these efforts contribute to driving behavioural change of the public and cultivating a persistent habit to practise recycling frequently and properly. While it is not practicable to quantify the effectiveness of a voluntary promotional programme such as the source-separation programme in isolation, we plan to engage a consultant to conduct a review of the implementation of the source-separation programme and make recommendations to improve the programme, including how to encourage and strengthen the collection of statistics on recyclables collected by participating estates as well as to further enhance public awareness and participation rate, increase quantity of recyclables recovered. We will refine our promotion strategy in the light of the review.

- (l) According to paragraph 3.37 of the Audit Report, due to the lack of reporting requirements in the recyclable collection service contracts, the Government did not have statistics on the quantities of recyclables collected from waste-separation bins (WS bins) which were disposed of at landfills due to contamination or other reasons. In this regard,**
- i) Please explain how EPD would monitor and review the effectiveness of the recyclables-collection scheme without the relevant statistics;**
 - ii) Whether EPD would consider requesting contractors to submit such information for public disclosure. If no, the reason for that;**
 - iii) Measures to monitor the contractors to ensure that the non-contaminated recyclables would be transported to approved recyclers, and the results of these monitoring activities in the past years; and**
 - iv) The total expenditure incurred for collecting recyclables from WS bins in the past five years.**

Reply:

The FEHD has engaged a contractor through outsourcing to provide recyclables collection service. The contractor is required to collect waste paper, metal and plastic from 2,850 public WSBs placed at locations such as pavements, refuse collection points, public markets, bus terminals and venues managed by schools, the Water Supplies Department and the EPD. The expenditures incurred by the FEHD on the contracts of collecting recyclables from WSB over the past few years are :

Term of Service Contract	Contract Value (\$m)
August 2010 – July 2012	9.0
August 2012 – July 2014	12.9
August 2014 – July 2016	21.6

2. According to the service contract, contractors must hand over the collected recyclables to the designated recycler for process. To improve monitoring and accountability, the service contract signed between the FEHD and the contractor that took effect in August 2014 has included the following additional tender terms:

- (i) To facilitate on-site monitoring, the contractor is required to use transparent plastic bags for collection of recyclables, and the bags should be printed with the words “used for collecting recyclables”. Notices showing “FEHD contractor providing collection service for recyclables” should be displayed on both sides of the body of its collection vehicles;
- (ii) The contractor is required to nominate up to two local recyclers to receive and recycle plastic recyclables when submitting their bids for the contracts. Each recycler nominated shall have independent capability and experience to properly process plastic recyclables at a designated recycling site; and
- (iii) The FEHD may direct the contractor to change its recyclers if their performance is not satisfactory.

3. The FEHD has set up a comprehensive contract management mechanism under which the FEHD staff conducts regular and surprise checks to monitor the performance of the contractor. If any breach of contract provisions is found, the FEHD will take punitive actions accordingly, including issuing verbal warning, written warning and default notices. The monthly amount payable to the contractors who have received default notices will be deducted in the light of the breaches.

4. Since August 2014, the EPD has also set up an additional monitoring mechanism to ensure the plastic recyclables collected by FEHD's contractor would be properly processed by the engaged recycler. The EPD conducted site inspection to assess the recyclable processing ability of the nominated recycler and provided recommendation to FEHD at the tender stage. Since the FEHD had awarded the contract in August 2014, the EPD has conducted 9 site visits to check the operation of the recycler. Similar monitoring arrangement has been implemented to AFCD and LCSD recyclables collection service contracts and it will be extended to cover paper and metal recyclables in the forthcoming contracts. Under the current FEHD contracts for the collection of the recyclables, the contractors are required to provide data on the quantity of recyclables collected. We will explore with FEHD how to enhance the disclosure of information related to the quantity of recyclables collected by the contractors and information on the amount of recyclables which are actually recovered or disposed of due to contamination.

5. For recycling bins placed at locations such as country parks, leisure and cultural facilities, public housing estates, government quarters and government office buildings, the maintenance and management are provided and paid for by relevant departments or property management companies. The costs incurred are generally included in the refuse disposal and cleansing management contracts as a whole and no breakdown of such items is available.

(m) Results of the review on the location of waste separation bins in public places.

