

**For discussion on
22 March 2021**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

**PUBLIC CONSULTATION ON
A PRODUCER RESPONSIBILITY SCHEME ON
PLASTIC BEVERAGE CONTAINERS**

INTRODUCTION

The Government launched a three-month public consultation on 22 February 2021 to consult the public on introducing a producer responsibility scheme (PRS) on plastic beverage containers (PPRS) for the proper and effective management of waste plastic beverage containers. This paper seeks Members' views on the proposed scheme.

BACKGROUND

2. In Hong Kong, around 2 320 tonnes of waste plastics were disposed of at landfills daily in 2019, accounting for about 21% of total municipal solid waste. Out of these waste plastics, around 5% (i.e. 106 tonnes per day) were plastic beverage containers of which over 90% were made of polyethylene terephthalate (PET). This type of mono-material plastic beverage containers is relatively easy to handle and has a higher recycling value. They can be turned into useful resources more effectively if they are properly separated at source for collection and treatment after their service life. According to relevant survey, the recovery rate of PET containers (including beverage and non-beverage products) was 17% in 2019.

3. The Government has recently released the *Waste Blueprint for Hong Kong 2035* setting out the vision of "Waste Reduction·Resources Circulation·Zero Landfill". The blueprint outlines the strategies, goals and measures to tackle the challenge of waste management up to 2035, by leading the advancement of various policies and measures as well as promoting circular economy and sustainable living environment. As one of the key initiatives on "Waste Reduction", the Government proposed to put forward the introduction of PPRS. The Consultation Paper is at **Annex**.

4. PRS is a key policy tool of waste management. The Product Eco-responsibility Ordinance (PERO) (Cap.603) was enacted in July 2008 to provide a legal framework for PRSs and other measures to minimise the environmental impact of certain types of products. Since then, we have progressively implemented PRSs for different products, including plastic shopping bags, waste electrical and electronic equipment and glass beverage containers.

JUSTIFICATIONS

5. In our daily lives, plastic-bottled beverages are usually consumed on-the-go, and the waste plastic containers so generated are dumped everywhere scattering throughout the territory. The existing collection system can hardly achieve a high recovery rate. We need more effective waste management strategies and measures to collect this type of material.

6. To facilitate the proper management of single-use plastic beverage containers, it is common in other places (e.g. some European countries) to have dedicated systems for recovering and collecting these containers separately from other waste plastics for recycling, more often by means of PRS, which seeks to get the relevant stakeholders along the supply chain, including manufacturers, importers, retailers and the public involved and jointly share out the eco-responsibilities for the collection, treatment, recycling and proper disposal of end-of-life products with a view to minimising the environmental impacts caused by such products.

THE PROPOSALS

7. We propose introducing a new PPRS comprising the following key elements-

- (a) Application of Reverse Vending Machines (RVMs), as appropriate, to enhance the recovery efficiency and facilitate the provision of rebate;
- (b) Certain retail stores selling pre-packaged beverages to serve as designated return points;
- (c) A rebate arrangement to be set up to encourage the public to return plastic beverage containers;
- (d) A levy to be imposed on the beverage supplier level to fund the operations of the schemes; and
- (e) Licensing control on the operation of recycling facilities to ensure proper recycling and treatment of waste plastic beverage containers.

Proposed framework of the PPRS

8. There will be a “PRS Operator”¹ to oversee the operations of the PPRS, including the operation of the rebate system and the collection and preliminary processing of waste plastic beverage containers. The collected containers will be supplied to local recyclers on a commercial basis, turning the waste into resource saleable in local or international markets. A rebate will be provided to the public to incentivise them to return used plastic beverage containers to designated return points for proper recycling. The PRS Operator will engage a “Rebate System Administrator” to set up and operate the entire rebate system and related administrative arrangement, and act as central transaction clearing house for the rebate system. It will also engage multiple “Return Network Operators” to set up and manage return points according to geographical demarcation and arrange collection and handling of plastic beverage containers for supplying to the local recycling market. The overall operation of the PPRS is summarised in a diagram on page 26 of the

¹ PRS Operator can either be the Government or a Government-appointed organisation through open tender as appropriate.

Consultation Paper.

Scope of coverage

9. We propose that the PPRS shall cover all plastic-bottled beverage products with volume ranging from 100mL to 2L distributed in Hong Kong for local market (covering over 99% of products in the market), subject to proposed exclusion of certain types of beverage products, such as beverages in refillable plastic containers, drink pouches, etc., details of which are listed in paragraphs 3.7 to 3.9 of the Consultation Paper. For sake of consistency, the PPRS will adopt the same definition of “beverage” for the PRS on glass beverage containers as provided in the PERO as amended by the Promotion of Recycling and Proper Disposal (Product Container) (Amendment) Ordinance 2016, i.e. a ready-to-serve drink (e.g. soft drink or milk), or a product that is a liquid or consists of liquid and is commonly served as a drink after being diluted or reconstituted (e.g. concentrated fruit juice or honey citron tea). In addition, the plastic containers of the beverage products under the PPRS have to be airtight and sealed by machine or with the aid of a tool.

Rebate for return of used containers

10. The experience of other places suggests that provision of financial incentive through a dedicated recovery system to encourage the public to return their used plastic beverage containers would in general result in a higher recovery rate (e.g. over 90% in some European countries). We therefore propose providing a rebate under the proposed PPRS to incentivise the public to return used plastic beverage containers.

11. It is important to set the rebate at an appropriate level that can encourage the public to participate in recycling on one hand, and not to induce fraudulent behaviour, such as using containers with counterfeit barcodes for rebate, on the other hand. Having regard to prevailing voluntary programmes operated in Hong Kong and current market price of other recyclables, we propose providing a rebate of 10 cents per container as a starting point for discussion. We welcome the views of the public and relevant stakeholders on the rebate level.

Network of return points

12. In addition to the provision of rebate, a reasonably convenient network with appropriate return points to facilitate the public to return containers and get the rebate is also the key to increase the recovery rate under the PPRS. In other places, it is not uncommon that retailers selling pre-packaged beverages in plastic containers serve as return points for used containers, either by law or voluntarily, to ensure that the PRS provides convenient and accessible service to the public. Having considered the local situation of Hong Kong, we propose requiring retailers selling, among others, plastic-bottled beverages and operating at certain scale, say those with retail floor area not less than 200 square metres, to provide take-back and rebate redemption services. The take-back of plastic beverage containers and rebate redemption can be done either manually or automatically through the application of RVMs.

13. The Government has rolled out a one-year pilot scheme in January 2021 to test out the practical application of RVMs in Hong Kong. A total of 60 RVMs would be installed in phases at different locations such as public places and government facilities with suitable foot traffic, with provision of instant rebate via e-payment platforms to encourage the public to return their used plastic beverage containers for recycling. Members of the public can also choose to donate the rebate to designated charities to benefit the community. At present, 40 RVMs are in service, with the remaining RVMs to be available by 25 March. As at mid-March, over 300,000 plastic beverage containers have been collected through the RVM pilot scheme.

The Levy

14. In line with the “polluter pays” principle, we propose imposing a container recycling levy, to be collected from suppliers² who distribute

² Suppliers include manufacturers and importers.

plastic-bottled beverages in Hong Kong, to fund the operation of the PPRS. The suppliers are required to register as “registered suppliers” and register the information of plastic-bottled beverage products to be distributed in Hong Kong, provide the required barcodes and designated recycling logos on plastic beverage containers, submit periodic returns for the amount of the distributed plastic-bottled beverage products, pay the container recycling levy calculated based on the total amount of plastic-bottled beverage products distributed, as well as to engage a qualified independent auditor to conduct annual audit and submit audit report.

15. The level of container recycling levy will depend on two major factors, namely, (i) the administration and operation expenditures of the PPRS, including collection and processing costs for waste plastic beverage containers (i.e. the “recycling fee”) , which will be calculated based on the litre-volume of beverage products; and (ii) the rebate, to be offered to the public on return of used containers at return points. Based on the initial guesstimates on the recycling fee projected by the consultant engaged by the Government, if the rebate level is set at 10 cents per container, the recycling levy would be around 50-65 cents per 500 mL container³.

