



A WWF INITIATIVE FOR
A CIRCULAR ECONOMY AND
NO PLASTICS IN NATURE BY 2030



Reducing Plastic Use in Fashion

A Stepwise Guide for Fashion Businesses
to Reduce Plastic Packaging

October 2020





Content

Introduction

About this guide	3
About WWF and PACT	3
About the 'Reducing Plastic in Fashion' Virtual Roundtable	3

Why is there a need to reduce plastic use?

The economic & environmental cost of excessive plastic use	4
Excessive use of plastic packaging in fashion	5
Roles of plastic packaging	6
More waste as businesses shift online	7

Stepwise instructions to reduce plastic packaging

STEP 1: Review initial packaging	9
STEP 2: Develop a PACT plan	11
STEP 3: Identify and implement PACT solutions	14





About this guide

This guide is created mainly for businesses in the fashion industry from manufacturers, retailers, and e-commerce looking to minimise packaging waste and switch to alternatives with the least environmental impact.

This guide provides recommendations for the fashion industry to eliminate single-use packaging, introduce reusable packaging, and divert waste away from incineration by increasing recycling rates.



About WWF and PACT

WWF is the largest environmental not-for-profit organisation in the world, driving change on a large range of environmental issues. Plastic ACTION (PACT) is a business initiative, started by WWF-SG, aiming to eliminate plastic pollution in nature and move towards a circular economy on plastics. It recognises the integral role that businesses play to solve the issues of unnecessary use of plastics and plastic pollution. PACT provides businesses with guidance, life cycle assessments, resources and best practices, enabling them to make science-based decisions to reduce their plastic footprint.



About the 'Reducing Plastic in Fashion' Virtual Roundtable

On 16 June 2020, Textile and Fashion Federation (TaFF) and WWF co-hosted the 'Reducing Plastic in Fashion' Virtual Roundtable. Over 80 participants gathered to discuss challenges and possible solutions to address harmful plastic use in the fashion industry's entire value chain. The challenges and opportunities discussed during the roundtable, complemented by additional desktop research of successful case studies by companies globally, set the basis for this guide.





Why is there a need to reduce plastic use?

The Economic & Environmental Cost of Excessive Plastic Use

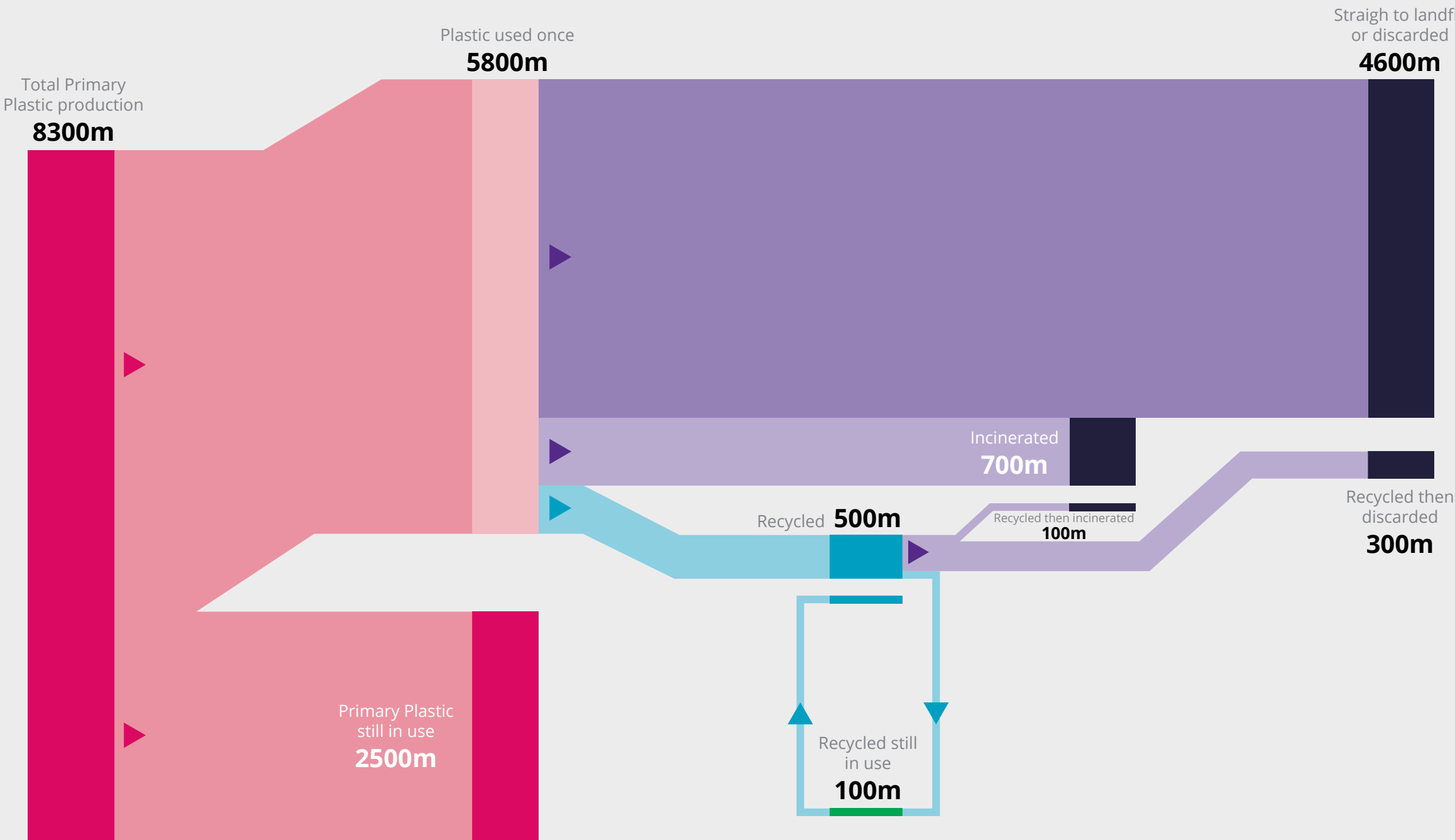
Global Plastic Production and Its Fate (1950-2015)

Global production of polymer resins, synthetic fibres and additives, and its journey through to its ultimate fate (still in used, recycled, incinerated or discarded). Figures below represent the cumulative mass of plastics over the period 1950-2015, measured in million tonnes.

