

Primary Packaging Annual Progress Report 2021

Swire Coca-Cola Ltd.

Date: May 2022



Goals of [World Without Waste](#) by The Coca-Cola Company:

Make our packaging 100% recyclable by 2025

Use 50% recycled material in our bottles and cans by 2030

Aim to collect and recycle a bottle or can for everyone we sell by 2030



2021 DETAILS ON PRIMARY PACKAGINGS

CHINESE MAINLAND

	Is it technically recyclable?	Percent of recycled content	Collection & recovery rates	Is there domestic recycling infrastructure?	Is it exported for recycling?
Returnable Glass Bottle (RGB)	Yes	35%	95%	Yes	No
Non-returnable Glass Bottle	Yes	30%	25% [2]	Partial	No
PET (Water)	Yes	0%	95% [1]	Yes	No
PET (Rest)	Yes	0%	95%	Yes	No
Carboy (PC)	Yes	0%	95%	Yes	No
Aseptic fibre pack	Partial	0%	10% [2]	Partial	No
Tin	Yes	0%	0%	No	No
Aluminium Can	Yes	9.6% [3]	99% [2]	Yes	No
Post mix BIB	No	0%	0%	No	No
Pouch	Not sold in Chinese Mainland				

Material changes versus 2020

Note:

- The loss in collection and recovery of Returnable Glass Bottle (RGB) and Carboys is due to breakage, unacceptable scuffing or loss by customer.
- RGBs percentage of recycled content is the figure for cullet in our system, whereas Non-returnable Glass Bottle (NGB) is the figure for the industry average in Chinese Mainland.
- NGBs are given to a glass recycler who crushes it. After crushing, the cullet is used in one of three ways:
 - As a casting flux for smelting cast steel and copper alloys, covering the molten metal to prevent oxidation;
 - is pre-processed, melted and recycled to produce glass containers, glass fibres and other glass materials; or
 - is used as a raw material to make glass products, because adding cullet in appropriate amounts helps glass to melt at a lower temperature.
- Cullet is popular because the cost of washing and sterilising RGBs is similar to producing new bottles.
- Food grade packaging in the Chinese Mainland today cannot contain recycled PET.
- Carboys in the Chinese Mainland are made from polycarbonate plastic (PC) which is classified as type 7 plastic.
- After collection, aluminium cans are used in four ways:
 - Un-standard die-casting aluminium (45%);
 - Un-standard extrusion (27%);
 - Un-standard rolling aluminium plate (20%); and
 - Other – deoxidising agent in steel mills (8%).
- We do not produce or sell products packaged in pouches.
- The world's most sophisticated deposit systems with EPR mechanisms only achieve 80-90% collection rates, so we question the accuracy of the PET and aluminium can recovery rate data.

[1] Collection and recovery rates taken from China Beverages Industry Association (CBIA).

[2] Collection and recovery rates taken from China Resources Recycling Association (CRRA).

[3] The recycled aluminium is from scrap from the manufacturing process, and not from post-consumer Used Beverage Cans (UBC).

2021 DETAILS ON PRIMARY PACKAGINGS

HONG KONG SAR

	Is it technically recyclable?	Percent of recycled content	Collection & recovery rates	Is there domestic recycling infrastructure?	Is it exported for recycling?
Returnable Glass Bottle (RGB)	Yes	0%	N/A [8]	Partial	Yes
Non-returnable Glass Bottle	Not sold in the Hong Kong SAR				
PET (Water)	Yes	100% (except for 4.8L and 5L)	15%	No	No
PET (Rest)	Yes	25% [4]	15% [5]	No	No
Carboy (PC)	Yes	0%	95%	Yes [6]	No
Aseptic fibre pack	Partial	0%	0%	Partial [7]	No
Tin	Yes	0%	0%	No	Yes
Aluminium Can	Yes	0% [1]	17.8% [2]	No	Yes
Post mix BIB	No	0%	0%	No	-
Pouch [3]	No	0%	0%	No	N/A

Material changes versus 2020

Note:

