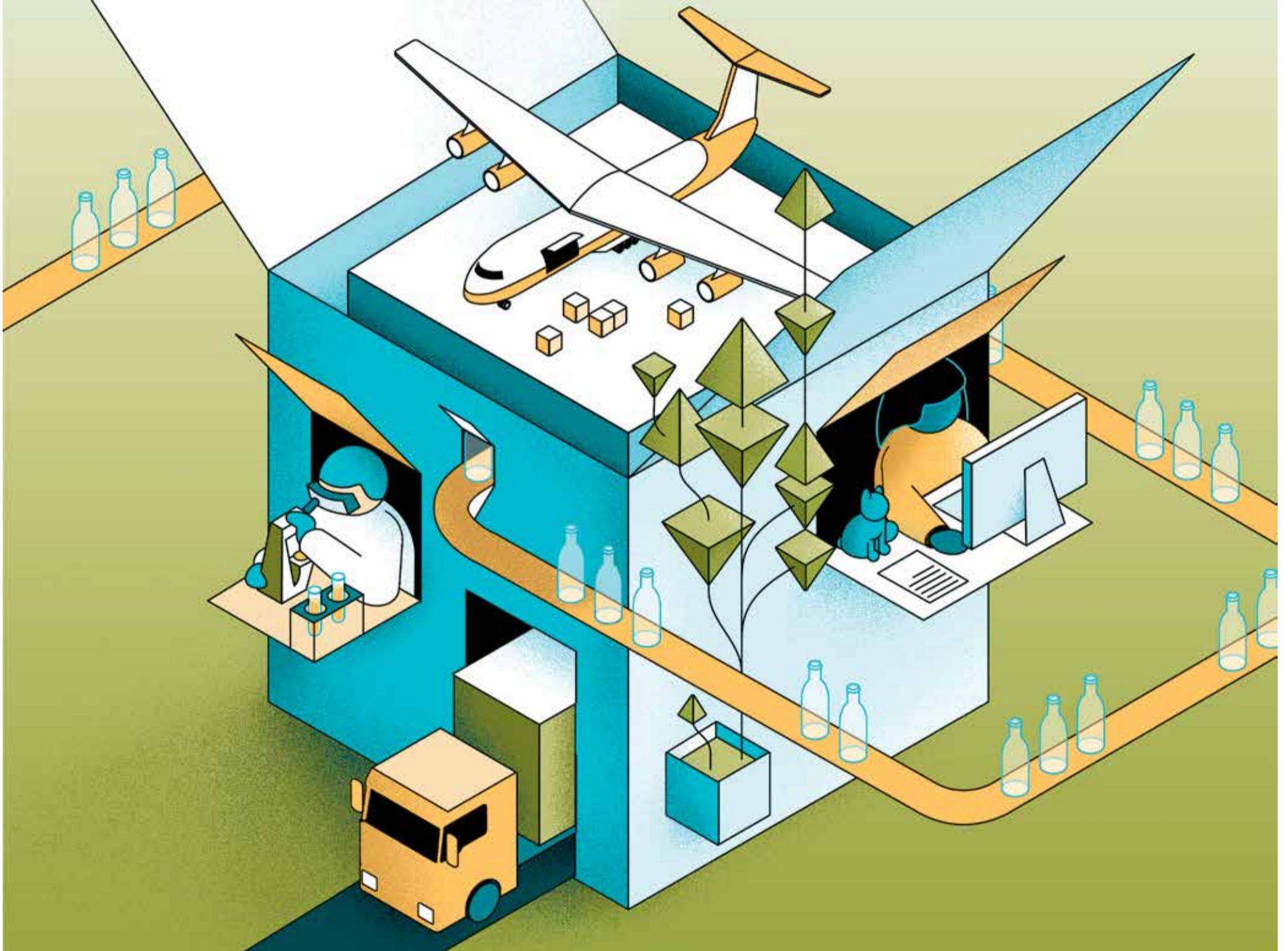


# FUTURE OF PACKAGING

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**16** WILL REFILLS EVER GO MAINSTREAM?



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# FUTURE OF PACKAGING

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## SUSTAINABILITY

# COVID crisis puts sustainability in focus

As health and safety becomes consumers' top concern, some fear the coronavirus may have halted sustainable packaging's progress

Jim McClelland

**P**re-pandemic, packaging was on a roll. The global market value in 2019 was \$917 billion, according to research by Smithers, with forecasts it would top the one-trillion mark by 2024.

As the climate emergency loomed large in the minds of consumers, numbers for environmentally responsible options were strong too. A YouGov survey last year found half of UK shoppers were willing to pay more for sustainable packaging.

So how has the coronavirus changed the game? In general, according to Nicholas Mockett, partner at Moorgate Capital, most packaging manufacturers have seen strong sales during the pandemic, which augurs well for funding and finance.

"Investors do not invest if there is no prospect of a return on investment. Fortunately for packaging, the vital role it plays in supply chains, as evidenced by the robust performance during COVID-19, suggests investor appetite will be sustained," he says.

Inevitably, there have been winners and losers. It has been boom time for ecommerce, including the "recommerce" market for previously owned, new or used goods, plus online shopping and direct-to-consumer models. Demand for medical packaging is atypically high, for obvious reasons, plus food provision for people staying home to eat, especially takeaway meals, has seen a spike in unit sales.

All these uplifts in end-user demand bring with them opportunities for transit packaging and wholesale business happening along the supply chain.

On the downside, volumes in heavily impacted market sectors, such as air travel, tourism and hospitality, plus some high street retail, notably fashion, have sadly been hit hard.

Where then does this leave sustainable packaging? The more eco-conscious end of the general consumer market has held up surprisingly well, even advanced in some cases.

Data from more than 40,000 consumers in 23 countries, collected by global intelligence platform Streetbees, reveals 35 per cent of people worldwide have changed their sustainability habits, since the end of May, for the better.

Naturally, the question of hygiene shot up the consumer agenda, especially in the early days of lockdown when fears about the virus surviving on materials and surfaces



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heightened the risk factor associated with anything arriving at your door.

In response, a new logistics language emerged, explains Amelia Dales, business development manager at Garçon Wines. "Contactless delivery is now a term that has become part of our vocabulary and has allowed many who have had to self-isolate to access everyday household essentials safely."

Sustainable packaging pioneers able to adapt to these new criteria are prospering, including Garçon Wines that has seen unprecedented demand for its contactless supply of climate and letterbox-friendly flat wine bottles.

"COVID-19 has redefined sustainability," says Kaushal Shah, founder and chief executive of sustainable papers specialist envopAP. Fundamentally, though, the scenario remains simple. "Consumers' current top priorities are staying healthy and spending as little as possible. The real challenge is to deliver a truly sustainable packaging product that ticks both boxes," adds Shah.

The evidence from waste management is also that the pandemic has forced packaging companies to speed up decisions on sustainable solutions and bolster their green credentials. But again this view carries a caveat, according to Roger Wright, waste strategy and packaging manager at Biffa.

"Hygiene and sustainability are by no means mutually exclusive; the bigger challenge for businesses will be controlling costs," he says.

Safety and sustainability are not always an easy match though. Terms such as "single use" and "plastic" have become red-flag badges of dishonour for a *Blue Planet* generation of shoppers.

The fear among environmentalists is that a reactionary shift back to a more risk-averse mindset post-COVID might see more packaging, particularly plastic, not less, with the excess meaning more resource consumption, CO2 and waste, and less sustainability.

Even with single-use solutions designed to assuage hygiene

concerns, however, there are still ways to level up the safety and sustainability equation a little, for instance by optimising use of recycled content, says Dales. "Companies that survive this challenging decade will manage to balance these elements sufficiently, but those that want to excel should lead from a 'sustainability-first' perspective to have the greatest positive impact and odds of success," she says.

Following the upheavals of lockdown, the packaging industry is also dealing with disruption of a different kind as restrictions ease. So, for instance, pubs and bars reopening have thrown up new packaging-related changes in consumer behaviour, motivated by hygiene considerations, says Adrian Curry, managing director of Encirc, a market leader in container glass.

"Our research with YouGov showed people choosing glass bottles over pint glasses. Some 60 per cent of UK adults say they're more cautious about drinking from reusable glasses due to fears around contamination and four in ten people are more likely to choose glass-bottled beverages than before lockdown," says Curry.

By contrast, another example of a potential trade-off between safety and sustainability sees consumers wanting coffee shops to resume serving in reusable cups, despite hygiene issues.

Furthermore, in a sign of confidence in sustainable packaging returning, TerraCycle launched its zero-waste refillable UK shopping pilot, in July, in collaboration with Tesco.

With existing operations in the United States and France, Loop had delayed its original start date due to COVID, but is now pressing ahead, with major brands, from Heinz to Nivea, signed up.

Reusables also received a significant show of support when more than 125 health experts from 19 countries signed a statement with Greenpeace USA assuring retailers and consumers such packaging is safe during COVID-19.