BALANCE OF PLASTIC PRODUCTION AND FATE (M = MILLION TONNES)

8300m produced ➔ 4900 discarded + 800m incinerated + 2600m still in use (100m of recycled plastic)

SOURCE: Based on Geyer et al. (2017). Production, use, and fate of all plastics ever made. This visualization is adapted from OurWorldinData.org, where you find data and research on how the world is changing. Licensed under CC-BY-SA by Hannah Ritchie and Max Roser (2018).



- 95% of plastic packaging material value, or USD 80–120 billion annually, is lost to the economy.
- A staggering 32% of plastic packaging that enters nature is generating significant economic costs by polluting the ocean and clogging urban infrastructure.

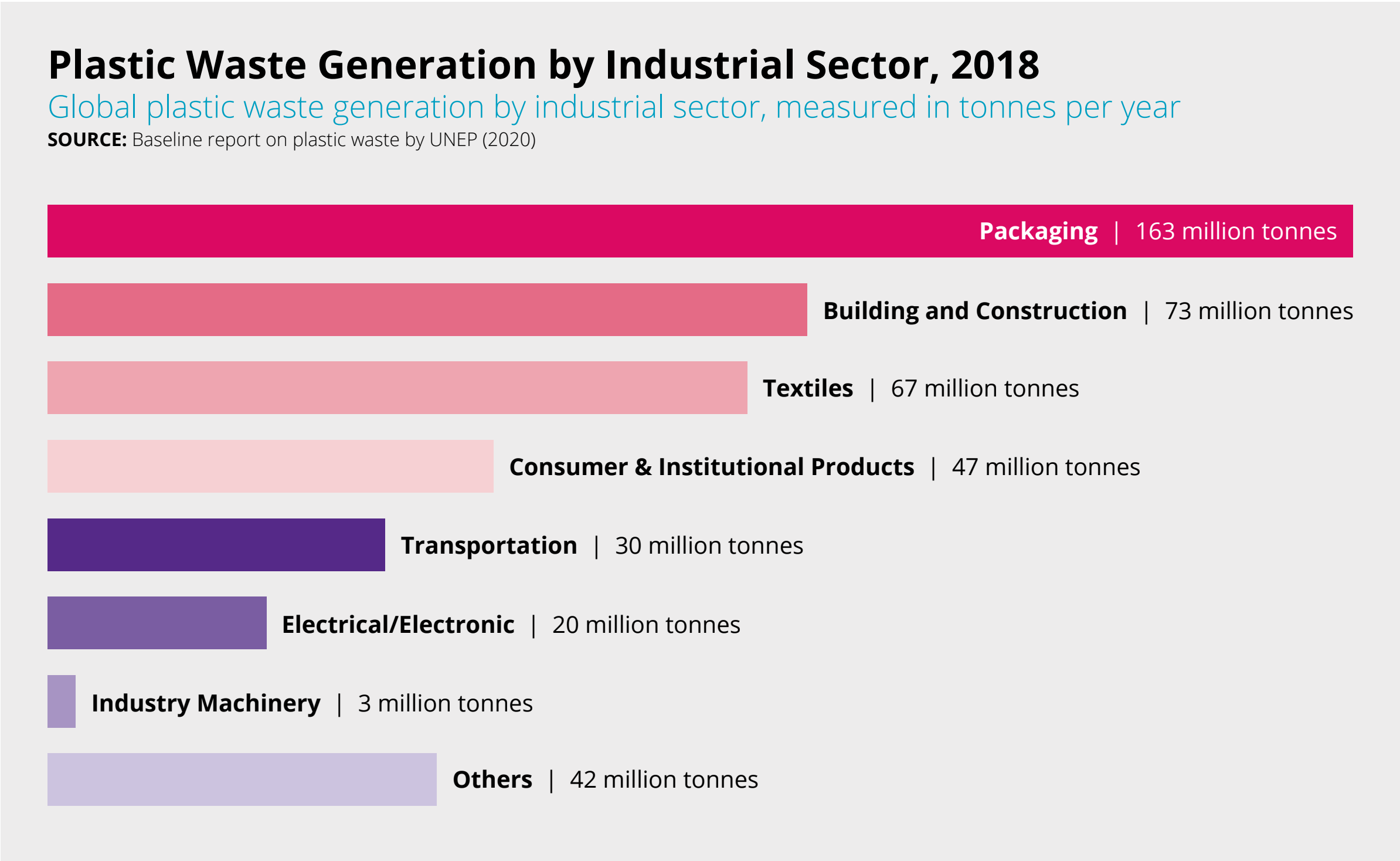




Why is there a need to reduce plastic use?

Excessive Use of Plastic Packaging in Fashion

- Globally every year, **180 billion** polybags and 100 billion hangers are used by the fashion industry.
- **Less than 15%** of polybags are recycled globally and **85%** of hangers are discarded after a single use.
- In Singapore, consumers buy about **34 pieces** of brand new apparel, translating to approximately 190 million polybags used yearly.





Why is there a need to reduce plastic use?

Roles of Plastic Packaging

Packaging plays an important role within the supply chain in fashion. The different levels of packaging have different functionalities and will require different approaches in reducing your reliance on packaging.

LEVEL OF PACKAGING	ROLE OF PACKAGING	EXAMPLES
Primary Packaging	Design and Communication <ul style="list-style-type: none">• Retail packaging refers to one that is the most closely associated with the product.• Companies can communicate its brand values and impress their customers through packaging design. For example, branded shopping bags and e-commerce packaging are used as marketing materials.• Customers equate packaging with a new, unused product.	<ul style="list-style-type: none">• Shopping bags• Sales tags• Size stickers
Secondary Packaging	Protection <ul style="list-style-type: none">• Secondary packaging is critical for protection and branding during transit. Packaging, especially individual garment polybags, add a protective layer around the product to prevent loss or damage in the supply chain journey.	<ul style="list-style-type: none">• Individual garment polybags
Tertiary Packaging	Transportation <ul style="list-style-type: none">• This refers to packaging used most often by warehouses to ship secondary packaging.• Tertiary packaging facilitates the easy, cost-effective handling and storage of products, promoting efficiency in the supply chain.• Labels and stickers communicate relevant information to supply chain participants, from warehouse pickers to delivery couriers and end recipients through product descriptions and barcodes.	<ul style="list-style-type: none">• E-commerce polybags• Pallets that bulk shipments are placed on• Shrink wraps that are used to secure stacks of cartons



Why is there a need to reduce plastic use?

