For discussion on
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LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS

MANAGEMENT OF WASTE PLASTICS

Purpose

This paper briefs Members on the Government's work and progress in the management of waste plastics.

Current Situation of Waste Plastics

2. Plastics, formed by organic compounds of high molecular mass, are light, malleable, and have excellent insulating and corrosion-resistant properties. They are therefore widely used in various fields in our daily lives, including plastic bags, disposable cutlery, take-away lunchboxes and beverage containers, etc. While plastics are highly durable, they are difficult to decompose naturally and the process is also lengthy. With the popularisation of plastic materials, how to handle waste plastics to minimise their impact to the environment and ecology has become an important global issue. The Conference of the Parties to the Basel Convention adopted a decision in 2019 to enhance control on transboundary movement of waste plastics. Starting from 1 January 2021, transboundary movement of waste plastics controlled under the Basel Convention (e.g. mixed or contaminated waste plastics, or waste plastics that cannot be recycled in an environmentally sound manner) shall not proceed unless consents are received from the export, import and all transit states concerned. To effectively overcome upcoming challenges against waste plastics, concerted effort of the Government, relevant trades, and the general public is required.

3. According to the annual survey "Monitoring of Solid Waste in Hong Kong", around 2 300 tonnes of waste plastics are disposed of at landfills daily in 2018, which accounts for 20% of total municipal solid waste. Of all the waste plastics, plastic bags constitute 36% (which include garbage bags, plastic shopping bags (PSBs) and other plastic bags), plastic cutleries 10%, and plastic beverage containers 5%. The recycling rate of waste plastics is around 7%, with around 55 800 tonnes of waste

plastics were recycled locally.

4. The Government has been promoting "plastic-free" culture in Hong Kong: practise waste reduction at source, and encourage substituting plastic materials with other materials as far as possible; and if plastic materials have to be used, priority should be given to reusable instead of single-use plastics. Moreover, we have implemented producer responsibility schemes (PRSs) and recycling services to reduce the use of plastics and encourage plastic recycling. A series of waste plastic management initiatives are set out below.

Producer Responsibility Schemes

5. PRS is a key policy tool in the waste management strategy in Hong Kong. Enshrining the principle of "polluter pays" and the element of "eco-responsibility", PRS requires relevant stakeholders, for example, the business and industry sectors, consumers, recyclers, etc., to share the responsibility for the collection, recycling, treatment and disposal of end-of-life products with a view to reducing waste at source, and to avoiding and minimising the environmental impacts caused by such products. The Legislative Council enacted the Product Eco-responsibility Ordinance (Cap.603; the Ordinance) in July 2008 to provide a legislative framework for putting forward PRSs. The Environmental Protection Department (EPD) has subsequently developed PRSs for various types of products under the Ordinance and other relevant subsidiary legislation. In terms of waste plastics, the PSB Charging Scheme has been in place for over ten years. We are also actively preparing to put forward a PRS on plastic beverage containers.

Plastic Shopping Bag Charging Scheme

6. The PSB Charging Scheme is the first PRS introduced in Hong Kong. First phase of the Charging Scheme was implemented on 7 July 2009, covering some 3 000 retail outlets that are mainly large supermarkets, convenience stores and medicare and cosmetics stores. With public support, the Charging Scheme has been extended to cover the entire retail sector since 1 April 2015 under which all retail outlets shall, save for exemptions, charge not less than 50 cents for each PSB distributed.

7. The Charging Scheme has yielded encouraging result in reducing the disposal of PSBs. We are also glad to see that majority of the public has developed the good habit of bringing their own shopping bags. According to the EPD's landfill survey, the number of PSBs disposed of at landfills dropped significantly by 25% in 2015 (comparing with 2014 before full implementation of the Charging Scheme). However, we note a rebound of PSB disposal rate after 2015 though the rate in 2018 is still 14% lower than that of 2014 before full implementation of the Charging Scheme (see the table below).