Proper recycling and treatment

16. The dedicated collection network for used plastic beverage containers described above can provide a steady supply of mostly PET containers that have a reasonably good market value. Such high quality feedstock of plastic waste would be welcomed by the local recycling market as the recycling of such material is a self-sustainable business that does not require the financial support of the PPRS. To encourage healthy competition among local recyclers, the proposed PPRS will not cover the post-collection treatment of the waste plastic containers, which will instead be handled by the local recycling sector on market mechanism. Yet, to ensure that the waste plastic beverage containers collected are properly treated and to facilitate the development of circular economy by turning waste into reusable resource, we propose imposing

³ The relevant figures are preliminary estimates. The actual level of recycling levy will be subject to the operation mode of the future scheme, the network of return points to be established, collection arrangement, and the market's response to the tendering of the operation contracts for provision of the required services.

licensing control under the Waste Disposal Ordinance (WDO) (Cap. 354) on the treatment, reprocessing, and recycling of plastic beverage container waste under the proposed PPRS.

Timetable

17. Subject to the views collected in the public consultation, we plan to finalise the way forward within 2021 and accordingly prepare the legislative proposals for introduction into the Legislative Council in 2022 the earliest.

ADVICE SOUGHT

18. Members are invited to offer views on the above proposal.

Environmental Protection Department
March 2021

Producer Responsibility Scheme on Plastic Beverage Containers

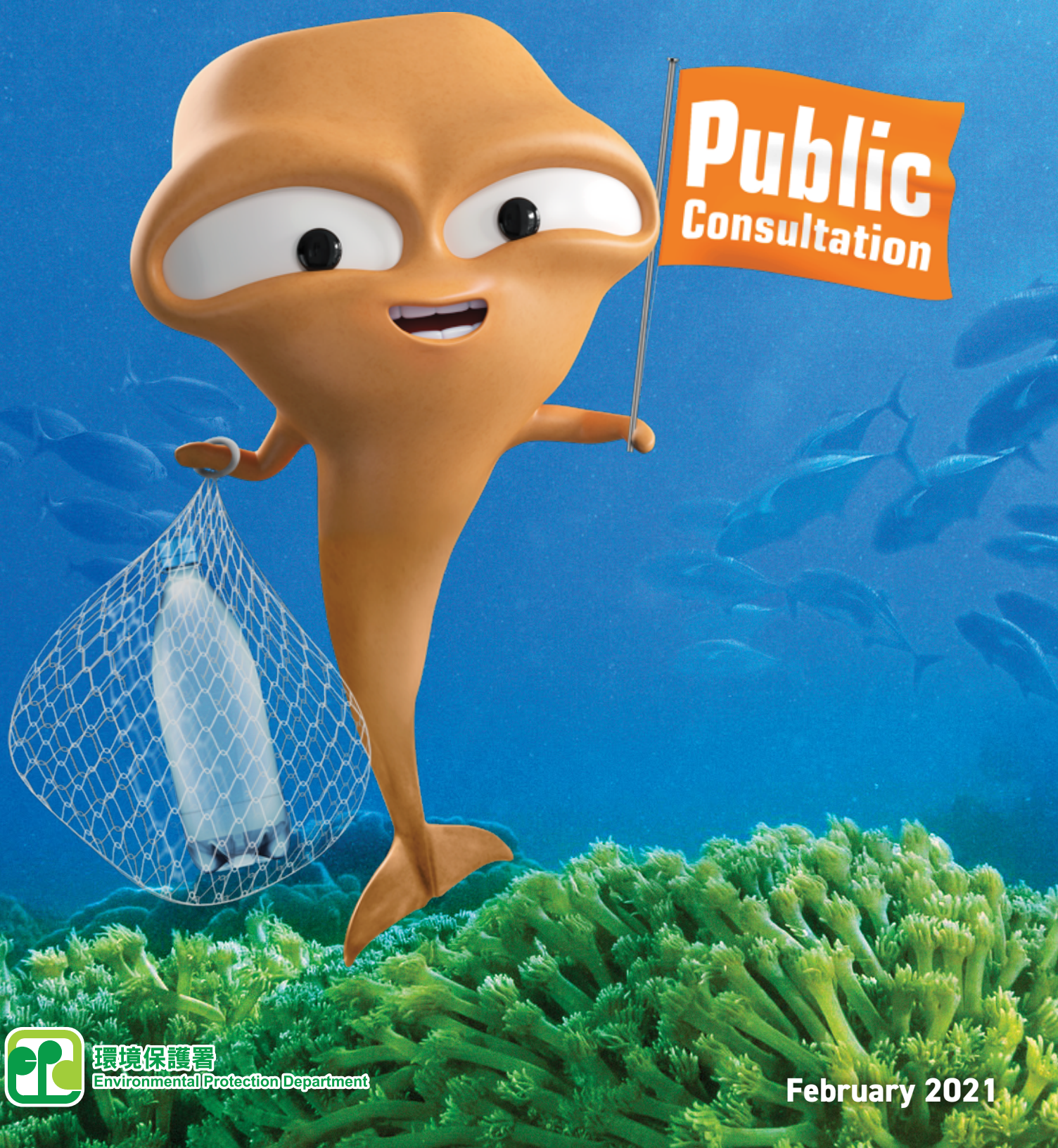


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Foreword

Plastic materials are commonly found in our daily lives. With their low production cost and high durability, they have been widely used for different purposes and have brought convenience to our lives. Yet, the merit of low production cost has also led to the emergence of enormous number of single-use disposable plastic products, which place a huge burden on the environment. Apart from resource depletion and post-consumption disposal, there is also concern about plastic waste entering the marine environment from time to time, causing damage to the ecosystem or even posing threat to human health. While we do not reject the use of plastics in general, we strongly encourage the public to think twice before using them, utilise their life span and join hands in taking up the eco-responsibility. Looking around, our global partners have been moving fast and stepping up efforts on all fronts to reduce the use of single-use plastics so as to create a greener and more sustainable environment for ourselves and future generations.

In Hong Kong, billions of single-use plastic beverage containers are consumed every year (amounting to more than 200 bottles per person a year), of which the majority are disposed of at landfills, while many others are dumped as litter in country parks, rivers, seas, etc., interfering the ecosystem and our living environment. In fact, most of the plastic beverage containers are made of materials that are recyclable. If they are properly separated at source for collection and treatment, they can be turned into useful resources and their impact on the environment can be minimised.

The Government has just released the Waste Blueprint for Hong Kong 2035. With the vision of “Waste Reduction•Resources Circulation•Zero Landfill”, the Blueprint sets out the strategies, goals and measures to tackle the challenge of waste management up to 2035, and to promote circular economy and sustainable green living environment. As one of the major “Waste Reduction” measures and along the principle of “polluter pays” and the concept of “eco-responsibility”, the Government proposes to introduce a producer responsibility scheme on plastic beverage containers. It requires all relevant stakeholders, including beverage manufacturers, importers, retailers and the public to share the responsibility for the collection, treatment, recycling and proper disposal of end-of-life products to avoid and minimise the environmental impacts caused by them, and enhances both the quality and quantity of the recovered materials in a more effective way. Besides, the scheme also incentivises the public and different sectors of the community to actively participate in the recycling of plastic beverage containers through the provision of rebate, which can in turn induce behavioural changes of the public and cultivate the habit of “source separation of waste and clean recycling”.

Protecting our environment requires the nurturing of good habits in our daily lives and perseverance. We sincerely invite your views on the proposals. Let us join hands to build a green culture of “dump less, save more” in Hong Kong.