More Packaging Waste as Businesses Shift Online

- As more retail activities shift online, the fashion industry will generate more waste from its e-commerce business unit
- As a result, there is a growing need for polybags due to the growth in e-commerce
- Higher return rates (**10% in traditional brick-and-mortar retail**, as compared to 15% to 30% for online purchases and even up to **60% for fast fashion**) may also result in more waste
- Excessive e-commerce packaging may derive from brands utilising packaging design as an important first touchpoint with the customer to deliver an outstanding brand experience

Therefore, polybags end up in multiple destinations:

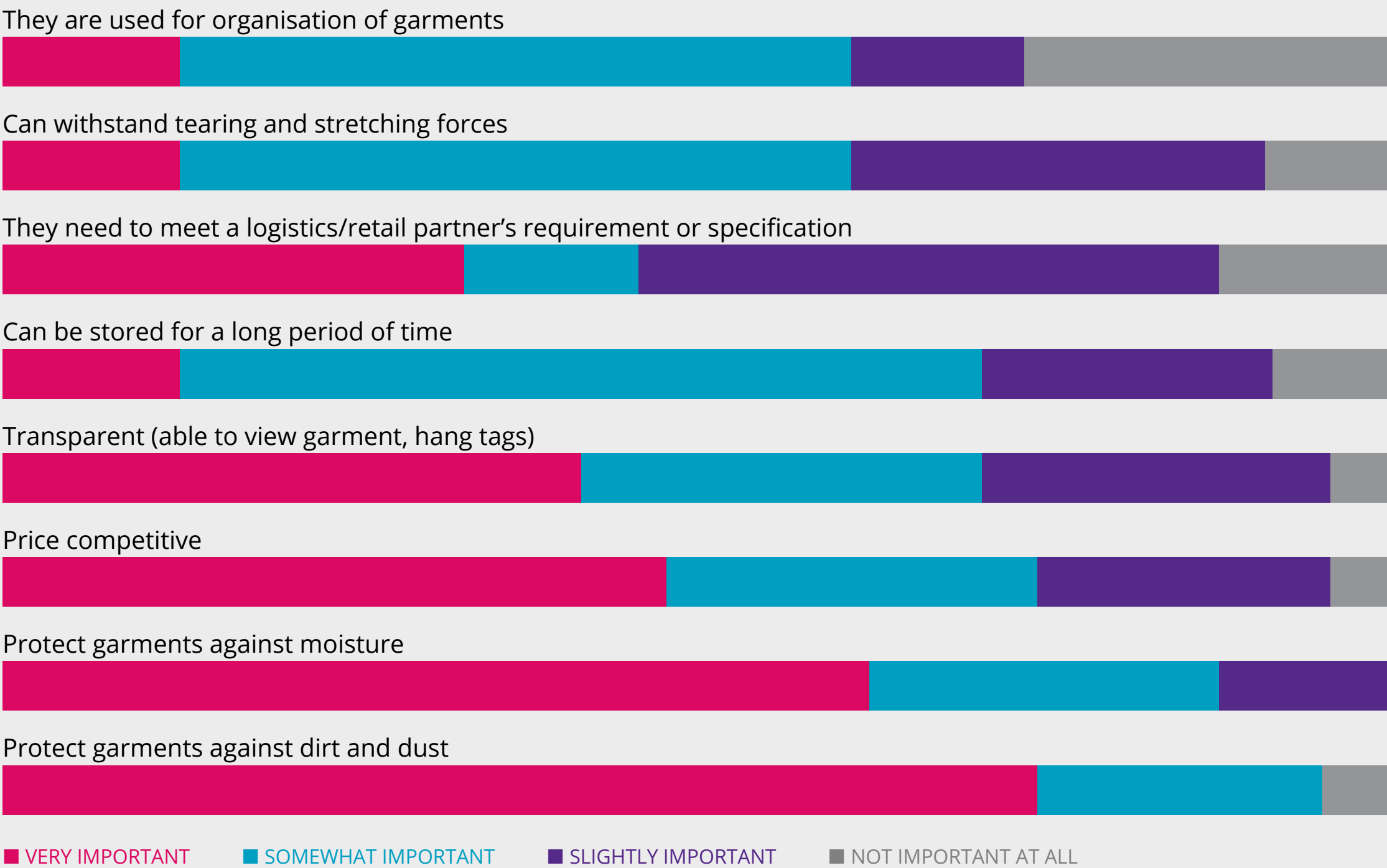
1. Retail stores that are directly owned or via wholesale channels
2. Consumers' homes via e-commerce
3. Distribution centres due online returns and repacking operations

“ **Most of the time, you are not getting a polybag back** because consumers have already opened the polybag; the polybag is damaged... **The polymailer is also not reusable** after it has been torn open. ”

Participant from Reducing Plastics in Fashion Roundtable

WHAT ARE POLYBAGS AND WHY SHOULD WE BE FOCUSING ON THEM?

SOURCE: Fashion for Good and Sustainable Packaging Coalition, 2019





Stepwise Instructions for Fashion Businesses to Reduce Plastic Use

The following section outlines the **three-step approach** for fashion companies to review current packaging, develop a plan and implement solutions according to PACT's guiding principles.



STEP 1:

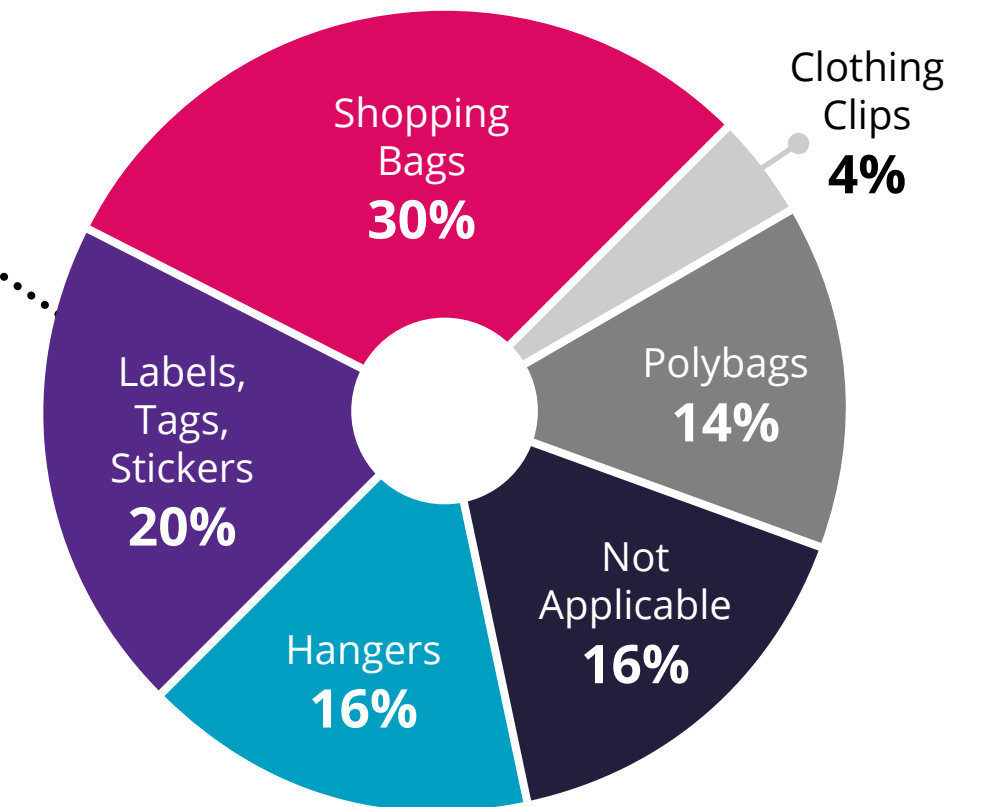
Review Initial Packaging

A

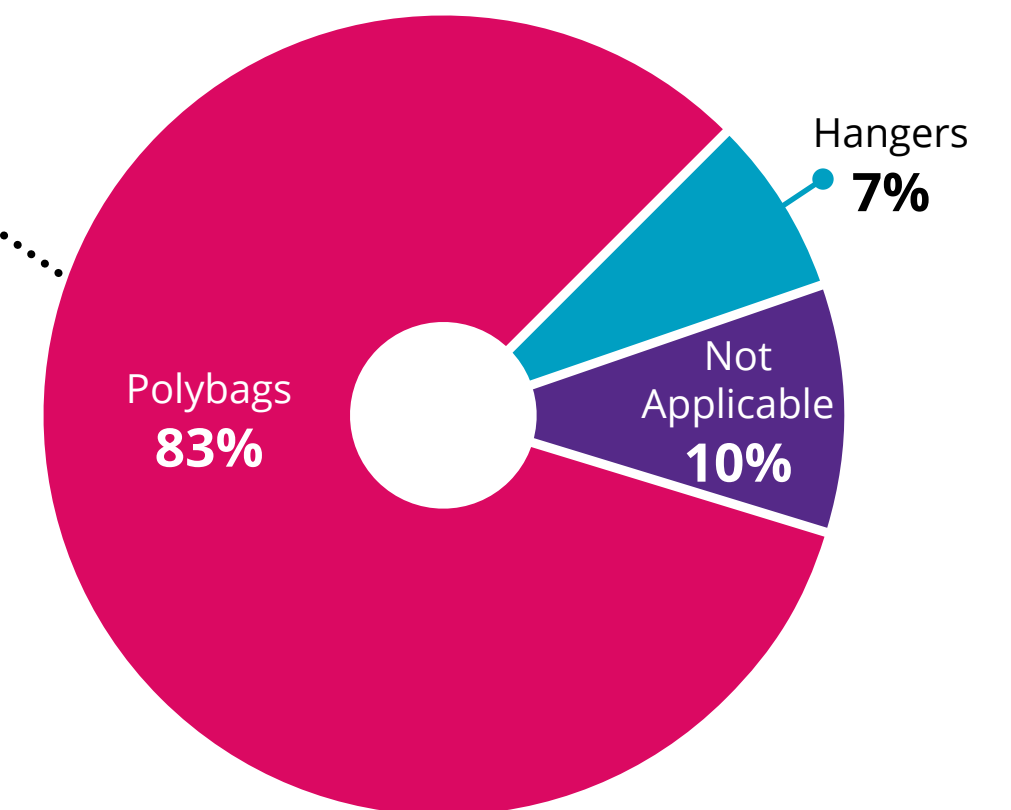
List the types of packaging in your supply chain, from manufacturing to logistics to retail stores.

- Your packaging footprint depends on your supply chain processes. For some, items are packed at the manufacturing facilities ready to be displayed in store, while for others, items need to be packed and repackaged. This would require using multiple polybags down the supply chain.
- Based on a survey we conducted with participants of the 'Reducing Plastic in Fashion' Virtual Roundtable, shopping bags are the easiest to remove, while polybags are the most difficult.
 - 30% said shopping bags are the easiest to remove
 - 83% said polybags are the most difficult to remove

Which plastic packaging do you think is the **most feasible to eliminate** from your supply chain?



What is the **most difficult plastic packaging** in your supply chain to tackle?





STEP 1:

Review Initial Packaging

B

Identify the packaging types that are in major volumes. Then, determine the packaging that are essential or unnecessary.

Quantifying and categorising your packaging footprint will allow you to identify packaging which are easiest to eliminate, and packaging which may require a redesign to reduce its volume or increase its recyclability.

For example:

- Is it possible to reduce the volume of polybags by 50%?
- Are size stickers necessary?
- If each item is individually packed, is bulk packaging necessary (or vice-versa)?





STEP 2:

Develop a PACT Plan

A

List out the resources your business needs and commit to the plan.