Year	Total Disposal Quantity		
	Number of PSB disposed of (billion)	Year-on-year comparison	Comparison with pre-full implementation level in 2014
2014	5.24	-	-
Full implementation of PSB charging covering the entire retail sector			
2015	3.93	- 25%	- 25%
2016	4.30	+ 9%	- 18%
2017	4.42	+ 3%	- 16%
2018	4.51	+ 2%	- 14%

8. Reducing the use of PSB is a global trend and we notice the global community has stepped up measures to control the use of plastic bags. For neighboring regions, Macao has implemented "plastic bag charge" on 18 November 2019 where retail outlets, save for exemptions[1], shall charge MOP 1 dollar (around HK$1.00) for each plastic bag provided during retail acts. Taiwan introduced "Restricted Use Policy on PSBs" in 2002, imposing levy on plastic bags covering government departments and agencies, public and private schools, public hospitals and certain trade. The restriction has been expanded since 2018, with the scope of target businesses expanded from seven to 14[2]. In South Korea, starting from 1 January 2019, 2 000 large stores (e.g. shopping malls) and over 11 000 supermarkets have been prohibited to provide PSBs[3], while bakeries and certain retail outlets have also been banned from providing PSBs for free. Furthermore, the United Kingdom has requested large retail outlets to charge at least 5 pence (around HK$0.50) for each single-use plastic carrier bag provided since 2015, and launched public consultation in December

[1] Exemptions include non-prepacked food and medicine, and plastic bags provided for goods obtained in retail outlets in the restricted area of the airport and subject to safety restrictions of hand luggage.

[2] Include government departments and agencies, public and private schools, public hospitals, department stores and shopping malls, warehouse stores, supermarkets, convenience stores, fast food chains and restaurants, medicare and cosmetic stores, medical product outlets, electrical appliance stores, bookshop and stationery shops, laundry stores, beverage stores and bakeries.

[3] Relevant retail outlets can still provide PSBs for containing wet foodstuff such as meat and fish.

2018 on expanding the charging scheme, amongst other matters, to increase the charge for single-use plastic carrier bag from 5 pence to at least 10 pence (around HK$1.00), and to implement the charging scheme in the entire retail sector.

9. In view of the rebound of PSB disposal in Hong Kong, and with reference to the practice of other places, we consider there is room to refine the current scope of exemption[4] and charging arrangement. Taking into account the actual circumstances in Hong Kong, we are conducting a full review on the Charging Scheme with respect to the scope of exemption (for instance, PSBs containing frozen and chilled foodstuff), the number of free PSB that can be distributed under exemption cases, and the charging level, in order to further reduce the use of PSB. We plan to consult the public on the outcome of the review in the second half of 2020 in order to map out the way forward.

Producer Responsibility Scheme on Plastic Beverage Containers (PPRS)

10. The Government engaged a consultant in October 2017 to conduct a feasibility study on introducing a PRS on suitable plastic product containers. The study reveals that among various plastic product containers, beverage containers are relatively easy to handle due to the high homogeneity of the plastics involved. If these plastic beverage containers are collected centrally through a dedicated recovery system, their recycling value and efficiency can be enhanced effectively. In fact, plastic beverage container recycling is common around the world. The study also reveals that the PRSs on plastic product containers adopted in many places (including Europe, North America and Australia) have the element of a deposit-refund system (DRS) to provide economic incentive to encourage consumers to return used plastic containers. The recovery rates are in general higher in places where DRS is implemented, and the plastic containers collected are also relatively clean, which helps enhancing their recycling value. The study also indicates that reverse vending machines (RVMs)[5] are commonly used in places with DRS implemented, such as Germany, Norway, the Netherlands, Denmark, New York City of the United States, South Australia and New South Wales of Australia, etc.,

[4] Under the current Charging Scheme, PSB used for food hygiene reasons will not be charged, which include PSB containing foodstuff without packaging, foodstuff in non-airtight packaging and frozen or chilled foodstuff. Moreover, PSB used for packaging or provided with services will not be charged.

[5] RVM is an automatic device that allows consumers to feed in used beverage containers (e.g. plastic beverage containers) for instant cash refund. It is usually equipped with scanning function to recognise barcodes on containers to ensure that only designated containers are accepted. In addition, many RVMs are equipped with compression function to reduce the volume of beverage containers so as to enhance the handling and storage capacity.

to facilitate return of beverage containers by the consumers. In some other places, for example, British Columbia of Canada, consumers may return used beverage containers to designated recycling points for deposit refund.

11. The consultant engaged by the Government has consulted relevant stakeholders on the initial recommendations of feasibility study on the PPRS from the second half of 2018 to early 2019. We are carefully considering the recommendations, including the provision of economic incentives to encourage the public to return waste plastic beverage containers. We plan to consult the public in the second half of 2020 on the detailed proposal, and will continue to maintain close communication with relevant stakeholders when formulating detailed arrangement for the future PRS.

Reverse Vending Machine Pilot Scheme

12. To pave way for the future PPRS, we are actively studying the feasibility of using RVMs in Hong Kong. The EPD is preparing for the implementation of a pilot scheme on RVMs with a view to assessing the feasibility and cost-effectiveness of the application of RVMs in local context as well as gauging the public responses. We plan to place 60 RVMs at various locations, primarily at public places with higher foot traffic or suitable government facilities. The work relating to the tendering for the pilot scheme is in progress. Detailed arrangements for the pilot scheme will be worked out after appointment of the contractor, and the pilot scheme is expected to be rolled out in the second half of 2020.

