



PRACTICAL GUIDES ON PACKAGING REDUCTION AND MANAGEMENT



BEVERAGE MANUFACTURING SECTOR

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About this Guide



Image credit: Alamy

The importance of packaging is multi-faceted. From containing and protecting the products at the point of manufacturing and all the way through the supply chain to the retail stores, service providers or customers, as well as attracting people to purchase a product and providing product information, packaging has been playing an indispensable role in business activities and our daily lives.

Yet, many of these packaging are intended to be used only once or a limited number of times before disposal. In Hong Kong, environmental problems caused by excessive packaging using different materials have been a growing concern. With raising public awareness in environmental protection, **customers are demanding more for products with simpler or less packaging.** Therefore, it is high time to rethink how we could **balance various environmental criteria of product packaging with other functional and commercial considerations** and look at ways of tackling the problem of excessive packaging and reducing the amount of materials we are using to strive towards the goal of carbon neutrality and achieving sustainability.



Image credit: Foodmanufacture



Image credit: Peconicbeverage

In May 2013, the former Environment Bureau (now known as Environment and Ecology Bureau) unveiled “Hong Kong: Blueprint for Sustainable Use of Resources 2013 – 2022”, **promulgating the vision of “Use Less, Waste Less”** through various initiatives in policies and legislation, social mobilisation and investing in infrastructure with a view to tackling waste challenges from a resources circulation perspective.



Building on the blueprint released in 2013 and the momentum of previous efforts in waste reduction and recycling, the former Environment Bureau further announced the “Waste Blueprint for Hong Kong 2035” in February 2021, **putting forward a more aggressive vision of “Waste Reduction • Resources Circulation • Zero Landfill”**.

Apart from Hong Kong China, other countries/ regions are also working in unanimous efforts in recent years to promote waste reduction, in particular on packaging management. Examples include:

Austria

Introducing binding targets for refillable beverage packaging in November 2020. Within the national waste management law, binding quotas were set for the proportion of reusable packaging sold in retail, starting with a requirement of 25% in 2025 to at least 30% by 2030.

Chile

Introducing Plastic Regulation Bill in 2021, requiring at least 30% of bottled drinks in supermarkets must come in reusable bottles.

European Union (EU)

Requiring member states to provide data on packaging waste generation and recovery since 1994 (latest amendment in 2018), and to comply with essential requirements for all packaging placed on the EU market, for the sake of regulating the responsibility of the producer for packaging materials and cutting down on packaging waste.

France

Adopting Waste Prevention Legislation in December 2019 to promote bulk and reusable packaging. Beverage sellers are required to provide a preferential price for consumers who bring their own containers. Also, the target of 10% reused packaging should be achieved by 2027.

Germany

Implementing a deposit return scheme (DRS) scheme since 2003, it was further achieved in 2019 to mandate the take-back of single-use and reusable containers for all retailers. It helped Germany reach an 82% recycling rate for all packaging.

Norway

Introducing DRS since the early 2000s, the recovery rate of plastic drink bottles has reached over 90%.

Chinese Mainland

Introducing “Opinions on Further Strengthening the Management of Plastic Pollution” in 2020. Plastic products manufacturers are encouraged to adopt green and environmentally friendly materials, increase the use of recycled plastic, and strengthen research and development relating to recyclables and easy-to-recycle product.

To support the vision and in view of the waste challenge in Hong Kong, it is imperative for the Government, businesses, and the general public to **join forces and work together in the pursuit of simple packaging, waste reduction at source, and promulgating green business and consumption.**

Packaging is part and parcel of the operation of the beverage manufacturing industry. Proper packaging protects products from damage and facilitates handling of the products during storage and transit before arriving at the hands of end consumers. Nonetheless, there is a higher expectation of consumers and society in environmental aspects regarding the current approach to packaging being practised by the beverage manufacturing sector. The common packaging uses among beverage manufacturing sector include single-use plastics for beverage container, label and stretch film, etc. Without due consideration on the impact of some products on the supply chain ecosystem, the use of unnecessary **packaging has driven up packaging costs and created inefficiencies in the downstream supply chain.**

As most beverage products sold at physical stores/ online would have to go through the supply chain before reaching the hands of customers, beverage manufacturing sector can play a key role in waste reduction in packaging design and various processes. It is very crucial for beverage manufacturing sector to **reconsider the necessity of different packaging and avoid non-essential packaging, by optimising packaging design through innovative ideas and technology.** In addition, reducing the use of raw materials and making use of recycled, durable, or reusable materials in packaging can help towards reducing a company's carbon footprint.



How to use this guide?

- + This guide provides practical tips to trade practitioners of the beverage manufacturing industry on **how to avoid and reduce packaging consumption and achieve sustainable packaging management in their daily operations.**
- + This guide also offers guidance and reference, with tailor-made templates, for beverage manufacturing companies to prepare packaging reporting and **disclose packaging data in a harmonised structure so as to identify areas of improvement beyond their current practices.** This is in response to the requirements of the Hong Kong Exchanges and Clearing Limited (HKEX) on the Environmental, Social, and Governance Report (ESG Report) of the listed companies for financial years commencing on or after 1 July 2020.
- + With this guide, trade practitioners should be able to have a general picture on the sustainable packaging trend in both Hong Kong China and other places . To get geared up as a responsible company with sustainability placed at the heart of business, trade practitioners should grasp the opportunities to put in place meaningful packaging reduction and management measures. **While demonstrating the corporate commitment to social responsibility, it would help trade practitioners in capturing business opportunities and at the same time safeguarding and enhancing the wellbeing of both the customers and society.**

- + **Packaging:** Any products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer. Packaging mainly comprises primary packaging, secondary packaging, tertiary packaging and service packaging.
- + **Primary packaging:** Packaging conceived so as to constitute a sales unit to the final user or consumer at the point of purchase.
- + **Secondary packaging:** Packaging conceived so as to constitute at the point of purchase a grouping of a certain number of sales units whether the latter is sold as such to the final user or consumer or whether it serves only as a means to replenish the shelves at the point of sale. It can be removed from the product without affecting its characteristics.
- + **Tertiary packaging:** Packaging conceived so as to facilitate handling and transport of a number of sales units or grouped packaging in order to prevent damage during physical handling and transportation.
- + **Service packaging:** Packaging conceived so as to facilitate the delivery of sales units and for the containment of sales units at point of sale.
- + **Packaging waste:** Any packaging or packaging materials that the holder disposes of.
- + **Biodegradable:** Any materials that will decompose back to its basic elements (e.g. water, carbon dioxide and biomass) through the action of micro-organisms over time.
- + **Compostable plastics:** A subset of biodegradable plastics, defined by the standard conditions and timeframe under which they will biodegrade.

Scope and Classifications of Packaging

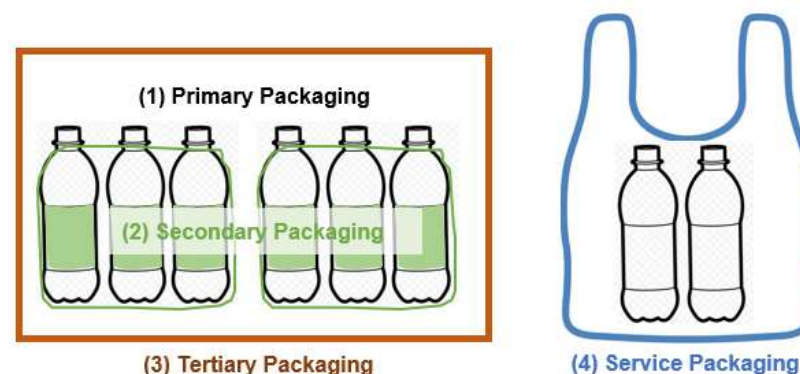
in Beverage Manufacturing Sector

With reference to the common definitions of “packaging” adopted worldwide, the forms of packaging can be classified into 4 broad types, namely, primary, secondary, tertiary and service packaging. These 4 levels of packaging form are categorised by the use and purpose of the packaging.

There are different kinds of packaging materials used by beverage manufacturing sector in Hong Kong. The packaging helps maintain the product quality and integrity and facilitates the handling of the product in an efficient manner. **Plastics, beverage cartons, metal and glass are the most commonly found packaging materials** being used by beverage manufacturing sector during transportation and storage of goods as they are economical, light weighed, versatile, and protective in nature.

Before a beverage product reaches the end consumer, packaging of different types may be applied to it for various purposes in the course of beverage manufacturing and distribution. These packaging generally include:

- **(1) primary packaging** such as plastic bottles, glass bottles, aluminium cans, beverage cartons, etc.
- **(2) secondary packaging** such as paperboard, shrink wrap, labels, etc.
- **(3) tertiary packaging** such as plastic stretch film, carton boxes, plastic crates, etc.
- **(4) service packaging** such as plastic bags, paper bags, etc.



The Producer Responsibility Schemes (PRSS) on Glass Beverage Containers has been fully implemented on 1 May 2023 and the Environmental Protection Department is also working on the PRS on Plastic Beverage Containers and Beverage Cartons progressively. These methods are anticipated to create a circular economy and to provide practicable solutions in source separation, collection logistics, proper treatment and recovery outlets for these primary packaging.

While the aforementioned trade-specific packaging serves important functions from beverage manufacturing perspectives, adopting suitable green business practices would be an effective mean in reducing the generation of packaging waste at source.

This practical guide aims to enhance public education and offer tips to the trade practitioners of the beverage manufacturing industry on the prevention, reduction, reuse and recovery of packaging, with a view to facilitating the integration of the corporate ESG goals into their businesses.

The following shows examples of different types of packaging generated by the beverage manufacturing industry:

/ paper

Beverage manufacturing sector often use **corrugated paper boxes for packing of individual products** to facilitate storage, transportation, and distribution. When the corrugated paper boxes could no longer be used or reused, they would usually be collected for recycling due to their high recycling value.

Example: Corrugated paper box, cardboard, straw



Ease of recycling: HIGH



Environmental impacts

Manufacturing of paper may cause deforestation, high energy consumption that leads to high carbon emissions, wastewater discharge that leads to water pollution.

/ plastics

Plastic packaging is often **single-used**. Beverage manufacturing sector use plastic packaging to cover and protect goods because it is lightweight and water resistant. Whenever possible, plastic packaging should be arranged for proper recycling.



PET

Polyethylene terephthalate

Example: Beverage container



Ease of recycling: HIGH



Image credit: Petainer



PE-HD

High Density Polyethylene

Example: Milk jug, plastic crate



Ease of recycling: HIGH



Image credit: Lusdatuac



PE-LD

Low Density Polyethylene

Example: T-shirt bag, shrink film



Ease of recycling: MEDIUM



Image credit: Gertex Solutions



PP

Polypropylene

Example: Bottle cap, beverage label, straw



Ease of recycling: MEDIUM



Images credit: Indiamart



PS

Polystyrene

Example: Bottle of probiotic milk beverage, wine post pack



Ease of recycling: LOW



Image credit: Makingmum



(All other resin and multi-materials not otherwise defined) *

Example: Products made from polylactic acid plastic (PLA) and biodegradable plastic, etc.