- Obtain internal approval to engage on the PACT initiative
- Identify resources or funding required to achieve your commitments
- Identify opportunities with PACT - for example, implementing a pilot test to introduce a new packaging model
- Commit to a PACT plan with milestones and timelines





STEP 2:

Develop a PACT Plan

B

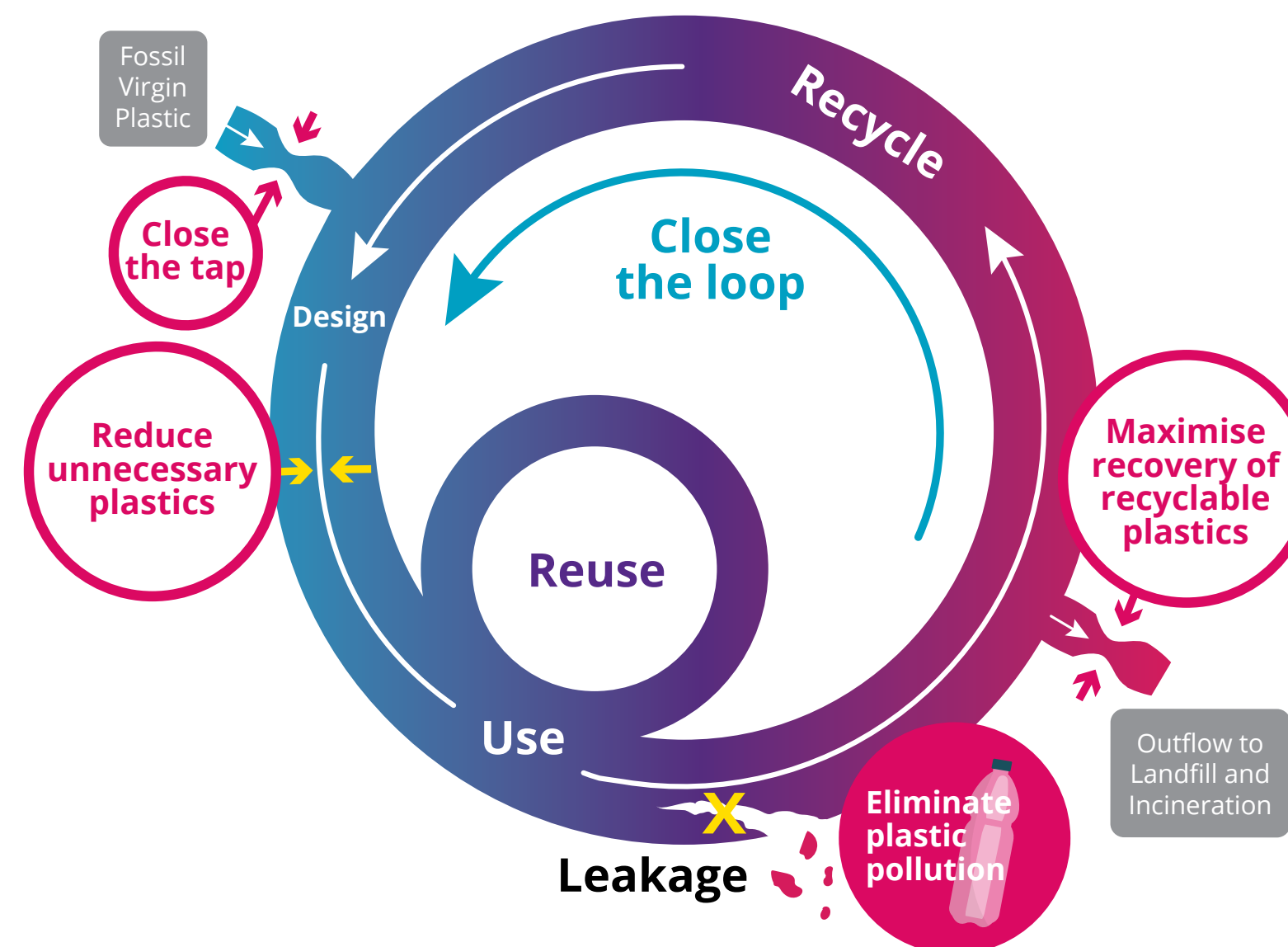
Stay aligned to PACT's guiding principles for businesses to move towards a circular economy for plastics.

Our [guiding principles for a circular economy](#) for plastics can be addressed via **Closing the Tap** and **Closing the Loop**.

The idea of a circular economy is simple: to use resources for as long as possible, ideally – forever. We believe this will help eliminate plastic pollution and extend the lifespan of plastics beyond a single use. The following principles will guide businesses to systematically tackle single-use packaging along their supply chain by moving away from a linear model (of producing, buying, and disposing) to a circular one.

CLOSE THE TAP:

1. Eliminate packaging that are not crucial for product integrity;
2. Switch away from fossil virgin plastic and utilise the WWF Alternative Materials Tool to guide your procurement decisions.



CLOSE THE LOOP:

1. Introduce a reusable model where possible;
2. Switch to mono material packaging to increase the recyclability of packaging;
3. Collect packaging back from your consumers for recycling.



STEP 2:

Develop a PACT Plan

C

Commit to PACT's guiding principles with specific milestones and timelines.

We commit to:

1. Eliminating unrecyclable plastics that are not crucial for product integrity by 2022.
2. Reducing % of unrecyclable single-use plastics by 2021, % by 2025 and 100% by 20 , either by eliminating them from the supply chain or switching to recycled or sustainable plant-based materials.
3. Supporting a circular economy by moving to 100% reusable or recyclable product & packaging design models by 2021.
4. Removing plastics from nature by making a net positive impact. By 2030, we will be collecting and recycling more plastics than we use.
5. Supporting conservation, innovation & research projects related to plastics.

Specific & measurable goals to be filled in by signee

CLOSE THE TAP:
Reduce fossil based virgin plastics

CLOSE THE LOOP:
Enable a circular economy

Read more about PACT at the end.



STEP 3:

Identify and Implement Solutions

A

Close the tap by reusing and reducing demand for plastic packaging before looking for alternative materials.

- **For every material that is extracted, used for consumption, and eventually discarded, an impact is exerted on the environment.** Companies should prioritise to reduce its packaging as much as possible, and introduce reusable packaging models where possible.
- In cases where reusable packaging is not practical and not feasible, especially in maintaining product integrity, businesses should minimise the impact of its single-use packaging through alternative materials that are more environmentally benign, without transferring the environmental cost to another system.
- In the context of [Singapore's waste management system](#):
 - Singapore relies on incineration to manage our waste.
 - Only 4% of plastics in Singapore are successfully recycled, due to poor segregation practices.
 - There are currently few local recycling or industry composting facilities at the moment.
- To understand why we don't recommend bioplastics, biodegradable and oxodegradable plastics in the context of Singapore's waste management system, read more [here](#).



STEP 3:

Identify and Implement Solutions

B Close the tap by reusing and reducing demand for plastic packaging.

In Step 1, you would have identified the target list of packaging that are potentially excessive. Here are possible solutions to address each consumer-facing packaging type discussed during the roundtable.