Reply:

The Government places strong emphasis to promote waste separation and build up recycling habits of the public and facilitate them to participate in recycling by placing waste separation bins in public places and organising relevant promotion activities. In 2014, we placed about 15 800 sets of WSB throughout the territory at locations such as pavements, public transport interchanges, refuse collection points, leisure and cultural facilities, country parks, schools, public/private housing estates, shopping centres, government quarters/offices and hospitals/clinics, etc.

2. The locations of recycling bins are decided based on various factors, including actual needs and demand, site location, utilization rate, quantity of recyclables collected.

3. With a view to facilitating waste reduction and resource recovery, the Environment Bureau will convene a Steering Group to review among other things the design and distribution of recycling and refuse collection bins in public place and to recommend transformation as appropriate. We will take into account views of relevant stakeholders in the process.

- (n) With reference to paragraphs 3.39(a) and 3.40 of the Audit Report, the measures to strengthen promotion efforts to encourage participating housing estates and commercial and industrial buildings to provide EPD with statistics on recyclables collected from waste-separation bins.**

Reply:

At present, a list of participating housing estates/buildings and a list of award-winning housing estates and residential buildings in the annual competition under the Source Separation Programme is published on the EPD Hong Kong Waste Reduction website. While it is voluntary for participating housing estates and commercial and industrial buildings to provide statistics on recyclables collected from waste-separation bins to the EPD, we plan to take the following measures to encourage them to report the relevant data to us:

- (a) To organize commendation schemes to recognize the property management companies or their owners whose buildings have reported and attained increases in recyclables collected from the source separation bins. Subject to feedback from consultation with the stakeholders, we are ready to promote transparency of the reports on the statistics to encourage participation of residents and workers in recycling;
- (b) To provide guidelines to assist collectors and recyclers to provide summary and analysis of the types and quantity of recyclables collected from the participating housing estates and commercial and industrial buildings on a timely basis; and
- (c) To organize training to frontline staff on the purpose and process to collate and compile the statistics from recycling bins with a view to alleviating their perceived increase in workload or concerns on the additional resources required in the process.

2. We will continue to engage the stakeholders and refine our promotional efforts to drive better results.

Recycling of municipal solid waste

- (o) The Administration's assessment on whether the EcoPark, with a construction cost of \$308 million, has met its target objectives for Phases 1 and 2 respectively.**
- (p) According paragraph 4.3(b), Tables 7 and 8 of the Audit Report, the total minimum throughput of 64 529 tonnes per quarter under Phases 1 and 2 of EcoPark of August 2015 has significantly exceeded the target throughput of 58 600 tonnes a year which was set in 2006. In this regard, whether EPD would set a new target throughput and use other performance indicators to assess the performance of EcoPark**

Reply:

The EcoPark is one of the Government's major initiatives to promote the development of the local recycling industry. Its objectives are set out in the PWSC paper to the Legislative Council in 2006 [*PWSC(2005-06)49*] as follow:

- (a) Encourage the development of value-added environmental and recycling technologies that help minimise waste generation or turn locally recovered materials into products for material conservation;
- (b) Process recyclable materials with priority on those subject to producer responsibility scheme and other materials that are otherwise difficult to recycle; and
- (c) Facilitate tenants to achieve the projected throughputs of target materials.

2. There are currently 13 tenants in the EcoPark engaged in processing a variety of waste types, including those identified for control under producer responsibility scheme (i.e. waste electrical and electronic equipment (WEEE) and waste glass beverage bottles), those that are difficult to recycle therefore have limited local recycling outlets such as food waste, waste wood and waste cooking oil, as well as those that lack a robust market for the processed materials such as waste rubber tyres. The total pledged capital investment by the tenants has exceeded \$300M. Examples of advanced technologies employed in the recycling operation include-

- (i) enhanced resonance system to mechanically dismantle and break waste glass into designed particle size. The resulting cullet is used for mass production of eco-pavers and eco-blocks for use in various construction projects;
- (ii) modern fermentation technology which enables food waste to be decomposed into nutrient powder. The recycled product is used as a major ingredient for production of fish feed for sale to fish farmers; and

(iii) esterification process to enhance productivity in manufacturing of bio-diesel from waste cooking oil and grease trap waste collected from local sources.