Ultimately, then, the message from clients is sustainability will be the number-one priority for the future of packaging, even or perhaps especially, in a post-pandemic world, says Dr Tim Breker, co-founder and managing director of reusable packaging-as-a-service pioneer VYTAL. "Reusable packaging and circular-economy models are increasing in importance. Hygiene is a given, whereas sustainability is a differentiating criterion for consumers." ●



Ipsos 2020

# What to expect from the new plastic tax

As the UK's levels of virgin plastic continue to rise, a bold new tax could be the solution, but implementing it will not be without difficulties

Peter Yeung

With more than five million tonnes of materials processed every year and a combined turnover of £19 billion, the UK is one of the top five processors of plastics in the European Union. But the majority of plastic packaging, which accounted for 44 per cent of the UK's plastic use in 2017, is made from virgin rather than recycled plastic.

In March 2018, the government announced it will introduce a plastic packaging tax aimed at reducing the environmental impact of the two million tonnes of plastic packaging used each year. Coming into effect from April 2022, plastic packaging produced in, or imported into the UK, which does not contain at least 30 per cent recycled plastic, will be subject to a levy of £200 a tonne.

Given that virgin plastic is estimated to be around £500 a tonne cheaper, the new tax is intended to create an economic incentive for businesses to use recycled material, stimulating demand and increasing rates of recycling collection, shifting away from damaging landfill or incineration processes.

Research by Imperial College London estimates that if it is transferred to households by packaging producers, the cost of the plastic packaging tax would be around 16p a week per household, while



encouraging investment in the domestic recycling infrastructure and incentivising greener product design and resource security.

"It's a good start," says Tim Duret, technology and organics director for Veolia UK and Ireland, a leading recycling and waste management company. "The plastic packaging tax could be a key incentive. It will create a more circular economy and will drive manufacturers to more eco packaging designs. It will also

create more jobs and better infrastructure in the recycling industry."

Duret believes a "gradual, incremental increase" above the current targeted amount of recycled plastic packaging should be rolled out over time, pointing to the example of PET (polyethylene terephthalate) plastic bottles, which can already be made entirely from recycled material. But key to that growth will be investment. "The UK needs better recycling infrastructure," he adds

Barry Turner, director of the BPF Plastics and Flexible Packaging Group, considers this a major problem. Unlike the rest of Europe, most councils in the UK do not collect all plastic packaging from consumers and businesses. As a result, Turner says, the UK has an underinvested waste management infrastructure and is highly dependent on exporting its plastic waste and importing quality recyclate to meet domestic needs.

He says to ensure the success of the plastic packaging tax, whose consultation concluded last month, the UK must reinvest the income to guarantee it has the capacity to collect and process all plastic. "Not all councils collect pots and trays and very few collect film," he says.

According to Turner, the tax could also, due to regulatory, supply, quality or functional constraints, result in an extra cost to business of £300 million a year, given that, for example, recycled plastic is banned for uses including pharmaceutical packaging. He claims this cost applies to 26 per cent of the weight of all plastic packaging in use and around 70 per cent of all the items sold by grocery outlets.

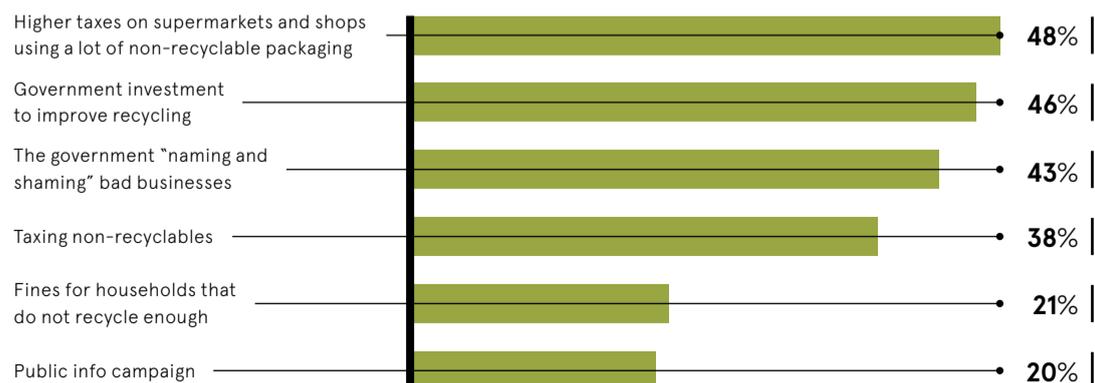
"What the tax will do is provide an incentive to use recycled content where it is not being used; what it won't do is enable it to be used in

“

**When you have a business that operates on very small margins, either the company will go out of business or the cost will be passed on to the consumer**

## PLASTIC TAXES POPULAR FOR TACKLING WASTE

Share of consumers who think the following would be effective at reducing the problems caused by non-recyclable packaging



Ipsos 2019

those applications where regulatory restrictions prevent it being used," he adds. "They should be exempted."

Industry experts agree that while the plastic packaging tax is likely to improve long-term sustainability, manufacturers will also require significant preparation to adjust in time. David Harding Brown, chief executive of ecoVeritas, a packaging compliance provider that has around 70 UK clients, says that companies that don't adapt could go to the wall as compliance costs rise.

Packaging recovery note charges, the compliance fees companies must pay towards the collection and disposal of plastic packaging waste, have risen from an average



### Three companies' plastic pledges

#### Coca Cola

By 2025, Coca-Cola has pledged to ensure its packaging is 100 per cent recyclable and that at least 50 per cent of the content of its plastic bottles comes from recycled content, with an aim to achieve 100 per cent in the future. Coca-Cola in western Europe is set to reach 50 per cent recycled content in 2023, two years earlier than its stated goal. The Honest, Glaceau Smartwater and Chaudfontaine brands have already transitioned to 100 per cent recycled plastic. It has worked to remove all unnecessary or hard-to-recycle plastic through lightweighting and the removal of all secondary packaging made from plastic.

#### The Co-op

The Co-op supermarket chain has committed to only using 100 per cent recyclable plastic packaging where it helps reduce food waste and extends longevity. In November 2018, the Co-op became the first UK retailer

to replace single-use plastic carrier bags with compostable alternatives, removing around 40 million single-use plastic bags from circulation. By the end of 2021, it has pledged to make 100 per cent of its own brand packaging easy to recycle, a move which will be facilitated by the rollout of the UK's largest scheme to recycle plastic film, and to use a minimum of 50 per cent recycled plastic in food packaging, bottles, tubs and trays.

#### Mattel

Toy manufacturer Mattel has set the goal of achieving 100 per cent recycled, recyclable or bio-based plastic materials in its products and packaging by 2030. It has looked to adopt pioneering, sustainable materials such as the sugarcane-based plastics used in its Fisher-Price Rock-a-Stack and Baby's First Blocks toys, which also come packaged in 100 per cent recycled or sustainably sourced material. Currently, Mattel uses 25 per cent recycled material within most of its plastic packaging and the company says it is actively working to increase this figure.

of £50 a tonne in 2017 to more than £400 in 2019. However, when these costs are modelled for large and mid-sized businesses, it is calculated that for every £1,000 a company was spending on plastic compliance in 2017, they are now spending more than £8,000.

"When you have a business that operates on very small margins, either the company will go out of business or the cost will be passed on to the consumer," says Harding Brown. "They need to identify their liabilities and optimise where possible. There's a storm coming."

Despite these caveats, it is widely thought the plastic packaging tax will revolutionise the UK's recycling industry. "The problem with recycled plastics is that virgin plastic has tended to be less expensive," says Dr Teresa Domenech, lecturer in industrial ecology at University College London. "But this tax should make secondary plastics more attractive."

There is a risk materials other than recycled plastics could be incentivised, according to Domenech, or that recycled plastics will be imported from other countries rather than being produced in the UK. But if the correct system is in place, she believes the recycling

Over **2m**

tonnes of plastic packaging used each year

**44%**

of all the plastic used in the UK is for packaging

**67%**

of all plastic waste comes from packaging

Gov.uk 2019

targets could be exceeded. "It will take time and investment to reach the targets, but you could reach even higher levels of recycled material in the future," she concludes. ●

# Need for more transparency drives sustainable innovation

Consumers are demanding more transparency over the environmental footprint of the products they consume, driving a growing movement towards sustainable packaging

**T**ransparency, a concept already gaining ground before the pandemic, has been galvanised by the rapid spread of the coronavirus, showing just how quickly change can be implemented if the need arises.

Consumers are also increasingly demanding transparency, with 70 per cent saying trust in a brand is more important now than in the past, according to research by Edelman.

As consumers learn more about how packaging waste, especially plastics, ends up in landfills and oceans, they want to know and understand where products came from and what their environmental footprint is.

Conscious consumers are increasingly aware of a product's journey and the need to move from a linear to a circular economy, whereby products are designed to be reused, recycled or composted. Sustainable innovation is required in the packaging industry to enable a truly circular economy, and ultimately regenerative practices, to be achieved.