- The loss in collection and recovery of RGB and Carboy is due to breakage, unacceptable scuffing or loss by customer.
 - With the implementation of Operation National Sword on January 1, 2018, the Hong Kong SAR can no longer export baled PET to Chinese Mainland.
 - Combibloc, one of the brands of aseptic fibre pack, is FSC approved in the Hong Kong SAR.
 - According to the [New Life Plastic Limited](#) collection volumes collected through the Baggio Green Group's rPlastics Company.
 - RGBs are given to a glass recycler who crushes it. The glass is not part of a closed loop, but is down-cycled. The new ultra RGB is light weighted and contains approximately 60% of recycled content. Except for Coca-Cola and Coca-Cola No Sugar, all other flavours use a generic design to optimise reuse operations and stocking. Only clear glass bottles are used to enhance potential recycling value.
- [1] Recycled aluminium content fell from 50-60% to 0% due to a change in can supplier in 2019.
- [2] This figure is an estimate based on our own investigations into recovery rates for aluminium cans (for both soft drinks and alcoholic drinks) in the Hong Kong SAR.
- [3] The pouch as a primary packaging will be phased out by 2022 as it is not technically recyclable.
- [4] Carbonated beverage in 600ml sizes and below only.
- [5] Based on New Life Plastic Limited collection volumes collected through the Baggio Green Group's rPlastics Company.
- [6] Used carboy (PC) is sent to Kingway Development HK Limited through our contract cleaner.
- [7] [Mil Mil](#) is a recycler for aseptic fibre packs, but due to their stipulations around Collection (the packs must be cut open, washed and dried), very little post-consumer aseptic fibre packs actually get recycled.
- [8] The returnable glass bottles production line was decommissioned in Q2 2021 and all the returnable glass bottles collected from the market were recycled by Government-appointed glass management contractor.

PET COLOURATION AND LABEL SIZE

Aquarius 500ml

Existing Packaging



Aseptic New Packaging



Full label wrap to
half label wrap

Schweppes Sparkling Water



The only coloured
PET packaging
remaining in the
Hong Kong SAR

2021 DETAILS ON PRIMARY PACKAGINGS

TAIWAN REGION

	Is it technically recyclable?	Percent of recycled content	Collection & recovery rates (1)	Is there domestic recycling infrastructure?	Is it exported for recycling?
Returnable Glass Bottle (RGB)	Yes	25%	83%	Yes	No
PET (Water)	Yes	0%	94%	Yes	No
PET (Rest)	Yes	0%	94%	Yes	No
Carboy	Not sold in the Taiwan Region				
Aseptic fibre pack	Partial	0%	64%	Yes	No
Tin	Not sold in the Taiwan Region				
Aluminium Can	Yes	0%	73%	Yes	No
Post mix BIB	No	0%	73%	No	No
Pouch	Not sold in the Taiwan Region				

Material changes versus 2020

Note:

- The loss in collection and recovery in RGB is due to breakage, unacceptable scuffing or loss by customer.
- Food grade packaging laws prohibit the use of recycled materials in the Taiwan Region.
- The Taiwan Region does not produce or sell products packaged in pouches.
- In 2021, the business moved from the Ultra RGB to the new Ultra RGB. The new Ultra RGB is lighter (New Coke contour has gone from 369g to 240g; new Nordic bottle has gone from 275g -380g to 240g) but unfortunately the recycled content has fallen from 55% to 25%.

(1) Collection and recovery rates are calculated based on 2020 data from the Taiwan Environmental Protection Administration (EPA) using the formula "recycling volume/ generation volume". Official waste containers' recycling rate from January to October 2021 was 86.9%, yet generation volume breakdown was not available by the time this report was prepared. The same data source was utilised for 2019 data in the 2020 report.

2021 DETAILS ON PRIMARY PACKAGINGS

U.S.

	Is it technically recyclable?	Percent of recycled content	Collection & recovery rates	Is there domestic recycling infrastructure?	Is it exported for recycling?
Returnable Glass Bottle (RGB)	Not sold in the U.S.				
Non-returnable Glass Bottle	Yes	26%	40%	Varies by State	Unknown
PET (Water)	Yes	0% [3]	30%	Varies by State	No
PET (Rest)	-	14.7% [1]	30%	-	-
Carboy	Not sold in the U.S.				
Aseptic fibre pack	Partial	0%	0%	No	No
Tin	Not sold in the U.S.				
Aluminium Can	Yes	72% [2]	49%	Varies by State	No
Post mix BIB	No	0%	0%	No	No
Pouch	Not sold in the U.S.				

☐ Material changes versus 2020

Note:

- The loss in collection and recovery in RGB is due to breakage, unacceptable scuffing or loss by customer.
 - We do not manufacture glass packaging but we do sell NGBs.
 - Coca-Cola Beverage Sales and Service (CCBSS) is the source for recycled content.
 - [Western Container Corporation](#) (WCC) is the source for recycled content of PET.
 - American Beverage Association (ABA) is the source for the recovery percentage (U.S. average).
 - We do not produce or sell products packaged in pouches.
 - In the U.S., carboys, tin and pouches are not used as primary packaging.
- [1] rPET decreased from 25% in 2020 to 14.7% in 2021, as there was a mechanical failure at one of the resin suppliers during October 2021.
- [2] Information taken from CCBSS.
- [3] In 2021, all Niagara case pack water was manufactured by an external party, and zero rPET or PlantPET was used.