PACKAGING TYPE	POTENTIAL SOLUTION(S)	POTENTIAL BENEFIT(S)
Shopping bags in retail outlets (Primary packaging)	By default, do not offer a bag to customers. <ul style="list-style-type: none">• Charge for each bag if a bag is requested. Communicate clearly to customers the reasons for the bag charge.• Replace plastic bags with FSC-certified recycled paper bags.	BENEFIT: A bag charge is a consumer facing solution that will help to raise awareness and introduce behaviour change. This is a relatively straightforward solution that can kick-off your plastic initiatives. Email us at markets@wwf.sg to join the WWF PACT Retail Bag Charge pledge.
Labels and stickers (Primary packaging)	Replace labels that contain product information (price, size, material, after-care) with a smaller QR code label.	BENEFIT: Switching to a digital solution will reduce your packaging needs, increase the recyclability of your packaging and allow you to introduce new innovation for your packaging.
Polybags for garments (Secondary packaging)	Polybags may be essential in protecting garments from damage along the supply chain. Companies can reduce its volume of polybags by: <ul style="list-style-type: none">• Folding garments in more compact packages to reduce the size of polybags needed; or• Packing garments in bulk, as compared to individual bags; or• Reducing the thickness of the polybags.	BENEFIT: Reducing your volume of polybags use will also help to cut overall procurement costs.



STEP 3:

Identify and Implement Solutions

C

Successful case studies of closing the tap to reduce demand of unnecessary plastic packaging e.g a bag charge.

- One year since charging for bags in 2019, H&M Singapore has reduced more than 681,000 pieces of plastic and paper bags from its stores islandwide. Proceeds collected are donated to WWF-Singapore's PACT initiative to support conservation effort including research, innovation and conservation projects on plastics.
- Since charging for bags in late 2018, 7-Eleven's 10,000 branches in Thailand have reduced more than **one billion single-use plastic bags**. Profits raised from the charges, amounting to 134 million baht (or approximately SG\$5.9 million), have been donated to Siriraj Hospital and other hospitals around the country.
- **Patagonia's case study** on plastic packaging and garment delivery tested plastic polybags, paper polybags and a no-polybag model. They determined that plastic polybags were essential for the transportation of the garments, from the factory to the distribution center, in order to preserve the clothing's integrity and cleanliness. Patagonia found that folding products into smaller shapes can result in nearly a 50% reduction in plastic weight per product level.





STEP 3:

Identify and Implement Solutions

D If reduce and reuse are not possible, close the tap by looking for alternative materials.

Reduce the demand of plastic by switching to alternative materials with the least environmental impact. Based on the results of the [WWF Alternative Materials Tool](#), the following materials are recommended to replace both polybags and plastic bags.

KEY PACKAGING FEATURES	TOP 5 RECOMMENDED MATERIALS	TOP 5 RECOMMENDED MATERIALS
Single-use bags (polybags and plastic bags)	<ol style="list-style-type: none">1. Recycled Paper2. Post-consumer HDPE (75% recycled material)3. Post-consumer HDPE (25% recycled material)4. HDPE5. Paper	<p>BENEFIT: Recycled materials are important for the circular economy because they:</p> <ul style="list-style-type: none">• Close the loop and move into a circular economy, by increasing the demand for recycled materials• Reduce the use of resources in the manufacture of virgin materials <p>Note: WWF recommends to communicate to consumers that the bags are made of recycled material</p> <p>CHALLENGE: Paper bags to replace polybags may be problematic, as tested in pilot tests by the industry:</p> <ul style="list-style-type: none">• Not waterproof, and more susceptible to wear and tear compared to plastics• Not suitable for long term use as it does not prevent mould formation on garments
Reusable bags (bags made from thicker materials that are more suitable for long term use)	<ol style="list-style-type: none">1. Post-consumer LDPE (75% recycled material)2. Post-consumer LDPE (25% recycled material)3. LDPE4. Cotton5. PP	<p>CHALLENGE: Needs to go hand-in-hand with consumer engagement and education, to ensure that the reusable bags are being utilised such that the environmental cost (of producing a more resistant material) is justified.</p>



STEP 3:

Identify and Implement Solutions

E

Close the tap by using recycled materials.

- Packaging with a certain percentage of recycled content helps to reduce the environmental impact of the material.
- Using recycled materials will help to close the loop and move into a circular economy, by increasing the demand for recycled materials (for example: aluminium, papers and plastics).

	RECOMMENDED CERTIFICATION(S) AND STANDARD(S)
Recycled Paper	FSC-Certified Recycled Paper The Forest Stewardship Council (FSC) is an international non-profit, multi stakeholder organization established in 1993 to promote responsible management of the world's forests. FSC is a global forest certification system established for forests and forest products.
Recycled Plastics	ISO 14021 For Self-Declared Environmental Claims, including Recycled Content and Recycled Material. This standard provides definitions for "Recycled Content" and "Recycled Material" that certifiers such as SCS and UL reference in their standards (SCS Global Services 2014). EN 15343 Plastics Recycled plastics. Plastics recycling traceability and assessment of conformity and recycled content. This standard aims to encourage proper recycling of plastics by standardising it, particularly focusing on the process for the traceability and assessment of conformity and recycled content of recycled plastics (Association Européenne des Recycleurs de Plastiques 2019)



STEP 3:

Identify and Implement Solutions

F

Close the loop by introducing reusable packaging where possible.

- Packaging designed to be longer-lasting and used over multiple life cycles can result in less material usage and environmental impact.
- New innovations can provide superior user experience, customise products to individual needs, gather user insights, build brand loyalty, optimise operations, and save costs.

PACKAGING	POTENTIAL SOLUTION(S)	POTENTIAL BENEFIT(S) AND CHALLENGE(S)
Returnable e-commerce packaging	<ul style="list-style-type: none">• Reusable packaging can be returned from a consumer’s home by arranging for pickup of empty packaging.• This can be combined with the delivery of new products, or it can be dropped off at designated points such as post offices or retail stores.• Innovators such as Repack, Returnity and LimeLoop provide a returnable and reusable e-commerce packaging service.	CHALLENGE: These solutions are not necessarily available in Singapore or Southeast Asia yet. The e-commerce or logistics industry will need to carry out pilot tests to roll out a system that is operationally feasible for Singapore’s or the country’s logistics network.
Reusable transport packaging for logistics	<ul style="list-style-type: none">• Utilise reusable transport packaging in a business-to-business setting for both large rigid packaging and pallet wrap.• Where crates or pallets are often sent back empty, pooling solutions companies offer reverse logistics services, managing a shared pool of standardised pallets and crates across a wide and dense network of companies, leading to significant logistics savings.	
Hangers	<ul style="list-style-type: none">• If hangers are necessary for operations, we recommend using a reusable system.• Examples include the reuse and recycling hanger systems by Mainetti and Braiform.	