3. As in December 2015, over 200 staff are employed in the EcoPark. Many of them are in technical or professional levels. Moreover, as more tenants start commissioning their operations, the original projected annual throughput set at 58,600 tonnes in 2006 has been exceeded. Indeed in their tender returns, tenants have to pledge for minimum outputs. The current tenants have in total pledged to handle 200,000 tonnes in a full year upon full commissioning. In 2014, the amount of recyclables recovered by the EcoPark tenants amounted to over 150,000 tonnes. Looking ahead, we would continue to raise the community awareness of the Ecopark tenants so as to assist them in broadening their network in sourcing recyclables for treatment. General promotion on green procurement and importance of recycling will also be stepped up.

4. We will also leverage on the EcoPark to disseminate information on proper recycling and cultivate a habit of recycling in daily lives of community member. Over 110,000 visitors have visited the EcoPark Visitor Centre since its opening in March 2010. We will strive to increase the number through various means e.g. organized tours, open day.

Treatment and disposal of municipal solid waste

(q) With reference to paragraph 5.9 of the Audit Report, the reasons for the postponement of the target of commissioning a waste-to-energy plant (later renamed as integrated waste management facility) from mid-2010s to “2019 to 2022”;

Reply:

As stated in the paragraph 6.13 of the Audit Report, the long time taken for the development of IWMF Phase 1 is due to the need to obtain public consensus on related issues.

2. In the past decade we have been actively engaging the public on various issues for development of the project including the choice of the incineration technology, site selection, public consultation on environmental issues and zoning application through EIA and town planning processes, etc.

3. We carried out a comprehensive site search exercise in 2006 to identify suitable sites for developing the first phase of IWMF and following the completion of the site search exercise in early 2008, Shek Kwu Chau site and the Tuen Mun Tsang Tsui Ash Lagoons site were found suitable as potential sites. In order to ascertain the suitability of these two potential sites, we commissioned the detailed Engineering Investigation and Environmental Impact Assessment (EIA) studies for both sites in November 2008. The engineering investigation and environmental studies for the two potential sites for IWMF Phase 1 were completed in 2011.

4. Longer than expected time was required to obtain public consensus for development of the project. Since February 2011, we had met with over 2,500 stakeholders and about 60 groups/organizations, and attended 70 meetings to explain the need of the project and to address their queries on various aspects of the project. We consulted the Advisory Council on the Environment (ACE) on the findings of the feasibility study and the proposed moving grate incineration technology on 14 December 2009. At district council level, we attended the Islands District Council (IsDC) on 21 February 2011, 20 February 2012 and 16 December 2013. Since 2002, we had attended over 10 LegCo EA Panel meetings to explain the need and justifications for the project. However, we were not able to secure the support of the EA Panel to submit the funding proposal to Public Works Subcommittee (PWSC) until 28 March 2014. The proposal was submitted to PWSC on 16 April 2014 and endorsed by PWSC on 27 May 2014 after 5 meetings. It was submitted to Finance Committee (FC)

on 24 October 2014 and was approved by FC on 9 January 2015 after 10 meetings.

5. After obtaining funding approval from the FC on 9 January 2015, we immediately commenced the pre-qualification exercise in March 2015 to invite interested companies to make submission for pre-qualification. Preparation works for tender documents are now in progress. We plan to invite tenders from the pre-qualified tenderers for the design, build and operate of the IWMPF Phase 1 in 2016 and commission the facility in 2023.

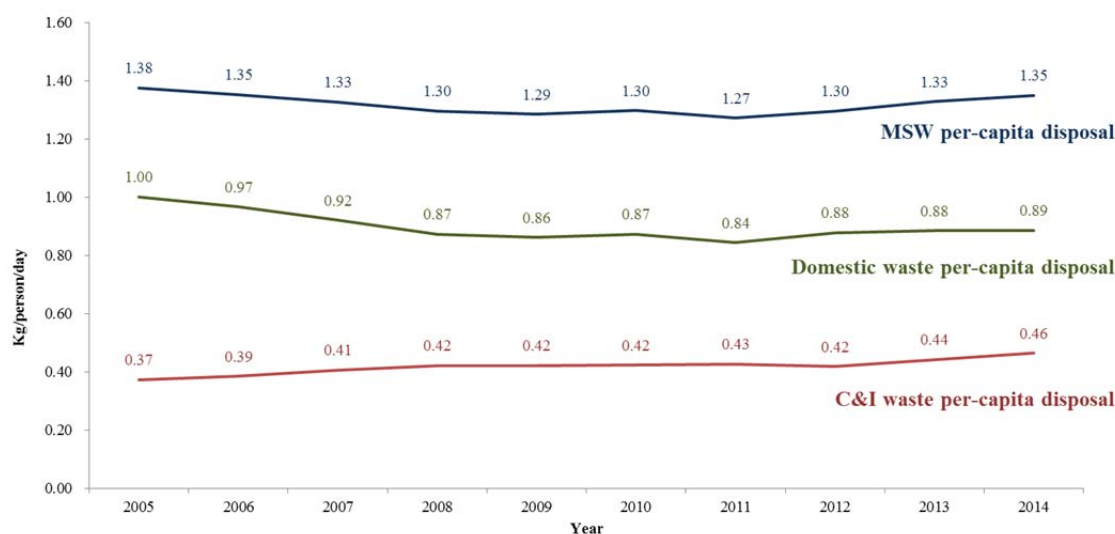
(r) According to Table 14 in paragraph 5.14 and paragraph 5.15 of the Audit Report, notwithstanding the various actions taken by EPD in recent years to reduce the MSW generation and increasing the MSW recovery, the rising trend in both the total quantities and per-capita quantities of MSW disposed of at landfills from 2011 to 2014 is a cause of concern. Please explain why there was a rising trend in MSW-disposal at landfills;