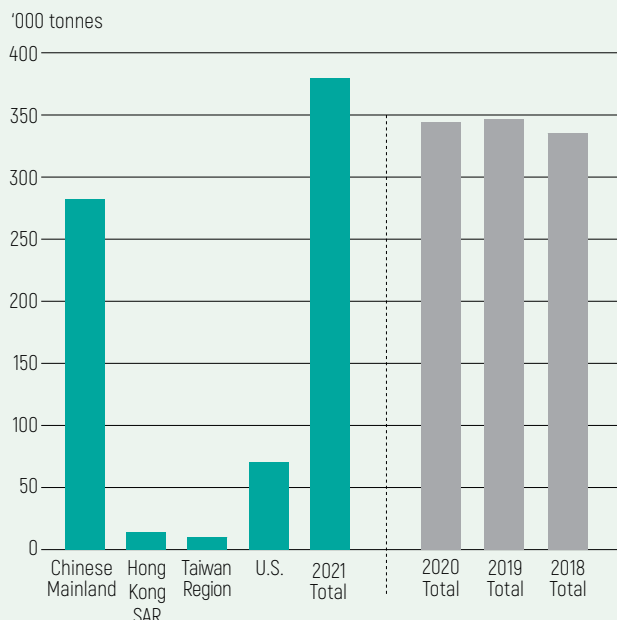
Niagara case-pack water



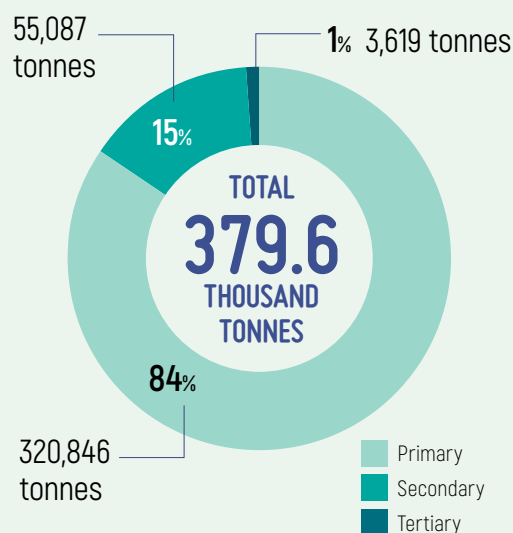
2021 DETAILS ON PRIMARY PACKAGINGS

PACKAGING BY MARKET, TYPE AND WEIGHT

TOTAL PACKAGING BY MARKET 2021

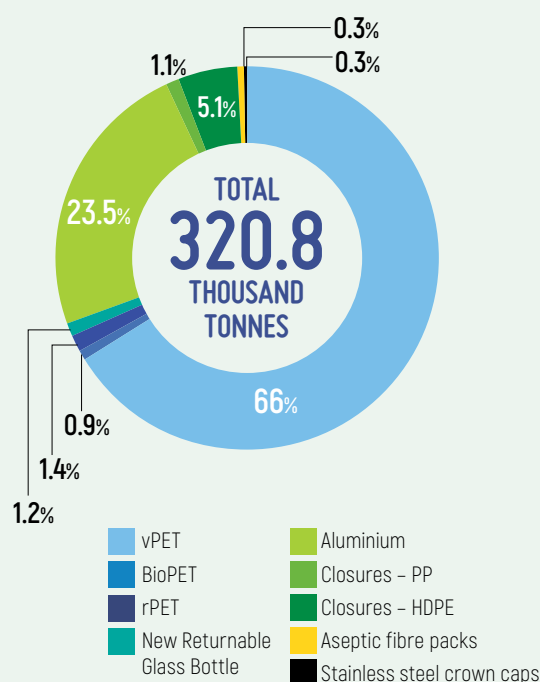
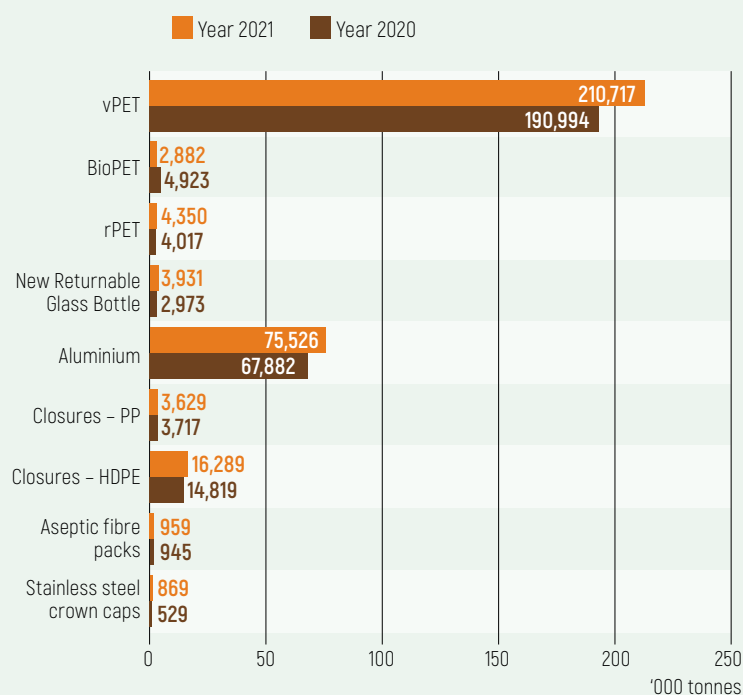


WEIGHT OF PACKAGING PRODUCED BY CATEGORY 2021



Note: Primary packaging contains 10% recycled content – this refers to rAL in U.S. and Chinese Mainland, rPET in Hong Kong SAR and U.S., and recycled content of returnable glass bottles in Taiwan Region and Chinese Mainland.

