PRACTICAL GUIDES ON PACKAGING REDUCTION AND MANAGEMENT

ELECTRONICS AND ELECTRICAL APPLIANCES SECTOR

環境保護署
Environmental Protection Department

BUSINESS ENVIRONMENT COUNCIL
商界環保協會

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About this Guide

Image credit: The Guardian

Image credit: Lodamaster

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 or consumers, 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: Anandtech

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:

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.

Chinese Mainland	Establishing a whole-chain administration system on over-packaging by 2025, with improvements to be made in corresponding laws and regulations, standard systems and industrial management. Companies should operate in accordance with mandatory standards for restricting excessive packaging of goods. With respect to electronics products, national standards would be devised to clearly define over-packaging.
Singapore	Requiring producers of packaged products that are imported or used in Singapore to report yearly packaging data (including materials, weight and form of packaging) and to develop and implement 3R (reduce, reuse, recycle) plans for packaging. First report shall be submitted by 31 March 2022.
South Korea	Imposing restrictions on packaging volume ratio and the number of packaging layers of designated products since 1 July 2020 (Amendment decree). For portable electronics weighing below 300g, packaging must not exceed 2 layers and the vacant space is restricted to 35% of the packaging capacity.

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.**

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 growing concern that the current approach on packaging being practised by electronics and electrical appliances (EEA) companies is running contrary to the environmental principals that fails to meet the expectation of consumers and the society. The use of excessive packaging, especially single-use plastics for stretch film and cushioning materials, is an industry-wide practice among EEA companies. Without due consideration on its impact on the supply chain ecosystem, **over-packaging has driven up packaging costs and created inefficiencies in the downstream supply chain**.

As most EEA products sold at physical or online stores would have to go through the fulfilment/ distribution network before reaching the hands of customers, EEA companies can play a key role in waste reduction by **reconsidering 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 EEA 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 EEA 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 well-being of both the customers and society.**

Glossary

- **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

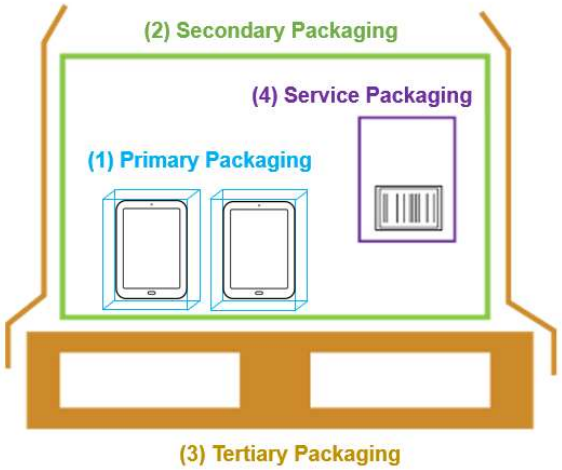
Electronics & Electrical Appliances Sector

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 EEA sector in Hong Kong. The packaging helps maintain the product quality and integrity and facilitates the handling of the product in an efficient manner. **Paper, wood and plastics are the most commonly found packaging materials** being used by EEA sector during transportation and storage of goods as they are economical, light weighed, versatile and protective in nature.

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

- **(1) primary packaging** such as polybags, adhesive protection film, cushioning foam, carton boxes etc.
- **(2) secondary packaging** such as cushioning foam, cardboard, bundle straps, etc.
- **(3) tertiary packaging** such as plastic stretch film, cushioning materials, box-sealing tapes, wooden pallets, etc.
- **(4) service packaging** such as padded envelopes, plastic waybill pouches, etc.



While the aforementioned trade-specific packaging serves important functions from EEA perspective, 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 EEA 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 EEA industry:

/ paper

EEA companies usually 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, corner protectors

Ease of recycling: HIGH

Image credit: Alibaba

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**. EEA companies 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.

01

PET

Polyethylene terephthalate

Example: Anti-static plastic bag

Ease of recycling: HIGH

Image credit: Amazon

02

PE-HD

High Density Polyethylene

Example: Plastic pallet, plastic crate, air pillow

Ease of recycling: HIGH

Image credit: Indiamart

03

PVC

Polyvinyl Chloride

Example: Electronics product component tray

Ease of recycling: LOW

Image credit: Indiamart

04

PE-LD

Low Density Polyethylene

Example: Adhesive protective film, polybag, shrink film, bubble wrap

Ease of recycling: MEDIUM

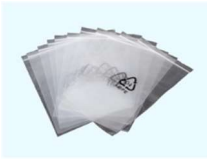


Image credits: Indiamart

05

PP

Polypropylene

Example: Box-sealing tape, bundle strap

Ease of recycling: MEDIUM

Image credit: Amazon

06

PS

Polystyrene

Example: Packing peanut, cushioning material, plastic tray

Ease of recycling: LOW

Image credit: Directindustry

07

O

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

Example: Products made from polyurethane (PU) and biodegradable plastic, etc.

Ease of recycling: LOW

Image credit: Precisepack

**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.

/ metal

Though not commonly used, metal containers are used for higher load capacity.

Example: Metal pallet box, pallet collar

Ease of recycling: HIGH

Image credit: Alibaba

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.

/ wood

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: Wooden pallet

Ease of recycling: HIGH

Image credit: Uline

Opportunity for reuse

Wooden pallets 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 EEA industry, there are several types of **packaging items made from composite materials**, such as padded envelopes with bubble lining, envelopes composed of card cover and LDPE waybill bags, and waybills made of paper, carbon black and wax.

Example: Padded envelop, waybill

Ease of recycling: LOW

Image credit: Walmart

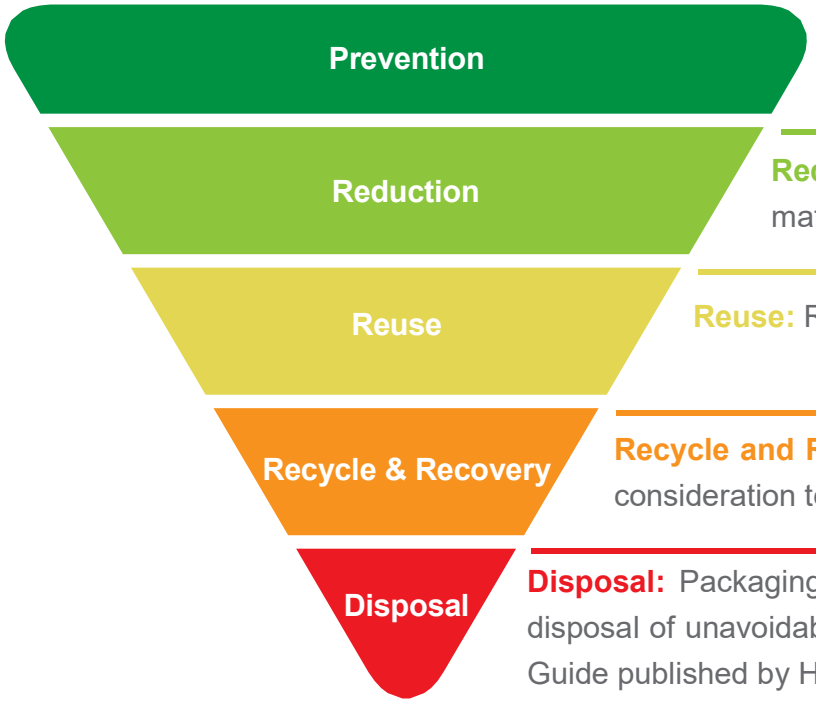
Environmental impacts

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**.