Ease of recycling: LOW



Image credit: Alibaba

**Businesses should be cautious on the application of biodegradable plastics as their degradability and composability depend on specific conditions in practical environment. It is still premature to pursue biodegradable and compostable plastics as packaging alternatives at this stage, as they may eventually harm the wildlife and ecosystems if treated improperly without suitable recycling and treatment infrastructures. For such reason, while some other places' experiences of these application are cited in this Guide as reference, this has no implication on the suitability in the context of Hong Kong China.*



Environmental impacts:

Most plastics are made from fossil fuels. Extraction of fossil fuel may lead to deforestation or fossil fuel leakage, the process is energy-intensive that leads to high carbon emissions, marine and soil contamination caused by microplastics, burning of plastics leads to toxic substances and air pollutant emissions.

/ beverage carton

Beverage carton is commonly used for containing beverage including milk, juice, and preserved drink. There are two types of beverage carton namely shelf-stable cartons (usually Tetra Pak composed of polyethylene (PE), paperboard and aluminium) and refrigerated cartons (usually gable top containers composed of polyethylene (PE) and paperboard).

Example: Tetra-pak



Ease of recycling: MEDIUM



Images credit: Recyclopeda



Environmental impacts

Less decomposable in view of the composite nature of beverage carton and create burden on landfill if they are not properly recycled.

/ metal

Metal containers are commonly used for containing soft drinks. Other metal packaging includes crown caps and aluminium foils for glass bottles covering.

Example: Aluminium can, crown cap, aluminium foils



Ease of recycling: HIGH



Images credit: Aluminium today



Images credit: Berlin Packaging



Environmental impacts

Raw material mining may lead to deforestation, biodiversity loss or soil erosion, the processing is energy-intensive that leads to high carbon emissions.

/ glass

Glass container is one of the recyclable materials which is mostly used as primary packaging for alcoholic products.

Example: Wine bottle, beer bottle



Ease of recycling: HIGH



Image credit: Alibaba



Environmental impacts

When considering their contribution to climate change through energy use and damage from mining, the total environmental impact of glass container is much higher than that of plastic container if it is disposed of after a single use, which is a common phenomenon.

/ wood

Wood boxes are commonly used for containing multiple wine bottles. Pallets are used for **bulk transportation of boxes of products**. Boxes of the products are placed and stacked on the pallet, then wrapped to fix position to reduce damage.

Example: Wood box, wooden pallet



Ease of recycling: HIGH



Opportunity for reuse

Wooden pallet and other wooden packaging can be reused after basic repairment. At the end of their lifespan, most wooden packaging can be recycled as energy source through heating, landscape mulch, animal bedding, soil enhancement, wood particle board or pressed wood pallets.

/ composite

In the beverage manufacturing industry, there are several types of packaging items **made from composite materials**, such as drinking pouch composed of aluminium foil, PE and PET film.

Example: Drinking pouch



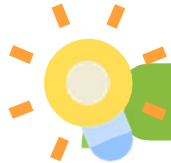
Ease of recycling: LOW



Environmental impacts

Burden on landfill due to low recyclability, other impacts depend on the materials composed of and could be similar to the impacts mentioned above.

Practical Tips for Achieving Sustainable Packaging



Waste management hierarchy in application

The “waste management hierarchy” is a globally recognised conceptual framework designed to guide and prioritise waste management decision and is a useful tool to consider different strategies for reducing packaging. Different levels of the hierarchy are interlinked and may affect each other and should not be viewed in isolation. **Measures moving up along the waste hierarchy would save costs, raw materials, natural resources and energy and reduce the overall impact on the environment.**



With reference to the waste management hierarchy, some practical tips for reducing packaging consumption and generation of packaging waste are set out below to assist beverage manufacturing sector in balancing the benefits amongst environmental protection, cost reduction, corporate image, as well as expectations from customers and other stakeholders. A summary checklist of practical tips is given in **Appendix 1**.

1 Prevention – Avoiding/ Eliminating non-essential packaging

For the high mobility nature of citizen's daily life in Hong Kong, it is usual to see the use of single-use packaging for water or beverage consumption. It is also common to see beverages with secondary packaging, such as multipack cling wrap, for the convenience of shelf management in retail shops and bulk purchases by customers. Though it may be convenient to use these single-use beverage containers and secondary packaging, it is a waste of our valuable materials and may also lead to higher costs and reputational damage considering that they are intended to be used only once before disposal. Thus, the leading players who are more resourceful in the beverage manufacturing sector are highly encouraged **to invest more resources in promoting bottle-free drinking initiatives for particular products and avoid the use of non-essential secondary packaging.**

Beverage manufacturing sector could actively seek opportunities to install beverage dispensers at places with high hydration needs, such as shopping malls and schools, to support the bring-your-own-bottle (BYOB) initiative. They could also explore the possibility of

developing innovative beverage do-it-yourself (DIY) platforms for domestic and workspaces applications, that allow customers to produce several servings of a beverage using only one or two bottles of concentrate and simple procedures.

With respect to secondary packaging, **beverage manufacturing sector are encouraged to consider implementing multi-buy promotions that align with green initiatives.** For example, companies could give customers the freedom to choose and combine their purchases at the same unit price, rather than offering pre-packaged multi-pack bundles for discounted prices. This approach not only eliminates the need for plastic in multi-packs, but also appeals to environmentally conscious customers who appreciate the flexibility of choosing their own product combinations. Additionally, this strategy can lead to increased sales growth for beverage products, particularly among loyal customers.

/ beverage manufacturing sector are suggested to promote bottle-free drinking initiatives for particular products and avoid the use of non-essential secondary packaging



Experience to learn

+ Hong Kong China

- A renowned bottled mineralised water manufacturer rolled out 300 water refill stations at locations such as parks, shopping malls, and schools across Hong Kong to support the 'Bring Your Own Bottle' initiative.



Image credit: Swire Coca-Cola

- A renowned bottled distilled water manufacturer promoted the use of water dispensers and carboys for over 160 events and avoided the use of 500,000 plastic bottles. They also set up water refill machines to reduce on-the-go consumption of bottle packaging for indoor events.



Images credit: Watsons Water

+ Japan

- A multinational beverage corporation piloted a project on installing self-serve dispensers for cold, hot, room temperature, and carbonated water supplies at renowned theme parks, with a view to encouraging the 'Bring Your Own Bottle' initiative.



Image credit: Nikkei Asia



Experience to learn

+ Japan

- A renowned retail company with sales of own-brand beverages business has launched the provision of water refilling stations at over 460 stores in Japan, anyone can use the refilling station freely with their own bottles. The company also started the sale of 'My Bottle for Water' to encourage the 'Bring Your Own Bottle' initiative, as well as launching a mobile application for the public to view the locations of water dispensaries and make water supply a fun part of daily life.



Images credit: Muji

- A renowned probiotic beverage manufacturer has ceased to provide straws with their beverage product since 2019.

+ Switzerland

- A multinational beverage manufacturer piloted reusable and refillable dispensers for soluble coffee at their shops to reduce single-use packaging. Customers could bring reusable containers to purchase soluble coffee, and product information such as ingredients and nutritional value could be accessed digitally.



Image credit: Nestle



Experience to learn

+ United Kingdom

- A multinational grocery and general merchandise retailer eliminated multipacks plastic completely for their own-brand drinks. Customers could simply pick up individual cans or bottles at the same price per unit as part of a multi-buy promotion. Instead of having to buy multiples of the same product designated by a multi-pack, customers could enjoy flexibility in mixing and matching their purchases. Around 45 million pieces of plastic were saved each year.



Image credit: TESCO

+ United States

- A multinational beverage corporation acquired a sparkling water producer and rolled out a new platform for delivering soft drinks without single-use plastic bottles at homes or workplaces. The platform offers a variety of flavours, carbonation, and temperature options that can be customised for every pour, with preferred drink settings saved in the mobile app for future pours. Every one bottle of concentrated flavour could make around 9 litres of drink, and is expected to fulfil around 23 servings.



Image credit: Sodastream

Through redesigning packaging, beverage manufacturing sector can minimise materials used, thus reducing resource consumption and packaging waste.

When it comes to redesigning packaging, **parameters including weight, dimensions, thickness, materials, etc. should be carefully considered.** Some might have the misconception that using more packaging materials can help ensure product integrity and safety. In fact, **packaging reduction needs not be at the expense of product protection.** With adequate stress tests on the packaging and communication with trading partners/ customers on the packaging requirements, the optimum amount of packaging allowed by the specifications could be worked out and employed. Moreover, it is suggested that beverage manufacturing sector frequently review and adjust their product sizes and material to align with the evolving consumer trends brought about by demographic changes. With respect to packaging material, it is noted that Polyvinyl chloride (PVC) heat shrink labels are still adopted for some

beverage products, beverage manufacturers are suggested to avoid the use of PVC as it is known as a contaminant that affects PET recycling process and it is categorised as hard-to-recycle material.

Apart from that, with an innovative mindset in packaging design such as component separation (e.g. making use of resealable lids for aluminium cans), life cycle of materials could be extended and packaging minimisation could be achieved.



Image credit: CanO Water

/ packaging reduction needs not be at the expense of product protection



Several questions to be considered

- + Have I fully understood the packaging needs of my trading partners/ customers?
- + Considering all the packaging options and comparing them with other similar examples, have I over-packaged my products, which deliver little functional and marketing benefits, but possibly cost more?
- + Have I over-packaged my products solely due to the fact that it has long been our operational practice/ habit, but possibly not always necessary?
- + Could I use fewer packaging materials while maintaining their function, e.g. using less PET material product, without sacrificing product protection?



Experience to learn

- Many beverage manufacturers from different parts of the world have started selling unlabelled beverage products. They adopted an embossed brand logo design and laser-printed* the product details on bottles. They also printed recycling symbols directly onto PET bottles instead of using tack sticker labels. A Korean beverage manufacturer saved 41 tonnes of plastic waste by switching to unlabelled beverage products in 2021.

** Beverage manufacturers should take note that the recycling mechanism of beverage bottles and operation of reverse vending machines (RVM) vary in different parts of world. As such, the design of beverage containers should comply with the local statutory requirements.*



Image credit: Asahi Group



Image credit: Cnhubei



Image credit: Sohu



Image credit: Media Outreach



Image credit: Evian



Image credit: Lotte Chilsung Beverage



Experience to learn

+ Belgium

- A renowned beer manufacturer has adopted new technology to evolve from paper labels to imprinting branding on their beer bottles in 2020. The 'direct object printing' uses only ink and varnish that wrap around the glass.