Reply:

To better understand the trend of MSW disposal rates, we suggest that a longer term outlook on a per capita basis should be adopted. The table at Chart 1 below could better illustrate the trend of MSW disposal rates over the past 10 years. The total MSW per capita disposal rate actually was on a declining trend from 2005 to 2011 (from 1.38 kg/person/day in 2005 to 1.27 kg/person/day) but has since been on a slightly rising trend (1.35 kg/person/day in 2014). The declining trend could largely be attributed to the decline in domestic waste per capita disposal rate (1.00 kg/person/day in 2005 to 0.89 kg/person/day in 2014). On the other hand, there has been a slightly rising trend in C&I waste per capita disposal rate (from 0.37 kg/person/day in 2005 to 0.46 kg/person/day), offsetting the reduction in domestic waste.

2. As economic growth generally increases the level of consumption and production activities which in turn may contribute to generating more waste, we assess that the rising trend of C&I waste disposal rate over the past ten years is likely caused by increases in economic activities. As shown in Chart 2, the growth of per-capita-per-day C&IW disposal rate over the last ten years correlates normally with the growth of real GDP.

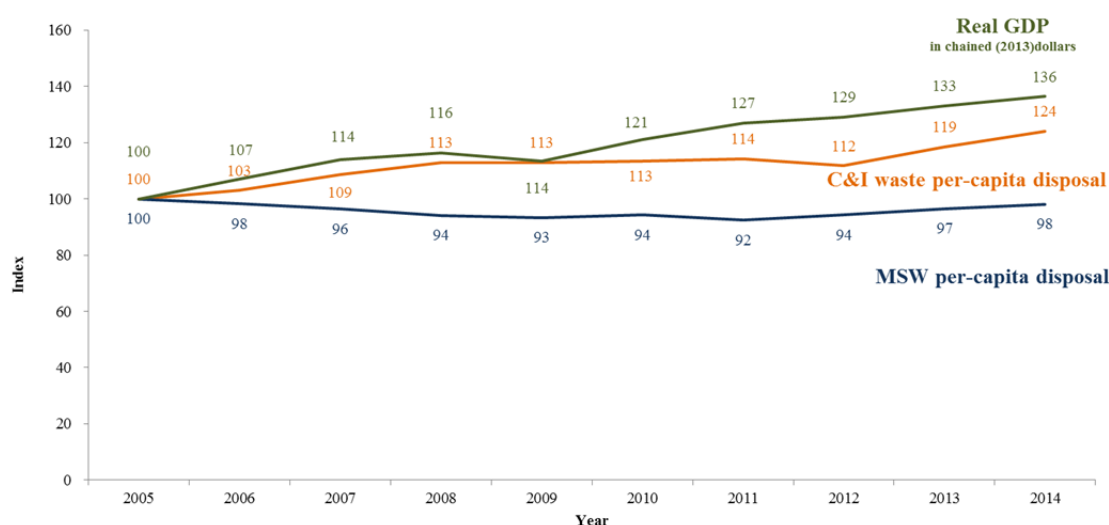
Per Capita Per Day Disposal of MSW, DW and C&I Waste (2005 - 2014)



	Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Domestic waste per-capita disposal	Year % changes (%)	-3.1	-3.5	-4.8	-5.1	-1.3	1.3	-3.3	4.0	0.7	0.2
C&I waste per-capita disposal	Year % changes (%)	11.6	3.1	5.4	3.9	0.1	0.3	0.8	-2.2	6.1	4.7
MSW per-capita disposal	Year % changes (%)	0.5	-1.7	-1.9	-2.4	-0.9	0.9	-2.0	1.9	2.4	1.7

Note: The unit of Kg/person/day will discount the factor of population growth in the movements of the waste disposal rates.