KS Wong
Secretary for the Environment
February 2021



Acronyms

Abbreviation	Full Form
EPD	Environmental Protection Department
GPRS	Producer Responsibility Scheme on Glass Beverage Containers
MSW	Municipal Solid Waste
PPRS	Producer Responsibility Scheme on Plastic Beverage Containers
PRS	Producer Responsibility Scheme
RNO	Return Network Operator
RSA	Rebate System Administrator
RVM	Reverse vending machine
SME	Small and medium-size enterprise
tpd	tonnes per day

Plastic Material Codes:

Code	Short Form	Plastic Material
1	PET	polyethylene terephthalate
2	HDPE	high-density polyethylene
3	PVC	polyvinyl chloride
4	LDPE	low-density polyethylene
5	PP	polypropylene
6	PS	polystyrene
7	Other	other plastics





Part I: The Challenges

1.1

Plastics are widely used in our daily lives as they are light, malleable, with good corrosion resistance and are good insulator. While it may be convenient to use plastic products like beverage containers, bags, disposable dining ware and lunch boxes, etc., the environmental cost for their proper disposal and treatment is sizable. Researcher has estimated that around 320 million tonnes of plastics are produced worldwide every year. Of the approximately 6.3 billion tonnes of waste plastics produced since the 1950s, only around 9% has been recycled and around 12% incinerated, while the majority of the waste plastics has ended up in either landfills or the natural environment, with an estimated 100 million tonnes entering the ocean¹. More importantly, it takes considerable years for waste plastics to decompose and some would break into small fragments and enter our ecosystem, which threatens wildlife habitat and even our living environment. Waste plastics management has become a global issue and Hong Kong is no exception.



1.2

Amongst the vast number of plastic products in the consumer market, we are particularly concerned about the indiscriminate use of single-use plastics, also referred to as disposable plastics, which are intended to be used only once; their service life is usually short, yet the turnover rate is high. The problems associated with indiscriminate use of plastics and plastic pollution are attracting the attention of the public, governments and businesses around the world. There are increasing calls for actions to enhance the circular economy of plastic resources and minimise their impacts on the environment. At the national level, many places have developed their own strategies to control the use of single-use plastics. For example, Mainland China announced in January 2020 a plan to phase out several types of single-use plastic products nationwide from end of 2020 to 2025 by



phases. At the regional level, “A European Strategy for Plastics in a Circular Economy”² provides the framework, alongside the relevant legislation including the “Single-Use Plastics Directive”³, to reduce the unnecessary generation of single-use plastics waste. At the global level, the Basel Convention has been amended to enhance transparency and control on transboundary movement of waste plastics. Starting from 1 January 2021, transboundary movement of waste plastics controlled under the Basel Convention shall not proceed unless consents are received from the export, import and all transit states concerned.

¹ Factsheet “Plastic Waste Partnership” (2019). Retrieved from Basel Convention, Web site: <http://www.basel.int/Implementation/Plasticwaste/Guidance/tabid/8333/Default.aspx> . Accessed on 3 November 2020.

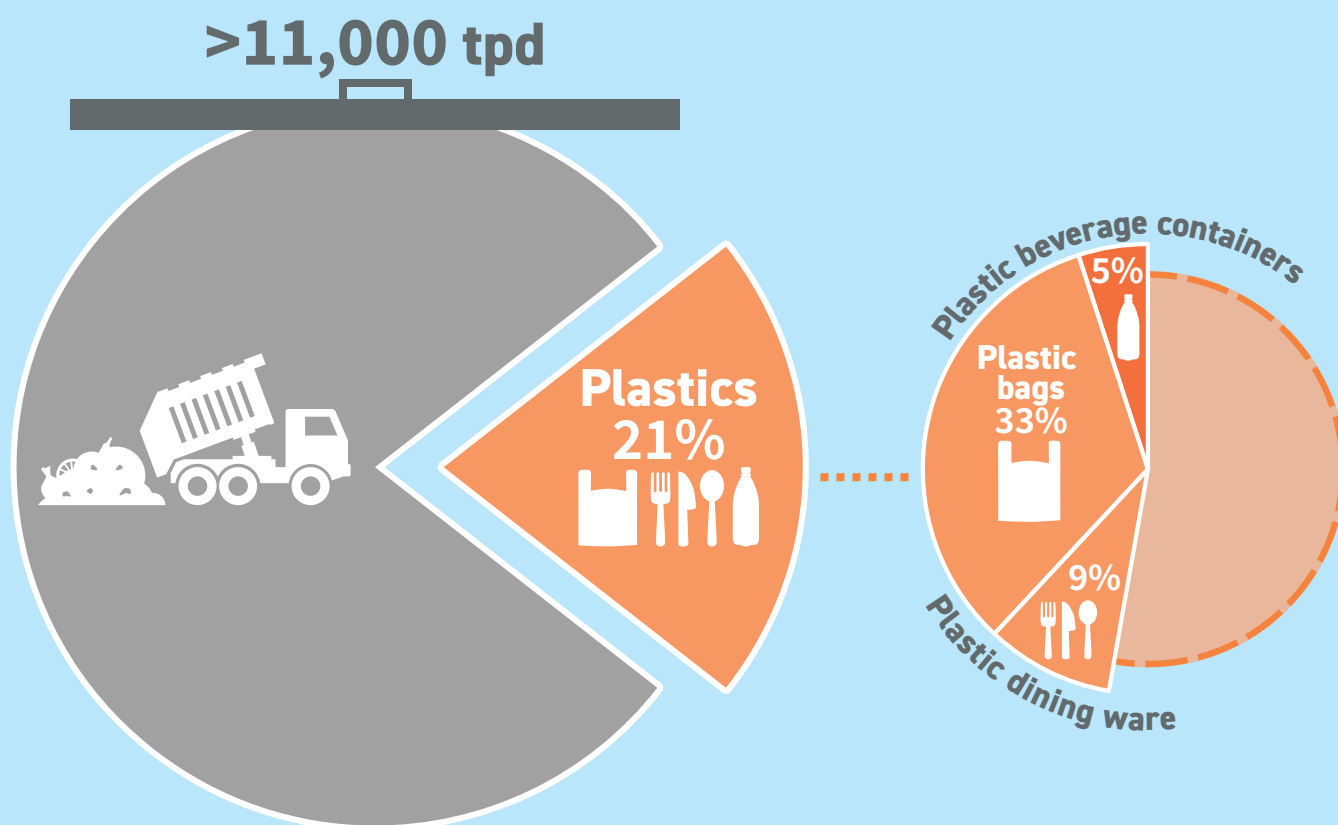
² A European Strategy for Plastics in a Circular Economy (16 January 2018). Retrieved from European Commission, Web site: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52018DC0028&from=EN> . Accessed on 3 November 2020.

³ “Single-Use Plastics Directive”. DIRECTIVE (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment (5 June 2019). Retrieved from The European Parliament and the Council of the European Union, Web site: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019L0904&from=EN> . Accessed on 3 November 2020.

1.3

Over the past decade, waste plastics disposed of at landfills in Hong Kong increased by 36% from 2009 to 2019 whilst the population grew by only 7.5% over the same period. Waste plastics accounted for about 2 320 tonnes per day (tpd), or about 21% of the 11 057 tpd overall municipal solid waste (MSW) disposed of at landfills in 2019. Of all the waste plastics, plastic bags constitute 33%⁴, plastic dining ware make 9%⁵, and plastic beverage containers are 5%. As a predominantly service-oriented economy, Hong Kong does not have a sizeable industrial base. As such, the local demand for recycled plastic materials remained minimal in the past and we have been relying on the export of recovered plastic wastes. With the tightened import and export control on waste plastic materials imposed both regionally and internationally, the export rate of waste plastic materials worldwide, including Hong Kong, has been greatly affected. The export rate of waste plastic materials of Hong Kong has dropped drastically. Besides, while waste plastic materials can be turned into recyclables that are tradable in local and international markets, the light-weight and bulky natures of plastic containers result in a very high logistics cost, making their recycling generally not cost-effective.

Disposal Amount of Municipal Solid Waste (2019)



⁴ Plastic bags include garbage bags, plastic shopping bags and other plastic bags.

⁵ Plastic dining ware include plastic and polyfoam dining ware.

1.4

All along, the Government has been promoting a “plastic free” culture and waste reduction at source. If plastic materials have to be used, priority should be given to reusable over single-use plastics. There is already a common consensus in the community that we can no longer ignore the indiscriminate use of single-use plastics. In this consultation paper, we focus on a common single-use plastic product: plastic beverage containers.