Image credit: AB InBev

+ Hong Kong China

- A major beverage distributor has applied lightweighting to selected brands of aseptic PET product range in Hong Kong. Compared to traditional hot-fill packaging, aseptic packaging allows a reduction of up to 21% in weight for their 500ml PET bottles. To facilitate the recycling of PET bottles, the company has also commenced the process of reducing label length.



Image credit: Swire Coca-Cola



Experience to learn

+ Hong Kong China

- A renowned bottled distilled water manufacturer has introduced the application of clear and transparent PET bottle bodies since the 1980s, enhancing the recyclability of bottles as they are colourless.

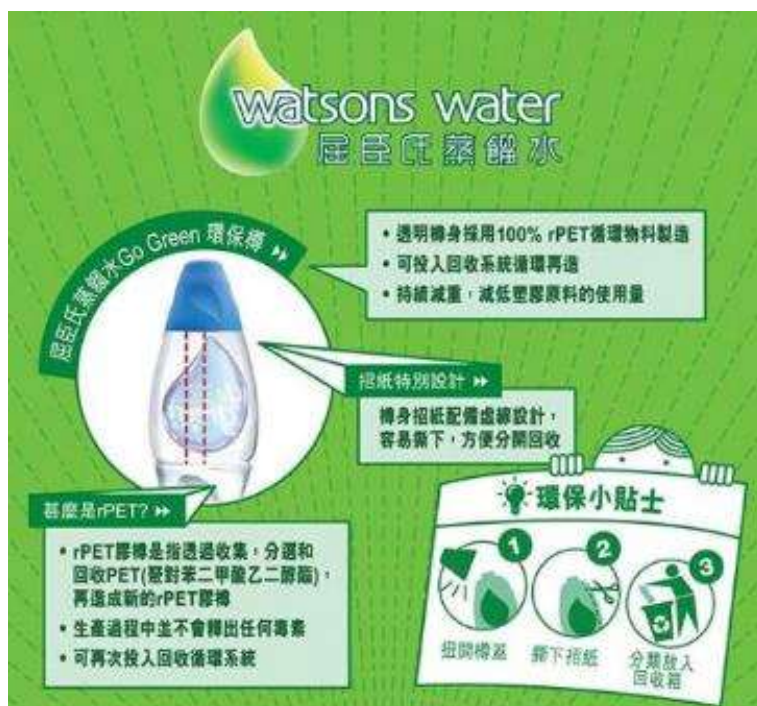


Image credit: Watsons Water

+ Japan

- In view of the demographic shift with shrinking birth rates and an ageing population, which increases the number of smaller families of 2-3 people per household, a multinational beverage corporation re-sized their sparkling beverage to offer the maximum enjoyment of the great taste of soft drinks at home. Instead of the 1.5L bottle, which is too much, the 700ml bottle would be conveniently sized for smaller families.



Image credit: Coca-Cola

- A renowned probiotic beverage manufacturer reduced the thickness of the shrink labels for four of their products sold in PET containers from 50µm to 45 µm.



Experience to learn

+ South Korea

- A renowned beverage manufacturer has pursued the reduction of the weight of its existing large-capacity PET products and has also conducted research to lighten the packaging materials of its small-capacity products. Through reducing the small-capacity product of ICIS 200mL/300mL, the weight of PET decreased from 10.5g to 9.4g, and avoiding a total of 172 tonnes of plastic consumption in 2021.



Images credit: Lotte Chilsung

+ Chinese Mainland

- A major milk product manufacturer rolled out their 'less ink' bottle and packaging box, which adopted innovative sculpture artwork and abandoned plastic handles and unnecessary colouring, in 2022.



Image credit: Foodtalks



Experience to learn

+ Netherlands

- Two major beer manufacturers rolled out cardboard toppers for their multipack beers in 2021. By replacing the original can carriers with the cardboard alternative, more than 617 tons of plastic were saved per year.



Image credit: Grolsch



Image credit: Environmentalleader

+ United States

- A multinational beverage corporation rolled out cardboard toppers for their multipack soft drinks in 2021. By replacing the shrink wrap with the cardboard alternative, 2,000 tons of plastic were saved per year.



Images credit: Coca-cola



Experience to learn

+ United Kingdom

- Instead of bottling the product, a sparkling water manufacturer chose to pack their product in aluminium cans with a resealable lid to minimise plastic consumption and extend the life span of an aluminium can.



Images credit: CanO Water

- A multinational packaging company designed an innovative solution named Hug&Hold to wrap and transport PET beverage bottles. Comprising two elements, the design included a draft paper sleeve and a corrugated clip. It provides secure and safe transportation as well as the stacking of bundles of bottled drinks.



Images credit: Mondi

(ii) Using environmentally-friendly alternatives of packaging materials

Beverage manufacturing sector should be aware that single-use plastics are not the only option available for packaging. Single-use plastic packaging **could be replaced with alternatives made of more environmentally-friendly materials such as packaging with recycled content. This helps reduce carbon footprint** as recycled materials generally require less energy and resources than virgin materials in the manufacturing process, and thus generating less greenhouse gas emissions. It is increasingly common around the world to include a certain proportion of recycled materials in packaging, such as bottles made from rPET, paper straws and multi-pack paper boards made from recycled fibres.

New developments in recycled content packaging have significantly improved the quality and application of packaging, and reduced the consumption of raw materials and resource wastage. Beverage manufacturing sector is encouraged to strike a balance between market considerations and promoting sustainable packaging by **continually reviewing new packaging improvements and increasing the use of recycled content in their packaging**, where applicable to Hong Kong's context.

If the adoption of recycled materials is yet to be implemented, **priority should be given to packaging materials with higher recyclability**, such as aluminium can, transparent plastic bottles, or paper cardboard for multi-packs, as much as possible. Not only can they be easily recycled, but the product's shelf life could also be extended, and stronger loyalty from eco-conscious customers could be gained.

/ it is increasingly common around the world to include a certain proportion of recycled materials in packaging



Experience to learn

+ Belgium

- A renowned beer manufacturer adopted a unique pulping process that creates paper board from 100% recycled wood fibre and barley straw, a leftover from harvest of farmers, for the secondary packaging of their six-pack beers. The new packaging was launched in 2021.



Image credit: AB InBev

+ France

- A renowned bottled-water company unveiled its 100% recycled plastic (rPET) water bottles in 2020. The rPET is made of previously used material that was collected and fed back into the recycling loop, cleaned, and transformed for bottle making again.



Image credit: Evian



Experience to learn

+ Hong Kong China

- A renowned bottled distilled water manufacturer has adopted 100% recycled plastic (rPET) for their water bottles and production of bottle sleeves since 2015 and 2019 respectively. For bottle labels, they began to use the adhesive-free technology for bottle attachment since 1980s. Another multinational beverage corporation had also debuted the 500ml trademark soft drink in 100% rPET bottles in 2024.



Images credit: Watsons Water



Images credit: Swire Coca-Cola

- Two renowned beverage manufacturers have introduced paper straws for some 250ml-sized beverages since 2021 and 2023 respectively.



Image credit: Vitasoy



Image credit: Tao Ti



Experience to learn

+ Japan

- A renowned probiotic beverage manufacturer switched its multi-pack and external packaging from plastic film to carton, reducing approximately 15 tons of plastic use in 2021.



Image credit: Yakult

- A renowned retail company with sales of own-brand beverages business switched their beverage containers for 12 types of drinks from PET to aluminium, which is considered a material with higher recyclability and could extend the shelf life of beverages.



Image credit: Muji

+ United Kingdom

- A major gin manufacturer has adopted a new paper bottle developed by a sustainable packaging company. The new paper bottle was made from 94% recycled paperboard with a food grade pouch and is five times lighter than glass. It is also fully recyclable with the outer space casing, cap recycled curb side and soft plastic liner.



Images credit: Frugalpac



Experience to learn

+ United States

- A bottled-water company using glass bottles began to adopt aluminium bottles for their spring water as they are lighter and more portable for customers.
- A beer company has replaced plastic rings with 'eco six pack rings' made from by-product waste and other compostable materials.



Image credit: Mountain Valley Spring Water



Image credit: Saltwater Brewery

+ Spain

- An organic juice manufacturer has switched from plastic bottles to sustainable beverage cartons. The aseptic cartons retain the natural brown colour of wood fibre and are fully recyclable.



Images credit: Elopak



Experience to learn

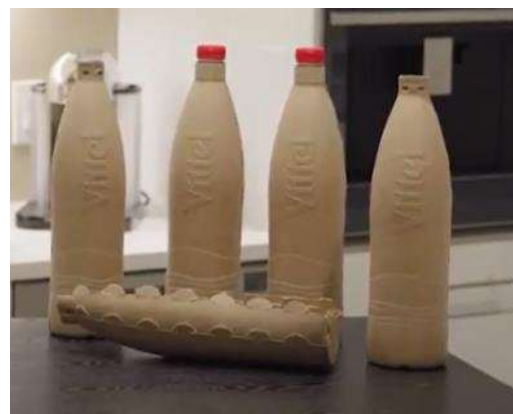
+ Switzerland

- A multinational beverage corporation piloted a prototype bottle for their renowned sparkling water. With innovative technology, the prototype bottles were made from coloured rPET, and the quality was found to be virtually identical to clear virgin PET.



Image credit: Nestle

- A multinational beverage corporation has innovated a 100% recyclable bottle for its bottled-water brand. The new bottle is made from two types of materials: an ultra-thin plastic layer made entirely from recycled content, surrounded by a fibre-based material made from 100% recycled cardboard and newspapers. Proprietary technologies enable the plastic and fibre-based layers to be locked together to create a functional, sturdy water bottle that can be easily used without any damage.



Images credit: Nestle

The beverage manufacturing industry consumes and generates a considerable amount of packaging, which may ultimately be disposed of as packaging waste after consumption by end-consumers, the packaging along their supply chain should not be overlooked. Beverage manufacturing sector should engage their packaging suppliers to incorporate environmental requirements into their products. For instance, they could require suppliers to use recyclable and reusable materials for bottling and multi-packing, or even smaller and lighter packaging that fits better with the size of beverages. The beverage importers or distribution agents could provide their customers with the information regarding whether the packaging of the products complies with the green packaging or eco labeling requirements of their places of origin. Apart from the above, beverage manufacturing sector could adopt different green criteria for the procurement process **through communication with their importers/ suppliers to ensure packaging materials provided are durable, reusable, recyclable, and adding value to products.**

Other than having good procurement practices, beverage manufacturing sector should also engage their own logistics providers/ suppliers' logistics providers in setting up a closed-loop supply chain of packaging resources, with a view to minimising the use of tertiary packaging and switching to reusable packaging. For example, suppliers and logistics providers could adopt a return services for in reverse logistics. Beverage manufacturing sector could establish mechanisms to collect used beverage packaging, such as plastic bottles, glass bottles, and shrink wrap, and return them to packaging manufacturers/ suppliers for future reuse or transform into recycled material for new packaging production. Packaging waste could be effectively reduced at source by applying this practice.