13. To ascertain technical details of the pilot scheme, we have installed 10 RVMs of three different brand models at seven Community Green Stations (CGSs) starting from June 2019 for conducting technical trials. The number of plastic beverage containers collected every month increased gradually from about 20 000 at the beginning to more than 80 000. As at end of April 2020, over 544 000 plastic beverage containers (about 16 tonnes) have been collected. In addition, the EPD also, through the Recycling Fund and the Environment and Conservation Fund (ECF), supports the trade and organisations to launch recycling projects related to RVMs for plastic beverage containers. So far, the two funds have approved a total of five projects involving 31 RVMs, with a recycling target of about 29 tonnes.

Reducing the Use of Disposable Tableware

14. In April 2019, the EPD commenced a study on the feasibility, scope and mechanism of controlling or banning disposable plastic tableware. The consultant is currently reviewing the latest international development in controlling or banning disposable plastic tableware as well as the recommendations on the substitutes. Based on findings and analysis of the study, the consultant will recommend to the Government a proposal that is suitable for implementation in Hong Kong in the long run. The study is scheduled for completion by the end of 2020.

15. Starting from January 2019, the Government has taken the lead in banning plastic straws and polyfoam food containers in premises and canteens mainly serving government staff. Relevant departments, when awarding new contracts and renewing existing contracts, will stipulate the requirement for restaurant operators in suitable government venues to avoid using disposable plastic tableware.

16. In addition, the Government launched the "Plastic Free Beach, Tableware First" campaign at public beaches across the territory in the summer of 2018 and 2019 to encourage members of the public and restaurants in the vicinity of the beaches to go "plastic-free" on beaches by avoiding the use and distribution of disposable plastic tableware. During the campaign, participating restaurants and kiosks used bamboo sticks, paper straws and paper bags provided by the EPD in place of disposable plastic tableware to promote the "plastic-free" culture to the public.

17. The Environmental Campaign Committee (ECC) and the EPD collaborated with the food and beverage sector to jointly launch the "Plastic-Free Takeaway, Use Reusable Tableware" publicity and education campaign from November 2018 to January 2019 and from June 2019 to August 2019. The campaign encouraged members of the public to bring their own reusable tableware and go "plastic-and-disposable-free" when they ordered takeaways in order to reduce the use of disposable plastic tableware. The two phases of the campaign have saved a total of about 2.4 million sets of disposable tableware. About 700 eateries across the territory, including more than 630 eateries from more than 30 catering businesses and online takeaway platforms, as well as over 50 canteens and restaurants in government venues, have participated in the campaign.

18. In response to the increasing number of takeaway orders due to the coronavirus disease 2019 (COVID-19) outbreak, the EPD and ECC have reminded the public through social media, online activities, public transports and media advertisements to support "plastic-free takeaway" while fighting against the pandemic.

Stopping the Sale of Plastic Bottled Water and Installing More Water Dispensers

19. To create a social atmosphere for inculcating a "bring your own bottle" culture in the public, since 20 February 2018, the sale of plastic bottled water of 1 litre or less has been progressively ceased in automatic vending machines (AVMs) at government premises. Over 80% of about 1 600 AVMs installed at government premises have put in place the above stop-sale arrangement. The remaining AVMs will gradually implement the arrangement during the renewal of existing relevant contracts, lease/tenancy agreements or permissions, etc.

20. Besides, the Government is progressively installing 500 more water dispensers in government venues and the target is to increase the number of water dispensers from about 2 700 units at present to about 3 200 units by 2022 for public use in government venues. For country parks, there are currently 15 water filling stations already in place, and about ten more will be installed in 2021 that can be conveniently used by visitors. The Government will continue to install more water filling stations at suitable locations in country parks and encourage visitors to bring their own bottles.

Green School Campus

"Plastic-free" School Lunch Pilot Scheme

21. The Government announced the "Plastic-free" School Lunch Pilot Scheme in the 2019 Policy Address Supplement. The EPD will provide refrigerators, steam cabinets, dishwashers and disinfection machines (collectively known as the "Four Treasures") to encourage students to bring their own lunch using reusable food containers in accordance with their eating amount. The EPD has established a new pilot scheme under the ECF, which has earmarked $4.5 million to subsidise 50 primary and secondary schools to acquire the "Four Treasures". The pilot scheme is scheduled to be open for applications in September / October 2020.