Prevention: Avoid the use of non-essential materials/ components where possible.

Reduction: Reduce the amount (e.g. size, thickness or weight) of packaging material used and adopt environmentally-friendly alternatives.

Reuse: Retain and reuse packaging materials whenever possible.

Recycle and Recovery: Encourage recycling of packaging, always with due consideration to reduce and reuse as well.

Disposal: Packaging report on reduce packaging consumption and proper disposal of unavoidable waste generated, and in line with the ESG Reporting Guide published by HKEX in December 2019.

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 EEA companies 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

To catch up with the fast-changing technology era, it is not unusual to see enthusiastic consumers always pursuing the latest model of electronic products and electrical appliances. These products often come with a large parcel fully filled with cushioning materials for protection. This is not only a waste of our valuable materials, but may also lead to higher costs and reputational damage.

Therefore, EEA industry is suggested to **practise rightsizing and use a wider range of sizes of packaging containers** to meet the diverse needs and expectations of consumers. This could contribute directly to the minimisation of over-packaging such as the use of filling materials, if the box of right size is used. It is understandable that balancing product protection and sustainable packaging is still a common challenge. In face of this, the leading players who are more resourceful in the EEA industry are highly encouraged to **invest more resources in the research and development of data-driven solutions for packaging usage and effective warehouse management,** which is a growing trend in the industry to streamline operation flow and optimise packaging efficiency.

In addition to preventing non-essential packaging at source, EEA companies are suggested to **provide extended warranty periods and expand the network of maintenance services so as to encourage the repairment of faulty products.** The extended warranty period and better accessibility of maintenance could drive consumers in making full use of the product's life cycle, reducing the frequency of new products purchase, and thus minimising the consumption of brand-new packaging and electronic waste (e-waste) generation. The next section highlights some of the practical options and alternatives that could promote the better use of resources.

/ EEA industry is suggested to practise rightsizing and use a wider range of sizes of packaging containers

Do you know...?

A multinational EEA company has launched a self-service repair programme to facilitate individuals with relevant knowledge and experience to repair their electronic devices. With access to genuine parts, tools, and repair manuals, consumers can perform their own out-of-warranty repair, hence avoiding the consumption of brand-new packaging due to new purchases and reducing e-waste generation.

Image credit: Apple

Experience to learn

Chinese Mainland

- A major EEA manufacturer has provided a three-year standard warranty and five years of replacement parts availability for top-selling commercial monitors, notebooks and desktops, consumers could purchase an extended warranty to sustain the durability of the products.
- A major EEA manufacturer has extended its free warranty service of residential air conditioners from 6 years to 10 years since 2021, with a view to leveraging the confidence of consumers in product quality.

Hong Kong China

- A major EEA company has set up over 70 service points in Hong Kong to facilitate customers to send back or leave their EEA products for repairing.

United States

- A multinational electronic product manufacturer and retailer has eliminated the outer polypropylene wrap around the box of smartphones as a means to support their goal of removing all plastic packaging by 2025. The wrap-free smartphone packaging avoided the consumption of about 600 metric tons of plastics in 2021.

Image credit: Apple

France

- A multinational EEA company has eliminated the use of plastic bags for product protection since 2020. Custom-designed cardboard sleeves are used as an alternative for product protection.

Image credit: Tefal

Japan

- A multinational EEA company started to eliminate plastic packaging from small products weighing 1 kg or less in 2023. These include smartphones, cameras and audio accessories, accounting for about 40% of the products the company shipped in 2021.

Image credit: Sony

2 Reduction

(i) Redesigning packaging

Sometimes, multiple packaging materials including a carton box, box-sealing tape, filling materials, a padded mailer, as well as shrink film, could be found containing one single EEA product. Therefore, EEA companies can minimise materials used by redesigning packaging, with a view to reducing resource consumption and packaging waste.

When it comes to redesigning packaging, **parameters including weight, dimension, thickness, volumetric efficiency, materials, etc. should be carefully considered.** Some might have the misconception that using more packaging material 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/ consumers on the packaging requirement, the optimum amount of packaging allowed by the specification could be worked out and employed.

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

Apart from lowering the packaging to product weight ratio, reduction in packaging consumption and enhancement in packaging recyclability could be achieved through **innovative packaging design and procurement.** For example, a simple switch to a tape-free zipper box which is readily available in the market could also contribute significantly to the reduction of tapes and adhesives consumption, hence avoiding the generation of composite packaging waste.

Image credit: iF Design / Gree

Image credit: Lenovo

Besides, the industry has been actively exploring the possibilities of giving used packaging a new purpose. This could be achieved by considering the life cycle of packaging at the early design stage. Table 1 illustrates two redesign examples, of which a packing box could be transformed into a laptop stand or home accessories after serving its original purpose as packaging. This design not only extends the life cycle of packaging significantly, but also becomes one of the product signatures that impress consumers.

Table 1:
Packaging life cycle extension through innovative design

Transforming the packaging into **parts of the product**

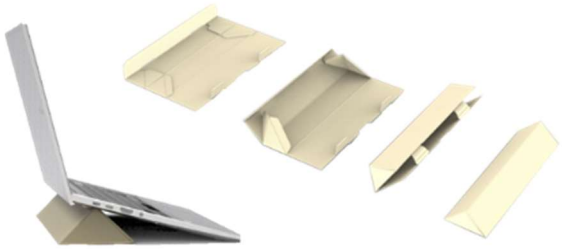


Image credit: ASUS

Transforming the packaging into **useful household items/ decoration**

Image credit: Samsung

Several questions to be considered

- Have I fully understood the packaging need of my trading partners/ customers?
- Considering all the packaging options and comparing 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 reason that it has long been our operational practice/ habit, but possibly not always necessary?
- Could I use fewer packaging materials while maintaining its function, e.g. using single wall corrugated board instead of double or triple ones, without sacrificing the product protection?

Experience to learn

Chinese Mainland

- A multinational EEA manufacturer and retailer developed an “One Paper Box” for non-phone products. By using only one sheet of paper, the consumption of packaging was reduced by 40%. Also, the design of insert tabs fully eliminated the use of adhesives in packaging.

Image credit: Red Dot / Xiaomi

Image credit: Xiaomi

- A multinational EEA manufacturer has adopted a new design for their television packing boxes since 2022. Using kraft packaging without a glossy effect, limiting ink usage to only white colour and eliminating the use of adhesives could minimise the use of chemical substances and greatly enhance the packaging recyclability.