A recent report by Avery Dennison, titled *The New Transparency*, underlines the importance of transparency as a powerful tool capable of giving businesses unprecedented control over their supply chains and environmental footprint, while offering consumers increased visibility, safety and education.

It outlines ways businesses can offer a higher level of trust, including through digital identities, tracing and sustainable materials, within four category-specific microtrends: blockchain and analytical technologies, labelling, packaging and secondary waste.

"First and foremost, consumers are demanding this information; they want



to understand the environmental footprint and be able to trace the provenance and journey, in detail, of the products they buy," says Renae Kezar, global senior director and head of sustainability at Avery Dennison. "But embedding transparency also serves to unlock more effective decision-making for businesses, increasing their resilience."

"Materials will play a key role in achieving a transparent circular economy. In the packaging sector, the circular-economy model handles all stages of a product life cycle: design, production, distribution and use, but also its 'afterlife'."

"Considering sustainability and even striving for regenerative business models from the start of the cycle means designing materials to take into account resource efficiency, reuse and recycling, and avoiding use of critical or toxic materials."

Avery Dennison is a global materials science company that specialises in the design and manufacture of labelling and functional materials. Its engineering solutions are sustainable in their own right and improve the sustainability of any value chain they're part of.

The organisation's intelligent labels, for example, offer the potential for huge gains in sustainability by enabling far more efficient supply chains and better communication with consumers about proper recycling and food-waste management.

The continued advance of sustainable innovation in the packaging industry relies on engagement and collaboration across the whole ecosystem, from initial choice of materials and design of packaging and labelling solutions, right through to a product's afterlife. Avery Dennison engages with venture startups, brands, recycling

companies, forward-thinking suppliers and manufacturers, as well as other capability and technology enablers.

"The ecosystem is much broader than people think," says Hassan Rmaile, vice president and general manager at Avery Dennison, Europe, Middle East and North Africa. "Breaking new ground in sustainability requires us all to expand our idea of our ecosystem and adopt 360-degree thinking, with the understanding that game-changing ideas can come from anywhere."

"The biggest change we see is we are not alone in thinking this way anymore. More often than not, we are approached by brand owners that come to us, as the market leader, for a labelling solution which meets their sustainability goals."

"As trailblazers for regeneration and innovators in the labels and packaging industry, we aim to delight our consumers on all fronts with advanced materials, design, aesthetics, experience, sustainability and technology."

"While serious strides have been made already, the future is coming fast and change is a constant. We always aspire to be at the forefront. Whether it's packaging that vanishes, easily enters the circular economy, is digitally connected or has longevity through upcycling, brands must be prepared and embrace new technologies, materials and sustainable designs as they become available."

Read Avery Dennison's report on *The New Transparency* at [label.averydennison.com/transparency](http://label.averydennison.com/transparency)



“As trailblazers for regeneration and innovators in the labels and packaging industry, we aim to delight our consumers on all fronts

## MYTHS

# Busting seven packaging myths

From demonising materials like plastic and aluminium foil to keeping packaging to a minimum, these common assumptions might not be as green as they seem

Mark Hillsdon



Room 76 via Shutterstock

## “Glass is always more sustainable than plastic”

Not true, says Professor Edward Kosior, of sustainable performance consultancy Nextek. “Glass containers are not always more sustainable than plastic since they’re heavier to transport and are not always recycled back into glass products, even after they’re collected; a lot of glass ends up as hardcore under our roads.”

Andrew Capper, of brand and packaging design agency Echo, agrees. He worked on the launch of a new yoghurt that used a “sustainable” glass jar as part of the premium positioning of the brand. “But a glass yoghurt jar is only sustainable if it’s recycled by the consumer,” he says. “Conversely, the much-maligned plastic yoghurt pot, in its third or fourth iteration, does the job much better.”

## “Plastic is always the least sustainable option”

“Single-use plastics can be more sustainable than many other options depending on the selected material, how it’s used and the end-of-life destination,” says Kosior at Nextek. For example, he says, a plastic bag has a lower carbon footprint than a canvas bag, which would need to be used more than 300 times before it had a comparable impact.

Avoiding plastic can also be a false economy, says John Garner, head of business development at Antalis Packaging. “It’s more sustainable to pack something well, in plastic, once, than it is to pack something

in a seemingly ‘greener’ packaging that fails to provide adequate protection,” he says. “This can result in products being returned, creating more transit miles in the supply chain, and therefore more CO<sub>2</sub> and environmental impact.”



Sally Ancombe via Getty Images



deurzon via Shutterstock

## “Biodegradable means compostable”

This is a common misconception because some biodegradable materials require industrial conditions to break down, otherwise they could persist for years, Kosior explains. Only truly compostable materials will break down at ambient conditions, he adds, and even then that could take up to six months.

Some plastics are misleadingly labelled degradable, says Kosior, but are actually oxo-degradable and require the use of chemical additives. This creates microplastics, which then pollute the environment. “Unfortunately, many ‘degradable’ plastic bags are sold by manufacturers that exploit this misconception,” he says.



Stefan Cristian Ciopatu via Getty Images

## “All plastic is oil based”

While it’s easy to make plastic a black-and-white issue, says Erik Lindroth, sustainability director at Tetra Pak, the challenge is not replacing plastic altogether. “Rather, it’s reducing the amount of plastic we use and changing the types we’re using,” he says.

“Environmental change means focusing on longer-term, sustainable solutions; the large-scale utilisation of plant-based materials is critical for this.” The new Tetra Rex plant-based carton, for instance, is made from paperboard and plastic derived from sugarcane.

## “Most packaging is needless”

From the layers of polystyrene that entomb a new fridge, to the plastic film that covers a mobile phone, packaging can be a source of intense irritation. But according to James O’Neill, principal consultant at procurement consultancy Proxima, well-designed packaging fulfils an important function.

“Packaging can help maximise loads on logistics vehicles and reduce fuel miles, as well as protecting products,” he says. “In a project with a major brewing organisation, we worked with their glass bottle supplier to re-engineer the packaging solution and enabled them to fit an extra layer of bottles on the truck. A little extra cardboard meant that we were able to take 20 per cent of the fleet off the road, reducing carbon fuel emissions.”



Natalia Dolgoshcheva via Shutterstock

## “Food without packaging is always better”

Before the coronavirus, there was a push by supermarkets to do away with packaged fruit and vegetables. But wrapping fresh produce in plastic film has its benefits. Take the humble cucumber: estimates suggest that a plastic wrapper can extend its shelf life from just three days to fourteen. This helps reduce

food spoilage and waste, which has an even bigger footprint than single-use film.

“When you buy a product, it’s most important to consume the contents, which have the largest environmental footprint,” says Markus Mannström, executive vice president at Stora Enso. “Packaging represents only a small part of the entire environmental footprint of a product.”



Jehzhe via Shutterstock

## “All aluminium is bad”

After plastic, aluminium has always been the *bête noire* of packaging, from Nespresso coffee pods to foil takeaway trays. But now the lightweight metal is fighting back. Aluminium has always been hailed as infinitely recyclable, with almost 75 per cent of all aluminium ever produced still in circulation, but manufacturing it is hugely energy intensive. Low-carbon aluminium could be about to change that.

“New generation aluminium created with clean energy is a green game-changer, an essential building block of a sustainable future,” says Lord (Greg) Barker, former UK energy and climate minister, and now executive chairman of metals and energy company the En+ Group. “Old aluminium created with coal-fired electricity has no future, but when manufactured with green power it is a super-weapon in the fight against climate change.” ●



Natalia Dolgoshcheva via Shutterstock

## OPINION

## 'We must consider the amount of carbon that is used at every point of the supply chain'

**U**nnecessary plastic waste remains a key contributor to climate change and it is undeniable that more must be done to tackle the issue to protect our planet from further damage.

However, sustainability within packaging is complex and cannot be neatly solved by simply swapping plastic for an alternative material. There are many factors that need to be considered when determining whether a product offers a truly eco-friendly solution.

It can be easy to forget that plastic is often incorporated into packaging to perform an important role: to protect the product inside. This is particularly important in industries such as the food and pharmaceutical sectors, where minimising waste that could have a damaging impact on the environment is key.

Any material that is used to replace plastic in packaging for perishable products must offer the same protective qualities or the purpose is entirely defeated.

The life cycle of materials must also be considered. Throwaway plastic packaging makes up 40 per cent of our demand for the material, with two thirds of plastic produced being released into the environment and staying there. This is clearly not sustainable.

However, the solution is more convoluted than simply replacing plastic with a material that is perceived to be "green". In recent years we have seen a move towards reusable packaging, with retailers such as Waitrose and Lush introducing refillable packaging options in their stores.

It's important that we weigh up the credentials of a recyclable solution against packaging that can be used hundreds, or even thousands, of times over to establish what truly offers the most environmentally friendly solution.

Finally, and perhaps most importantly, it is essential the carbon used to produce a product is considered before we make judgments on whether a material is genuinely sustainable. Plastic remains among the most energy-intensive materials to make and many alternatives offer a far more carbon-efficient alternative.