STEP 3:

Identify and Implement Solutions

G

Successful case studies of closing the loop to introduce reusable packaging models.

- **Brambles** is a logistics company using over 500 million reusable pallets, crates, and containers for transport globally. Brambles' products are designed for reuse and follow best practice circular processes to maintain the constant flow of assets through Brambles' networks, for example: Recover > recondition/repair > redistribute > reuse > share and repeat. As a result, Brambles has saved over **5.8 million tonnes** of single-use packaging waste since 2015.
- China's popular e-commerce platform, JD.com, recently announced a **free service for its customers to opt for reusable packaging** which can be reused at least 10 times, and aims to reduce single-use packaging by 10 million by the end of 2020. It also estimates that if just 10% of orders use the new packaging, the platform can save 32.5 million RMB (or 6.4 million SGD).
- Braiform, a clothes hanger supplier, utilises a re-use supply chain. Every year, about **one billion hangers** from Braiform are reused, with an average lifespan of 9 reuses. After the hangers can no longer be reused, they are recycled into new hangers. According to a **case study** by Green Entrepreneurship Europe, Braiform is recognized as the world's first closed-loop hanger service.





STEP 3:

Identify and Implement Solutions



Close the loop by collecting packaging back for recycling.

- This will divert waste from landfill or incineration
- Ideally, packaging is recycled into added-value products (for example: recycling PET bottles into recycled-PET bottles, instead of polyester)

PACKAGING	POTENTIAL SOLUTION(S)
Polybags	<p>Where possible, facilitate a centralised collection of used polybags for recycling, and ideally to be made into value-added products such as recycled-polybags.</p> <p>Increase the recyclability and financial value of polybags by:</p> <ul style="list-style-type: none">• Avoiding stickers, labels and adhesives• Using transparent polybags• Preference for mono-material such as mono-PE or mono-PP• Segregating from general waste and collecting at scale
Hangers	<p>Where possible, facilitate a centralised collection of used or broken hangers for recycling, and ideally to be made into other recycled items.</p> <p>Increase the recyclability of hangers by:</p> <ul style="list-style-type: none">• Using materials that are more likely to be recycled. I.e paper, cardboard or metal• Using only one material for your hanger. If more than one is needed, ensure that the pieces are easily dismantled



STEP 3:

Identify and Implement Solutions



Successful case studies related to closing the loop by collecting packaging back for recycling.

- Fashion4Good launched [**The Circular Polybag Pilot**](#) in December 2019, to explore closed-loop recycling of polybags.
- Arch and Hook launched [**BLUE hangers**](#) in 2019. The hangers are made from 80% marine plastic waste and 20% recycled plastics. They can be collected and recycled as an end-of-life treatment option.
- In North America, [**NIKE**](#) recycles their polybags into retail bags.
- The North Face has [**partnered up with TerraCycle**](#) to recycle their polybags into other products such as bicycle racks.
- [**A Circular Economy for Flexible Packaging**](#) has published design principles for flexible plastics (titled Designing for a Circular Economy: An Introduction). Although catered towards the European market, these general principles can be followed by all companies.





What's in it for Businesses?

Be a part of a transformative and collective movement in Singapore for the fashion industry to create positive change at scale.



PACT is designed to help the industry convene and celebrate plastic action. By signing an individual company commitment, your business will enjoy:

- Continued close consultation from WWF on strategies and alternative solutions
- Use of tools developed to identify most sustainable alternatives
- Free trainings conducted by WWF experts for staff
- Publicity through WWF channels and media partners
- Exclusive mentions in press releases, WWF annual reports, etc.
- Access to exclusive PACT marketing collaterals
- Invites to private closed-door events with industry leaders and peers

Taking serious and impactful plastic action will help your brand being recognised as thought-leader in sustainability and will add purpose to your brand.

Please contact markets@wwf.sg if you wish to join PACT.