Image credit: TCL

China’s Taiwan region

- A multinational electronic product manufacturer has redesigned the packaging of their mobile bluetooth speaker projector to reduce the packaging weight and volume by 7.8% and 26.5% respectively, transportation efficiency was thus enhanced by 53%.

Image credit: ASUS

Experience to learn

United Kingdom

- A multinational EEA company has redesigned the inner packaging of their vacuum cleaner by packing the components tightly and minimising the number of cardboard inserts. The compact packaging design could reduce 20% of cardboard consumption, and the number of boxes being loaded in a shipping container could be increased by 60%.

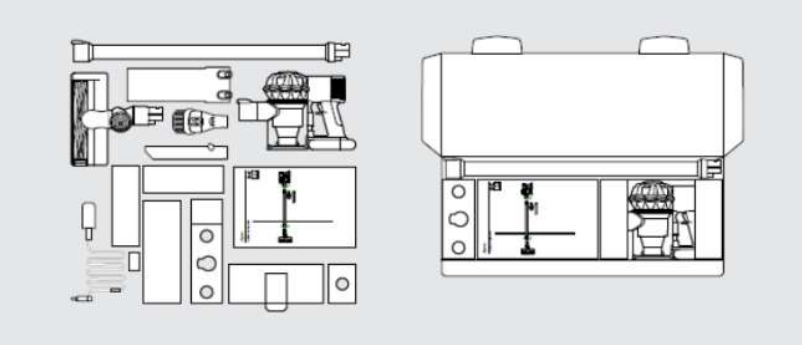


Image credit: Dyson

South Korea

- A multinational EEA company has printed dot matrix designs on their television packaging boxes. With reference to the electronic manuals with QR codes on the packaging boxes, consumers could DIY their desired small furniture such as a cabinet or cat house by making use of the packaging.

Image credit: Samsung

Image credit: Samsung

2 Reduction

(ii) Using environmentally-friendly alternatives of packaging materials

EEA industry should always keep in mind 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 less greenhouse gas emissions. It is increasingly common around the world to include a certain proportion of recycled materials into packaging, such as plastic tray containing recycled plastics, and paper cartons consisting of recycled fibres.

Apart from seeking to increase the content of recycled materials in packaging, priority should also be given to those recyclable packaging such as paper, if packaging is unavoidable. For instance, the use of honeycomb paper wrap is gaining popularity in comparison to traditional styrofoam padding and plastic bubble wrap. Not only can it be easily recycled, but the use of glue or tape can also be avoided owing to its honeycomb-like interlocking structure. Yet, it is certainly preferable to use wastepaper/ recyclable materials as wrapping under the best circumstances.

When it comes to sourcing environmentally-friendly packaging materials, the procurement team should give priority to local suppliers so as to reduce carbon footprint along the supply chain. It is anticipated that the suggested initiatives may contribute to a slight increase in short-term costs at the early stage of green transformation. Nevertheless, this could largely be offset by stronger loyalty from eco-conscious trading partners/ consumers and better operational performance in the long run where the extra costs incurred should be within an acceptable level.

Image credit: Acer

Image credit: DS Smith / Activtek

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

Experience to learn

Japan

- A multinational EEA company has replaced expanded polystyrene (EPS) and plastic trays with recyclable card inserts and paper pulp cushions for their home video game console packaging starting from 2020.

Image credit: Sony

- A multinational EEA company has explored opportunities to include sustainable materials in packaging. They created an “Original Blended Material” made of bamboo, sugarcane fibres, and post-consumer recycled paper, which is a durable paper material suitable for a diverse range of packaging and has less impact on the environment than virgin plastics. It was used for various product packaging including outer boxes, inner boxes, sleeves and cushions.

Image credit: Sony

- A multinational EEA company has used pulp moulds as a protective material for their interchangeable lens camera since 2022.

Image credit: Sony

Experience to learn

India

- A multinational EEA manufacturer has replaced EPS packaging with paper-based honeycomb packaging for refrigerators since 2019. The use of environmentally-friendly alternatives reduced the carbon footprint of packaging of their refrigerators by 50%.

Image credit: Godrej Appliances

United States

- A multinational EEA manufacturer has replaced EPS with recyclable moulded paper pulp for the protection of PCs, laptops and printers. In 2019, they eliminated 933 tons of EPS foam by switching to fibre packaging.

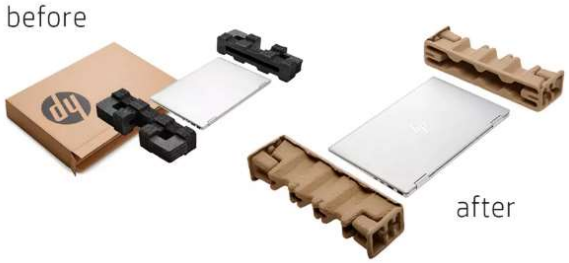


Image credit: HP

Netherlands

- A multinational EEA company has eliminated the use of expanded polyethylene (EPE) by packing their monitors in 100% recyclable materials and paper cushions.

Image credit: Philips

2 Reduction
(iii) Green supply chain management

EEA industry should recognise the complexity of the packaging ecosystem, where a packaging may come into the hands of different stakeholders along its lifecycle, including designers, material suppliers, product/brand manufacturers, importers, logistics service providers, retailers, and end customers. Yet, these stakeholders do not usually share the same set of vision, need, and priority. For instance, brand owners may concern about product protection and costs the most, while logistics service providers would put more focus on the easy handling and storage of products. However, end customers may look for the environmentally friendliness of the packaging. Nonetheless, packaging design and specification decisions may usually be made by a small group of stakeholders, without adequate consideration of the expectations further downstream. Therefore, maintaining close dialogue with importers/ trading partners/ customers to understand their expectations is required to address the potential conflicting interests in the packaging ecosystem effectively. Ideally, **the EEA companies should collectively explore solutions with trade stakeholders (including importers) in minimising packaging materials** without compromising the required level of protection in handling and transportation. The EEA companies should also 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. By doing so, meaningful packaging reduction and management could be achieved in the long run.

Table 2:
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:

- ☑ Logistics service
- ☑ Warehouse

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

- ☑ Logistics service
- ☑ Distribution centre

/ the EEA industry should collectively explore solutions with trade stakeholders (including importers) in minimising packaging materials

Experience to learn

Chinese Mainland

- A multinational EEA manufacturer has set environmental packaging specifications for their suppliers, requiring all corrugated container packaging supplied shall contain at least 70% of post-consumer fibre content, and be printed with water-based and non-toxic inks. Also, Forest Stewardship Council (FSC) certified fibres shall be used for liners for some product series.
- A renowned EEA company has committed to the shared use of recycling packaging and green management by forming a collaborative transfer platform for sharing packaging resources to rent the packaging instead of buying. Universal packaging such as standard pallets, crates, wrap-around boxes, etc. can be shared in a small cycle within the same industry for similar customers.