Table 1:
Action items for green supply chain management on packaging reduction

A. Communicate the ESG commitment to the following stakeholders:

- ☒ Packaging manufacturers
- ☒ Trading partners
- ☒ Customers

B. Provide guidelines/ trainings to the staff of self-operated:

- ☒ Warehouse
- ☒ Logistics service

C. Set tender specifications with sustainable packaging requirements for third-party service provider:

- ☒ Packaging manufacturers
- ☒ Logistics service
- ☒ Warehouse

/ beverage manufacturing sector is highly encouraged to communicate with packaging suppliers/ manufacturers to ensure products provided are durable, reusable, recyclable, and adding value to products



Experience to learn

+ Denmark

- A renowned beer manufacturer partnered with their supplier to circular their polyethylene shrink wrap used for product protection during transport. Any polyethylene waste generated from breweries by the company would be sent to the supplier for upcycling into recycled shrink wrap. In 2022, nearly 80% of the shrink wrap sourced from the supplier was recycled.



Image credit: Carlsberg

+ Japan

- A sports drink manufacturer collaborated with a recycling company to develop a circular shopping platform named 'Loop', focusing on reusable packaging with the mission of 'eliminating the idea of waste'. Products traditionally sold in single-use packaging are offered in reusable packages that are subsequently collected, cleaned, and refilled for sale again.

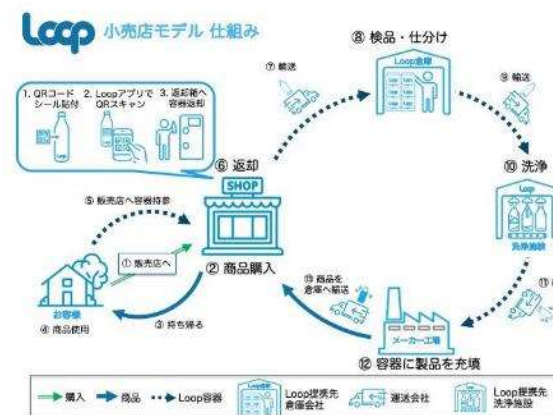


Image credit: Otsuka

Experience to learn

+ Chinese Mainland

- A multinational beverage corporation has developed a six-step process to build awareness and alignment with a view to leading their suppliers in decarbonising their businesses. They collaborated with suppliers to design a light-weight, yet sturdy, hand grip used in sales promotion for product bundling. The new 1.9-gram grip is made from 30% less material and could save 173 tonnes of HDPE per year. Apart from the above, they have also mandated that the paper used to package multi-pack cans is from certified sustainable sources.



Images credit: Swire Coca-Cola



Experience to learn

+ Switzerland

- A plant-based milk manufacturer collaborated with a renowned pulp and paper manufacturer to develop an innovative secondary packaging solution, enabling a reduction in secondary packaging material of up to 35%. The renewable paper material originates from responsibly managed forests, and the packaging can be recycled after use and used for less demanding packaging multiple times.
- A multinational beverage manufacturer published 'The Rules of Sustainable Packaging' in 2021 to provide an overview of their packaging vision and commitments, 'The Golden Rules' which guide current and future packaging design, and 'The Negative List' which explain the materials to be removed and by when.



Image credit: Oatly



Good food, Good life



Image credit: Nestle

+ United States

- A multinational soft drink manufacturer partnered with a sustainable packaging manufacturer in 2022 to develop a prototype of a 100% plastic-free-bottle (including bottle, label, cap, and closure), aiming to be compostable or recyclable with other paper products. The project is to test the innovation in selected products, including water, juices, and carbonated beverage.



Image credit: Papacks

Reuse

Using reusable packaging materials

When it comes to reusable packaging, there is an ongoing discussion among the industry on the shift from using single-use packaging to reusable and/or refillable options. **Beverage manufacturing sector should adopt reusable beverage packaging systems**, which commonly featured a container return scheme with supporting policies to encourage reusables, the cooperation of business partners to take empty bottles back, investment in reverse logistics and associated infrastructure, standardisation of bottles, as well as measures to ensure convenience, efficiency, and public awareness. Adopting reusable beverage packaging systems is the easiest and most economical way to motivate the public to cultivate the habit of reuse and achieve packaging waste reduction.



Image credit: Coca-Cola

Therefore, beverage manufacturing sector is also encouraged to **constantly review environmental initiatives with respect to the reusability of their packaging products**, including secondary packaging such as shrink wrap and multipack holders. For instance, industry-leading companies could establish goals for the proportion of products sold in reusable models with an achievement timeframe. This could set an industry reference and have an influential impact on driving the industry towards resource circulation and waste reduction.



Image credit: Kowloon Dairy Facebook

/ beverage manufacturing industry is on the shift from using single-use beverage packaging to reusable and/or refillable options



Experience to learn

+ Hong Kong China

- A multinational soft drink manufacturer re-launched their returnable glass bottles scheme in 2022. With volume increased from 192ml to 250ml, the new design of returnable glass bottles comprises 60% recycled glass with a weight loss of one-third, making it more convenient for customers to return them after use for cleaning, disinfecting, and refilling at its bottling plant.
- A renowned milk manufacturer established an empty bottle collection scheme. Apart from the one-dollar deposit return, they also launched another campaign in 2019 where customers can purchase reusable straws at a special price to promote bottle returns.



Image credit: Swire Coca-Cola



Image credit: Kowloon Dairy Facebook

Experience to learn

+ Japan

- A sports drink manufacturer launched its 250ml returnable bottles in 2022. The new returnable bottles are distributed at supermarkets that participated in the circular shopping platform 'Loop', where returns collected will be cleaned and refilled for sale again.



Returnable bottle



Crown Cap

Image credit: Otsuka

+ United States

- Two multinational beverage corporations announced an industry-leading goal in 2022 to significantly boost their use of reusable packaging. They aimed to have at least 25% and 20% respectively of all beverages globally across their portfolios of brands sold in reusable models by 2030.



Image credit: Coca-Cola

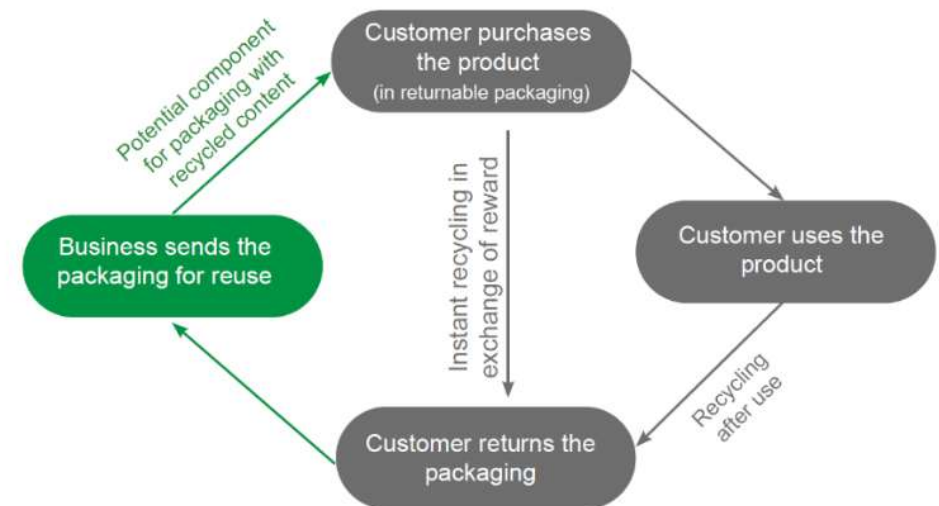
Recycling and Recovery

Setting up recycling facilities

Setting up suitable recycling facilities and system is a good way to raise customers' sustainability awareness and bring circular economy into business practices directly in collaboration with consumers. Not only could customers be given opportunities to recycle their unwanted packaging materials at the collection point instantly, but regular customers could also be encouraged to bring the recyclable packaging from their homes to the collection points for reuse and recycling. In fact, by setting up suitable recycling facilities and system, business can improve brand loyalty and demonstrate its commitment to environmental protection.

/ setting up recycling facilities and system is a good way to raise sustainability awareness and bring circular economy into business practices

Besides, beverage manufacturing sector could consider setting up a closed-loop model of beverage containers collection and recycling, or even partnering with logistics and waste management companies for recycling infrastructure investment. Subject to the availability of resources and capacity of the beverage manufacturing sector, recycling services could be extended to door delivery, and unwanted packaging materials could be instantly collected from customers.





Experience to learn

+ Hong Kong China

- Several beverage manufacturers have set up cross-sector beverage container recycling networks in Hong Kong, including Reverse Vending Machine (RVM) for plastic and glass bottles as well as recycling boxes for beverage cartons, across public locations such as MTR stations, shopping malls, and schools. The collected beverage packaging would be upcycled to various types of useful products, such as wind coats, benches and stationeries.



Image credit: Hung Fook Tong



Images credit: Watsons



Images credit: Vitasoy



Images credit: Ulifestyle



Experience to learn

+ Hong Kong China

- A renowned beverage company joint-ventured with a local waste management company to establish a 6,500 square metre plastic recycling facility. With operation commenced in late 2022, the facility is capable of processing 400 tonnes of recycled beverage bottles per month, providing a substantial solution to plastic bottle waste reduction at landfills. In addition, they supported the 'Drink Without Waste (DWW)', a coalition of major beverage producers, retailers, and NGOs aiming to reduce waste generated from beverage consumption together. By donating HK\$1 million to fund a community plastic bottle recovery pilot programme run by DWW that engaged cleaners, residents, and property management offices in Tin Shui Wai, around 4 million plastic bottles have been collected for recycling from Oct 2022 to Mar 2024.



Image credit: New Life Plastics Ltd



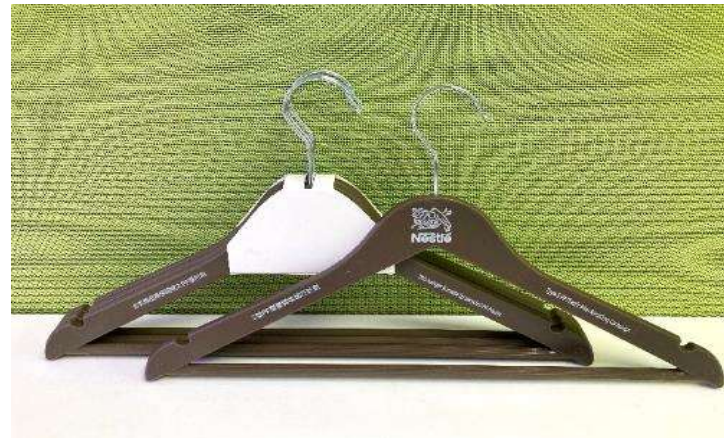
Image credit: Drink without Waste



Experience to learn

+ Hong Kong China

- A renowned beverage manufacturer has collaborated with an NGO to implement a 'Type 5 PP Plastic Recycling Campaign' since 2020. After its 3-year operation, around 3 tonnes of Type 5 PP plastic (equivalent to around 90,000 single-use plastic meal boxes) had been collected and upcycled into household items such as eco-friendly hangers, cooler bags, and storage boxes.