1.5

Hong Kong is one of the first movers in the region to introduce the framework of Producer Responsibility Scheme (PRS) through an empowering legislation, the Product Eco-responsibility Ordinance (Cap. 603), which was enacted back in 2009. The overarching principles of “polluter pays” and share-out of “eco-responsibility” have been laid down in the law. Accordingly, the Government has introduced a number of PRSs progressively, to (i) control the quantity of waste generation, e.g. the Plastic Shopping Bag Charging Scheme (PSB Charging Scheme); or (ii) facilitate the building up of a circular economy for the recyclables, e.g. the PRSs on Waste Electrical and Electronic Equipment and Glass Beverage Containers. Over the years, the Hong Kong community in general as well as the key stakeholders (including manufacturers, suppliers, retailers and consumers) have shown support to and participated in these schemes. The sense of eco-responsibility has also been developed in our society. It is now an opportune time to move on and do more for protecting the environment. Having considered the nature of the relevant products and their use in Hong Kong, we recommend introducing a new PRS on the plastic beverage containers so as to achieve a more effective plastic waste management.





**Part II:
Introducing PRS on
Plastic Beverage Containers**

2.1

There has been a continuous growth in the consumption of plastic containers in Hong Kong over the past decade, in particular plastic beverage containers. Majority of these containers were disposed of at landfills. It is estimated that in 2019, among the 191 tonnes of plastic containers disposed of at landfills daily, 106 tonnes were plastic beverage containers, with over 90% of them made of polyethylene terephthalate (PET). This type of mono-material plastic beverage containers is relatively easy to handle and has a higher recycling value. If properly separated at source for collection and treatment, they can be turned into useful resources.

2.2

However, in our daily lives, plastic-bottled beverages are usually consumed on-the-go, and the waste plastic containers so generated are dumped everywhere scattering throughout the territory. The existing collection system can hardly achieve a high recovery rate. We need more effective waste management strategies and measures to collect this type of material.

Amount of Plastic Beverage Containers Disposed (2019)

1.55 Billion
(> 200 bottles per
person a year in Hong
Kong)



= **38,700** =
Tonnes

2,690
Double-decker
buses



Over 90% of plastic-bottled beverage products circulating in the market are carried in polyethylene terephthalate (PET) containers



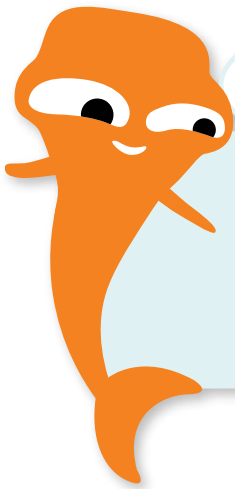
If properly collected for recycling, these PET containers can be turned into resources with market value

2.3

In fact, in other places (such as some European countries), it is common to set up dedicated recycling system through producer responsibility scheme, with the provision of financial incentive to encourage the public to return used beverage containers. This greatly increases the recovery rate of single-use beverage containers and the quality of recyclables in these places. This serves as a good reference for us.

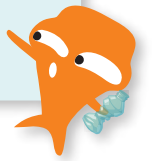
2.4

Having considered that there are stable local waste plastic recycling facilities in considerable scales, we *propose that a mandatory PRS on plastic beverage containers (PPRS) be introduced (Q.1)* to ensure that relevant stakeholders will play their parts in contributing to the proper and effective treatment of used plastic beverage containers.



Question 1

Do you support introducing a mandatory PRS to enhance the recycling of plastic beverage containers?



2.5

We do not intend to cover other plastic containers in the proposed PRS, such as those for personal care and household cleansing products, as these containers are much more diverse in terms of their materials, sizes, shapes and colours, thus their recyclability. In other places, these containers are usually dealt with separately instead of using the same recycling system for plastic beverage containers.



2.6

To facilitate the proper management of single-use plastic beverage containers, it is common in other places to have a dedicated system to handle and collect them separately from other waste plastics for recycling, usually by means of PRS. Reverse vending machines (RVMs) are also commonly used in other places to facilitate the public to return used beverage containers to enhance the recovery efficiency and quality. A summary of relevant experience is at **Annex A**.

Relevant PRS experience of other places

In Europe, North America and Australia, the PRSs usually involve the setting up of a dedicated recovery system with the provision of a financial incentive to encourage the public to return their used beverage containers to designated return points. In general, it results in a higher return rate, e.g. over 90% in Germany and Norway, successfully diverting majority of beverage containers from landfills and incinerators. Under most PRSs, beverage suppliers are responsible for the recycling of the packaging of their drinks. Retailers selling pre-packaged beverages in plastic containers serve as return points for used containers, either by law or voluntarily, to ensure that the PRS provides convenient and accessible service to the public. The retailers may also benefit from increased foot traffic through the shops.





**Part III:
Scope of Coverage**

A. Beverages covered

3.1

In Hong Kong, “beverage” is defined under the legislation⁶ that applies to the PRS on glass beverage containers (GPRS) as -

- (i) a ready-to-serve drink, including –
 - (a) alcoholic drink;
 - (b) water (carbonated or non-carbonated) or water-based flavoured drink (carbonated or non-carbonated);
 - (c) milk or dairy-based drink;
 - (d) soybean-based drink;
 - (e) fruit or vegetable juice or nectar;
 - (f) coffee, coffee substitute, tea or herbal infusion; and
 - (g) cereal grain drink; or
- (ii) a product that is a liquid or consists of liquid; and is commonly served as a drink after being diluted or reconstituted.



3.2

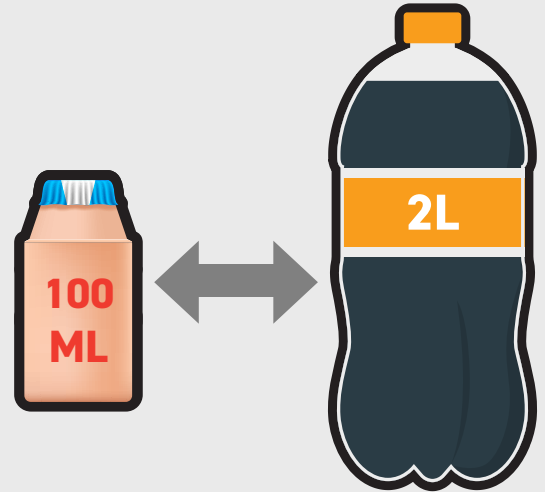
For sake of consistency, we propose that the proposed PPRS should adopt the same definition of “beverage” as in the GPRS. Indeed, this would avoid causing confusion to consumers as well as beverage suppliers, particularly for those supplying beverages in both glass and plastic containers.

⁶ Promotion of Recycling and Proper Disposal (Product Container) (Amendment) Ordinance 2016

B. Container volume

3.3

Beverage products in plastic containers for single-use consumption that are available in Hong Kong market are usually between 100mL and around 5L in volume, though the vast majority of them do not exceed 2L. We note that in some other places (like Germany and New South Wales of Australia), their relevant schemes exclude containers below or exceeding certain sizes in volume. These places usually use RVMs to collect waste plastic beverage containers and most of the RVMs available on the market can only accept containers within certain specific ranges of sizes (minimum of 100mL and up to 3L in most cases). Including plastic containers with sizes that cannot be accepted by RVMs in the PPRS would likely increase the operation burden of the scheme disproportionately.



3.4

While the exclusion of small containers (i.e. those below 100mL) from the PPRS may encourage, to a certain extent, beverage suppliers to reduce the volume size to just less than 100 mL; however, there are various factors that the suppliers would have to take into account in setting their products' volumes. Apparently, consumers' preference would be the major consideration.

3.5

On balance, we *propose to confine the scope of the proposed PPRS to beverage containers with volume ranging from 100mL to 2L (Q.2)*. According to market sales data, beverage products in such containers account for about 99% of the market sales.



Question 2

Do you agree that the PPRS should cover beverage products within the volume range of 100mL-2L?

C. Plastic materials of containers

3.6

Over 90% of plastic-bottled beverage products circulating in Hong Kong are carried in PET containers and the remaining are packaged mainly in high-density polyethylene (HDPE), polypropylene (PP) and polystyrene (PS) containers. While some other places (e.g. the Netherlands) target more specifically on PET containers, we consider it inappropriate to confine the proposed PPRS in Hong Kong only to beverages held in PET containers, having considered market fairness and to prevent switching of containers to other plastic materials by some producers in order to evade their environmental responsibilities. As such, the proposed PPRS will regulate all pre-packaged beverages carried in sealed plastic containers irrespective of the plastic materials used.



D. Exclusion



3.7

Refillable plastic containers (e.g. carboys) are usually collected separately by the beverage suppliers/manufacturers for reuse. In other places, they are often excluded from the respective PRSs or handled separately. As such, we will exclude beverages in refillable plastic containers from the proposed PPRS.