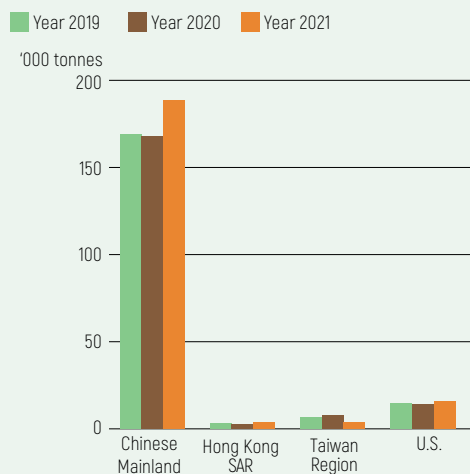
MATERIALS USED FOR PRIMARY PACKAGING AND BREAKDOWN BY TYPE AND WEIGHT



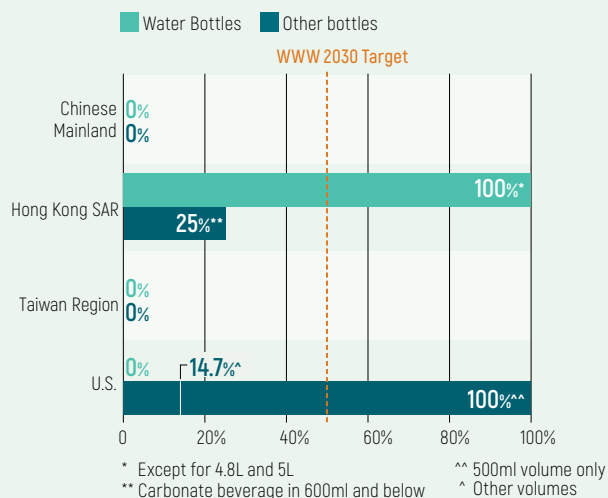
2021 DETAILS ON PRIMARY PACKAGINGS

SNAPSHOT: PET

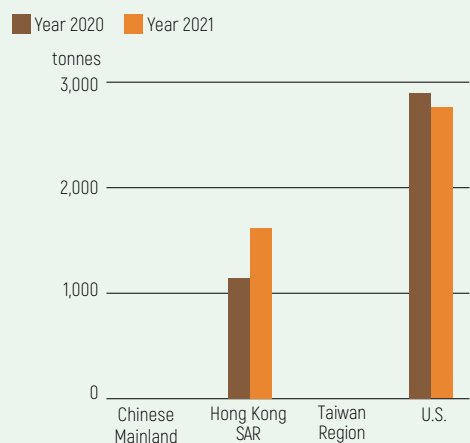
vPET RESIN CONSUMPTION BY MARKET



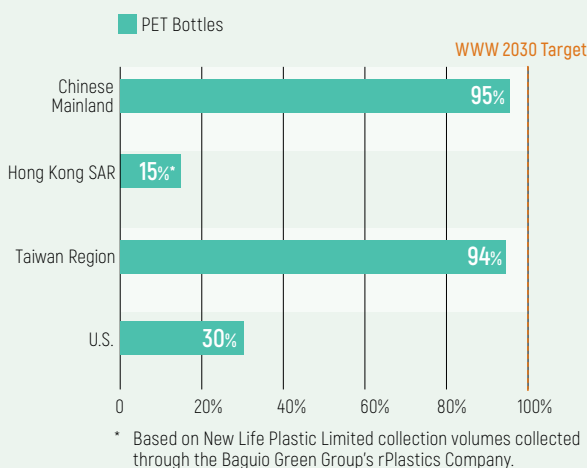
rPET CONTENT BY MARKET



rPET RESIN CONSUMPTION BY MARKET

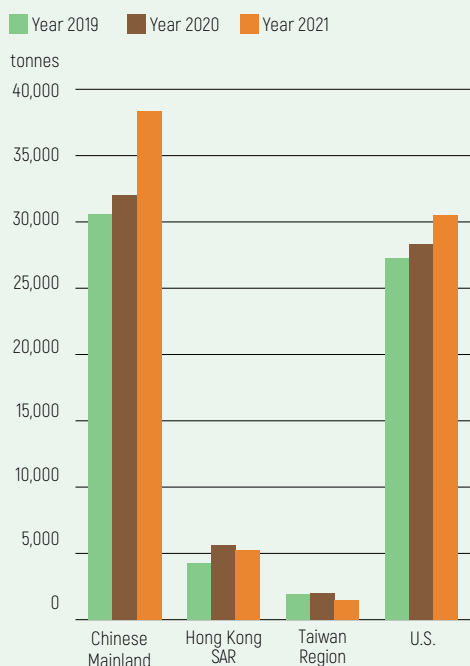


PET COLLECTION RATE BY MARKET

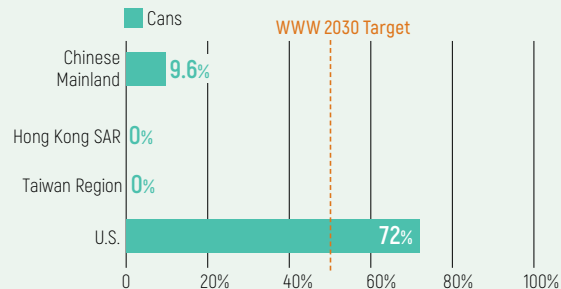


SNAPSHOT: ALUMINIUM

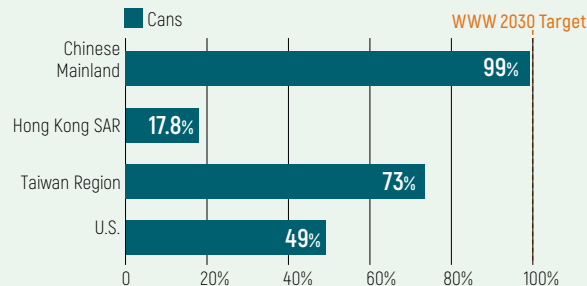
CONSUMPTION BY MARKET



RECYCLED CONTENT BY MARKET



COLLECTION RATE BY MARKET



DETAILS ON THE SPECIFICS OF HOW THE COLLECTION AND RECYCLING SYSTEMS WORK BY MARKET

CHINESE MAINLAND

Currently the Chinese Mainland does not have a standardised EPR legislation covering the country. Driven by the intrinsic value of recyclable materials, informal and formal sectors pull waste which is considered to be recyclable from the municipal solid waste stream.

However, there is a transition from the informal to the formal handling of municipal solid waste (MSW) across the country. In November 2020, the National Development and Reform Commission (NDRC) and Ministry of Housing and Urban-Rural Development (MOHURD) of the People's Republic of China issued instructions around a domestic garbage separation scheme. The document states that the first batch of 46 pilot cities including province-level municipalities, provincial capitals and cities specifically designated in the state plan, will roll-out compulsory domestic garbage separation schemes. The document then states that in a further five years, it expects domestic garbage separation, collection, transportation and treatment systems at other prefectural-level cities to be established.

Looking forwards and referencing the 14th five-year plan, one chapter is dedicated to "Promote Green development, stimulate harmonisation of human being and nature" (推动绿色发展, 促进人与自然和谐共生). This chapter addresses "Promoting garbage sorting and separation measures, embrace overall reduction of waste and to develop recycling infrastructure" (推行垃圾分类和减量化、资源化. 加快构建废旧物资循环利用体系). All this seems to indicate further macro-forces which will greatly help get more and more primary packagings collected and professionally recycled.