Images credit: Nestlé



Experience to learn

+ Japan

- A multinational beverage corporation partnered with local governments to set up bottle-to-bottle programme in several cities. Used PET bottles collected were crushed, washed, and processed into raw materials to be used at production plants for manufacturing of new beverage containers.
- A renowned retail company with sales of own-brand beverage business started their recycling programme for PET bottles in 2020. Water bottles collected are recycled into polyester raw materials.



Images credit: Coca-Cola



Image credit: Muji



Experience to learn

+ Chinese Mainland

- A renowned beverage manufacturer recycled waste PET material generated in the production process and upcycled them into useful products such as coats and bags. Around 6,000 tonnes of waste PET are recycled annually.



Image credit: Master Kong

+ Malaysia

- A multinational beverage corporation launched a door-to-door packaging waste recycling programme in one of the cities. By end of 2022, over 5,800 tonnes of post-consumer packaging waste were collected, of which 3,800 tonnes were plastic. The programme was recognised by the United Nations Environment Programme (UNEP) and the Ministry of Environment Malaysia as an example of separation-at-source best practice.

+ United Kingdom

- A multinational grocery and general merchandise retailer with sales of own-branded beverage products set up recycling machines within their stores in 2019. Around 100,000 bottles were collected and recycled into new plastic bottles.



Image credit: TESCO



Experience to learn

+ United States

- Three leading beverage corporations collaborated to launch the 'Every Bottle Back' initiative in 2019, aiming to reduce the industry's use of new plastic by making significant investments to improve the upcycling of used beverage plastics into new bottles. The initiative included four major aspects – to measure the progress of the industry in reducing new plastics use in the country, to improve the quality and availability of recycled plastics in key regions of the country, to launch a public awareness campaign to educate customers on the value of recycled bottles, and to leverage packaging in reminding customers that their bottles are 100% recyclable and can be remade into new bottles.
- A renowned beer manufacturer partnered with the Glass Recycling Foundation to support their efforts to promote glass recycling with the aim to preserving the environment. Over 220 tonnes of glass were avoided from disposal at landfills in 2 years.



Image credit: Americanbeverage



Image credit: Glass Recycling Foundation

With reference to the waste management hierarchy, apart from the above experience to learn, the following example also shows how beverage manufacturing sector can start considering ways to reduce packaging consumption and generation of packaging waste. This can help relieve the waste disposal burden of landfills.



Image credit: packaging4retail

Reuse, Recycle and Recovery:

- + Could you incentivise your customers to choose refillable options and bring their own bottles?
- + Could you set up collection points or recycling facilities (e.g. reverse vending machines) to recycle used beverage containers?
- + Could you upcycle packaging materials into useful products?

Prevention:

- + Could you explore/ invest in the research and development of bottle-free drinking initiatives (e.g. beverage dispensers installation)?
- + Could you remove any unnecessary layers/ components of beverage packaging?

Reduction:

- + Could you redesign traditional packaging and use thinner and lighter packaging materials?
- + Could you explore the use of creative packaging/ innovative technology?
- + Could you include a higher percentage of recycled content for beverage packaging?

Guidance for Packaging Reporting and Management

While it is anticipated that the sustainable packaging initiatives suggested in previous chapters would help beverage manufacturers in identifying existing gaps and potential opportunities to packaging reduction, we understand that some packaging exists for a practical reason as certain level of packaging is necessary and vital to business operation. Therefore, it is high time for beverage manufacturers to **explore ways in managing these unavoidable packaging in a more systematic manner.**

With reference to experience in other places and in line with the ESG Reporting Guide published by HKEX in December 2019, packaging reporting is an effective mean to facilitate gathering of information by companies for **self-review and identifying opportunities for reducing packaging consumption and packaging waste generation**, which may help companies to minimise unnecessary cost.

Also, **investors and other stakeholders are now more willing to allocate capital in sustainable investments** and thus expecting more information from companies on how they manage ESG related risks, including how to minimise non-essential packaging.

In this chapter, a step-by-step guidance will be provided to assist companies to disclose their packaging consumption in their ESG Reports, Sustainability Reports or Annual Reports in a more systematic and standardised manner. To be an environmentally-responsible industry practitioner, it is advisable for companies to follow the guidance in **reporting the quantities of different types or forms of packaging materials consumed under a specific period of time.**



Do you know...?

Under the requirement of HKEX, Hong Kong listed companies are required to report on ESG matters on an annual basis and regarding the same period covered in their Annual Reports. Under Section Aspect A2: Use of Resources – KPI A 2.5 of the “Appendix C2 (formerly known as Appendix 27) ESG Reporting Guide” published by HKEX, companies are required to disclose information on total packaging material used for finished products. The information required to comply is:

+ Total packaging material used and intensity

+ If possible, issuers should provide a breakdown of materials by type

Step-by-step guidance for packaging reporting and management

i Define reporting boundary

- i Companies should firstly determine the scope for packaging reporting, it would be a better approach to follow the reporting period and boundaries of their ESG Reports, Sustainability Reports or Annual Reports.

It is important that packaging materials consumed in different operating units, e.g. warehouses and distribution centres, etc. should be included and reported.

- ii When defining the sources of packaging consumption within the reporting boundary, products made of any materials of any nature to be used for the protection, handling, and delivery from the factories to the end customers should be taken into account. On the other hand, the already-added packaging of inbound items from other places should not be included in the reporting scope.

ii Identify source of packaging consumption

Therefore, packaging generated from the following operation points should be measured:

Packaging consumed at factories

(e.g. beverage containers, bottle caps, labels)



Packaging consumed at warehouses and distribution centres

(e.g. paperboards, carton boxes, box-sealing tapes, stretch films)



Packaging consumed during self-operated delivery operation

(e.g. waybills, stretch film, bundle strap, plastic crates, wooden pallets)



Scenario of reporting scope

Beverage manufacturing companies may own and operate self-manufactured beverage products and partner with retail companies for retail sales. Some might import beverage products and further distribute them to customers with their own vehicle fleet for order delivery. Table 2 shows some examples of scenarios for various types of beverage manufacturing companies and their associated reporting requirements.

Table 2: Examples of Beverage Manufacturing Companies

Company	Examples
A	<pre> graph LR A[Factory (Self-manufactured fresh milk beverages)] -- "R: beverage cartons, caps, glass bottles, aluminium foils NR: Recycled glass bottles" --> B[Fulfilment Centre inside Factory] B -- "Delivery handled by Company A R: waybill stickers NR: Reusable plastic crates" --> C[Retail points] </pre> <p>Company A owns and operates a factory that manufactures daily made milk beverages locally and partners with various retail points, including supermarkets and convenience stores for sales of their milk beverages. Company A bottled their fresh milk products in brand-new beverage cartons with caps, as well as brand new glass bottles and recycled glass bottles with aluminium foils. All milk products were delivered to various retail points in reusable plastic crates. Some waybill stickers were used as well.</p>
B	<pre> graph LR A[Supplier] -- "Alcoholic products shipped to Warehouse of Company B ahead Delivery handled by Supplier No packaging added by Company B" --> B[Warehouse of Company B] B -- "Delivery handled by Company B R: Wrapping paper, carton boxes, box-sealing tapes, waybill stickers NR: Recycled wooden box, recycled paperboards" --> C[Customers] </pre> <p>Company B is an alcohol retailer that imports wine, beer, and distilled beverages for local retail sales, of which the products came with their original packaging placed by the suppliers. As company B takes orders of mixed alcohol products (e.g. 4 bottles of red wine with 1 bottle of whisky in the original packing box) for individual customers, new wrapping paper is used to protect them, and a recycled wooden box is used to contain all items collectively. For another order that involved mixed types of beers, a new carton box and recycled paperboard are used to contain them, and some box-sealing tapes and waybill stickers were used as well.</p>
C	<pre> graph LR A[Factory (Self-owned operation of soft drinks bottling)] -- "R: metal cans, plastic bottles, caps, labels, paperboard trays, shrink wrap" --> B[Fulfilment Centre inside Factory] B -- "Delivery handled by Company C R: waybill stickers NR: reusable metal cages" --> C[Retail points] </pre> <p>Company C is a bottling partner of a global soft drinks brand that operates a factory locally for soft drinks bottling and partners with various retail points, including supermarkets and convenience stores, for sales of the soft drinks. Company C bottled soft drinks in brand new metal cans as well as plastic bottles with caps and labels. New paperboard trays and shrink wrap are used for 24-can packs. The soft drinks were delivered to retail points with waybill stickers and reusable metal cages.</p>

Legend:

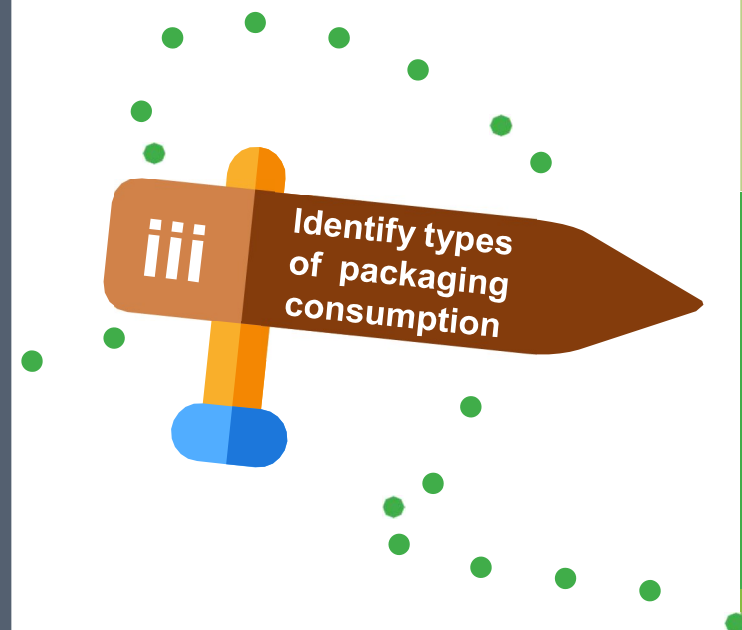
R = To be reported

NR = Not to be reported

It might seem complicated when a beverage manufacturing company could be handling thousands of orders in a typical day. However, in practical application, **their procurement and inventory records should serve as the key source for packaging disclosure**, but not on an order-by-order basis. Practitioners of beverage manufacturing companies are therefore recommended to refer to Step 4 to obtain packaging consumption data in an efficient and reliable manner.