Indexes On Real GDP, Per-capita Disposal of MSW and C&IW (2005-2014) (2005=100)



	Unit	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
C&I waste per-capita disposal	Kg/person/day	0.37	0.39	0.41	0.42	0.42	0.42	0.43	0.42	0.44	0.46
	Year % changes (%)	11.6	3.1	5.4	3.9	0.1	0.3	0.8	-2.2	6.1	4.7
MSW per-capita disposal	Kg/person/day	1.38	1.35	1.33	1.30	1.29	1.30	1.27	1.30	1.33	1.35
	Year % changes (%)	0.5	-1.7	-1.9	-2.4	-0.9	0.9	-2.0	1.9	2.4	1.7
Real GDP	Constant BHS billion	1,606	1,719	1,830	1,869	1,823	1,947	2,040	2,075	2,139	2,192
	Year % changes (%)	7.4	7.0	6.5	2.1	-2.5	6.8	4.8	1.7	3.1	2.5

Note: Movement in the indexes (2005=100) over time will accurately reflect the movements of the selected variables relative to the base year of 2005.

3. Both the 2005 Policy Framework and the 2013 Blueprint recognize the importance of reducing waste at both the domestic and C&I sectors. A number of educational and policy waste reduction measures have been implemented which resulted in slight reduction of the overall MSW waste disposal rates over the past 10 years. But clearly more efforts would need to be made if we are to achieve the waste reduction target set out in the 2013 Blueprint. To this end, we will vigorously pursue the various actions set out in the Blueprint and closely monitor progress of the various waste reduction measures in both the domestic and C&I sectors.

(s) According to paragraph 5.19 of the Audit Report, the historical MSW-disposal shows a weight-to-volume ratio of 1.24 tonnes of waste : 1 cubic meter (m³) of landfill space. However, EPD has adopted a ratio of 1 tonne of waste : 1 m³ of landfill space for estimating the remaining serviceable lives of the three landfills. Please explain why EPD has adopted this ratio in estimating the remaining serviceable lives of the landfills;

Reply:

Construction waste represented about 50% of total waste disposed of at the landfills (1990-2005 average) prior to the implementation of construction waste disposal charging scheme in 2006, whilst thereafter the proportion was significantly reduced to about 25% (2006-2014 average). A ratio of 1.24 tonnes of waste : 1 cubic meter (m³) of landfill space was derived by the Audit based on historical information back to 1990s. However, inert construction waste (e.g. rock and concrete debris) has a higher weight-to-volume ratio as compared with ordinary municipal solid waste. In light of the significant reduction of inert construction waste requiring landfill disposal since 2006, EPD had adopted a more prudent and realistic assumption of a lower weight-to-volume ratio of 1 tonne of waste: 1 m³ in estimating the remaining serviceable lives of the three landfills.

- (t) According to paragraph 5.20 of the Audit Report, in estimating the remaining serviceable lives of the three landfills, EPD had assumed that there would be growth in the MSW quantities, construction waste and special waste being disposed of at landfills in the coming years. Please explain the basis of such assumptions, and whether EPD has taken into account the effort made in recent years in reducing, recycling and recovery of MSW in arriving at such assumptions;**

Reply:

Actual waste arising correlates closely with changes of population, level of economic and major construction activities, etc. In estimating the remaining serviceable lives of the three landfills in the course of planning of the landfill extension projects in 2011/2012, the EPD had made reference to the best available information at that time, including projected annual population growth [of 0.8% ~ 1.0%] from the C&SD, forecasted GDP growth rate [of 4% per annum] from the EABFU and the latest information on annual increase in construction waste disposal at landfills [of 14.8% from 2009 to 2010], and adopted the assumptions that there would be a 2.5% annual growth rate of MSW and a 10% annual growth rate of construction waste respectively. Regarding the arising of special wastes, we adopted a moderate annual growth rate of 5% in the planning exercise, having regard to its comparative minor share of 8% of the total waste disposal at landfills.