The current landscape for the recycling of primary packaging is as follows:

- Recycling infrastructure for PET (mechanical recycling where the recycled PET (rPET) flake and or pellet is the end product) is common and often done on large scale (100,000tpa plants) with modern equipment. This rPET flake or pellet tends to go to garment manufacturers in-country as polyester feedstock.
- Glass is generally crushed into cullet and used in-country in further glass manufacturing and or as a casting flux in some types of metal production.
- Used beverage cans (UBC), made from aluminium, tend to be crushed, baled and sent to in-country aluminium smelters, where the recycled aluminium tends to be re-worked into aluminium products for the domestic car industry.
- High-density polyethylene (HDPE), like PET fits into a well-established in-country mechanical recycling network. The recycled HDPE (rHDPE) pellets are then re-worked into a number of new non-food grade HDPE manufactured products.
- Paper and cardboard go to well established paper recyclers.

DETAILS ON THE SPECIFICS OF HOW THE COLLECTION AND RECYCLING SYSTEMS WORK BY MARKET

HONG KONG SAR

The MSW in the Hong Kong SAR largely goes to two landfills via a network of transfer stations which further compact the MSW leading to a more efficient haulage of waste. The Hong Kong SAR has no wet or dry Material Recovery Facilities (MRFs), meaning any recyclables which are pulled from the waste stream is done due to their intrinsic value and or because of some of the programs mentioned below. Due to the Hong Kong SAR's size and the current waste infrastructure (focused on landfilling), little professional recycling capability exists. As such collection and recovery rates for primary packaging are low, and like all markets getting verifiable data in a timely manner on collection, recovery and recycling rates is challenging.