Table 3:
Commonly found packaging material and forms

Paper/ cardboard	<ul style="list-style-type: none"> • Carton boxes • Cardboards 	<ul style="list-style-type: none"> • Other paper packaging
Plastics	<ul style="list-style-type: none"> • Adhesives (e.g. attachment of straws on beverage carton) • Air column for wine bottles • Beverage bottles • Bottle caps • Bundle strap • Box-sealing tapes • Flat pockets • Labels/ stickers (e.g. waybill sticker) 	<ul style="list-style-type: none"> • Plastic trays • Plastic bags for straws • Plastic crates • Plastic pallets • Shrink hoods • Straws • Stretch film • Other plastic packaging
Metals	<ul style="list-style-type: none"> • Aluminium foils • Crown caps • Metal cans 	<ul style="list-style-type: none"> • Metal pallet boxes • Other metal packaging
Glass	<ul style="list-style-type: none"> • Beverage bottles 	<ul style="list-style-type: none"> • Other glass packaging
Wood	<ul style="list-style-type: none"> • Wooden pallets • Wooden boxes 	<ul style="list-style-type: none"> • Other wood packaging
Composite	<ul style="list-style-type: none"> • Padded envelopes • Envelopes with waybill bag 	<ul style="list-style-type: none"> • Waybill • Other composite packaging



- iii** Packaging is ubiquitous in beverage manufacture and distribution operations. It facilitates the handling of products and protects products from the point of manufacturing all the way through the supply chain to end customers. To fit different natures of products and functions, there are wide varieties of packaging and the most commonly found packaging materials and forms are listed in Table 3.

iv Data collection is an important step and requires collaborative efforts. Companies should establish strong collaboration with relevant departments and stakeholders to collect accurate and reliable data for reporting purpose.

To understand the quantities of different forms of packaging materials consumed within the reporting period, companies may adopt the following two approaches. Approach 1 is anticipated to be universal across all beverage manufacturing companies, whereas Approach 2 should also be adopted at the same time if self-manufactured own-brand products sales is part of the business.



1 Approach 1: Data obtained from procurement and inventory record

The following data should be obtained for calculation of packaging consumption:

Items	Description	Data source
A	Quantity of each type of packaging materials/ forms at the beginning of the reporting period	Stock-taking exercise, inventory report, etc.
B	Quantity of each type of packaging materials/ forms procured/ received during the reporting period	Purchase orders/ reports, invoices from suppliers, import/ delivery records, etc.
C	Quantity of each type of packaging materials/ forms remained at the end of the reporting period	Stock-taking exercise, inventory report, etc.

$$\left[\begin{array}{l} \text{Total consumption amount} \\ \text{of each type of packaging} \\ \text{materials/ forms} \end{array} \right] = A + B - C$$

Approach 2: Data obtained from packaging materials used on self-manufactured own-brand or sold products

- + Calculate the average weight of packaging per stock keeping unit (SKU) then multiply by the total number of products sold during the reporting period with reference to sales record.
- + Company should identify components of the packaging according to different materials and forms, and record the weight of each material and form.

Example (1): Sales of self-manufactured own-brand lemon tea



Image credit: Vitasoy

Product name/ code	Packaging material	Packaging form*	Weight of the packaging material per unit of product (g)	Number of products sold during the reporting period	Total quantity of packaging consumed (kg)
			(A)	(B)	(C) = (A) x (B) / 1,000
Lemon Tea – 250ml (Pack of 24)	Plastics	Shrink wrap	5	2,000	10
		Straws (24 nos.)	12		24
		Plastic bag for straws (24 nos.)	2.4		4.8
		Adhesives for straws	12		24
	Paper	Cardboard	300		600
	Beverage Carton	beverage carton (24 nos.)	120		240
Sub-total					902.8

* Companies can select appropriate items to report, subject to data availability

V Calculating the packaging consumption data helps engage your stakeholders to learn about the environmental commitment of your companies. Companies can consider reporting the total packaging material used during the reporting period or the intensity of packaging material use^{note}.

Breakdown of packaging materials consumed by type (e.g. plastics, paper, glass, metals) would be more preferable. This will establish the data for comparison, benchmarking and drive actions on packaging reduction. For samples of packaging reporting templates, please refer to **Appendix 2**.

Note:

Intensity of packaging material use = PA/U

PA = Total packaging materials used (in weight)

U = Company specific metrics (e.g. units of product, production volume, monetary units such as revenue or sales)



6

Tips on publicity and customer education

Most of the packaging materials can be easier to recycle if they are made from a single material. For beverage cartons, some local manufacturers have established education programmes to raise public awareness on clean recycling. Though the majority of citizens are aware of the recyclability of common beverage packaging such as plastic bottles and metal cans, some customers are still not used to the habit of clean recycling for various reasons, such as the inconvenience of washing and returning to recycling points. **Beverage manufacturers could leverage the public's motivation for packaging recycling through activities that are fun and daily-life related.** For instance, smart redemption programmes, regular art installation exhibitions, design competitions, and mobile promotional and educational tours are good ways to convey the importance of recycling. Moreover, developing an interactive calculation platform is also an effective way for the public to easily realise the benefits of clean recycling.

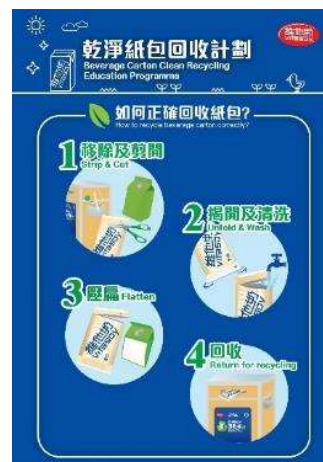


Image credit: Vitasoy



Image credit: Coca-Cola China

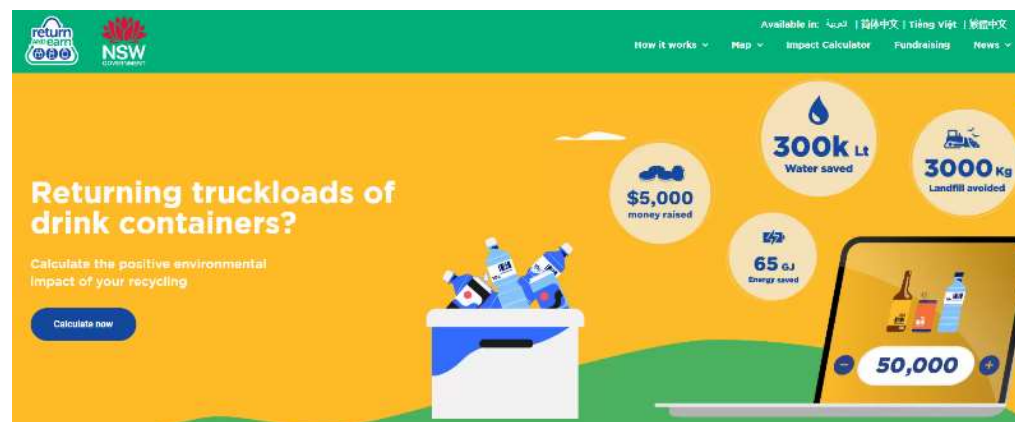


Image credit: Return and Earn

/ beverage manufacturers could leverage the public's motivation for packaging recycling through activities that are fun and daily-life related



Experience to learn

+ Australia

- A local government developed a beverage container deposit scheme named 'Return and Earn' with an online interactive impact calculator for citizens to realise the benefits of recycling beverage containers in terms of daily-life statistics. For instance, returning 50 beverage containers through the scheme means a water savings of approximately 293 litres of water, which is equivalent to 33 minutes of showering.

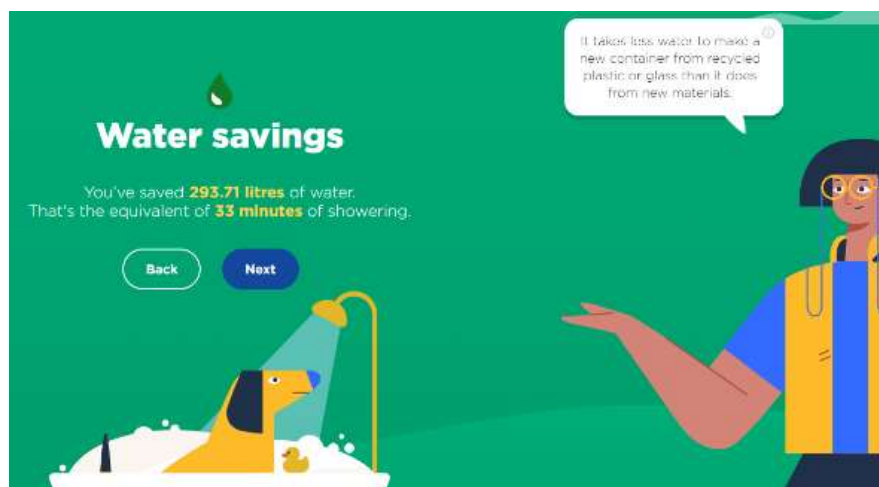


Image credit: Return and Earn

+ Chinese Mainland

- A multinational beverage corporation established a series of exhibitions themed 'Recycle Me, See You Later – Community Recycling Aesthetics Station' with more than 100,000 recycled beverage bottles. In collaboration with local communities, the artistic and educational exhibition leveraged the public's understanding of the significance of beverage packaging recycling and established a closed-loop model of beverage bottle recycling within the community. A total of 70 sessions of exhibition were conducted in the country with cumulative visits of over 500 million times.



Image credit: Coca-Cola



Experience to learn

+ Chinese Mainland

- A multinational beverage corporation joined efforts with 'Ant Forest', a campaign launched by an electronic payment platform advocating carbon emission reduction by tree planting through engaging in green activities, to raise public awareness on the value of recycled bottles. Customers could earn 'energy units' by purchasing designated products made from recycled materials at the official flag store of the online retail platform.
- A major milk product manufacturer rolled out a packaging upcycling engagement programme in 2022. Customers are invited to return used beverage packaging to the company by post, which would be upcycled into a series of 'Zero-ink' environmentally friendly products, including bags, masks, and caps. Customers could earn green points by returning empty bottles and hence redeeming the upcycled products.



Image credit: Foodtalks



Image credit: Ambrosial



Experience to learn

+ Hong Kong China

- Several beverage manufacturers set up 'Smart' beverage packaging deposit machines with redemption and education schemes to drive community recycling and public awareness about packaging circularity. The public could earn green points and redeem gifts by recycling plastic bottles, glass bottles, and beverage cartons.