But to determine which materials are truly sustainable, we must look at the bigger picture and consider the amount of carbon that is used at every point of the supply chain.

For example, if a company creates a paper alternative that weighs more than their original plastic packaging, they have twice as much material to produce, transport and dispose of at the end of its life, all of which comes at a high cost for the environment.

It's a complex and multifaceted equation, but one that must be considered if we are to move towards a carbon-efficient world.

Justin Kempson, director of sales and innovation at Charpak, says: "Research shows the entire life-cycle carbon footprint of recycled plastics is the least impactful. Plastics must become circular to prevent packaging waste. Existing resources must be recovered and reused to reduce new materials production. Where packaging is necessary, a circular model is the most sustainable solution, with a far lower carbon impact, no matter which material."

At the last edition of our *Packaging Innovations* show in Birmingham, 20 per cent of visitors said they were looking for sustainable design, but 32 per cent said they look for biodegradable plastics. Plastic can still be the material of choice; it's about where it has come from and what happens to it after use.

The shift in focus away from demonising plastic and towards creating packaging that is truly sustainable throughout its life cycle can be felt across the entire industry and will continue to take centre stage despite the other challenges 2020 has brought us.

It is an intricate and challenging problem that will require the whole supply chain, both for packaging and the products inside, to work together and focus on delivering solutions for the right reasons. It has become much more apparent that we are fighting a war on waste, not on plastic. ●



**Alessandra Leonard**  
Marketing project manager  
Packaging portfolio, Easyfairs

This advert is not here to talk about the problem of plastic pollution.

It's here to talk about solutions.

**Coming soon:**  
*The Upstream Innovation Guide*

Rethinking the packaging, the product, and the system to solve plastic pollution before it starts

Sign up to receive your FREE copy before the official launch in November



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Luis Alvarez via Getty Images

## ECOMMERCE

# Surprise, delight and stay sustainable

Lockdown provides a golden opportunity for ecommerce brands; it's now up to them to ensure their packaging is clean, green and fun to unpack

Olivia Gagan

The seemingly unstoppable rise of online shopping was firmly established long before the coronavirus pandemic left high streets empty. Of course, ease, price and vast choice are behind its success, but this year, with consumers confined to their homes, online shopping is also driven by necessity.

This is no doubt welcome news for online retailers. But these businesses must now meet a triple challenge when packaging and sending out goods: dealing with spikes in order volumes; proving their sustainability credentials; and, in the face of these pressures, providing the enjoyable unboxing experience that consumers increasingly expect.

Stuffing cardboard boxes, plastic mailing bags and all manner of

foam and bubble wrap into recycling bins is an everyday chore for stay-at-home consumers. For online retailers, fitting more product into less, and more eco-friendly, packaging is therefore a way to save costs, boost customer satisfaction and stand out from other brands.

Innovative ecommerce packaging solutions are emerging in direct response to the pandemic. For example, the closure of pubs and restaurants during lockdown saw alcohol consumption become a strictly at-home activity; cue the launch of wines, cocktails and spirits in slim, recycled plastic bottles, which can slip easily through a letterbox.

What would have been regarded as a novelty product last year now

looks like a space and resource-saving innovation. Coupled with a strong focus on attractive branding, major gift online retailers, including letterbox flower sellers Bloom & Wild and gift company Not On The High Street, quickly made deals with these drinks brands to incorporate letterbox-friendly booze into their own offer. It's an example of how relevant, timely packaging can make the difference between a new brand's success or failure.

However, making ecommerce packaging meet the demands of 2020 and beyond also requires investment in packaging that the customer is unlikely to see. Major ecommerce platforms such as Amazon, for example, typically require businesses to provide

products fully sealed in protective wrapping. This is to prevent contamination, spoiling or tampering while they sit in fulfilment warehouses or depots. Individual polybags – clear bags usually made from virgin plastic – are used to meet this requirement.

Yet failing to use eco-friendly packaging throughout your business's entire supply chain tarnishes a brand's sustainability credentials and risks accusations of greenwashing if consumers find out.

Alongside its biodegradable customer-facing packaging, ecommerce brand OneNine5, which sells reusable travel accessories, this year switched to also using water-soluble polybags to store stock.

The irony, however, is that after years of efforts to reduce plastic use, and with strong public awareness of single-use plastic's environmental impact, perceptions of the material may be shifting as a result of COVID-19.

"People are probably more accepting of plastic this year," says OneNine5's co-founder Alex Stewart. "Plastic packaging, in many cases, is seen as a negative, but there are still also connotations of it keeping things sterile. In a pandemic, people are seeing plastic as keeping things cleaner. In that respect, it does give peace of mind."

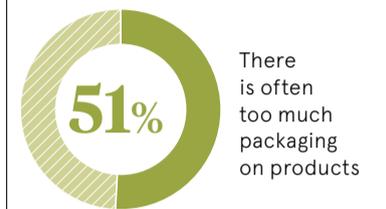
So brands need to make sure they have their sustainability and hygiene bases covered. In addition, for non-essential purchases, many consumers still expect an enjoyable experience when receiving, opening and unwrapping their parcels: the unboxing element online retailers must maintain, and even heighten, to win business in a competitive online market.

The Little Loop, an online business which provides children's clothing for rent, sends out the clothing in sealable, flexible PVC pouches, instead of cardboard boxes or single-use plastic packaging. The customer sends the clothes back in the pouch when the rental period is up. The bags, which are more commonly used by the government as diplomatic bags for sending official documents and items, are guaranteed to withstand being posted 2,000 times.

Founder Charlotte Morley says that while unconventional, the bags are nevertheless durable, flexible and secure ways to send items and don't require foam or void filling. "Our consumers keep the clothing for three months on average. We're potentially only sending these bags out four times a year, which means feasibly our

## CUSTOMERS NOT SATISFIED WITH PACKAGING FROM AN ENVIRONMENTAL PERSPECTIVE

Global shoppers who agreed or strongly agreed with the following statements



FMCG Gurus 2020

business could use them for 20 years," she says.

Morley adds that transitioning from the traditional ecommerce cardboard box or envelope brings compromises. "I can't just get rid of that unboxing experience altogether; it is such a key part of branding," she says. "One of the challenges is that the unboxing experience only really works if the customer can open up a box or a lid and it's all laid out perfectly. Because our packaging is soft bags, things do get jostled around inside them."

Brands that choose novel or sustainable packaging methods must therefore find other ways to create a pleasurable unboxing experience. Morley adds: "You have to meet a certain level of consumer expectation. We don't want to completely denigrate the customer experience, even though we're a sustainable company. So we wrap the clothing using sustainably printed, recycled tissue paper and use stickers made with vegetable-based inks instead."

Honing a unique, sustainable ecommerce packaging strategy costs time, money and effort. But brands charting their own path are more likely to make returns from their packaging than those that merely do what is expected of them, says Luc Speisser, chief innovation officer at global brand consultant Landor. His advice for brands is: "You need to do good to be relevant, but do good in your own different and unique way. That's how it becomes a competitive advantage, not just a cost or a race to compliance." ●

“

**We wrap the clothing using sustainably printed, recycled tissue paper and use stickers made with vegetable-based inks**

# Glass packaging: the clear choice for planet Earth and human health

When you choose glass packaging, you choose a packaging material that's made from pure natural ingredients that don't pollute. Glass packaging stands in a class all its own

**G**lass packaging has been trusted for thousands of years to protect food and beverages. As a kinder packaging material for the health of the Earth and the health of Earth's people, it's also the clear packaging choice of the future.

Glass is made from pure natural ingredients: sand, limestone, soda ash and recycled glass called cullet. Glass is virtually inert and doesn't interact with the food or beverage it holds. But not all food packaging materials are built the same.

## Five facts about glass recycling

- 1** Glass is Europe's most-recycled food and beverage packaging material.
- 2** When a consumer places a glass bottle in a recycling bin, it can be made into a new glass bottle and returned to a shop in 30 days.
- 3** One recycled glass bottle saves enough energy to charge 17 mobile phones for one hour.
- 4** A refillable glass bottle replaces at least 30 one-way containers.
- 5** Glass bottles are 40 per cent lighter than they were 30 years ago.

You may have missed Plastic Free July this year, possibly distracted by the coronavirus pandemic, but it is a global movement, established in 2011, that aims to encourage behavioural transformation and shift mindsets to heal the planet and its inhabitants.

Those who participate in Plastic Free July choose to refuse single-use plastics for a month and can feel safe doing so even through the pandemic. A statement released in June by more than 100 scientists from 18 countries addressed concerns that the coronavirus has raised around reusable food containers.

Last year, Sir David Attenborough called plastic pollution an "unfolding catastrophe" and supported a report that suggested mismanaged waste kills up to a million humans a year globally. In parallel, Jane Muncke, managing director of Swiss-based charity the Food Packaging Forum, educates and warns about the known, and unknown, chemicals that migrate into our food from packaging.

Plastic Free July and similar initiatives raise awareness that we all have a role to play. Individually and collectively we must change behaviours now, for the good of the planet and for the health of all.