2. In adopting the above assumptions on MSW and construction waste growth rates, EPD had taken into account the impacts of the promotional efforts on waste reduction and recycling. Nevertheless, as landfills were the last resort for waste disposal, we had been prudent in the planning assumptions.

- (u) EPD informed Audit on the assumptions behind the estimated time of the three landfills reaching their capacity of 2014 to 2018 in paragraph 5.19 of the Audit Report (“assumptions in the Audit Report”). Acting Secretary for Environment stated in her opening remark that “[Legislative Council] Members were provided with the information they requested, including those on the assumptions adopted in the estimation”. In this connection, please list out the assumptions provided to Members when scrutinizing funding applications in 2014; whether these assumptions include the assumptions in the Audit Report; if not, the reasons for omitting such information;

Reply:

During the process of seeking funding approval from the LegCo for the landfill extension projects, EPD provided information about the approach adopted in estimation of the remaining serviceable lives of landfills to the EA Panel, PWSC of the FC, and the FC of the LegCo. The relevant information and discussion at the LegCo are summarized in the Table below:

Table – Relevant information and discussion at the LegCo about the approach adopted in estimation of remaining serviceable lives of landfills

Papers Meeting Minutes /	Extracts of Relevant Information and Discussion at the LegCo
EA Panel Paper for discussion on 26.3.2012 EA Panel Paper for discussion on 27.5.2013 EA Panel Paper for discussion on 24.2.2014	<u>Note 1 in Annex A1 or A:</u> In assessing the anticipated year of exhaustion of the landfill, certain planning assumptions have been adopted to allow for fluctuation in waste disposal notwithstanding the continuing efforts in waste reduction and recycling. As landfills are the last resort for waste disposal, prudent and realistic planning assumptions are applied. Such assumptions include moderate growth in wastes due to population growth, increases in economic activities and major development projects having regard to historical trend and economic forecasts.
Minutes of	77. AD(EI)/EPD replied that to predict when a landfill

Papers Meeting Minutes /	Extracts of Relevant Information and Discussion at the LegCo
PWSC Meeting on 16.4.2014	<p>would be exhausted, the Administration would take into account various factors such as the rate of increase of the quantity of waste, population growth, waste reduction efforts, actual quantity of waste that had been delivered to the landfill in the past few years, and the measures to be taken to increase the landfill capacity, etc. In such estimation, allowance would be made for accommodating an annual increase of about 2% in the amount of waste requiring disposal. Moreover, the Administration's efforts in reducing and recycling waste made in recent years had helped slow down the exhaustion of the landfill.</p>
Minutes of PWSC Meeting on 7.5.2014	<p>28. AD(EI)/EPD replied that the estimation on the year of exhaustion of the SENT Landfill was subject to constant review. Changes to the estimation would be made when appropriate.</p> <p>29. In response to Dr Fernando CHEUNG's enquiry about the Administration's latest estimation on the year of exhaustion of the SENT Landfill, AD(EI)/EPD advised it was anticipated that the landfill would be exhausted by 2015. She explained that in the past two years, the overall quantity of waste generated in Hong Kong had been increasing at a rate of about 4%. Given that various infrastructure projects were underway, there would also be a moderate increase in the quantity of construction waste in future. In planning the landfill extension, allowance would be made for an annual increase of about 2.5% in the quantity of municipal solid waste ("MSW").</p> <p>31. AD(EI)/EPD replied that in assessing the anticipated year of exhaustion of the landfill, the Administration had taken into account various factors such as the rate of</p>

Papers Meeting Minutes /	Extracts of Relevant Information and Discussion at the LegCo
	increase of the generation of waste, population growth, actual quantity of waste that had been delivered to the landfill in the past few years and waste reduction efforts, etc.
Minutes of FC Meeting on 14.11.2014 Session 1	28. AD(EI) said that several factors had to be taken into account in estimating the remaining life of a landfill. These included the growth in population, economy, the rate of waste generation, and the effectiveness of various waste reduction measures. The remaining available space in the SENT landfill and the ability to compress the waste material disposed of would also affect the life of the landfill. AD(EI) added that apart from construction waste, a large amount of MSW was disposed of at the SENT landfill each year. If this remained unchanged, the SENT landfill would likely be exhausted by 2015.