22. To facilitate wider adoption of the "plastic-free" lunch arrangement by schools, the EPD, in collaboration with the Education Bureau and the Department of Health (DH), have updated the Handbook of Selection of Lunch Suppliers (the Handbook), which includes encouraging schools to incorporate service requirements on the use of reusable food containers and cutlery in the tender, with a view to making a full-scale use of reusable food containers and cutlery for school lunches by the 2023/24 school year. The DH has also released the updated Handbook in September 2019.

Smart Water Dispensers

23. The EPD will launch a pilot scheme in 2020-21 to encourage students to inculcate a living culture of "bring your own bottle". We will provide smart water dispensers with their exteriors designed by students to about 80 primary and secondary school premises via contractors, and support the schools to carry out relevant education and experiential activities, such as signing a charter to cease the sale of bottled water, for conveying green messages such as waste reduction at source and clean recycling to students in an interactive approach.

24. Our preliminary target is to complete the tendering exercise for the engagement of contractor within 2020, before proceeding to the exterior design activities and installation works, as well as continuing to carry out relevant education and experiential activities. After the COVID-19 pandemic has slowed down and the classes have resumed, the EPD will introduce details of the pilot programme to schools and invite them to participate. Subject to the effectiveness of the pilot scheme, feedback and comments from schools and students, etc., we will consider expanding the scope of the scheme to include more primary and secondary schools.

Enhancing Plastic Recycling

Pilot Scheme on Collection and Recycling Services of Plastic Recyclable Materials

25. Due to the low density, great variety and bulky volume of plastic materials, the costs of collection, sorting, storage and transportation of waste plastics are high. Their low economic value and recyclability have always been a matter of concern of the community. At the same time, since the Mainland and nearby locations have gradually tightened the requirements for imported recyclables (including waste plastics) from early 2018 onwards, the waste plastic recycling operation mode (i.e. collect, bale, and export of waste plastics) of the local recycling industry cannot sustain anymore.

26. Therefore, the Government stated in the 2017 and 2018 Policy Addresses to implement the central collection service for all types of waste plastics from non-commercial and non-industrial (non-C&I) sources, so that these recyclables can be processed more cost-effectively, and to raise public confidence in the waste separation and recycling system. The EPD is rolling out a 2-year "Pilot Scheme on Collection and Recycling Services of Plastic Recyclable Materials" in three different districts (i.e. Eastern District, Kwun Tong and Sha Tin), through which contractors are engaged under service contracts to provide free collection service for waste plastics from non-C&I sources such as public and private housing estates, schools and public institutions, Community Recycling Centres (CRCs) and CGSs in the districts. A wide range of recyclables can be collected under the Pilot Scheme, including plastic bags (e.g. carrier bags, rice bags, plastic packaging bags), plastic containers (e.g. plastic bottles, plastic buckets, plastic boxes, microwave containers, yogurt cups, tofu boxes), polyfoam (e.g. fruit sleeve nets, polyfoam boxes, protective polyfoam materials), plastic tableware, plastic straws, CDs, bubble wraps and other plastic packaging materials. The contractor will further process the plastics collected into plastic raw materials or recycled plastic products to be exported or supplied to the local market so as to ensure that the waste plastics collected are properly handled. The contractors will also collaborate with non-profit-making organisations to promote various publicity activities in parallel, so as to cultivate the public's habit of recycling plastics properly.

27. To effectively monitor the contractors, the EPD requires the contractors to implement a comprehensive monitoring plan including installation of Global Positioning System on collection vehicles, as well as electronic data recording and installing surveillance camera systems at processing plants. In addition, calculation of the service fees received by the contractors will be based on the weight of the recycled raw materials or products produced, while wastage sorted out will not be included in the calculation of service fee. This will ensure that the contractors will properly process the collected waste plastics and produce recycled raw materials or products with economic value.

28. Through open tendering, services under the Pilot Scheme in Eastern District have progressively commenced since late January 2020. As at March 2020, about 72 housing estates, buildings and other premises have been registered to participate in the Pilot Scheme, which covers 33% of the total population in Eastern District, and the total quantity of waste plastics collected during this period was about 17 tonnes. In addition, services under Pilot Scheme in Kwun Tong and Sha Tin districts are expected to commence in the third quarter of 2020.

29. Subject to the experience and effectiveness of the Pilot Scheme, and the content and progress of the PPRS to be launched later, we will consider extending the service to cover the whole territory in a longer term.