United States

- A multinational EEA manufacturer has set environmental transport packaging specifications for their suppliers on products of cloud hardware equipment. Packaging materials supplied must comply with relevant substance restriction laws and regulations, the sources and composition of transport packaging shall be identified and provided as well. Suppliers might also be requested to provide detailed information including content, weight, recycled content and material type of the packaging.
- A multinational EEA manufacturer has signed up to the “New Plastics Economy Global Commitment” since 2019, a network that brings packaging producers, packaged goods companies and retailers together towards the vision of a circular economy. Supply chain partners are driven to make progress towards sustainable packaging through peer influence, with a view that progress on plastic packaging reduction is committed to being publicised annually.

Image credit: Microsoft

Image credit: Ellen MacArthur Foundation / UN Environment Programme

3 Reuse

Using reusable packaging materials

In view of the fragile nature of EEA products, it is understood that secondary and tertiary packaging are essential for product protection in handling and transportation. When it comes to these unavoidable packaging, EEA companies are **encouraged to adopt durable and reusable materials** such as plastic container boxes, transport cages, pallet straps, pallet nets, etc. in their operations as far as practicable.

Image credit: Tai Hing Cheung

Image credit: The Cary Company

Table: 3

Commonly adopted reverse logistics channels

Reverse logistics channels	Mode of operation
1. Direct pickup from consumer locations	e.g. pickup of returned packaging right after delivery to the door
2. Scheduled pickup from consumer locations	e.g. pickup of returned packaging by appointment
3. Consumers drop off directly at collection points	e.g. drop off at service centre of EEA companies
4. Return by consumers through logistics service providers	e.g. drop off to courier companies for their handling of return-delivery

On the other hand, EEA companies should develop a return system (also known as reverse logistics) to encourage consumers, particularly corporate clients, to return the packaging for reuse as far as practicable. Packaging such as dunnage, carton boxes, padding and filling materials, and wooden and plastic pallets is valuable resources that could be utilised multiple times.

Image credit: Lenovo

There are a few common approaches when it comes to reverse logistics which are summarised in Table 3.

/ EEA companies are encouraged to adopt durable and reusable materials

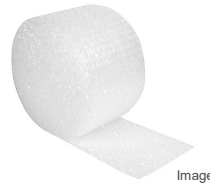
By working towards creating a “closed-loop” supply chain, **the value of resources could be maximised and less waste would be generated**. More resourceful EEA companies should explore the feasibility proactively through research and development as well as experience sharing with their peers. Trial programmes, especially for those trading partners/ consumers with subscription or recurring orders, could be explored and launched to help facilitate the design of reverse logistics systems and the management of reusable packaging operations.

Table 4:
A summary of considerations for a closed-loop supply chain system

- ☑ Environmental and economic cost factors
- ☑ Comparison of reusable against single-use packaging
- ☑ Ownership and responsibility
- ☑ Inventory management
- ☑ Routing and scheduling for reusable packaging collection
- ☑ Purchasing/ leasing, pooling, cleaning, and repairing (Quality of packaging material)
- ☑ Deposit scheme/ Discount to incentivise end customers/ Penalty
- ☑ Performance measurement

While it would take some time to develop a closed-loop supply chain system, **EEA companies are encouraged to adopt reusable packaging in parallel to achieve cost-efficient and lean supply chain operation.** For example, EEA companies may consider first using reusable boxes for delivery, and handing in individual items to the consumers to avoid additional secondary and tertiary packaging. Well-conditioned carton boxes and filling materials could also be reused as far as practicable. Apart from these, EEA companies may refer to Table 5 below for commonly reusable packaging items and consider their application to their operations.

Table 5:
List of commonly reusable items

☑ Carton box (whenever possible before recycling)	 Image credit: Freepik	☑ Padding and filling material	 Image credit: Freepik
☑ Plastic container box	 Image credit: Tai Hing Cheung	☑ Pallet straps	 Image credit: The Cary Company
☑ Transport cage	 Image credit: Better Storage	☑ Pallet net	 Image credit: Maxpack
☑ Wooden and plastic pallet	 Images credit: Freepik		

Experience to learn

Japan

- A multinational EEA manufacturer has adopted an award-winning returnable packaging design for air conditioner compressors to facilitate safe overseas transportation. With the use of foldable sleeves, the packaging could be easily stored and returned.

Image credit: Mitsubishi

- A multinational EEA manufacturer has utilised reusable bands to keep stacked cartons from collapsing at manufacturing sites and warehouses, consumption of single-use packaging such as stretch films could be reduced. Moreover, they have switched from using disposable containers to multi-use returnable boxes for transportation and protection of products, and the use of protective bags is eliminated completely.

Image credit: Sony

Image credit: Sony

Experience to learn

Chinese Mainland

- A multinational EEA manufacturer has promoted the reuse of cartons, saving approximately 3 million single-use cartons in a year. In addition, they also promoted the reuse of transfer boxes and pallets which saved the consumption of 320,000 boxes and 10,000 wooden pallets respectively in 2020.

Image credit: Xiaomi

South Korea

- A multinational EEA company used Expanded Polypropylene (EPP) foam to pack and transport their refrigerators. With good resilience and shock absorption ability, the EPP packaging could be reused approximately 40 times and facilitated their reverse logistics system in achieving resource recycling.

Image credit: Samsung

- A multinational EEA company has reused packaging materials as cushioning material for outdoor units of system air conditioners since 2020, the consumption of paper and expanded polystyrene reduced by 85 tons and 19 tons respectively per year.