### What you see is what you get

"The first step is to increase our recycling and that's true for all packaging materials," says Randolph Burns, chief sustainability and corporate affairs officer at O-I Glass, one of the world's leading manufacturers of glass packaging. "In Europe, for example, glass is already being recycled at 76 per cent, but the industry is joining forces behind the Close The Glass Loop



**If you're worried about the future of the planet and concerned about the health of your loved ones, don't compromise: choose glass whenever you can**

initiative to reach a whopping 90 per cent of glass collection."

However, is increasing recycling enough? Finding alternative and innovative materials is no simple task. Due diligence is paramount. For instance, there have been plenty of headlines touting the sustainable attributes of paper wine "bottles" recently. Yet the containers are more reminiscent of milk cartons than bottles and these "paper" products are more complex than you might initially think.

The containers are created through chemical pulping, plus a plastic coating is added to act as a protective barrier between the wine and the paper. No one wants a soggy wine bottle, after all.

And although paper bottles may save on transportation costs compared to glass, which is heavier, sustainability should be an end-to-end consideration.

"There's a reason everyone wants to imitate the original glass bottle – it creates such an emotional bond with consumers – but you can't," says Burns, "O-I's glass is Cradle to Cradle Certified and is even the first food and beverage packaging material to achieve a platinum score for material health."

Indeed, what you see is what you get with glass: just glass. As a material, it is beautiful and transformative. It is also 100 per cent recyclable by nature and it can be recycled over and over without losing quality.

**Whenever possible, choose glass** Sustainability matters with a packaging material, as consumer trends illustrate people are increasingly choosing food

and beverages that support a healthier lifestyle and are kinder to the planet.

When consumers choose glass, they're also choosing packaging that doesn't interact with the food or beverage it holds. It's the only packaging material that is "generally recognised as safe" (GRAS) by the US Food and Drug Administration. Without odour, it naturally protects what it carries and is impermeable and non-porous.

The message around the health benefits of glass is reaching consumers, too. Some 87 per cent of Europeans prefer it as a packaging material, a Friends of Glass study shows.

If you're worried about the future of the planet and concerned about the health of your loved ones, don't compromise: choose glass whenever you can.

For more information please visit [www.o-i.com/](http://www.o-i.com/)



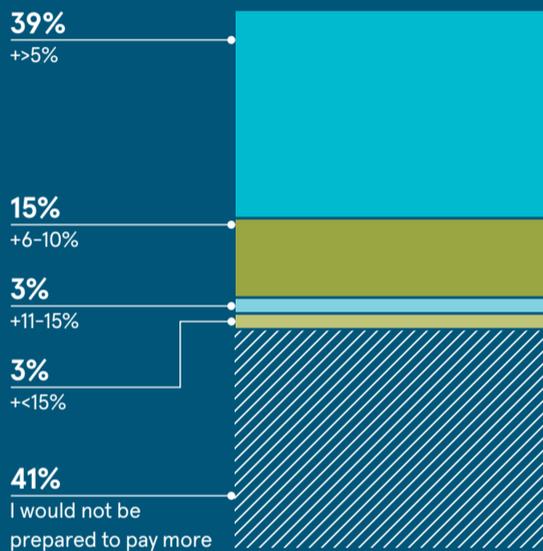
# TAKING ACTION

## FIGHTING RISING PACKAGING WASTE

As consumption grows, so does the demand for packaging. But how do consumers feel about sustainable options, and what is being done to cut down on waste?

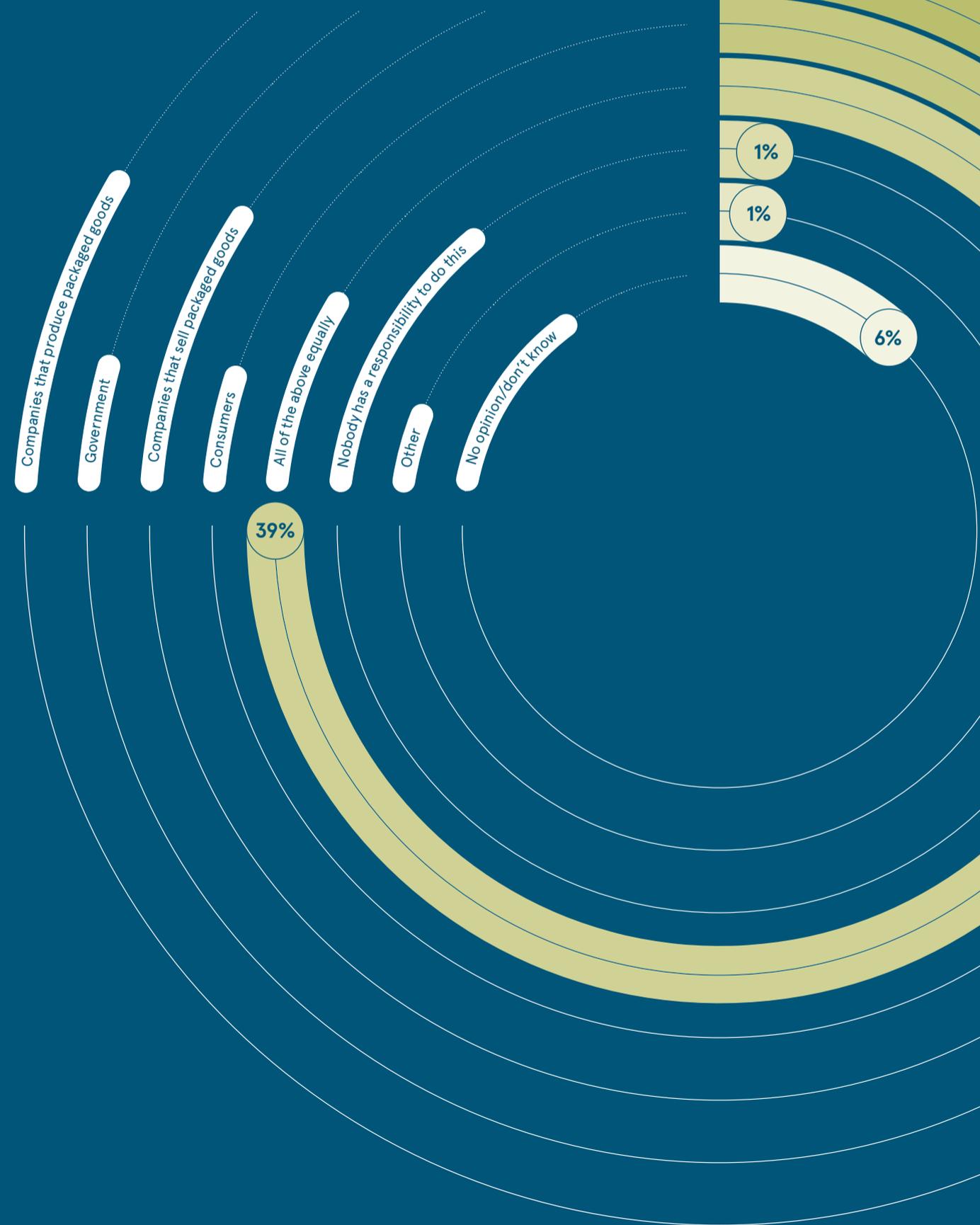
### COST IS A BIG BARRIER

Consumers were asked how much more they would be prepared to pay for an item if it moved to packaging with better environmental and social credentials

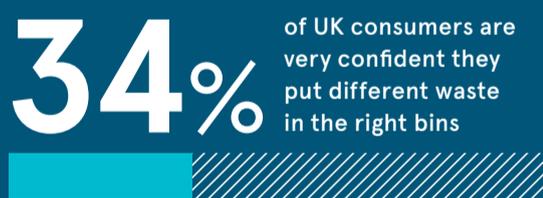


### TAKING RESPONSIBILITY

Global consumers were asked who should take most responsibility for finding a way to reduce the amount of unnecessary packaging which is sold



### MORE EDUCATION NEEDED





of consumers have changed their shopping habits as a result of concerns over packaging