2. The detailed assumptions that EPD adopted in the projection were set out in paragraph 5.19 (a) to (d) of the Audit Report. These planning assumptions covered population growth, increases in economic activities, fluctuation of waste quantity, effectiveness of waste reduction measures, as well as information on landfill operation and landfill extension projects (such as enhanced odour control measures at landfills, EIA/EP requirements for landfill extension projects). In response to questions raised, factors taken into account in projecting the remaining capacity of the landfills were presented. We note Director of Audit's view that additional information on quantifiable data should also be presented in future funding applications. We have no problem with this and would do so in future applications.

(v) With reference to paragraph 5.22(a) of the Audit Report, actions to be taken to reduce MSW generation and increase MSW recovery;

Reply:

The Blueprint analyses the challenges and opportunities of waste management in Hong Kong, and maps out a comprehensive strategy, targets, holistic policies and ten-years' action plans for waste management with a view to tackling the waste problems in Hong Kong. We will endeavour to implement the 2013 Blueprint and appeal to the public for support to achieve the targeted results. Our major initiatives in the coming years include:

- (a) **Driving behavioural change through mandatory schemes:** Overseas experience has shown that implementing quantity-based charging can create financial incentive to drive changes in the public's waste-generating behaviour, thus achieving an overall reduction in waste disposal. We are working towards implementing quantity-based charging in accordance with the views collected during the public engagement process. We are now progressively implementing the PR Scheme. The plastic shopping bag charging has been fully implemented since April 2015 and we have commenced the legislation exercise on the PRS for waste electrical and electronic equipment and glass beverage bottle. We will also conduct a review taking into account the experience accumulated and consider extending the scope of regulation to other types of containers in future.
- (b) **Continuing efforts on education and publicity:** The ECF will continue to fund projects by green groups and NGOs at community level to mobilize the local community to participate in waste reduction, source separation and clean recycling. We will enhance our collaboration with government departments, district councils, schools, housing estates, property management companies, green groups and social services organisations in setting up more community recycling points to form a wider community recycling network to help develop the habit of clean recycling. We are also progressively developing one community green station (CGS) in each of the 18 districts, which will be run by non-profit making organisations to step up environmental education and enhance the logistics support in the collection of various low-value recyclables (such as electrical appliances, computers, plastic bottles, glass bottles, compact fluorescent lamps and rechargeable batteries) in the local community.
- (c) **Promoting sustainable development of the recycling industry:** We have launched the \$1 billion Recycling Fund to assist recyclers to improve the collection network for recyclables, invest on machinery to lower the

processing costs, develop value-adding recycled products, explore new market, obtain certification for the recycling process, attend training to enhance their skills and awareness of occupational safety and health etc. We will take heed of the advice and recommendations of the Advisory Committee on Recycling Fund, which comprises experts, academics and people with experience in business management and community service, as well as representatives from various business and industry associations, in operating the Fund. Meanwhile, we are stepping up co-operation with the industry to increase the operational capability of local recyclers and uplift the image of the industry, raise the standard of the occupational safety and health, enhance the training for current practitioners and attract more newcomers to join the industry.

- (d) **Promoting food waste reduction:** We will continue with the Food Wise Hong Kong Campaign to promote public awareness of the food waste problem in Hong Kong. We will also encourage behavioral changes in various sectors of the community for reduction in food waste. We will continue to give support to non-government organisations and encourage them to collect from business establishments such as supermarkets, wet markets, restaurants, clubs, hotels etc., food which is surplus but edible or is approaching but not reaching the expiry date for donation to the people in need.
- (e) **Strengthening infrastructural and land support:** We will continue to monitor the performance of tenants and usage of sites at the EcoPark, and to encourage tenants to invest in advanced technologies and recycling processes and enhance our facilitation measures to address their operation needs at different stages of development. We are conducting a study on land support required for continuable development of the recycling industry.

2. We will continue to review the effectiveness of these measures, draw on the experience of other cities and countries, and take follow-up actions and enhancement measures in a timely manner.