Image credit: Swire Coca-Cola



Image credit: Watsons

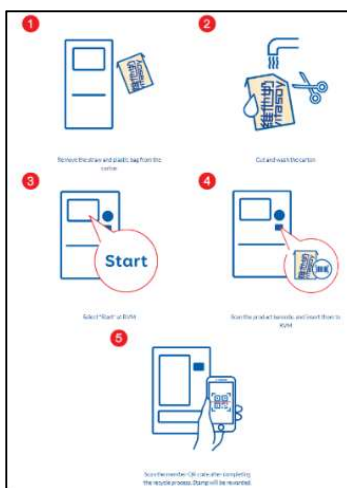


Image credit: Vitasoy



Image credit: Marketing-interactive



Experience to learn

+ Hong Kong China

- A renowned beverage corporation organised a design competition in partnership with a local university in 2021, challenging students to create a project to improve community inclusion and harmony while utilising 3D printed filaments and plastic pellets upcycled from old returnable glass bottle crates. The competition instilled a business mindset and promoted recycling and reusing materials among students. Moreover, they partnered with a local exhibition and arts space venue in the same year to transform over 500 returnable glass bottle crates into a creative art installation in celebration of Chinese New Year.



Images credit: Swire Coca-Cola



Experience to learn

+ Hong Kong China

- A renowned soymilk product manufacturer established the 'Beverage Carton Sustainability Mobile Education Centre' city tour. By hopping on the mobile vehicle, visitors can have an easy-to-understand introduction to the composition and recycling of beverage cartons, as well as learn about a range of products developed from beverage carton upcycling. Visitors could even win prizes by participating in the interactive activities. In 2021, they also launched the city's first Beverage Carton Clean Recycling Reward Programme to combine community and in-school education initiatives to build awareness of the importance of clean recycling. All participants in the organisation with the highest accumulated weight of recyclables in 2021 were rewarded with certificates of appreciation made from 100% recycled beverage carton pulp.



Images credit: Vitasoy

Frequently Asked Questions

The following frequently asked questions are designed to assist trade practitioners with answers about packaging reduction, reporting and management.

Q1 Why is packaging reporting important?

Packaging waste constitutes significant part of Municipal Solid Waste (MSW) in Hong Kong and has caused increasing environmental concerns. To achieve waste minimisation in the territory, local companies should share the responsibility towards sustainable packaging waste management. On the other hand, customers and investors are increasingly concerned about company's environmental and financial responsibility, packaging reporting would be an important initiative for companies to gather information for self-review, thereby identifying areas of improvement beyond current practices.

Q2 Is packaging reporting mandated by law?

Packaging reporting is not mandatory at this stage. However, in order to facilitate companies in gathering information for self-review and identifying areas of improvement to achieve sustainable packaging waste management which may help companies to minimise unnecessary costs. We strongly encourage companies to practise packaging reporting on an annual basis for self-assessment.

Q3 Which types of packaging should be covered in the packaging reporting of our company?

Companies should identify their scope of operations at different venues (e.g. factory, warehouse, retail shops, etc.) and identify the packaging materials consumed by their companies for reporting, including the primary packaging (e.g. plastic bottles, glass bottles, metal cans) of self-manufactured products, secondary packaging (e.g. paperboard, shrink wrap) and tertiary packaging (e.g. carton boxes, wooden pallets) used in their operations.

Q4 We found some of the packaging materials challenging to maintain an accurate inventory for reporting, what could we do?

We understand that the operational challenges of stock-taking different types of packaging from all sources. Therefore, companies are advised to report as many types and forms of packaging as practicable (use estimation if needed) generated from the following operation points: 1) Packaging consumed at self-operated factories, 2) Packaging consumed at self-operated distribution centres, and 3) Packaging filled/ consumed during self-operated delivery operation.

Q5 Where shall we disclose our packaging data?

For Hong Kong listed companies, you shall disclose your packaging consumption data on your ESG Report under the requirement of HKEX. For non-listed companies, you are also encouraged to disclose your packaging data on your website or your ESG/ Sustainability/ Annual Report.

Q6 We found some of the sustainable packaging initiatives challenging to implement, what could we do?

Businesses are suggested starting with a trial/ in phases and progressively expand for wider impacts. As a key stakeholder in achieving packaging reduction, the government will continue to collaborate with the beverage manufacturing sector for implementing practicable measures to promote and encourage reducing the use of plastic packaging materials. Think big, start small!

Q7 The original packaging materials from our suppliers are out of our control, what could we do?

Businesses are suggested communicating with their importers/ suppliers and collectively explore solutions for minimising use of packaging materials while maintaining the necessary level of protection for handling and shipping. You are encouraged to improve the packaging design and minimise packaging waste generation for various product lines.

Q8 We wish to recycle the packaging waste generated from my operations, what can we do?

Businesses should identify suitable outlets for recyclable materials. For larger businesses, it is suggested to set up suitable recycling facilities and engage a recycler to collect different types of recyclables regularly for proper recycling.

Please find more on the Hong Kong Collector/ Recycler Directory:

https://www.wastereduction.gov.hk/en/quickaccess/vicinity.htm?collection_type=collector&material_type=all&district_id=0

1 Packaging Reporting and Management

Hong Kong China

- + **How to Prepare an ESG Report – A Step-by-Step Guide to ESG Reporting – HKEX**
https://www.hkex.com.hk/-/media/HKEX-Market/Listing/Rules-and-Guidance/Environmental-Social-and-Governance/Exchanges-guidance-materials-on-ESG/step_by_step.pdf

Other Places

- + **Guide on Mandatory Packaging Reporting – National Environment Agency of Singapore**
<https://www.nea.gov.sg/docs/default-source/default-document-library/mpr-resource-slides-as-of-24-march-2021772abdb897c84ae0955da370215eeb74.pdf>

2 Packaging Reduction and Management

Hong Kong China

- + **Hong Kong Collector/ Recycler Directory – Environmental Protection Department, HKSAR**
https://www.wastereduction.gov.hk/en/quickaccess/vicinity.htm?collection_type=collector&material_type=all&district_id=0
- + **Producer Responsibility Scheme on Glass Beverage Containers – Environmental Protection Department, HKSAR**
https://www.epd.gov.hk/epd/english/environmentinhk/waste/pro_responsibility/qprs.html

- + Producer Responsibility Scheme on Plastic Beverage Containers and Beverage Cartons – Environmental Protection Department, HKSAR**
https://www.epd.gov.hk/epd/english/environmentinhk/waste/pro_responsibility/index.html
- + Strategies and Actions – Drink Without Waste**
https://drinkwithoutwaste.org/wp-content/uploads/2018/12/DWW_PositioningPaperEN.pdf
- + Waste Blueprint for Hong Kong 2035 – Environment and Ecology Bureau, HKSAR**
https://www.eeb.gov.hk/sites/default/files/pdf/waste_blueprint_2035_eng.pdf

Other Places

- + Beverage insights: Plastics packaging – Ellen Macarthur Foundation**
<https://ellenmacarthurfoundation.org/global-commitment-2022-beverages-insights>
- + Just one word: refillables – How the soft drink industry can – right now – reduce marine plastic pollution by billions of bottles each year – OCEANA**
https://oceana.org/wp-content/uploads/sites/18/3.2.2020_just_one_word-refillables.pdf
- + Reusable Beverage Packaging and Refillable Beverage Delivery Systems in New Zealand: Discussion Document – Hannah Blumhardt – commissioned by Greenpeace New Zealand**
<https://www.greenpeace.org/static/planet4-aotearoa-stateless/2020/05/c68f45e8-reusable-and-refillable-plastics-nz.pdf>
- + Reuse – rethinking packaging – Ellen MacArthur Foundation**
<https://ellenmacarthurfoundation.org/reuse-rethinking-packaging>
- + Towards a more sustainable, responsible and competitive European soft drinks industry – Unesda**
<https://www.unesda.eu/>

Appendix 1 – Summary Checklist on Practical Tips for Beverage Manufacturing Companies

The following is a quick start of key practical tips for the beverage manufacturing sector to consider in achieving sustainable packaging. This list is non-exhaustive and is prepared based on the best practices collected locally and from other places.

Summary Checklist on Practical Tips for Beverage Manufacturing Companies				
Practical Tips		Yes	No	Follow-up Actions if the answer is “No”
Prevention				
1.	Investing more resources in promoting bottle-free drinking initiatives.			
2.	Exploring/ investing in the installation of beverage dispensers.			
3.	Avoiding packaging multi-packs to promote green initiatives and encouraging multi-buys.			
Reduction				
4.	Redesigning traditional packaging and using thinner and lighter packaging materials with adequate stress tests.			
5.	Exploring the use of creative packaging (e.g. metal cans with resealable lids) or innovative technology (e.g. adhesive free technology) to enhance packaging recyclability and reduce the use of materials.			
6.	Replacing single-use packaging with alternatives containing recycled content.			
7.	Printing with less ink on beverage bottles and boxes.			
8.	Maintaining close dialogues with suppliers/ trading partners/ customers to simplify the packaging design.			

Summary Checklist on Practical Tips for Beverage Manufacturing Companies

Practical Tips		Yes	No	Follow-up Actions if the answer is “No”
Reuse				
9.	Operating a closed-loop platform to collect used beverage containers from customers for cleaning and refilling.			
10.	Adopting reusable packaging as far as practicable (e.g. glass bottles, plastic crates, wooden pallets).			
11.	Incentivising customers to bring their own bottles to refill drinks.			
Recycling and Recovery				
12.	Setting up recycling facilities to recycle used packaging (e.g. reverse vending machines, recycling bins, recycling plants).			
13.	Incentivising customers upon receiving clean and well-conditioned reusable packaging materials.			
14.	Upcycling recycled packaging materials into useful products.			
Packaging Reporting and Management				
15.	Performing statistical analysis and recording the total packaging materials used on a yearly basis.			
16.	Publishing waste reduction plans and achievements in companies' ESG/ Sustainability/ Annual Report.			
Publicity and Customer Education				
17.	Organising education/ environmental campaigns to raise public awareness.			
18.	Providing tips and guidance to customers on the proper handling of packaging materials generated (e.g. displaying at recycling bins).			
19.	Developing an online tool to educate customers on clean packaging and energy savings.			

Remark:

As a general principle, excessive and non-essential packaging should be avoided as far as practicable. In case the use of packaging materials is unavoidable, careful considerations should be adopted in choosing the suitable packaging to reduce waste generation. In addition, it is worth understanding that reuse and recycling could extend the life of packaging. Beverage manufacturing companies, therefore, should support recycling of various packaging materials with a view to encouraging their suppliers, business partners, logistics service providers, and customers to develop green habits.