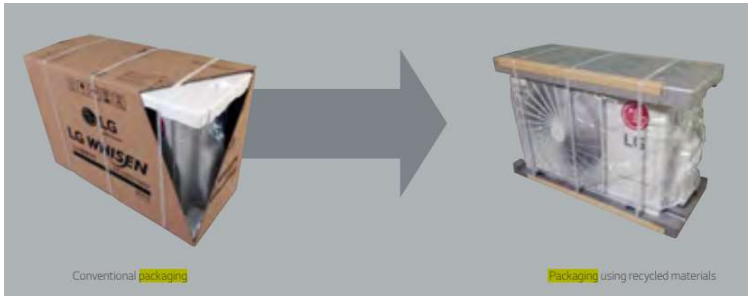


Image credit: LG

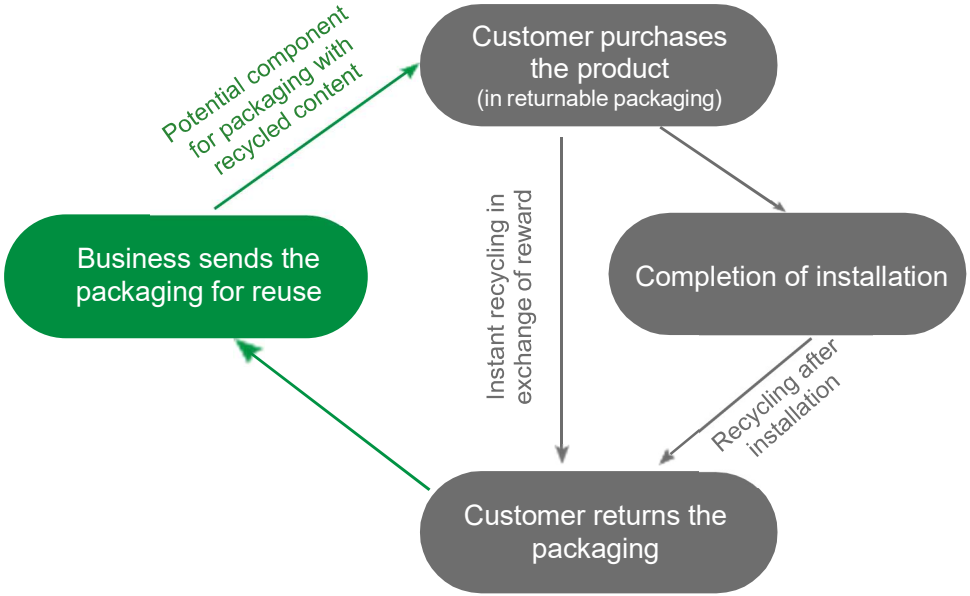
4 Recycling and Recovery

Setting up recycling facilities

Retail stores or service centers of EEA companies may generate paper and other recyclables in their daily operations, and arrangement should be made for their collection by recyclers or cleaning contractors. If customers remove packaging materials right after purchasing new electronic and electrical products at retail stores or service centers, EEA companies may consider helping them handle the packaging materials as part of their customer service. The packaging materials collected, such as paper boxes and plastic bags, can be handed over to recyclers together with the store's daily cardboard waste and other recyclables. Meanwhile, it is suggested that EEA companies could consider providing incentives (e.g. rebates or extended warranty periods) for customers to return reusable packaging materials that are in good condition. **This not only may raise customers' sustainability awareness, but may also enhance their brand loyalty, which is a direct application of the circular economy concept in business practices.**

/ Assisting customers in handling and recycling packaging materials could enhance brand loyalty

In addition, EEA companies can also consider setting up recycling facilities in operational areas such as warehouses, service centers, and retail store to manage packaging waste generated in their daily operations in order to achieve sustainable packaging management. Subject to the availability of resources and capacity of the EEA companies, they could consider expanding their recycling services to door delivery, assisting customers in returning used packaging materials instantly after on-site installation. This could be regarded as part of customer service and a way to fulfil corporate social responsibility.



Do you know...?

Building Environmental Assessment Method (BEAM) Plus is one of the most widely used green building rating scheme in Hong Kong. It facilitates companies to reduce environmental impacts and improve environmental quality in their buildings.

Retail stores/ service centres located in new buildings/ shopping centres/ malls are advised to **liaise closely with the building owner/ property management company** to set up in-store/ on-site packaging recycling facilities for plastics, paper and metal, with a view to improving the sustainability performance of their leased premises.

Experience to learn

Hong Kong China

- The Hong Kong branch of a multinational EEA manufacturer has engaged its logistics service partner to collect used EPS packaging at the time of product delivery since 2010. Used EPS packaging is collected weekly from the warehouse of the logistics service partner and would be delivered to the recycler, around 5 tonnes of EPS packaging could be recycled per year.

Image credit: Canon Hong Kong

Chinese Mainland

- A multinational EEA manufacturer collected used LDPE thermoformed cushions and crushed them into granule form for the production of recycled LDPE sheets, i.e. materials for new LDPE thermoformed cushions. The used cushions were recycled again and facilitated a closed loop of the LDPE recycling process without using new raw materials.

Image credit: Lenovo

Experience to learn

Japan

- A multinational EEA manufacturer has established several recycling centres across Japan to create a nationwide recycling system. With animated product disassembly manuals, workers could perform precise segregation of materials including 20 different types of plastic. Ballpoint pens and folders made from recycled plastics are distributed at their exhibitions and events to demonstrate the environmental initiative of the company.

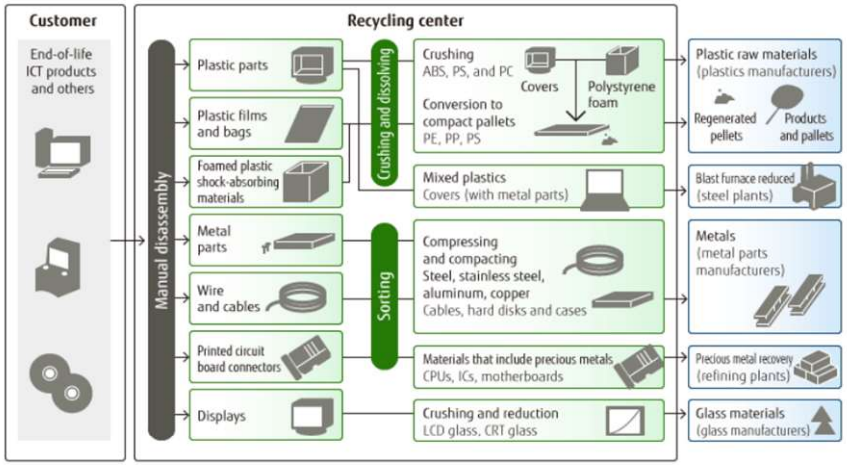


Image credit: Fujitsu

United Kingdom

- A renowned EEA company has launched a recycling scheme since 2021 to collect used EPS television packaging for recycling. The in-store collection scheme has complemented its existing home delivery recycling service that comes with a fee. The collected EPS would be treated by third-party recyclers and transformed into household insulation panels.

Image credit: Currys PLC / Letsrecycle.com

Image credit: Currys PLC / Letsrecycle.com

Experience to learn

South Korea

- A multinational EEA manufacturer has donated 400 recycled cardboard boxes of home electrical appliances to an Animal Enrichment Programme every year since 2021. These cardboard boxes are upcycled as animal toys to support the aim of resembling the actual habitat of each animal, minimising stress and allowing them to demonstrate their instincts.

Image credit: LG Electronics

Singapore

- A renowned EEA company has been regularly sending their used and well-conditioned wooden pallets to a non-governmental organisation since 2018. The used pallets were transformed into artwork at workshops to promote recycling and sustainability.

Image credit: National Environment Agency, Singapore

With reference to the waste management hierarchy, apart from the above experience to learn, the following example also shows how EEA companies 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: Corneredgeproducts

Reuse, Recycle and Recovery:

+ Could you set up recycling facilities to collect used packaging materials from customers for reuse/ recycling?
+ Could you use packaging with on-pack recycling labels or add on-pack recycling labels to encourage customers to recycle?

Prevention:

+ Could you practise rightsizing and using a wider range of sizes of packaging boxes?
+ Could you consider not to use polystyrene (PS)/ expanded polystyrene (EPS) fillings?