In 2013, the Environmental Protection Department (EPD) published a [Blueprint on the Government's waste strategy for 2013 to 2022](#). The blueprint was updated in early 2021 under the title of "[Waste Blueprint for Hong Kong 2035](#)". The document sets out vision of "Waste Reduction · Resources Circulation · Zero Landfill", the strategies, goals and measures to tackle the challenge of waste management up to 2035. More recently, the EPD released in 2021 the [Hong Kong's Climate Action Plan \(2050\)](#), setting out various strategies and actions to achieve carbon neutrality before 2050, including measures for waste reduction.

The [Producer Responsibility Scheme](#) (PRS) in Hong Kong is a key policy tool in Hong Kong's waste management strategy. Enshrining the principle of "polluter pays" and the element of "eco-responsibility", the PRS concept requires relevant stakeholders including manufacturers, importers, wholesalers, retailers and consumers to share the responsibility for the collection, recycling, treatment and disposal of end-of-life products with a view to avoiding and reducing the environmental impacts caused by such products at the post-consumer stage.

To date, the Hong Kong SAR has a PRS for plastic bags; a PRS on an array of electronic goods (fridges, TV's, washing machines etc.); an incomplete PRS on glass bottles (subsidiary legislation drafted by the EPD was submitted to the Legislative Council for a period of time, but in 2021, the Legislative Council has yet to approve); and a possible disincentive under a MSW landfill tipping fee (in 2021, the Bureau stated that the MSW charging effective date will be discussed by the new Legislative Council). There is at least a 18-month preparatory period to prepare for the implementation of the MSW after the Legislative Council approved the MSW charging bill, hence this disincentive is possibly years away from being effective); an external consultation process which was conducted in early 2021, which sought views on how a PRS would work on beverage plastic bottles ([PPRS](#)), has findings to date have yet to be presented to the Legislative Council; and lastly the EPD is running a pilot with 60 Reverse Vending Machines, which in 2022 will be taken up to more than 120.

Outside of this the EPD now runs the Three Colour Bin system (approximately 2,660 in total, located on street pavements and only for paper and plastic bottles), and will at some stage take on responsibility for all waste collection from the RCPs and a number of Community Recycling Centers (from FEHD) – but even after this sensible re-organisation, volumes of post-consumer primary packaging generated from these programs is low with high contamination.

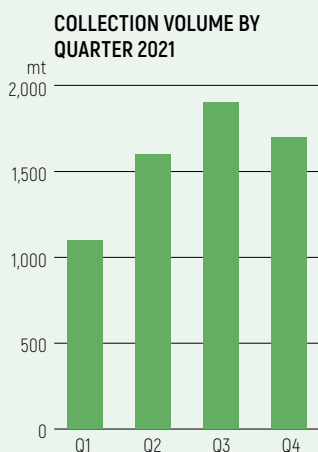
That being said, a professional PET and HDPE recycling plant ([New Life Plastics Limited](#)) is being built in Tuen Mun at the EcoPark, and is due to commence operations in late 2022. This company should provide some accurate data in regards to collected and recycled post-consumer PET. Swire Coca-Cola holds a 33% equal share in this business.

PLASTIC BOTTLES COLLECTION IN 2021

Plastic bottles collected equates to 6,200 tons (40,000 PET bottles a ton), however, the volume is a mix of PET and HDPE in an unknown ratio.

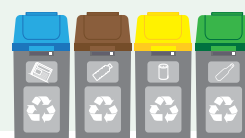
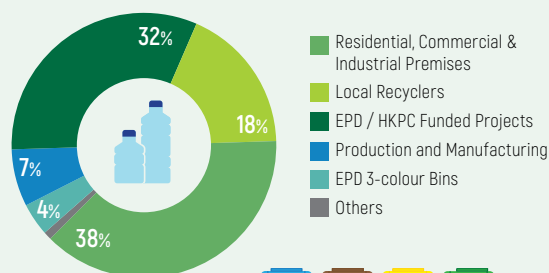
The Hong Kong SAR PET collection rate in 2021 is approximately 15%, based on the consumption of 5.5mn PET bottles per day.

This data was collected by Baguio Green Group on behalf of NLP.



COLLECTION BREAKDOWN BY CATEGORIES

99% of plastic bottles collection is contributed by 5 major categories



DETAILS ON THE SPECIFICS OF HOW THE COLLECTION AND RECYCLING SYSTEMS WORK BY MARKET

TAIWAN REGION

In the Taiwan Region, the management of MSW falls under an umbrella of legislation which focuses on incentives, charges and fines, which result in influencing behaviour to deliver high collection, recovery and recycling rates for soft drink primary packagings – and many other recyclables.