Way Forward

- (w) **According to the papers submitted by the Administration to EA Panel in 2008, 2012, 2013 and 2014 (PAC Reference Number: R65/1/INFO3, R65/1&2/INFO4, R65/1/INFO6 and R64/1/INFO13), EPD had consistently changed the estimated remaining serviceable lives of the three landfills in Hong Kong. In this regard, the measures to improve the accuracy of such estimations, and the latest estimation of the remaining serviceable lives of the three landfills;**

Reply:

The estimated serviceable lives of the landfills depend on a wide range of factors including population growth, level of economic and construction activities, implementation of waste reduction initiatives, provision of other upstream waste treatment facilities, development of landfill design, mode of landfill operation and implementation of landfill extension projects. As most of the contributing factors are dynamic in nature, the estimated serviceable lives of the landfills should be reviewed from time to time, having regard to the latest available information. This accounted for the necessary changes in the estimation upon review during the different stages of submissions to the EA Panel from 2008 to 2014.

2. With the funding approval of the LegCo on the SENT Landfill Extension and NENT Landfill Extension in December 2014, it is anticipated that the increased serviceable lives of the three landfills would cope with the ultimate waste disposal need for the territories up to late 2020s. The estimated serviceable life of the WENT Landfill upon its extension would only be available upon completion of the relevant consultancy study.

- (x) **In view of the deficiencies identified in the Audit Report, such as the over-estimation of MSW-recovery rates, the lack of statistics on collected recyclables being disposed of a landfills and the under-estimation of serviceable lives of the three landfills, whether consideration would be given to revising the strategies and planning on the management of MSW, including the reduction, recovery, recycling and treatment and disposal of MSW. If yes, please provide the relevant details. If no, please provide the reasons.**

Reply:

In the 2013 Blueprint, we have set out comprehensive strategies to achieve the single target of MSW waste disposal rate on a per capita basis by 40 per cent in 10 years' time. The waste disposal rate will be measured at our waste disposal facilities every year and will serve as a reliable indicator on whether we are able to achieve the target. Timely and effective implementation of the various measures set out in the Blueprint would contribute to the target of reducing MSW waste disposal. As regards Audit's questions on the compilation of statistics on waste recovery and estimation of the serviceable lives of the three landfills, the detailed responses above have explained the rationale of our methodologies and the enhancement to be introduced.

2. While the 2013 Blueprint has only been implemented for a few years, we have been constantly reviewing our waste management policies and initiatives to ensure they are responsive to new challenges posed by society development, keep pace with public aspirations and are timely and adequate to address the needs of industry practitioners.

- (y) Details of the long-term planning study of waste disposal infrastructure commenced in September 2015 as mentioned by the Acting Secretary for the Environment in paragraph 16 of her opening remark at the public hearing on 7 December 2015.**

Reply:

Even upon the implementation of all waste reduction at source/reuse/recycling measures as set out in the Action Blueprint and Food Waste Plan, there would still be a considerable amount of residual solid waste requiring disposal of at landfills. As the existing and currently planned waste management facilities, including Integrated Waste Management Facilities phase 1, organic waste treatment facilities and landfill extensions, would not be able to deal with all the waste sustainably in future, there is a need to carry out a study to identify additional strategic and regional waste treatment and bulk waste transfer facilities for the management of solid waste to reduce reliance on landfills for waste disposal and to meet Hong Kong's longer term requirements.

2. We commissioned a study for planning of future waste management and transfer facilities (the Study) in September 2015. The main objective of the Study is to formulate, develop and produce a territory-wide plan and strategy on the provision of waste treatment and bulk waste transfer facilities for handling solid waste in an environmentally acceptable, sustainable and cost-effective manner to meet Hong Kong's sustainable development needs. The Study will identify additional strategic and regional waste facilities required for bulk transfer and treatment of MSW and construction waste in line with smart city and circular economy concepts, draw up an outline action programme and develop the relevant planning guidelines for the identified waste facilities.

3. The Study will explore a variety of issues, including types and requirements, technology choices, optimal scales, spatial distribution, siting principles, site requirements, selection criteria, procurement options, potential broad geographical areas and indicative timing of the additional waste treatment and bulk waste transfer facilities. The additional waste facilities identified shall meet the following board objectives:

- (a) maximizing resources recovery from waste;
- (b) optimizing synergy of waste management technologies and land use, including the co-treatment of MSW with other types of waste and the potential provision of waste facilities in cavern/underground or co-location of waste facilities in multi-storey building;
- (c) minimizing disposal of untreated MSW at landfills; and
- (d) minimizing the need of vehicular traffic for transportation of waste.

4. According to the current programme, the Study is expected to complete in the second quarter of 2017.