Reduction:

+ Could you reduce the use of virgin materials through redesigning packaging (e.g. carefully considering the parameters of the packaging)?
+ Could you reduce the number of padding and filling material?
+ Have you checked to see whether it is possible to include recycled content in the packaging components?

5 Guidance for Packaging Reporting and Management

While it is anticipated that the sustainable packaging initiatives suggested in previous chapter would help EEA companies in identifying existing gap 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 EEA companies 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:

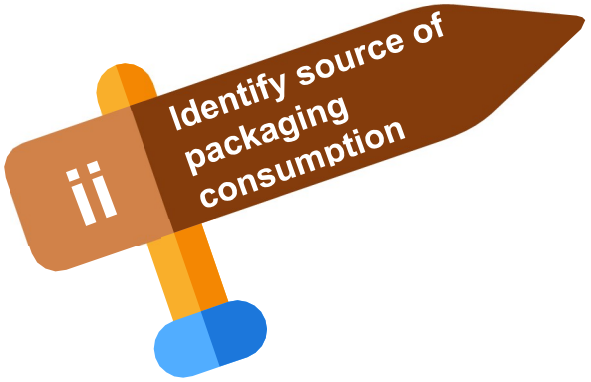
+ Total packaging material used and intensity
+ If possible, issuers should provide a breakdown of materials by type

Step-by-step guidance for packaging reporting and management

i 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. product manufacturing points, 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 point of product manufacturing 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.



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

Primary and secondary packaging consumed for self-manufactured own-brand products

(e.g. carton boxes, cushioning materials, cardboards, bearing tapes)

Image credit: THIMM

Packaging consumed at warehouses and retail stores

(e.g. carton boxes, box-sealing tapes, cushioning materials, shrink film)

Image credit: Binrush Stationery

Packaging consumed during self-operated delivery operation

(e.g. wooden pallets, waybills, woven bags, stretch film, bundle strap)

Image credit: Freepik.com

Image credit: SABIC

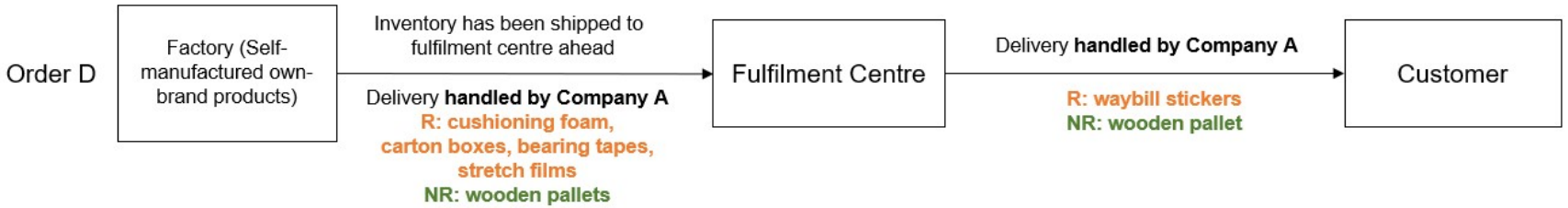
Scenario of reporting scope

Company A owns and operates physical stores and an online platform in Hong Kong for retail sales of multi-brand electronics products and electrical appliances, including their self-manufactured own-brand electrical appliances. They operate their own fulfilment centre and have their own vehicle fleet for order delivery. Table 6 shows some example orders generally handled by Company A and their associated reporting requirements.

Table 6: Examples of orders

Orders	Examples
Order A[1]	 It happened that the supplier had already shipped their inventory to Company A's fulfilment centre ahead of time, of which the products came with their original packaging placed by the suppliers, no additional packaging was needed by Company A except the use of some **waybill stickers**.
Order B[1]	 It happened that the supplier had already shipped their inventory to Company A's fulfilment centre ahead of time, of which the products came with their original packaging placed by the suppliers. Since the order involved multiple items (e.g. digital camera and notebook), **new wrapping paper** was used by Company A to protect fragile items and a **recycled carton box** in perfect condition was used to contain all items collectively. Some **box-sealing tapes** and **waybill stickers** were used as well.

[1] To deliver Orders A, B and D to the door of customers, Company A used a **reusable wooden pallet** to hold all items and reused the pallets afterwards.

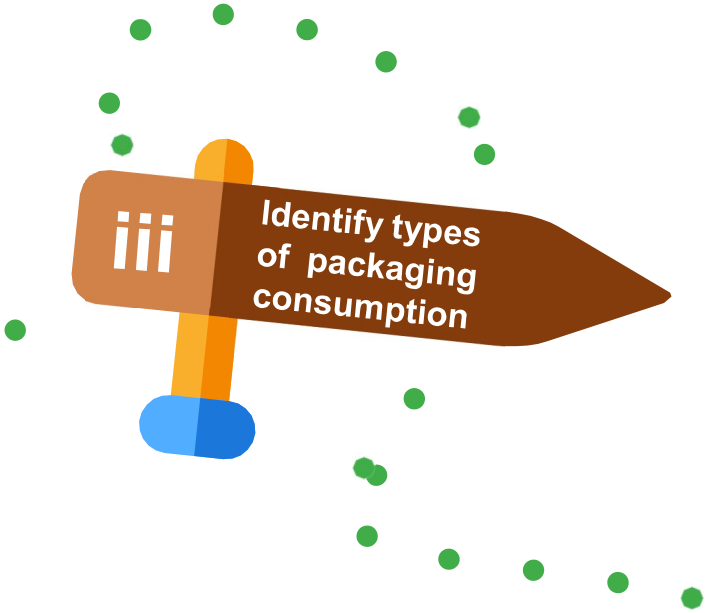
Orders	Examples
Order C	 It happened that the supplier had already shipped their inventory to Company A's fulfilment centre ahead of time, of which the products came with their original packaging placed by the suppliers. However, since the order involved multiple items (e.g. digital camera and notebook), **new wrapping paper** was used by Company A to protect fragile items and a **new carton box** was used to contain all items collectively. Some **box-sealing tapes** and **waybill stickers** were used as well.
Order D[1]	 Order D involved a unit of Company A's self-manufactured own-brand washing machine. Company A had already arranged shipment of batches of the product ahead of time from the factory to their fulfilment centre, with the usage of **brand-new cushioning foam, carton boxes, bearing tapes, stretch films** and **recycled wooden pallets**. As the products already come with original packaging, no additional packaging was needed by Company A at the fulfilment centre except for the use of some **waybill stickers**.

Legend:
R = To be reported
NR = Not to be reported

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

Table 7:
Commonly found packaging material and forms

Paper/ cardboard	• Carton boxes • Moulded pulp • Cardboard	• Paper corner protector • Other paper packaging
Plastics	• Adhesive protection film • Air column cushion bags • Bundle strap • Bearing tape • Bubble wraps • Box-sealing tapes • Flat pockets • Foam sheets • Labels/ stickers (e.g. waybill sticker)	• Plastic trays • Polybags • Plastic pallets • Packing peanuts • Polystyrene/ EPS foam • Shrink hoods • Stretch film • Vacuum packs • Other plastic packaging
Metals	• Metal pallet boxes • Pallet collars	• Other metal packaging
Wood	• Wooden pallets • Crates	• Other wood packaging
Composite	• Padded envelopes • Envelopes with waybill bag	• Waybill • Other composite packaging



iii Packaging is ubiquitous in EEA 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 7.