Appendix 2 – Packaging Reporting Templates

Report templates on types of packaging materials consumed during the reporting period: (Approach 1)

Company:				
Venue:				
Business Nature of the Venue:				
Reporting Period:	From		To	

Data obtained from procurement and inventory record

Packaging material	Packaging form*	Quantity of packaging in storage at the beginning of the reporting period (tonnes)	Quantity of packaging purchased/ obtained during the reporting period (tonnes)	Quantity of packaging in storage at the end of the reporting period (tonnes)	Remarks	Total quantity of packaging consumed (tonnes)
		(A)	(B)	(C)		(D) = (A) + (B) - (C)
Plastics	e.g. beverage bottles	5	10	4	made of PET	11
	e.g. bottles caps					
	e.g. shrink wrap					
Sub-total						
Paper	e.g. carton boxes					
Sub-total						
Metal						
Sub-total						

<i>Packaging material</i>	<i>Packaging form*</i>	<i>Quantity of packaging in storage at the beginning of the reporting period (tonnes)</i>	<i>Quantity of packaging purchased/ obtained during the reporting period (tonnes)</i>	<i>Quantity of packaging in storage at the end of the reporting period (tonnes)</i>	<i>Remarks</i>	<i>Total quantity of packaging consumed (tonnes)</i>
		(A)	(B)	(C)		$(D) = (A) + (B) - (C)$
Wood						
Sub-total						
Glass						
Sub-total						
Composite						
Sub-total						
Others						
Sub-total						
Grand Total (PA)						
Company specific metrics (e.g. units of product, production volume, monetary units such as revenue or sales) (U)						
Intensity of packaging material use = PA/U						

* Companies can select appropriate items to report, subject to data availability

Report templates on types of packaging materials consumed during the reporting period: (Approach 2)

Company:				
Venue:				
Business Nature of the Venue:				
Reporting Period:	From		To	

Data obtained from sales of self-manufactured own-brand products

Product name/ code	Packaging material	Packaging form*	Weight of the packaging material per unit of product (g)	Number of products sold during the reporting period	Total quantity of packaging consumed (kg)
			(A)	(B)	(C) = (A) x (B) / 1,000
e.g. Lemon Tea - 250ml (Pack of 24)	Plastics	Shrink wrap	5	2,000	10
		Straws (24 nos)	12		24
		Plastic bag for straws (24 nos)	2.4		4.8
		Adhesives for straws	12		24
	Paper	Cardboard	300		600
	Beverage carton	Beverage carton (24 nos)	120		240
	Sub-total				
Sub-total					
Sub-total					
Grand Total (PA)					
Company specific metrics (e.g. units of product, production volume, monetary units such as revenue or sales) (U)					
Intensity of packaging material use = PA/U					

* Companies can select appropriate items to report, subject to data availability

Appendix 3 – A “Step-by-Step” Self-Assessment Tool to Sustainable Packaging Management



The following self-assessment tool helps trade practitioners in the beverage manufacturing sector to understand their packaging portfolio along the supply chain and business cycle, so as to identify the scope for packaging management and assess the factors that they could consider in working out improvement options to reduce packaging.

A "Step-by-Step" Self-Assessment Tool to Sustainable Packaging Management			
Instruction for completion			
Step 1: Review your current packaging and practices against the below guiding questions.			
Step 2: Check if they are relevant to your business and packaging? Consider if there are any additional questions you would like to include.			
Step 3: Consider which responsible parties (e.g. within your business or supply chain) could provide the information to complete your packaging reviews.			
Step 4: Consider if better improvement opportunities are available, or could be further explored.			
Step 5: Identify opportunities to reduce your packaging and packaging waste. Develop an action plan and track your progress.			
A. Questions for Sustainable Packaging Tips			
Guiding Questions	Y/ N/ NA	Who is responsible for?	Timeline/ targets/ progress update
<div>Sample Question</div> <p>Does the packaging (all levels together) use the minimum amount of material to maintain the necessary level of protection, safety, and hygiene for the product? Could any components/ layers of the packaging be eliminated, e.g. shrink wrap for multipacks?</p>	Yes	Company Sustainability Manager	<p>1. Early April - To assess the feasibility with Company Product Manager</p> <p>2. Early April - To decide with Company Product Manager on what packaging could be eliminated</p> <p>3. Mid April - To provide briefing to manufacturing staff on the changes by Company Sustainability Manager</p> <p>4. Early May - Implementation</p> <p>5. Early July - Evaluation</p>

Guiding Questions	Y/ N/ NA	Who is responsible for?	Timeline/ targets/ progress update
Prevention – Avoiding/ Eliminating non-essential packaging			
Does the packaging (all levels together) use the minimum amount of materials to maintain the necessary level of protection, safety, and hygiene for the product? Could any components/ layers of the packaging be eliminated, e.g. shrink wrap for multipacks?			
Do you have the capacity and resources to explore/ invest in the research and development of bottle-free drinking initiatives (e.g. beverage dispensers installation)?			
// Add rows for other ideas applicable to your business in eliminating non-essential packaging //			
Reduction – Redesigning packaging			
Have you fully understood the packaging need of your customers so that opportunities for packaging reduction could be identified?			
Could you redesign traditional packaging and use thinner and lighter packaging materials?			
Could you explore the use of creative packaging (e.g. metal can with a resealable lid) or innovative technology (e.g. adhesive-free technology) to enhance packaging recyclability and reduce the use of materials?			
// Add rows for other ideas applicable to your business in redesigning packaging //			
Reduction – Using environmentally-friendly alternatives of packaging materials			
Could you adopt recycled materials (e.g. recycled plastics) as packaging materials?			
Could you include a higher percentage of recycled content in your packaging?			
Are there any opportunities to use sustainable materials that have been certified as being from responsible sources, e.g. by the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC)?			
Could you give priority to local suppliers when sourcing environmentally-friendly packaging materials so as to reduce carbon footprint along the supply chain?			
// Add rows for other ideas applicable to your business in using environmentally-friendly alternatives of packaging materials //			

Guiding Questions		Y/ N/ NA	Who is responsible for?	Timeline/ targets/ progress update
Reduction – Green supply chain management				
Suppliers				
Have you developed a green procurement policy which covers the packaging performance of packaging suppliers? For example, is there a procedure to specify the packaging material requirements jointly with the supplier?				
Could you conduct regular packaging audits on your suppliers to understand their performance on sustainable packaging and potential areas for improvement?				
Could you encourage your suppliers to seek third-party certification on the packaging materials used, so as to provide your customers with added assurance on the green packaging?				
Are there any opportunities to improve the packaging design (e.g. simplifying the design and using a higher percentage of recycled content and/or content with higher recyclability in primary and secondary packaging), or have steps been taken to reduce packaging waste to a minimum?				
// Add rows for other ideas applicable to your business in influencing suppliers on sustainable packaging //				
Logistics service				
Self-operated	Have you provided guidelines/ trainings to support your staff in implementing sustainable packaging strategies?			
	Have you established an internal task force to review packaging strategies regularly?			
	Have you identified any feasible ways for packaging reduction and management?			
Third-party service provider	Have you set tender specifications with sustainable packaging requirements for your third-party logistics service provider?			
	Have you provided guidelines to support/ oversee your third-party service provider in implementing sustainable packaging strategies?			
	Is the packaging consumption data available from your third-party logistics service provider for your internal monitoring?			
	Considering your previous answers, are there any opportunities to further engage with your third-party logistics service provider in packaging reduction and management?			
// Add rows for other ideas applicable to your business in managing logistics operations/ influencing your third-party logistics service provider on sustainable packaging //				
Reuse – Using reusable packaging materials				
Could you explore the feasibility of operating a closed-loop supply chain system?				
Could you adopt reusable packaging as far as practicable, e.g. glass bottles?				
Could you incentivise your customers to choose refillable options and bring their own bottles?				
Could you set up areas in your facilities to collect used but well-conditioned packaging for reuse purposes, e.g. carton boxes, paperboards?				
// Add rows for other ideas applicable to your business in using reusable packaging materials //				

Guiding Questions	Y/ N/ NA	Who is responsible for?	Timeline/ targets/ progress update
Recycling and Recovery – Setting up recycling facilities			
Could you set up recycling facilities to recycle used packaging (e.g. reverse vending machines/ recycling bins/ recycling factory)?			
Could you upcycle packaging materials into useful products (e.g. rPET bottles)?			
// Add rows for other ideas applicable to your business in establishing a collection system //			
Tips on publicity and customer education			
Could you provide more information on the recyclability and percentage of recycled content of the packaging for your products?			
Could you provide tips and guidance to customers on the proper handling of packaging materials generated, e.g. displaying at recycling bins?			
Could you incentivise your customers by offering rebates to encourage them on clean recycling?			
// Add rows for other ideas applicable to your business in raising public awareness, level of knowledge and motivation in package recycling //			
B. Questions for Packaging Reporting			
Guiding Questions	Y/ N/ NA	Who could provide you on this information?	Timeline/ targets/ progress update
Note 1: Refer to "Guidance for packaging reporting and management" for the non-exhaustive list of packaging materials and forms			
Note 2: All packaging being filled/ consumed 1) at factories, 2) at warehouses and distribution centres, and 3) for self-operated delivery operation, should be included in the reporting scope if available			
Could you identify the reporting period?			
Could you define the boundary and activities in your company related packaging reporting?			
Could you identify the packaging materials and forms that should be reported for the operation in your company?			
Are there any records of packaging quantity in storage at the beginning of the reporting period? (e.g. stock-taking record)			
Are there any purchase records of packaging during the reporting period? (e.g. receipt and delivery note)			
Are there any records of packaging quantity in storage at the end of the reporting period? (e.g. stock-taking record)			
Could you identify ways to obtain/ estimate the packaging materials used for each self-manufactured own-brand product?			
Could you identify the company specific metrics for calculating the intensity of packaging material use? (e.g. units of product, production volume, monetary units such as revenue or sales)			
// Add rows for other ways you can identify the source of packaging consumption //			

C. Checklist for Packaging and Packaging Waste Reduction Plan

Guiding Questions	Y/ N/ NA	Implementation details	Status/ achievements
<i>You have now identified several opportunities to reduce your packaging and packaging waste. You should develop an action plan and track your progress.</i>			
Could you identify any opportunities to reduce your packaging and packaging waste?			
Have you assessed the scope of your reduction plan (e.g. start with 3 product lines)?			
Have you set any time-bound goals/ targets on packaging consumption, the recycling rate of packaging waste or other packaging-related issues (e.g. 30% reduction of paperboards compared to the previous reporting period)?			
Have you planned any actions to achieve the abovementioned goals/ targets?			
Have you assigned roles and responsibilities to your team(s) for the abovementioned goals/ targets and actions?			
Have you developed any monitoring and evaluation mechanisms to track the progress?			
Have you set a regular interval to evaluate and modify your reduction plan if the progress is not satisfactory?			
<i>// Add rows for other opportunities you identified to reduce your packaging and packaging waste //</i>			