3.8

The proposed PPRS will also exclude beverages that are filled and sealed immediately before sale for takeaway at retail outlets on the spot (e.g. bubble tea packaged in plastic cup sealed with a plastic film). We consider that this kind of plastic “containers” is similar to common single-use plastic cups with lids and therefore it is better to regard them as single-use plastic dining ware to be dealt with under the relevant waste management initiatives being studied separately by the Government.



3.9

Besides, drink pouches, which are usually made of composite materials such as laminated aluminium foil, are not commonly recycled in many places. Composite plastic materials are generally regarded as contaminants in plastic recycling as they would affect the quality of recycled plastic materials. These packaging only account for less than 1% of the beverage products in Hong Kong. To avoid causing adverse impact to the recycling work, we will also exclude beverages carried in this type of containers from the PPRS for the time being.

That said, we will continue to monitor the development of technologies for processing composite plastic materials as well as the treatment capacity available in the local recycling market, and explore the necessity and feasibility of including such materials in a PRS at the appropriate time.



**Part IV:
Structure and Governance of
the Proposed PPRS**

4.1

The key features of the PPRS include:

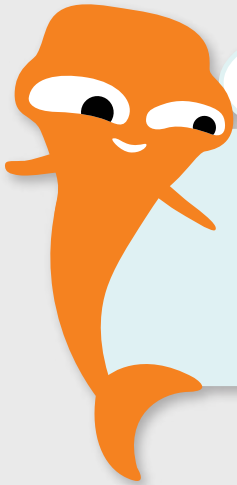


A. Achieving a high recovery rate

4.2

Plastic-bottled beverages are commonly consumed on-the-go and the waste plastic containers so generated are scattering throughout the territory, which presents a major challenge in setting up effective collection system for proper recycling. The successful experience of other places suggests that provision of financial incentive would be an effective means to increase the recovery rate of plastic beverage containers, which could also contribute to the reduction of littering. *We propose to provide a rebate under the proposed PPRS to incentivise the public to return plastic beverage containers (Q.3).*





Question 3

Do you support the provision of rebate under the proposed PPRS?



4.3

The rebate needs to be set at an appropriate level that can encourage the public to participate in recycling on one hand, and not to induce fraudulent behaviour, such as using containers with counterfeit barcodes or recycling logos for rebate, on the other hand.

Verification by Means of Barcode and Designated Logo

To prevent fraud, measures will be implemented to verify the barcodes on the containers to ensure that only "eligible" containers are accepted for redemption of rebate. In this connection, the beverage suppliers will need to submit barcode information for registration and approval before distributing the beverage products in the local market.

For easy identification of the eligible plastic beverage containers by the public, it is a common practice in other places to imprint a designated recycling logo on the product labels.



Barcode



Norwegian Recycling Logo

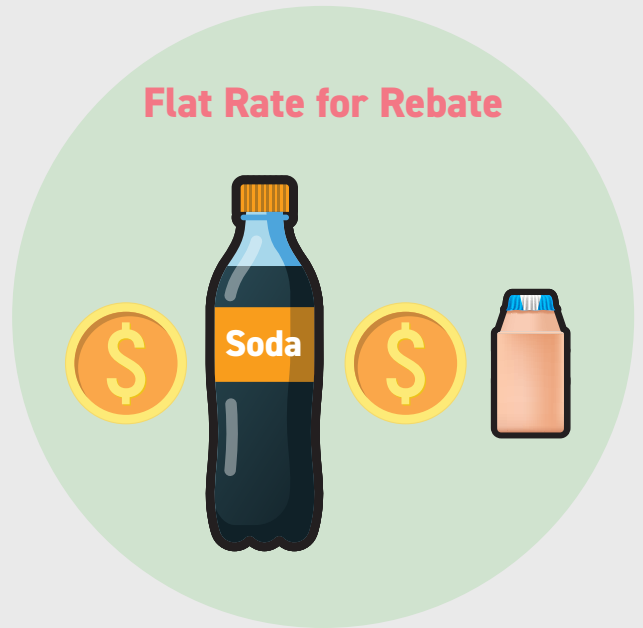


Germany Recycling Logo



4.4

The proposed PPRS will adopt a flat rate for rebate regardless of the beverage container sizes. Currently, there are a number of voluntary plastic container recycling programmes in operation in Hong Kong with a similar flat rate rebate provided. Having regard to the experience of these voluntary programmes and the market prices of other recyclables (e.g. about 5 cents for an aluminium beverage can), we *propose, as at start, a rebate of 10 cents be provided for the return of a plastic beverage container at designated return points (Q.4(a) and (b)).*



Question 4(a)

Do you consider a rebate at 10 cents per container an appropriate level?

Question 4(b)

If not, what should be the minimum rebate level?

- (i) 5 cents
- (ii) 20 cents
- (iii) 30 cents
- (iv) Others (Please specify: _____)

B. A convenient collection network

4.5

In addition to the provision of financial incentive to encourage the return of plastic beverage containers, a reasonably convenient network with appropriate return points to facilitate the public to return containers and get the rebate is also the key for the PPRS to increase the recovery rate. We note that different places have adopted different approaches in establishing an effective network of return points. In some European countries with higher return rates, retailers of pre-packaged beverages are mandated by law to serve as return points to take back the used beverage containers and provide the rebate. This has the advantage of providing a convenient return network to the public. On the other hand, in the case of Australia (New South Wales), return points are set up primarily by the relevant system operators and retailers may participate on a voluntary basis. In both cases, the retailers may either use RVMs where the public can return beverage containers and collect the rebate, or handle the returned containers manually, depending on their own business operations and settings. They are able to claim from the suppliers or system operators the rebate paid out to the public, and they usually receive a handling fee at a reasonable level or retain the proceeds from the sale of the plastic containers collected as an additional source of income.



4.6

For boosting the collection efficiency and, in line with the spirit of shared eco-responsibility, we *propose to require retailers selling beverages carried in plastic containers to provide take-back and rebate redemption services*. Given that many such retailers in Hong Kong are small and medium-size enterprises (SMEs) and they may have great limitation on shop space, it does not seem practicable to require all of them to provide the take-back service (whether manually or by means of RVMs). As such, we *propose to apply the take-back requirement, at least in the initial stage, only to stores with certain operation scale, say those with retail floor area of not less than 200 m² (Q.5)*.

Question 5

Do you support that relevant retailers (in particular the larger retail stores) should be mandated to provide take-back and rebate redemption services?

4.7

The take-back of plastic beverage containers and rebate redemption can be done either manually or automatically through the application of RVMs. In other places, it is common to have a combination of these two models to suit the local needs and constraints.



What is RVM?



RVM is a device that allows the public to feed in used beverage containers for instant rebate redemption by means of electronic payment.



For fraud control, it is capable of recognising certain features, such as barcode and security logo on a container and the shape of it, and only accepts the “eligible” ones. Those containers that are not pre-registered or are not empty will be rejected.



Some RVM models are also equipped with compression function to avoid repeated rebate redemption with the same container and make better use of the recycling space, thereby boosting handling capacity of the device and scheme efficiency.



Pilot Scheme on RVMs

The Government conducted a technical trial at seven Recycling Stations (formerly known as “Community Green Stations”) under the community recycling network GREEN @ COMMUNITY in the period between June 2019 and November 2020 to examine the technical aspects of RVM in collecting plastic beverage containers, during which over 1,219,000 plastic beverage containers (approximately 36 tonnes) were recycled. In order to test out the practical application of RVMs in Hong Kong, the Government has rolled out a one-year pilot scheme in January 2021 to install a total of 60 RVMs in phases at different locations, primarily at public places and government facilities with suitable foot traffic.

4.8

With suitable number and locations of return points, the public will have stronger motivation to return their plastic containers. We *propose to set up a collection network, with reasonably accessible points, to facilitate the return of used plastic containers by the public (Q.6)*, so as to ensure the effective implementation of the PPRS.



Question 6

What are your preferred types of locations listed below for the take-back and rebate redemption services? Please accord priority.