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 EEA companies, whereas Approach 2 should also be adopted at the same time if self-manufactured own-brand product sales are 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.

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

2 Approach 2: Data obtained from sales of self-manufactured own-brand 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 washing machine

Image credit: Samsung

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*
Washing machine	Plastics	Cushioning foam	10	2,000	20
		Adhesive protection film	1		2
		Bearing tape	5		10
	Paper	Carton box	1,500		3,000
		Cardboard	300		600
				Sub-total	3,632

* 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 materials used during the reporting period or the intensity of packaging materials use[note]. Breakdown of packaging materials consumed by type (e.g. plastics, paper, 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 material can be recycled if they are made from single material. However, some customers are not used to recycling while others do not know the correct way to do so. EEA companies are suggested to **use packaging with on-pack recycling labels** to give customers clear illustration on the correct way of recycling. The on-pack recycling labels should be as informative and as clear as possible. Providing tips and guidance to customers on the proper handling of common packaging materials is a measure that aims to raise the public awareness, level of knowledge and motivation in package recycling.

EEA companies can adopt different ways to convey such information, for instance, at retail stores, service centres, via websites, invoices, user manuals, or social media. In addition, training on understanding recycling labels should be provided to staff at the manufacturing points and warehouses to encourage and raise their awareness of recycling.

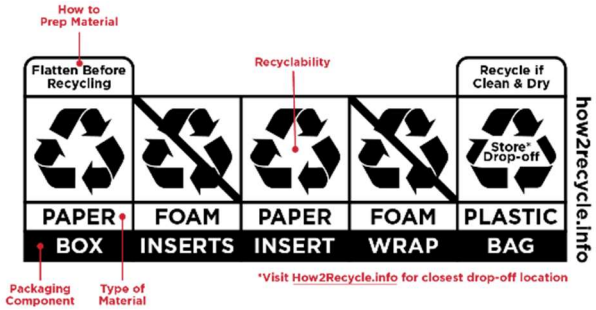


Image credit: TCL North America/ How2Recycle

Image credit: Lenovo

/ EEA companies are suggested to use packaging with on-pack recycling labels

Experience to learn

Hong Kong China

- The Hong Kong branch of a multinational EEA manufacturer used protective materials affixed with recycling labels for their electronics products, with a view to letting customers identify the material type and recycle them properly.

Image credit: IKEA

- A non-profit making organisation formed by repair technician volunteers has provided repair services for small electrical appliances and delivered educational workshops to the public. Their mission of promoting repair culture has contributed to the reduction of brand-new products and packaging waste.

Image credit: Repair Café HK

United States

- The United States branch of a multinational EEA manufacturer has partnered with a non-profit making organisation to display on-pack recycling labels on television packaging since 2021. The EEA manufacturer has also published step-by-step recycling instructions on its website to help consumers dispose of packaging responsibly.

Image credit: TCL North America

Experience to learn

United States

- A multinational EEA manufacturer has published product environmental reports for all products. The report introduced the green packaging features including material type, material source, and recycled content of the packaging.

Image credit: Apple

Switzerland

- A multinational EEA manufacturer has placed a carbon impact label on the box of some products showing the estimated total carbon footprint of the product, including packaging, over its entire life cycle. The figure was developed from Life Cycle Analysis (LCA) methodology which estimates the products' carbon impact from raw material sourcing to manufacturing, distribution, consumer use and disposal at end-of-life. This practice facilitated consumers to select environmentally-friendly products.

Image credit: Logitech

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. manufacturing points, warehouses, distribution centre, etc.) and identify the packaging materials consumed by their companies for reporting, including primary packaging (e.g. polybags and adhesive film), secondary packaging (e.g. cushioning materials, buddle strap etc.), tertiary packaging (e.g. padded envelopes, shrink wrap, wooden pallets, etc.) and service packaging (e.g. plastic waybill pouches, etc.) used in their operations. For companies which extend their business to the manufacturing of their own-brand products, they should also include the primary packaging and secondary packaging consumed for their self-manufactured own-brand products.

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) Primary and secondary packaging consumed for self-manufactured own-brand products, 2) Packaging consumed at warehouses and retail stores, and 3) Packaging 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 EEA industry for implementing practicable measures to promote and encourage reducing the use of plastic packaging materials. Think big, start small!

Q7 The original packaging materials of the goods of our suppliers and logistics service providers are out of our control, what could we do?

Businesses are suggested communicating with their suppliers and logistics service providers and collectively explore solutions for switching the use of reusable materials for packaging while maintaining the necessary level of protection for handling and shipping. Businesses with own-brand product lines are encouraged to improve the packaging design and minimise packaging waste generation.

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 at their manufacturing and retail points 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

Useful Resources

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

- **Guidance for the compilation and reporting of data on packaging and packaging waste – European Commission**
  https://apambiente.pt/sites/default/files/_Residuos/FluxosEspecificosResiduos/ERE/Guidance_for_the_compilation_and_reporting_of_data_on_packaging.pdf

- **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

- **Tackling Plastic Pollution – Legislative Guide for the Regulation of Single-Use Plastic Products – UN Environment Programme**
  https://wedocs.unep.org/bitstream/handle/20.500.11822/34570/PlastPoll.pdf?sequence=3&isAllowed=y

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

- **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

- **Everything you need to know about electronics packaging design – Swiftpak**
  https://www.swiftpak.co.uk/insights/electronics-packaging-design-everything-you-need-to-know
- **German Packaging Act (VerpackG) – Landbell Deutschland**
  https://verpackungsgesetz-info.de/en/
- **Here's Why the Electronics Industry is Transitioning to Sustainable Packaging – RyPax**
  https://www.rypax.com/heres-why-the-electronics-industry-is-transitioning-to-sustainable-packaging/
- **Packing Guide for Electronic Goods – DHL**
  https://www.dhl.de/content/dam/images/Express/pdf/dhl-express-electronics-packing-guide-en.pdf
- **Reuse – rethinking packaging – Ellen MacArthur Foundation**
  https://ellenmacarthurfoundation.org/reuse-rethinking-packaging
- **Singapore Packaging Agreement and Packaging Partnership Programme – National Environment Agency of Singapore**
  https://www.nea.gov.sg/programmes-grants/schemes/singapore-packaging-agreement
- **Sustainable Packaging for Consumer Electronics – Billerud**
  https://www.billerud.com/served-industries/consumer-luxury/consumer-electronics

Appendix 1 – Summary Checklist on Practical Tips for Electronics and Electrical Appliances Companies

The following is a quick start of key practical tips for the EEA 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 EEA Companies				
	Practical Tips	**Yes**	**No**	**Follow-up Actions if the answer is "No"**
Prevention				
1.	Practising rightsizing and using a wider range of sizes of packaging containers to your staff, business partners, and logistics service providers.			
2.	Exploring/ investing in the research and development of data-driven solutions to optimise packaging efficiency.			
3.	Exploring/ investing in the wider application of electronic shipment documentation.			
4.	Providing extend warranty periods and expanding the network of maintenance services.			
5.	Avoiding the use of single-use plastic packaging materials (e.g. EPS fillings, PVC shrink film, composite plastics, etc.).			
6.	Avoiding the use of packaging of multiple materials that are inseparable (e.g. padded envelopes, taped cartons).			
Reduction				
7.	Redesigning traditional packaging and using thinner and lighter packaging materials with adequate stress tests.			
8.	Exploring the use of creative packaging (e.g. tape-free zipper boxes)/ innovative technology to enhance packaging recyclability and reduce the use of materials.			