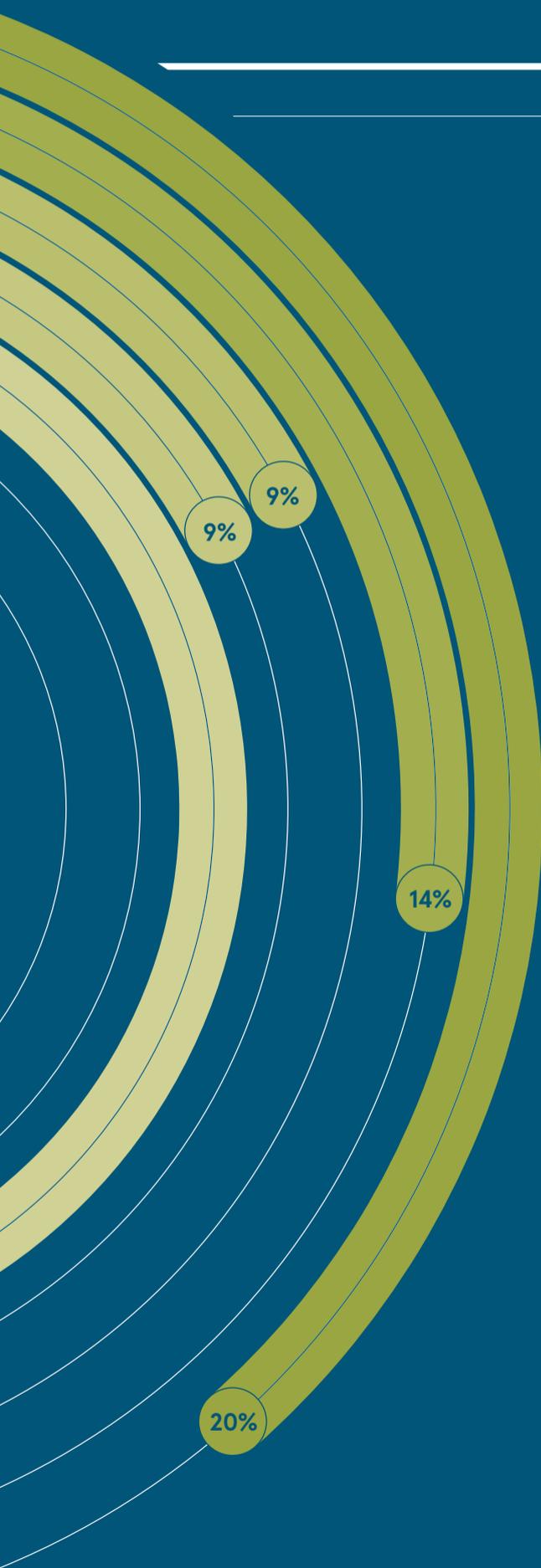


have sought out products with less packaging



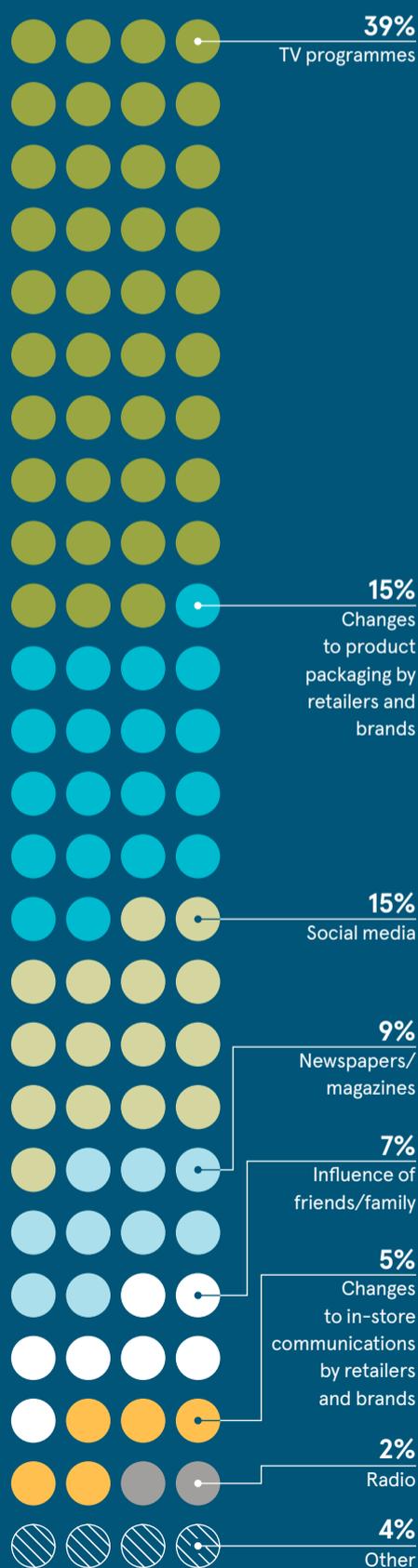
have changed their regular brand as a direct result of their attitude towards packaging

The Grocer/PwC 2019



### MAKING YOU THINK

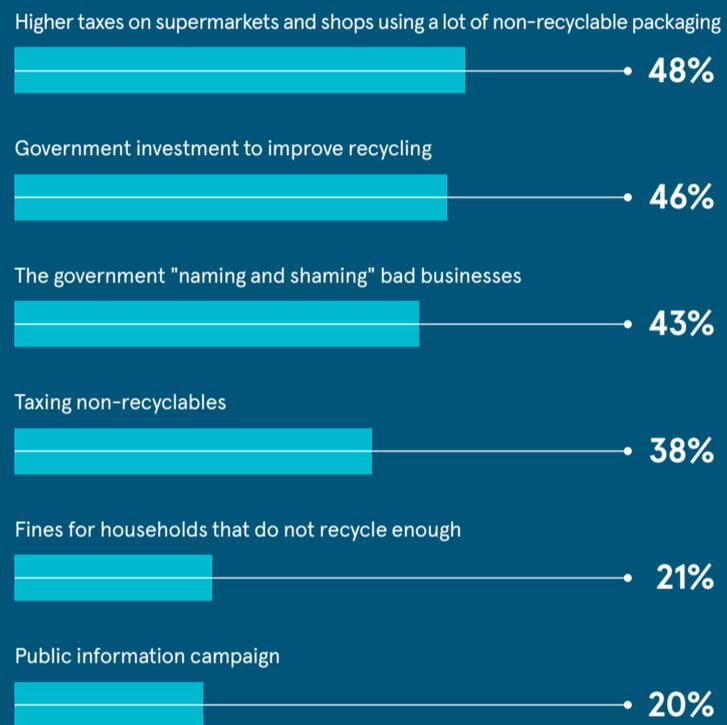
Most important factors in making consumers think about the environmental or social impact of their food and drink packaging



The Grocer/PwC 2019

### CUTTING DOWN ON NON-RECYCLABLES

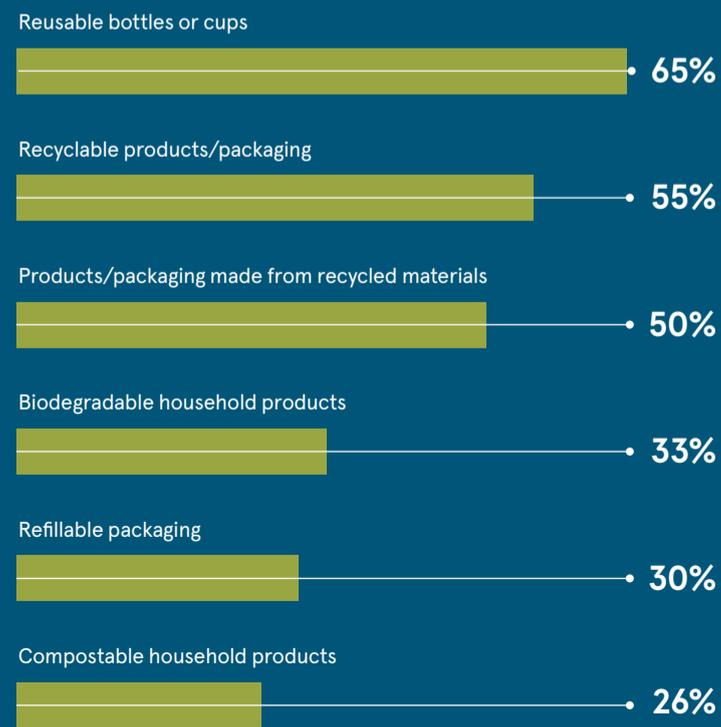
Percentage of consumers who think the following would be effective at reducing the problems caused by unnecessary use of packaging that cannot be recycled



Ipsos 2019

### EXTENT OF ECO-FRIENDLY OPTIONS

Percentage of UK consumers using the following methods



Viridor 2019

## RECYCLING

# Unpacking compostables

Widely seen as the greenest option, much is misunderstood about compostable packaging. Having it work together with a robust recycling programme, however, could be the key to a more sustainable future

Marcus Lawrence

As communities and enterprises around the world consider how to package products sustainably, the recyclables versus compostables debate has gathered considerable attention. Traditionally viewed as competitors, these solutions to our addiction to plastics are actually running in different races.

While a common misconception of compostable packaging is that it is biodegradable in natural conditions, the majority of these solutions must be broken down under particular industrial conditions, which means dreams of waste in the environment breaking down like organic material are far from reality.

Instead, the two sustainable packaging solutions have considerable potential as partners in the fight against environmental pollution, although their interaction at a domestic level poses challenges.

The Great Pacific Garbage Patch is a dire, but effective, representation of where our discarded plastics can end up. The hulking flotilla of man-made detritus is a damning indictment of the modern world's disregard for the environment, as well as a sobering example of the levels of waste that have entered ecosystems worldwide.

It is tempting to hear of compostable packaging and hope that, in future, such materials will simply rot away rather than linger for centuries in the natural world.