- (i) Public transport facilities
- (ii) Public facilities
- (iii) Shopping centres
- (iv) Supermarkets
- (v) Other relevant retail stores
- (vi) Residential estates
- (vii) Others (Please specify: _____)



C. Proposed framework

The Suppliers

4.9


In line with the “polluter pays” principle, we will impose a recycling levy on the plastic-bottled beverages distributed in Hong Kong to fund the operation of the PPRS. We *propose to collect the recycling levy from beverage suppliers (mainly local beverage manufacturers and importers) (Q.7)*. They are required to –

- (a) register as “registered suppliers”;
- (b) register the information on plastic-bottled beverage products to be distributed in Hong Kong and provide the required barcodes and designated recycling logos on plastic beverage containers;
- (c) submit periodic returns for the amount of the plastic-bottled beverage products manufactured or imported that are distributed in Hong Kong⁷;
- (d) pay the recycling levy calculated based on the total amount of plastic-bottled beverage products distributed on time; and
- (e) engage an independent and qualified auditor to prepare annual audit report to ensure factual accuracy.



Question 7

Do you support that we should collect the recycling levy at supplier level (i.e. manufacturers and importers) to fund the operation of the PPRS?



⁷ Excluding plastic-bottled beverages that are manufactured locally for export or imported for re-export.

4.10

The recycling levy rate will be determined having regard to two major factors, namely, (i) the administration and operation expenditures of the PPRS, including collection and processing costs for waste plastic beverage containers (i.e. the “recycling fee”); and (ii) the rebate to be offered to the public on return of used containers at return points. The proposed PPRS will adopt a flat rate in calculating the rebate based on the number of containers while the recycling fee will be charged based on the litre-volume of beverage products. Since the recycling fee is used to cover the costs for collecting and processing waste plastic beverage containers, which largely depend on the container size, it would be fairer to set the recycling fee in proportion to the container volume. Based on the initial guesstimates on the recycling fee projected by the consultant engaged by the Government, if the rebate level is set at 10 cents per container, the recycling levy would be around 50-65 cents⁸ per 500 mL container.



4.11

We are aware that some beverage suppliers have already set up their own arrangements to recover plastic beverage containers for recycling. To encourage the continuation of such green recycling practice, we *propose to allow moderate reduction of recycling levy payable based on the amount of containers collected and recycled on the suppliers' own initiatives (Q.8)*. The suppliers must comply with certain requirements to ensure that the recovery and recycling operation are carried out in an environmentally sound manner.

Question 8

Do you agree that moderate reduction of recycling levy should be allowed if suppliers have provided proper arrangements to recycle plastic beverage containers meeting certain environmental requirements?

⁸ The relevant figures are preliminary estimates. The actual level of recycling levy will be subject to the operation mode of the future scheme, the network of return points to be established, collection arrangements, and the market's response to the tendering of the operation contracts for provision of the required services.

Administration of the PPRS

4.12

For the effective implementation of the proposed PPRS, we propose the Government or a Government-appointed organisation to assume the role of “PRS Operator” to oversee the operations of the PPRS; and put in place two operational structures that look after the rebate system administration and the management of the collection network respectively –

- (a) **One** single “Rebate System Administrator” (RSA) to be appointed through open tender to manage and operate the entire rebate system for effective system administration and ensuring data integrity and compatibility.
- (b) **Multiple** “Return Network Operators” (RNOs) to be appointed through open tender to operate the collection network according to geographical demarcation. The return points within the network may comprise automated RVMs, manual collection, bulk collection and other operation modes to facilitate efficient collection of used plastic containers returned by the public.



Key Responsibilities of PRS Operator, RSA and RNOs

PRS Operator



To oversee the operation of the rebate system and collection of returned containers, including:

- process registration of beverage suppliers
- receive recycling levy payment by beverage suppliers
- appoint and manage RSA and RNOs



RSA



To set up the rebate system, manage the operation of system and related administrative arrangement, and act as central clearing house for the rebate system, including:

- set up, manage and operate the IT platform for administration of the rebate system
- process registration of beverage products, and set up and maintain central databases of registered beverage products
- provide and set up RVMs for return points
- act as central transaction clearing platform to receive and process data from different RNOs

RNOs



To set up and manage return points, arrange collection and baling plastic containers for supplying to the local recycling market, including:

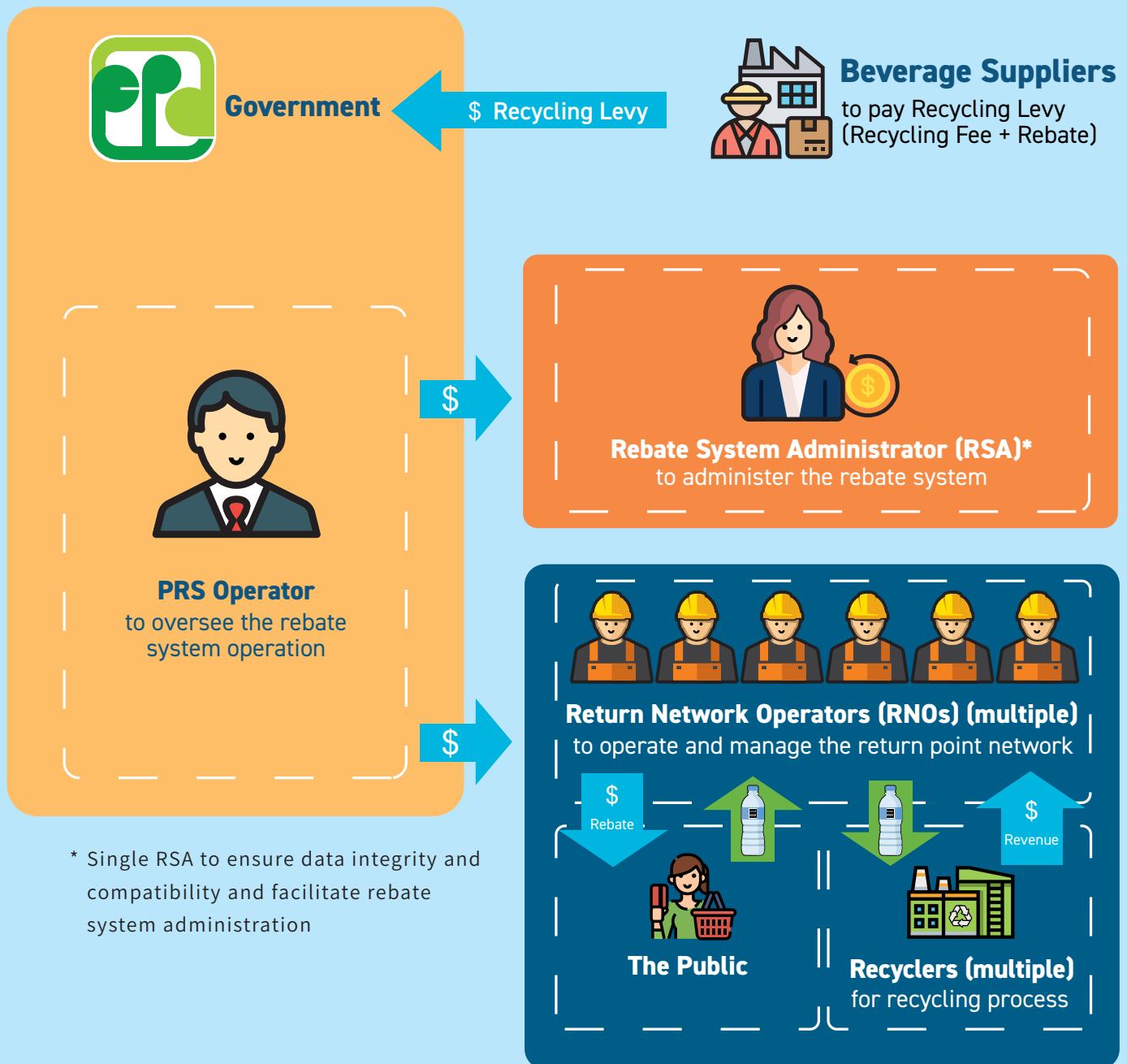
- establish, manage and operate the return points in its catchment region
- set up and operate not less than one regional counting and baling centre
- collect returned containers to regional counting and baling centre
- bale the return containers and supply to local market for recycling



4.13

Adopting a single centralised rebate system across the territory with same payment and IT platform for rebate redemption will avoid causing complication to the system as well as unnecessary confusion to the public. The merit of having multiple RNOs is that the contract size would be comparatively smaller, thus allowing more local qualified players to participate in bidding the contracts. This would also create healthy competition among the operators and encourage the optimisation of the good practices and strategies in operating the collection network by them, hence enhancing overall performance and service quality. To allow more qualified candidates in the market to participate in the collection of waste plastic beverage containers, we will set a cap on the maximum number of return point network contracts that a single operator can operate at any moment of time.