Glass, paper, cardboard, metal cans and plastics are collected in a single waste stream. Individuals bring their recyclable items to public recycling trucks or to the recycle collectors (free of charge), while general waste requires individuals to pay under the Pay As You Throw (PAYT) scheme. Citizens failing to comply with mandatory waste separation for a second time face penalties of over NT\$ 1,200–6,000 (US\$ 40–200).

The EPR scheme is led by the Government. Producers and Importers putting packaging into the market pay contributions (every 2 months) directly to the Government-led Central Recycling

Fund, which is managed by the Environmental Protection Administration (EPA). This Fund then supports the collection and recycling infrastructure, which survives from this EPA funding and the proceeds from selling of the processed recyclables. The recycling infrastructure across the Taiwan Region is owned by a number of different recycling companies.

Industry is involved in the determination of the contribution (recycling levy) through their participation in the multi-stakeholder Fee Rate Review Committee.

As an example the PAYT scheme in Taipei including New Taipei City (since 2000) requires residents to purchase designated garbage bags (3L = NT\$ 21 for 20 bags) for waste disposal while incentivising the source separation of recyclable materials, as these are exempt from this obligation.

The current Government subsidies to recycling plants for different materials is shown as below:

Kg	Government subsidy (NT\$)
AL	1
Glass	2.1
Tetra/Combi	7.25
PET	4.5

Source: Laws & Regulations Database of The Republic of China
<https://law.moj.gov.tw/LawClass/LawAll.aspx?pcode=00050014>

Below are the recycling amounts paid to the EPA by different material:

Recycling

PET bottles	NT\$ 8.50/kg
Steel cans	NT\$ 1.64/kg
Aluminium cans	NT\$ 1.00/kg
Glass bottles	NT\$ 2.00/kg
Aseptic paper packs	NT\$ 6.42/kg

Other containers

Formed polystyrene (PS)	NT\$ 69.83/kg
PS	NT\$ 11.64/kg
Polyvinyl chloride (PVC)	NT\$ 87.00/kg
Polypropylene (PP) / Polyethylene (PE)	NT\$ 7.00/kg
Paper / Fibers	NT\$ 6.00/kg

DETAILS ON THE SPECIFICS OF HOW THE COLLECTION AND RECYCLING SYSTEMS WORK BY MARKET

U.S.

Currently the U.S. does not have standardised EPR legislation covering the country. Each State tends to manage its MSW in a different way. Generally the country is landfill-focused with poor collection systems feeding an assortment of MRFs which vary in quality. Although the EPA in the U.S. calculates the national recycling rate for different materials (including packagings) on an annual basis, the market is lacking a reliable ability to compare the recycling rates of a common set of containers and packaging materials (CCPM) within or across all states due to conflicting measurement methodologies¹.

The market for recyclables tends to be driven by the pricing of paper and cardboard, which dominates the volumes of recyclables being managed. In the past two years, the prices for recyclables have had a turbulent time due to Operation National Sword by the Chinese Mainland and now the [Basel Convention](#), so the export driven market has fundamentally changed.

Only one State in which we operate (Oregon) has a Deposit Return System (DRS) for USD 0.10 per container. The [Oregon Beverage Recycling Cooperative](#) (ORBC) operates this DRS and has branded it as BottleDrop®. In Washington State there is some collection curb side and collection tends to be dominated by the trash haulers with mild success in collecting meaningful volumes of quality recyclables, including post-consumer primary packaging of soft drinks in urban areas, and very limited success in more rural areas of the State.

Recycling infrastructure for PET (mechanical recycling where the rPET flake and or pellet is the end product) is not well established across the country (same applies to HDPE), but there does seem to be greater impetus today for plants getting funding for operations due to greater awareness of the issue, the increasing demand for rPET, and the need for fast-moving consumer goods companies to demonstrate their transition from linear to circular models of operations.

Glass when it is separated, is recycled by the glass foundries.

UBC tends to be crushed, baled and sent to the aluminium smelters (i.e. Novellis in Kentucky), where the recycled aluminium tends to be re-worked back into sheet for the re-manufacturing of soft drink and beer aluminium cans.

Paper and cardboard are largely exported with some volume going to well established State side paper recyclers.

Looking forwards it would seem that certain States – for example Washington and Colorado are looking to write legislation around EPR and DRSs going forwards, but the speed as to which these will occur is unknown.