Upgrading Community Recycling Facilities

30. The EPD continues to take forward the development of the network of CGSs to strengthen the support for waste reduction and recycling as well as environmental education at the district level. As of today, eight CGSs[6] are in operation to collect different types of recyclables, including plastics. Furthermore, the EPD has also been providing funding support to non-government organisations (NGOs) through the ECF to operate CRCs in various districts to provide the public with another recycling channel in addition to recycling bins, and to promote waste reduction and recycling activities at the community level. At present, there are 17 CRCs and two mobile community recycling projects (i.e. community recycling vehicles), which mainly collect waste plastics with lower commercial value.

[6] Sha Tin CGS and Eastern CGS were commissioned in 2015, Kwun Tong CGS, Yuen Long CGS and Sham Shui Po CGS in 2017, and Tuen Mun CGS and Kwai Tsing CGS in 2018. Tai Po CGS has been opened and providing environmental education events as well as recycling service to the public since October 2019. Furthermore, Islands CGS will commence operation by 2020. Sai Kung CGS, Wan Chai CGS and Wong Tai Sin CGS are in different planning and construction stages.

Moreover, there are about 50 recyclable collection points operated by NGOs in the community to provide recycling services to the public. To further strengthen community recycling facilities, starting from 2020-21 we will regularise the funding for engaging eligible non-profit-making organisations to operate the CRCs through contracts. The network of CRCs will be expanded to all 18 districts across the territory and their services will also be upgraded by extending the service hours and days, increasing the number of mobile recyclable collection points, etc.

Public Education and Publicity

31. Each CGS has set up recycling bins for the collection of waste plastics with different plastic codes, and educated the public to put cleaned and sorted waste plastics into suitable recycling bins. Besides, the CGSs also disseminate information on waste reduction at source and clean recycling of waste plastics to the public through organising education activities, such as workshops and outreaching events, thereby instilling a green living culture in the community.

32. To strengthen on-site recycling support, the EPD established outreaching teams in end 2018. The outreaching teams would collaborate closely with community partners to educate the public on the importance of waste reduction at source and assist them in practising proper source separation of waste and clean recycling, and to identify proper outlets for recyclables. Tying in with the implementation of various waste reduction initiatives, such as the Pilot Scheme on Collection and Recycling Services of Plastic Recyclable Materials, the outreaching teams would also promote them to property management companies and residents' organisations, and to assist their participation in these events. The outreaching teams have kick-started pilot outreaching service in three pilot districts (i.e. Eastern District, Kwun Tong and Sha Tin). We will extend the outreaching service to the whole territory by phases starting from 2020 having regard to the experience in the pilot districts.

33. Furthermore, the EPD and the ECC have all along been promoting "go plastic-free" messages through different online channels, mobile applications, public transport and outdoor advertising spaces (e.g. tram and bus bodies, pillars of footbridge in Central).

34. The EPD will continue to promote environmental protection and "go plastic-free" messages through different channels, including television, social media platforms and video sharing platform to provide waste reduction guidelines for the public, cultivate "food-wise" and "waste reduction" culture and encourage them to reduce the use of disposable plastic cutlery.

Reducing the Use of Microbeads

35. Plastic microbeads are added to some personal care and cosmetic products (PCCPs) in their production to enhance their functions. Once used, these microbeads may enter the marine environment through wastewater treatment systems causing pollution and ecological threat. Although this category of manufactured microbeads does not constitute a major portion of the microplastics present in the ocean, we will still take appropriate measures to phase them out. We will implement a two-year voluntary scheme for phasing out PCCPs containing microbeads and review its effectiveness towards the end of the period for gauging the need of introducing legislative control. We plan to roll out the voluntary scheme in early 2021 through launching a "Microbead-free Charter" in collaboration with the trade. Participants, taking due consideration of their operational conditions, can set their own targets and timetables for ceasing the production, importation and sale of PCCPs containing microbeads and strive to achieve the targets within a pre-set timeframe. Before implementation, we will collect views from the trade on the mode and design of the voluntary scheme, with a view to formulating the details including monitoring methodology, timetable and effectiveness assessment, etc. During the course of the scheme, we will also follow up on the participants' phase-out progress and carry out complementary publicity and education activities to enhance public awareness and knowledge about microbead-related subjects. Besides, we are planning to conduct a survey starting in early 2021 to find out the amount of microplastics in local domestic sewage, treated effluent discharged from sewage treatment works and surface runoff collected by storm water drains. The survey results would be conducive to further studies on the feasibility and technology of removing microplastics from sewage at sewage treatment works.

Advice Sought

36. Members are requested to note and offer views on the initiatives on management of waste plastics.

Environmental Protection Department
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