Sadly, this is not the case, with packaging leader Amcor stating emphatically: "Compostable or biodegradable packaging is absolutely not a solution to litter and marine pollution; if these materials end up in nature, they often do not degrade and cause the same problems as conventional plastics."

Most compostable or biodegradable packaging, such as that derived from polylactic acid, requires particular industrial techniques to decompose effectively. Not only that, but compostables can often leave toxic residue behind, as well as

releasing greenhouse gases into the atmosphere as they degrade.

Such materials are effective as part of the infrastructure of a collection and processing system. Working alongside traditional recycling methods, compostable packaging can facilitate the decomposition of food waste and tackle the challenge of food-tarnished materials being largely unrecyclable.

In other words, to strive to be victorious in the compostables versus recyclables debate is to miss the point as together they can increase the rate at which packaging solutions are circularised.

Rather than accept that the majority of food sachets or coffee pods cannot be dealt with in an environmentally friendly way, simply because food residue impacts the recycling process, leveraging compostables for these products would mean they too can be processed without entering the environment.

Infrastructure is crucial to enabling the effective rollout of domestic, compostable packaging solutions. Such materials cannot be processed with traditional recyclables and depositing compostables in recycling bins only exacerbates the longstanding issue of inappropriate materials entering recycling systems.

"There is a distinct possibility that compostable materials could contaminate other recycling streams," says Gladys Naylor, group head of sustainable development at Mondi. "We need to find a way to overcome this challenge by either improving the waste stream sorting technology to collect compostable packaging in the same stream and avoid contamination of other waste for recyclability, or design materials that can be composted, but do not contaminate the recycling stream."

So the contention of compostables versus recyclables takes on greater meaning as they cannot coexist within existing recycling systems.

Adding another element to domestic waste management processes



Tolga Akmen via Getty Images



Dr. Victor Wong via Shutterstock

tends to confuse an already poorly understood system. The *State of Plastic Recycling 2020* report from multipacking systems supplier Hi-Cone found as many as 66 per cent of adults in the UK are unsure of how to recycle certain plastics. Education is of paramount importance as, without a populace that understands the necessity of effective domestic waste management, or indeed the mechanisms behind it, installed infrastructure will never be as effective as it ought to be.

In short, compostables provide some solutions to the challenges faced by recyclables, but they are not a panacea for waste pollution. "Eliminating plastic packaging would eliminate the benefits it has over alternative materials when considering their environmental impact during material extraction, production and use," says Jennifer Perr, sustainability director at Hi-Cone.

"Building a circular economy for plastics, ensuring plastic packaging never becomes waste and educating the public on the true cost of consumption of different materials, would be a major step in the right direction."

Frustration for environmental groups and companies endeavouring to deliver recyclable packaging, is rooted in the infrastructural challenges and limited awareness

surrounding recycling practice. Plastics are complex and the infrastructure required for comprehensive recycling is a challenge to deliver for all consumers, particularly while those same consumers are often confused about what can be recycled and where.

Aside from devising packaging solutions that use less material, recyclable solutions are widely considered the most impactful means of curbing plastic waste entering the environment. A fact of the compostables versus recyclables debate is that plastics, in particular, are a problem we cannot do without.

While biodegradable solutions can replace some plastic packaging, anything requiring structural soundness, protection from moisture, or

rigorous isolation from other products or atmospheric changes is still best placed in recyclable plastic packaging. Foodstuffs and medicines are particular examples where plastics are necessary, with plastic food packaging often being responsible for issues in the recycling process.

Initiatives led by the likes of the Ellen MacArthur Foundation (EMF) have been driving the circular economy: a model proposing that all products in the value cycle are not only reusable or recyclable, but the required infrastructure becomes a core focus for government spending and enterprise strategies.

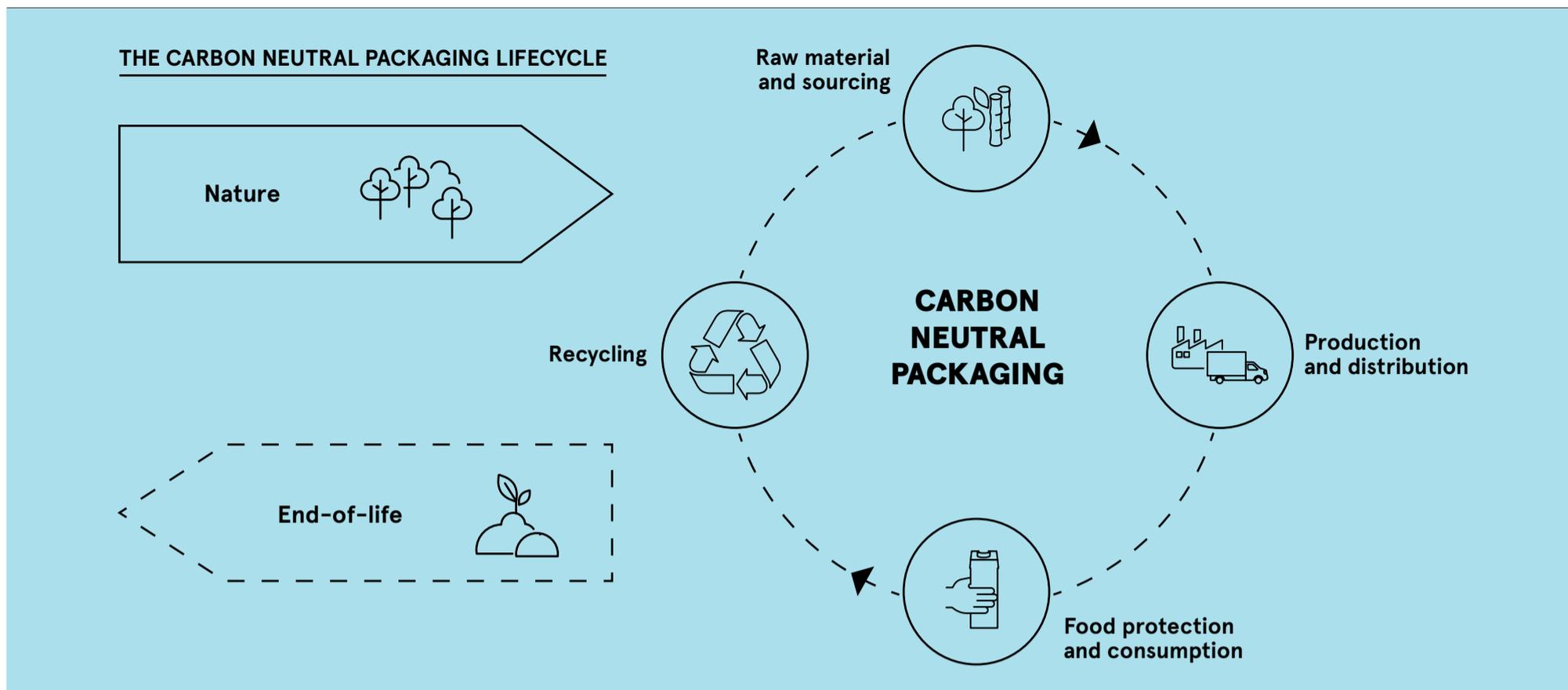
The benefits of a circular economy speak for themselves; if we can use existing plastics as material for all new plastics, we can minimise the amount of new materials that must be processed, the energy required, the carbon dioxide emissions released and the global volume of plastics produced.

Of course, recycling is a notoriously challenging endeavour. Not all plastics can be recycled and those plastics are so widespread within the packaging industry that their unilateral phasing-out would take some time. The infrastructure for recycling, including collections from homes and public spaces, is also not yet universally available. It is no wonder that global estimates from the EMF place recycling rates at just 14 per cent as recently as 2016.

Although there has been some movement towards realising the ambitions of a circular economy, the fact remains that the vast majority of all packaging is still being sent to landfill or for incineration, releasing greenhouse gases into the atmosphere or finding its way into the environment and ecosystems.

While viewing the dynamic as an oppositional compostables versus recyclables paradigm is outdated, considerable progress must be made with both sustainable packaging solutions before they realise their true potential. ●

“Compostable or biodegradable packaging is absolutely not a solution to litter and marine pollution



# How future food packaging can help solve the people-planet dilemma

We do not have to choose between protecting our planet’s ecosystem and meeting the human need for food, says **Adolfo Orive**, president and chief executive of Tetra Pak

**T**he COVID-19 pandemic has stress tested the global food supply chain like never before, putting a spotlight on the importance of food safety and availability.

Border restrictions, lockdowns and supply chain disruptions have forced the industry and companies like ours to take extraordinary business continuity measures, to support the uninterrupted supply of safe and healthy food to consumers across the world in these challenging times.

Looking into the future, the need for food is only going to grow. By 2050 the global population is predicted to reach 9.1 billion, which will require 70 per cent more food.

While food packaging plays a critical role in feeding the world, it also impacts the Earth’s climate and its limited resources, pointing towards a trade-off between people and the planet. I strongly believe this should not be the case and we do not have to choose between protecting our planet’s ecosystem and meeting the human need for food. Food packaging can play a strong role in bringing about this harmony.