Schematic Design of the PPRS



Separation of collection and treatment services

4.14

The collection network under PPRS can provide a steady supply of waste plastic containers with a reasonably high market value, mostly PET containers. Such a high quality feedstock of plastic waste is welcomed by the local recycling market as the recycling of such materials is a profitable and self-sustainable business that does not require the financial support of the PPRS. As such, the proposed PPRS will not cover the post-collection treatment of the waste plastic containers, which will instead be handled by the local recycling sector under market mechanism.

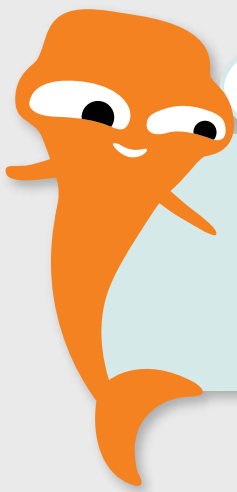


4.15

The plastic beverage containers collected will become the property of RNOs, which shall arrange to sell them to recyclers in local market for proper treatment and turning them into marketable materials by open tender or other means as approved by the Authority. The revenue generated from the sale of the plastic containers can be a source of funding for RNOs to operate the collection network and to help lower the operating costs. The arrangement can facilitate the building up of circular economy for plastic beverage containers while maintaining market competition.

4.16

To ensure that the waste plastic beverage containers collected are properly treated and to facilitate the development of circular economy by turning waste into reusable resources, we will also explore a complementary action by amending the Waste Disposal Ordinance (Cap. 354) such that any person who treats, reprocesses and recycles regulated plastic beverage container waste will be required to obtain a waste disposal licence. The licensing system will facilitate the Government in monitoring the recycling processes to ensure that the recycled materials meet technical specifications of the intended uses, with marketable outlets locally or internationally. We therefore *propose to impose licensing requirement on recycling facilities for handling waste plastic beverage containers under the proposed PPRS (Q.9).*



Question 9

Do you support imposing licensing requirement on recycling facilities for handling the waste plastics collected under the proposed PPRS?



D. The Government in the lead

4.17

PPRS in other places adopt two common approaches: government-administered and industry-operated. In the latter, the beverage industry would take up certain statutory responsibilities to arrange for the collection and recycling of waste plastic beverage containers up to a prescribed recycling target set by the Government. Different places choose different approaches that suit their own circumstances and mode of development.

4.18

In Hong Kong, we have adopted government-administered approach in our other PPRSs in place (e.g. PPRSs on waste electrical and electronic equipment and glass beverage containers). The major advantage of this approach is that there is a certainty on the provision of services as the contractors are directly appointed by the Government. In view of the current overall situation of the market and industry, we consider it more appropriate for the Government to assume the role of the "PPRS Operator" to implement the proposed PPRS. Notwithstanding, we will review at suitable juncture the implementation of the PPRS and will not rule out the possibility of considering the migration to an appropriate operation mode run by the industry in future.





**Part V:
Other Plastic-related Issues**

5.1

Concerted effort of the Government, business sector and the general public is the key towards reducing the use of plastics. To support the development of a circular economy for waste plastics, the Government has been adopting a multi-pronged approach, including the refinement of policies and regulations, and enhancement of relevant recycling support, etc.. In the meantime, the Government has also stepped up various publicity and education campaigns in order to drive behavioural change, for example, the promotion of bringing own plastic bag, bottle and food container. There is still room to step up our efforts in reducing the use of plastics, and the active participation from different sectors in the society and the general public is crucial for the purpose.

5.2

Improvement of product packaging design by manufacturers is a good example of plastic reduction initiative led by the business sector. It makes it easier for certain plastic packaging to be recycled, thus minimising the impact of waste plastics on the environment. The European Union has recently passed a new Directive that requires the plastic cap to remain attached to the main body of the product when in use. This is to reduce dumping of plastic caps, which may enter the natural environment or the ocean and eventually turn into micro-plastics. The Directive also requires that, starting from 2025, plastic beverage containers should contain at least 25% recycled plastic materials, and the percentage will be further raised to 30% by 2030.



5.3

In Hong Kong, we are glad to notice that some local beverage manufacturers are already adopting greener measures. For instance, clear transparent PET containers, which carry a higher recycling value, are used instead of coloured PET containers; a certain percentage (say, 30%) of recycled materials is adopted in the production of plastic containers, and polyvinyl chloride (PVC) wraps are gradually replaced by greener materials. These green packaging measures demonstrate corporate responsibility in the promotion of green and sustainable lifestyle. We *propose to continue to monitor the development in this aspect and examine the introduction of new measures at suitable juncture, for example, the feasibility of reducing recycling levy for environmentally friendly packaging so as to further encourage the industry to adopt more environmentally friendly packaging designs (Q.10(a)).*



Question 10(a)

Do you have any specific suggestion(s) on promoting eco-packaging design?

5.4

We recognise that the industry may need additional support for moving towards a circular economy gradually. In this regard, the Government will make good use of the Green Tech Fund to encourage the exploration of new ideas and directions, for instance, studying different types of alternative materials for plastics and the feasibility of their application in Hong Kong, conducting life cycle assessments on degradable materials and analysis on their specific degradation conditions, and studying ways to expand the outlet of recycled plastics. Besides, the Recycling Fund will continue to facilitate enhancement of operational capabilities and efficiency of the recycling industry in order to promote their sustainable development.

5.5

When tackling the challenge on waste plastics, it is important to remember that we are not only responsible for the environment but also the next generation. We must not ignore the harmful consequence brought by indiscriminate use of single-use plastic products. The new “Producer Responsibility Scheme on Plastic Beverage Containers” is one of the key measures on this front, for which we appeal to your support.


5.6

Apart from plastic beverage containers, the Government also keeps a close watch on the proper recycling of other single-use beverage packaging materials. That said, whether to introduce a PRS on certain product involves the holistic consideration of a wide range of factors, including the necessity and feasibility of launching a PRS and the priority of that product among other types of wastes. It is also important to assess whether our local recycling market is already equipped with the necessary technology and capacity for transforming the product into useful materials with market value. The Government will continue to monitor the development of the local recycling market and will explore the feasibility of introducing the relevant PRS at the appropriate time.



Question 10(b)

Do you have any other comments on the PPRS and other plastic-related issues?





Part VI:
Share Your Views with Us



We invite different sectors of the society and members of the public to offer views on the “Producer Responsibility Scheme on Plastic Beverage Containers”. This can help us formulate an effective and practicable proposal after considering the views from different perspectives. For the ease of responding to this consultation document and facilitating the subsequent analysis, please visit the dedicated website below for filling in and submitting “Online View Collection Form” direct. You may also fill in the “View Response Form” provided at Annex B and send it to the Environmental Protection Department (EPD) by email, post or fax.

Deadline and Ways of Submission

Please submit your views and comments on or before 21-May-2021 via the following channels:

Website:	www.pprs.hk
Email:	pprs@epd.gov.hk
Post:	Waste Management Policy Group Environmental Protection Department Room. 1501, 15/F., Chinachem Exchange Square, 1 Hoi Wan Street, Quarry Bay, Hong Kong.
Fax No.:	3121-5761

Website



Please scan.