1. Environmental Protection Agency. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management>

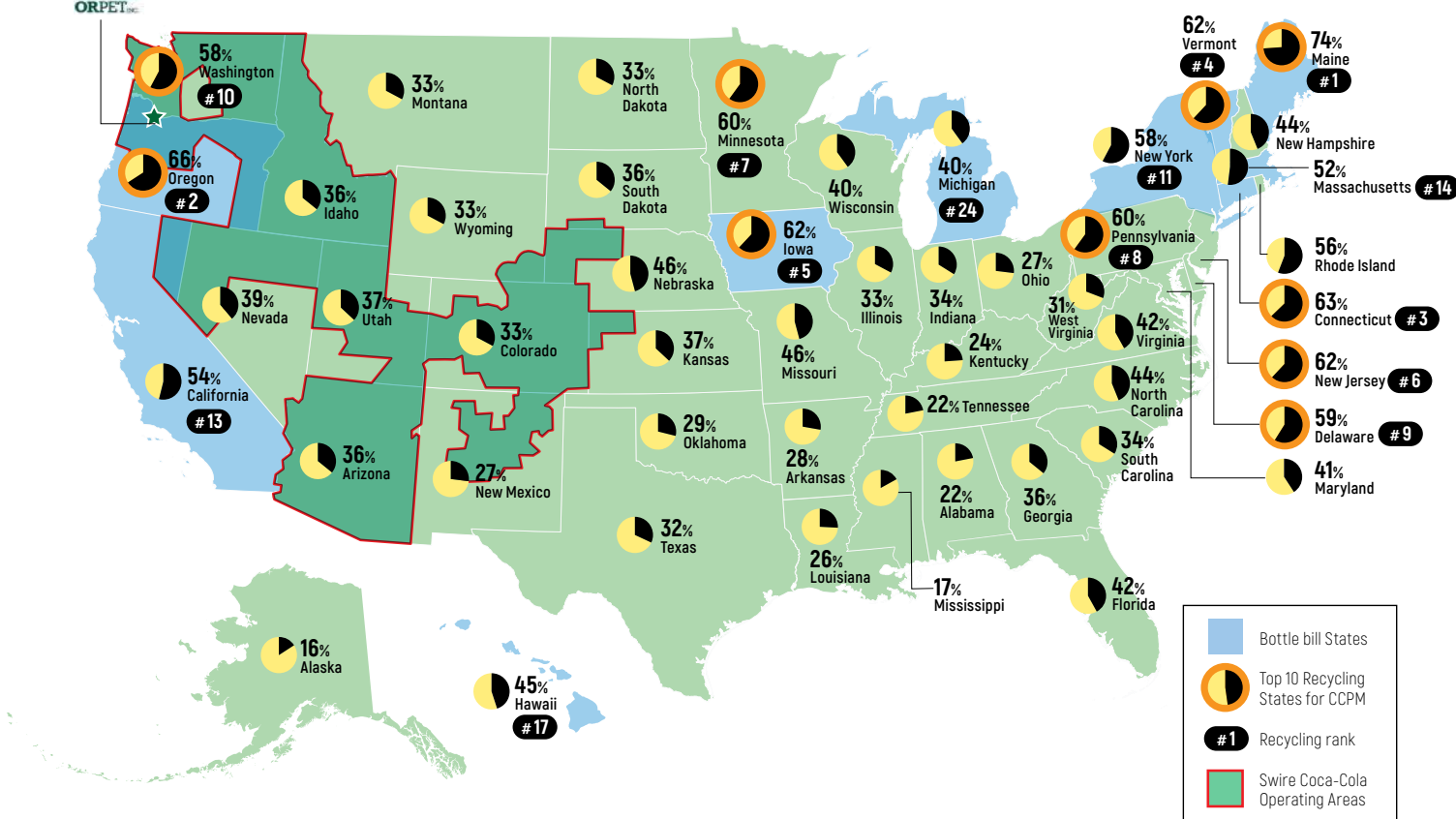
STATE-BY-STATE OVERVIEW OF COMMON CONTAINERS AND PACKAGING MATERIALS COLLECTION RATES LISTED ACCORDING TO CCPM RECYCLING RANK

Source: Eunomia, The 50 States of Recycling. <https://www.eunomia.co.uk/measuring-packaging-recycling-rates-across-the-us/>

eunomia | STATE OF THE STATES



ORPET, Inc. (PET recycler)



	Recycling rate*	Bottle bill	Recycling legislation
Maine	72%	✓ Yes	✗ No
Vermont	62%	✓ Yes	✓ Yes
Massachusetts	55%	✓ Yes	✗ No
Oregon**	55%	✓ Yes	✗ No
Connecticut	52%	✓ Yes	✗ No
New York	51%	✓ Yes	✗ No
Minnesota	49%	✗ No	✗ No
Michigan	48%	✓ Yes	✗ No
New Jersey	46%	✗ No	✗ No
Iowa	44%	✓ Yes	✗ No

* Recycling rates include glass to aggregate and landfill cover.

** In Oregon, where we operate, has a DSR in place.

Takeaway from Eunomia:

A Deposit Return System (DRS) for beverage containers is necessary to achieve CCPM recycling rates greater than 70%. Policy that requires a DRS delivered under the principles of target-based EPR, either as a standard policy or part of wider EPR policy for all packaging and paper products, will deliver the highest recycling rates.