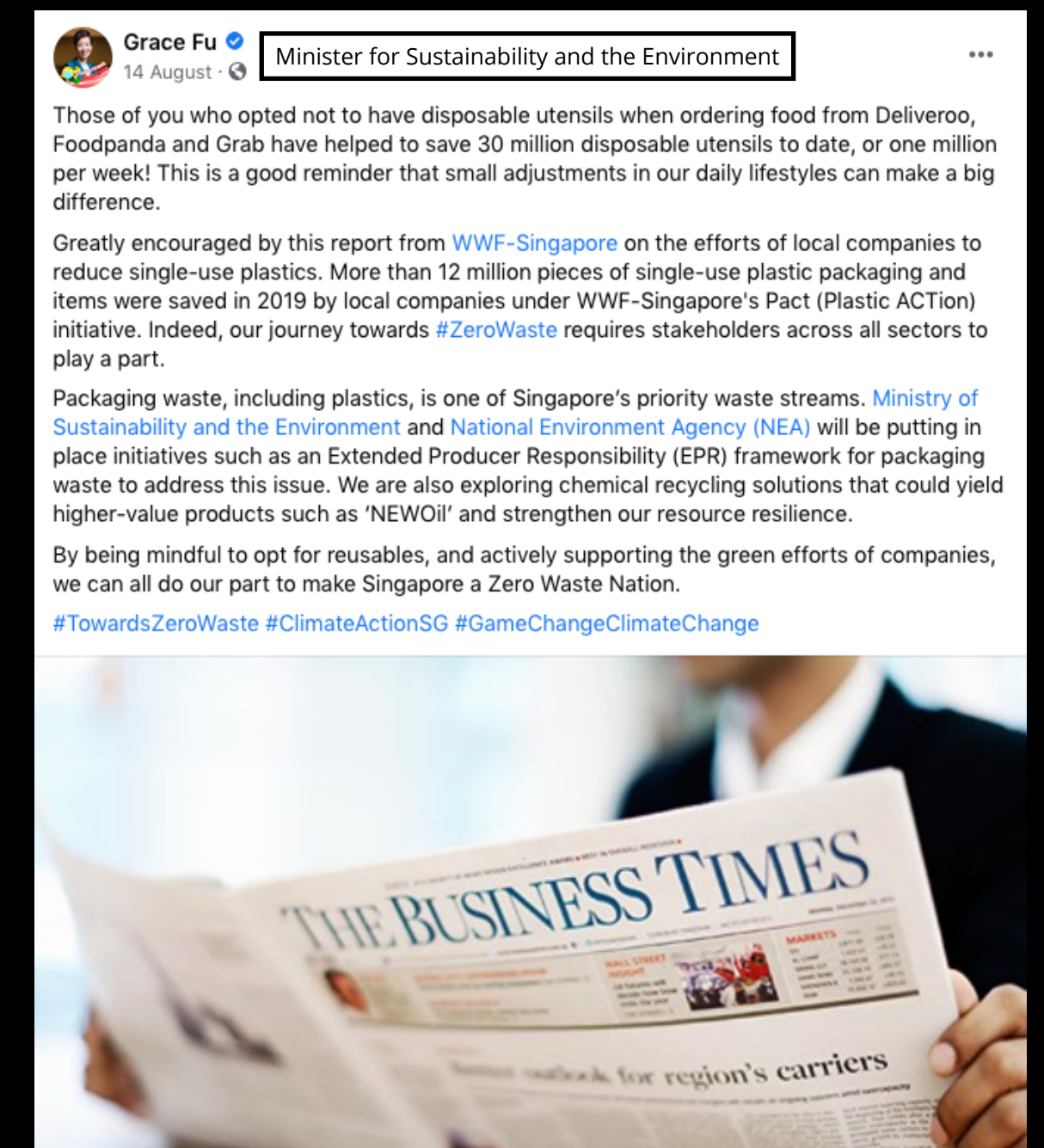
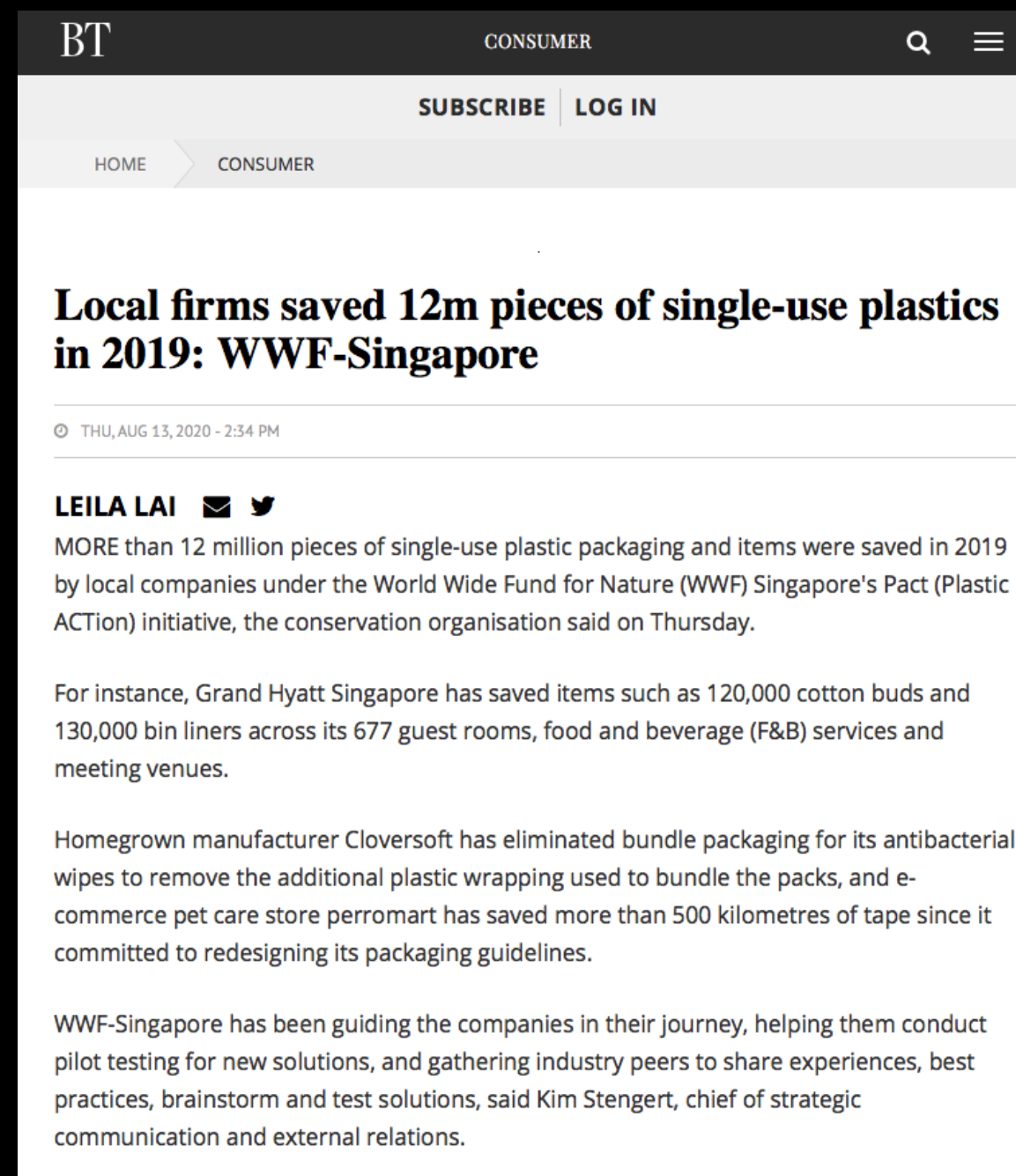
Achievements of PACT Champions

As of August 2020, our 22 PACT champions have reduced up to 12 million pieces of single-use plastics. Read more in our [2020 Impact Report](#).

Media impressions since early 2019 to announce industry pledges or PACT companies

- Over 35 print and online articles
- More than 18 TV and radio news broadcasts or interviews, including on CNA primetime

Please contact markets@wwf.sg if you wish to join PACT.





A business initiative to eliminate plastic pollution in nature and move towards a circular economy on plastics.

To find out more about PACT, please contact markets@wwf.sg or visit plastic-action.asia

Published in October 2020 by WWF – World Wide Fund for Nature – Singapore (Formerly World Wildlife Fund).
Any reproduction in full or in part must mentioned the title and credit the above-mentioned publisher as the copyright owner.
© Text 2020 WWF-Singapore. All rights reserved.