Important Disclaimer

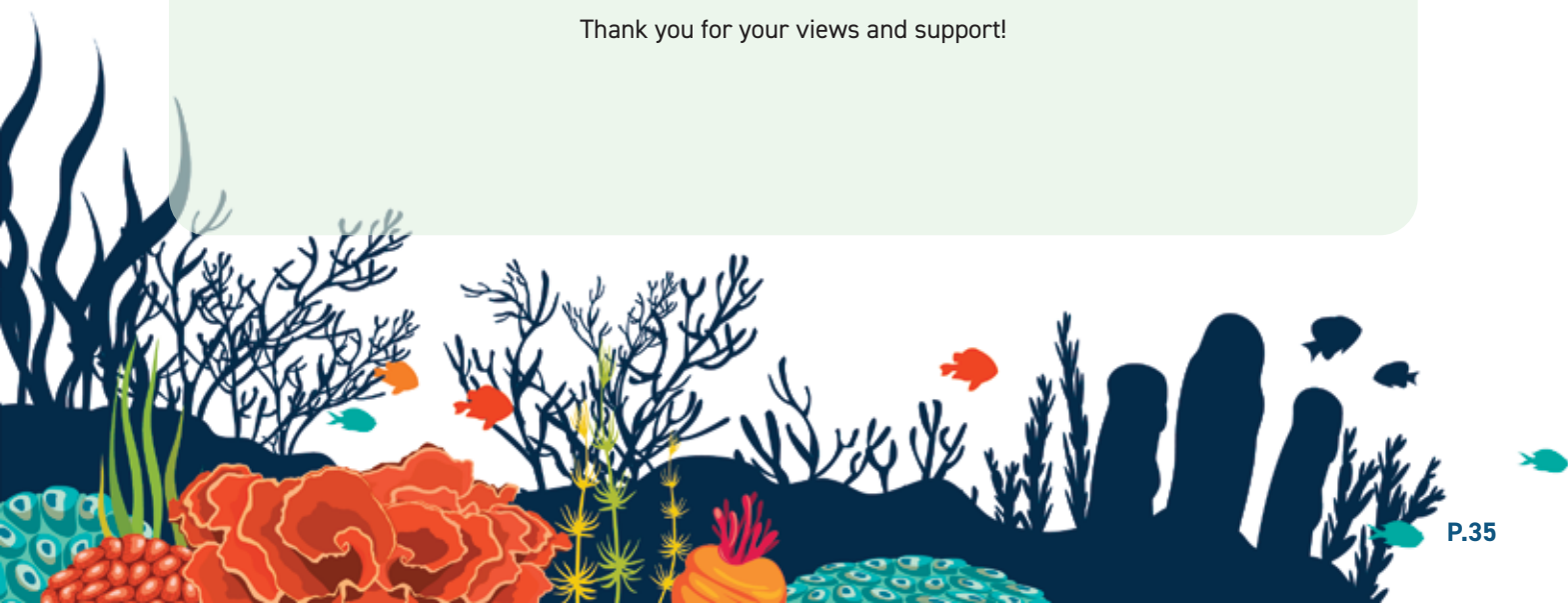
Please note that the Government would wish, either in discussion with others or in any subsequent report, whether privately or publicly, to be able to refer to and attribute views submitted in response to this consultation paper. Any request to treat all or part of a response in confidence will be respected, but if no such request is made, it will be assumed that the response and the identity for submitting such response is not intended to be confidential.

The names and comments (except personal data) provided by individuals or groups to the EPD in the course of the public consultation will be disclosed, either wholly or partly, to the public (including disclosure on the relevant websites). If you do not wish such information to be disclosed, please advise us at the time of submission.

Personal Information Collection Statement

1. The personal data provided by means of this form will only be used for the above public consultation conducted by the EPD and any directly related purpose.
2. You have the right of access and correction with respect to personal data as provided by means of this form. For enquiries or making correction concerning the personal data, please email to pprs@epd.gov.hk.

Thank you for your views and support!



Annex A: Experience of Other Places on PPRS

	USA (New York)	Japan	Germany	Norway	Australia (New South Wales)
Year of PRS Commencement	1983	1997	1998	1999	2017
Governance	Government-administered	Government-administered	Industry-operated	Industry-operated	Government-administered
Nature of Overseeing Organisation	Government	Government-designated Organisation	Not-for-profit	Not-for-profit	Government
Container Volume	< 3.78L	All	0.1-3.0L	All	0.15-3.0L
Plastic Type	All	All	All (except PE bags and stand-up pouch)	- PET - HDPE	- PET - HDPE

Public Consultation on PPRS

Email: pprs@epd.gov.hk
Post: Waste Management Policy Group
Environmental Protection Department
Rm. 1501, 15/F, Chinachem Exchange Square, 1 Hoi Wan Street
Quarry Bay, Hong Kong
Fax: 3121-5761

Annex B: View Response Form

Part I: Basic Information

Which of the following identities are you using to respond to this view response form?

<input type="checkbox"/> Professional Bodies / Institutions	<input type="checkbox"/> Public Organisations	<input type="checkbox"/> Green Groups
<input type="checkbox"/> Industry Associations	<input type="checkbox"/> Companies	<input type="checkbox"/> Others
Name of Organisations / Companies: _____		
<input type="checkbox"/> Individuals		

Email Address: _____

Part II: Consultation Questions

Q1: Do you support introducing a mandatory PRS to enhance the recycling of plastic beverage containers?

<input type="checkbox"/> Strongly Support	<input type="checkbox"/> Support	<input type="checkbox"/> Neutral	<input type="checkbox"/> Oppose	<input type="checkbox"/> Strongly Oppose
-------------------------------------------	----------------------------------	----------------------------------	---------------------------------	------------------------------------------

Q2: Do you agree that the PPRS should cover beverage products within the volume range of 100mL-2L?

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
-----------------------------------------	--------------------------------	----------------------------------	-----------------------------------	--------------------------------------------

Q3: Do you support the provision of rebate under the proposed PPRS?

<input type="checkbox"/> Strongly Support	<input type="checkbox"/> Support	<input type="checkbox"/> Neutral	<input type="checkbox"/> Oppose	<input type="checkbox"/> Strongly Oppose
-------------------------------------------	----------------------------------	----------------------------------	---------------------------------	------------------------------------------

Q4(a): Do you consider a rebate at 10 cents per container an appropriate level?

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
-----------------------------------------	--------------------------------	----------------------------------	-----------------------------------	--------------------------------------------

Q4(b): If not, what should be the minimum rebate level?

<input type="checkbox"/> 5 cents	<input type="checkbox"/> 20 cents	<input type="checkbox"/> 30 cents
<input type="checkbox"/> Others (please specify) :		

Q5: Do you support that relevant retailers (in particular the larger retail stores) should be mandated to provide take-back and rebate redemption services?

<input type="checkbox"/> Strongly Support	<input type="checkbox"/> Support	<input type="checkbox"/> Neutral	<input type="checkbox"/> Oppose	<input type="checkbox"/> Strongly Oppose
-------------------------------------------	----------------------------------	----------------------------------	---------------------------------	------------------------------------------

Q6: What are your preferred types of locations listed below for the take-back and rebate redemption services?
Please accord priority. (1 has the highest priority; 6 has the lowest priority. Please do not repeat.)

Public transport facilities	Public facilities	Shopping centres	Supermarkets	Other relevant retail stores	Residential estates
<input type="checkbox"/> Others (please specify) :					

Q7: Do you support that we should collect the recycling levy at supplier level (i.e. manufacturers and importers) to fund the operation of the PPRS?

<input type="checkbox"/> Strongly Support	<input type="checkbox"/> Support	<input type="checkbox"/> Neutral	<input type="checkbox"/> Oppose	<input type="checkbox"/> Strongly Oppose
-------------------------------------------	----------------------------------	----------------------------------	---------------------------------	------------------------------------------

Q8: Do you agree that moderate reduction of recycling levy should be allowed if suppliers have provided proper arrangements to recycle plastic beverage containers meeting certain environmental requirements?

<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
-----------------------------------------	--------------------------------	----------------------------------	-----------------------------------	--------------------------------------------

Q9: Do you support imposing licensing requirement on recycling facilities for handling the waste plastics collected under the proposed PPRS?

<input type="checkbox"/> Strongly Support	<input type="checkbox"/> Support	<input type="checkbox"/> Neutral	<input type="checkbox"/> Oppose	<input type="checkbox"/> Strongly Oppose
-------------------------------------------	----------------------------------	----------------------------------	---------------------------------	------------------------------------------

Q10(a): Do you have any specific suggestion(s) on promoting eco-packaging design?

Q10(b): Do you have any other comments on the PPRS and other plastic-related issues?

-- Thank you for your views --

搵  少 啲

Dump Less

慳  多 啲

Save More

識  收

Recycle Right