Summary Checklist on Practical Tips for EEA Companies

	Practical Tips	Yes	No	Follow-up Actions if the answer is "No"
9.	Replacing single-use packaging with alternatives containing recycled content.			
10.	Replacing hard-to-recycle packaging with recyclable packaging (e.g. paper, PE plastics, PET plastics) if the packaging is unavoidable.			
11.	Maintaining close dialogue with suppliers/ customers to simplify the packaging design.			
	Reuse			
12.	Exploring the feasibility of operating a closed-loop supply chain system via research and development and trial programme. etc.			
13.	Setting up areas to collect used but well-conditioned packaging for reuse purposes (e.g. carton boxes, filling materials).			
14.	Adopting reusable packaging as far as practicable (e.g., plastic container boxes, wooden and plastic pallets, pallet straps).			
	Recycling and Recovery			
15.	Setting up recycling facilities at manufacturing and retail points to recycle unwanted packaging (e.g. recycling bins, recycling cages).			
16.	Arranging regular material collection services for different recyclables.			
17.	Incentivising consumers upon receiving clean and well-conditioned reusable packaging materials.			
18.	Extending recycling service at the door or setting up mobile collection points to promote instant recycling practice upon receiving orders.			

Summary Checklist on Practical Tips for EEA Companies				
Practical Tips		Yes	No	Follow-up Actions if the answer is "No"
Packaging Reporting and Management				
19.	Performing statistical analysis and recording the total packaging materials used on a yearly basis.			
20.	Publishing waste reduction plans and achievements in companies' ESG/ Sustainability/ Annual Report.			
Publicity and Customer Education				
21.	Using packaging with on-pack recycling labels to facilitate recycling by end customers.			
22.	Providing tips and guidance to customers on the proper handling of packaging materials generated.			
23.	Disseminating guidelines on green packaging to educate the packaging team on lean packaging and cost saving.			

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. EEA companies, therefore, should support recycling of various packaging materials with a view to encouraging their staff, 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. Stretch film*	*40*	*60*	*20*	*made of HDPE*	*80*
	e.g. Box-sealing tape					
	e.g. Bubble wrap					
					Sub-total	
Paper	*e.g. Corrugated box*					
	e.g. Waybill paper					
					Sub-total	
Metal						
					Sub-total	

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)*
Wood						
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. Washing machine	*Plastics*	*Cushioning foam*	*10*	*2,000*	*20*
		Adhesive protection film	*1*		*2*
		Bearing tape	*5*		*10*
	Paper	*Carton box*	*1,500*		*3,000*
		Cardboard	*300*		*600*
				Sub-total	*3,632*
				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 EEA 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**
Sample Question **Does the packaging (all levels together) use the minimum amount of materials to maintain the necessary level of protection for the products and the presentable image of the company? Could any components/ layers of the packaging be eliminated, e.g. individual polybag for electronics components?**	**Yes**	**Company Sustainability Manager**	**1. Early April - To assess the feasibility with Company Product Manager** **2. Early April - To decide with Company Product Manager on what packaging could be eliminated** **3. Mid April - To provide briefing to manufacturing staff on the changes by Company Sustainability Manager** **4. Early May - Implementation** **5. Early July - Evaluation**

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 for the products and the presentable image of the company? Could any components/ layers of the packaging be eliminated, e.g. individual polybag for electronics components?			
Do you have the capacity and resource to explore/ invest in the research and development of data-driven solutions to optimise packaging efficiency? To what extent a data-driven logistics operation could save your costs in the long run?			
Could you avoid the use of single-use plastic packaging materials, e.g. polybags, cushioning air pillows?			
Could you avoid the use of packaging of multiple materials that are inseparable, e.g. padded envelopes?			
// 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 logistics service providers/ customers so that opportunities for packaging reduction could be identified?			
Could you redesign traditional packaging and use thinner and lighter packaging materials? Have you conducted adequate stress tests to ensure product safety is maintained with just-enough packaging?			
Could you explore the use of creative packaging (e.g. tape-free zipper boxes)/ innovative 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 eliminate the use of hard-to-recycle packaging, e.g. styrofoam padding?			
Could you adopt relatively easy-to-recycle packaging (e.g. paper, PE plastics, PET plastics) for unavoidable packaging?			
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 product 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?				
// 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 the packaging strategies regularly?			
	Have you identified any feasible ways for packaging reduction and management?			
Third-party logistics 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 logistics 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 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?				
Do you have the capacity and resource to invest in the research and development of a closed-loop supply chain system? Could this be adopted in phases, e.g. launching trial programme with your customers with subscription or repeated services for gradual full function?				
Could you set up areas in your facilities to collect used but well-conditioned packaging for reuse purposes, e.g. carton boxes, filing materials?				
Could you adopt reusable packaging as far as practicable, e.g. plastic container boxes, metal pallet boxes?				
// 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 in manufacturing and retail points to recycle unwanted packaging (e.g. recycling bins/ cages)?			
Could you provide regular training and guidelines to facilitate staff on identifying recycling labels?			
// Add rows for other ideas applicable to your business in establishing a collection system //			
Tips on publicity and customer education			
Could you use packaging with on-pack recycling labels to facilitate recycling by end customers?			
Could you provide tips and guidance to customers on the proper handling of packaging materials generated, e.g. via electronic product manual?			
Could you incentivise your customers by offering rebates to further encourage them to recycle unwanted packaging?			
// 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 consumed 1) for self-manufactured own-brand products, 2) at warehouses and retail stores, and 3) for self-operated delivery operations should be included in the reporting scope if available*			

Guiding Questions	Y/ N/ NA	Who could provide you on this information?	Timeline/ targets/ progress update
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 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
You have now identified several opportunities to reduce your packaging and packaging waste. You should develop an action plan and track your progress.			
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 5 selected products)?			
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 single-use plastic cushioning materials consumption 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?			
// Add rows for other opportunities you identified to reduce your packaging and packaging waste //			