The pandemic has reinforced the fact that our world needs high-performance

packaging, with a longer shelf life that increases food access and reduces food waste, supported by ambient distribution to reduce carbon emissions.

## Reducing environmental impact

To radically improve the environmental footprint, mitigate climate change and protect nature, we must look at the full life cycle of the package. Recycling is only a part of the solution and is not sufficient by itself, given the varying levels of infrastructure across countries and the fact that only a fraction of the materials used is recycled.

What we therefore need to look at is the use of materials and the carbon impact of the package. Comparative studies often show that carton packages have a lower carbon footprint than alternative packages.<sup>1</sup>

That’s because our carton packages are made of about 70 per cent paperboard from responsibly managed forests, which regenerate, taking up carbon dioxide as they grow.

However, our carton packages also contain thin layers of plastic and aluminium, some of which are thinner than a human hair, but play a key role in securing food safety. Which is where we see room to go further and create the ideal sustainable food

package that protects the planet and secures food safety and availability.

## Future food packaging

Considering various aspects of the value chain, the ideal future food package needs to deliver on five key areas:

1. Use renewable and recycled materials, so we don’t drain our planet’s resources, and source these responsibly in a way that protects biodiversity and nature.
2. Be carbon neutral, allowing for ambient distribution and storage, reducing the negative impact on climate.



**We continuously develop sustainable food packages that never compromise food safety and contribute to reducing food waste**

3. Remain safe and convenient, ensuring we reduce food waste and giving people everywhere access to quality food.

4. Be fully recyclable, supported by an effective recycling system that keeps materials in use.

5. Maximise the use of materials with a reduced impact on nature because waste management systems are not optimal and not all materials can be infinitely recycled.

## Leading the way

With a proven track record and solid sustainability foundation, our carton packages have a strong starting point and possess the full potential to address these requirements.

We were the first in the industry to receive FSC™ (Forest Stewardship Council™) certification in 2007 and now all Tetra Pak carton packages are FSC™ certified<sup>2</sup>. Furthermore, packages made of sugarcane-based plastic are Bonsucro certified, which means we only source materials responsibly, contributing to the protection of biodiversity and supporting local people.

We’re committed to reaching net-zero greenhouse gas emissions in our own operations and to using 100 per cent renewable electricity by 2030, with the ambition to achieve net-zero greenhouse gas emissions for the entire value chain by 2050.

We continuously develop sustainable food packages that never compromise food safety and contribute to reducing food waste. Our farm-to-table processing technologies extend the shelf life of food and keep perishable food nutritious, without the need for refrigeration or preservatives.

Tetra Pak carton packages are made of recyclable materials and are increasingly being recycled through our network of more than 170 recyclers, as well as through collaborations with waste management companies.

We’re working to maximise the use of paper-based content in our packages, while reducing the use of aluminium and plastic. We were the first

carton packaging company to launch paper straws on beverage cartons in Europe and we will soon be field testing our first aseptic package using an alternative to the aluminium barrier.

But we won’t stop there. Our ambition is to create a carton package that is made solely from responsibly sourced renewable and recycled materials, and is fully recyclable and carbon neutral, allowing ambient distribution and meeting food safety requirements.

Towards that end, we will continue to make significant investments to develop more sustainable solutions, the way we have done over the last few decades. It’s all part of our journey to deliver the ultimate sustainable food package.

## Building a sustainable future, together

Creating this future food package will not be easy and will also not happen overnight. But we remain fully committed towards this goal. After all, it’s an integral part of our brand promise – Protects what’s good – protecting food, people, planet.

And we’re not on this journey alone. We will be collaborating with our customers, suppliers and other stakeholders across the value chain to take an industry-wide view, not just looking at the environmental impact of our products, but also the production, manufacturing and distribution process, and beyond.

Only then can we be a part of building a sustainable future that works for people as well as the planet we all call home.

<sup>1</sup> For milk and juice in Europe: Source: ifeu 2020, Comparative Life Cycle Assessment of Tetra Pak carton packages and alternative packaging systems for beverages and liquid food on the European market  
<sup>2</sup> The FSC license code for Tetra Pak is FSC™ C014047

For more information please visit [tetrapak.com](http://tetrapak.com)



# No simple solution: achieving sustainability means fully understanding the nuances

There is much more to sustainability than one easy solution. Achieving a truly circular economy requires a full view of the carbon footprint and life-cycle impacts of packaged products

**S**ustainability has shot up the agenda of governments, consumers and businesses as the reality of climate change has become more visible. But, especially when it comes to the most environmentally friendly forms of packaging, there are no easy answers. Making real progress means fully understanding the built-in complexity in our global industrial processes and food systems and consumer behaviour.

The greatest challenge to reducing the environmental impact of packaging is changing consumer behaviour. Changes in all our behaviour, particularly at the end of a product's life, are necessary to deliver a step-change in sustainability. More often, however, when simple, one-dimensional solutions aren't available, misconceptions and biases can all too easily prevail.

Our perceptions around plastic are the perfect example. Despite the bad press it frequently gets, the reality is in some circumstances it can be the most environmentally friendly form of packaging, benefiting individuals and societies. This is not just due to its lightness, but also its ability to protect and preserve food items for longer. Without the plastic wrapped around a cucumber, for example, it would degrade much faster.

And if it wasn't for plastic, there would be no fresh, chilled meat sold in supermarkets. Plastic helps prevent cross-contamination and works to reduce food waste substantially.

Food waste is a growing concern, with the United Nations' Food and Agriculture Organization estimating that if it – the food waste – was a country, it would be the third-highest emitter of greenhouse gases after the United States and China. A study last year found the carbon footprint of food waste collected from households in Scotland was nearly three times that of plastic waste.

Overall, food waste accounts for 8 per cent of the world's total carbon emissions. This means that from a climate change point of view, reducing food waste is more important than reducing the use of plastics.

"You really have to calculate the carbon footprint for each product and look at the full life cycle, taking into account its complete supply chain," says Richard Ali, sustainability director at Huhtamaki, a global specialist in packaging solutions for the food and drink sector.

"Begin with what goes inside the packaging and how you ensure its properties remain intact through the



supply chain so it can be safely consumed. Then consider which packaging provides sufficient protection with the least environmental burden, considering the raw material, manufacturing process and transport, as well as what happens to the packaging once the product is consumed.

"If you deal with the packaging's end of life properly, you can use the material again and again, and thus help save finite resources as well as cut down carbon emissions. For example, recycling can cut the carbon footprint of a paper cup by 54 per cent and the wood fibre used to make paper cups can be used up to seven times before it loses its strength."

Public discourse around sustainable packaging is frequently shifting and, without the much-needed evidence-based discussions, consensus has still not been reached in terms of what are the most important goals that need to be achieved. In the area of environmental sustainability for packaging, is it carbon reduction, ocean plastics or biodiversity? Or should we think of the social or economic aspects of sustainability, such as jobs or food safety? There is no simple answer to solving all sustainability issues.

"People don't buy packaging for its own sake," says Ali. "It enables us to buy the products we want to buy, the

food we want to eat. That's why it's so important consumers understand the role it plays in protecting the environment by reducing food waste, protecting our health by limiting cross-contamination, and making food and drink accessible and affordable to billions of people across the world. Giving food a longer shelf life allows it to move not only between geographies but through time."

Huhtamaki seeks to design packaging that is 100 per cent recyclable, compostable or reusable. To achieve recyclability, packaging must be made as simple as possible while still delivering the safety and functionality consumers need. With a plastic pouch, for example, Huhtamaki will try to reduce the number of polymers while still achieving the shelf life people expect.

Huhtamaki mainly uses renewable raw materials, such as paper and

paperboard. Even with a thin plastic coating, which is required for moisture and grease resistance or water tightness, paper-based packaging typically has a lower carbon footprint than fossil-based alternatives.

The fibre derives from sustainably managed forests where trees are planted to replace harvested timber. Wood is used in a resource-efficient way, so tree trunks are primarily used for timber and construction, treetops, branches and bark for energy production, and the rest for cellulose, from which paper and paperboard is made.

"Using the whole tree in the best way possible contributes to the economic sustainability of forests and allows more trees to be planted within a sustainably managed forest," says Ali. "As a manufacturer, Huhtamaki takes raw materials and converts them into packaging. Doing that as efficiently and effectively as possible is not only about the design, it's about the materials we use and our own operations."

Huhtamaki is now committed to using 100 per cent renewable electricity and reducing its carbon impact to the extent that its operations will be carbon neutral by 2030, reducing significantly the carbon footprint of the packaging it makes. The company is also investing heavily in its efforts to work with other actors in the supply chain.

"You can design packaging to be the best it can be," Ali adds, "but if the recycling facilities don't exist, there will be a gap in fulfilling the circular economy. It's about talking to other parts of the supply chain about the lower carbon footprint packaging we could create, explaining how it would need to be recycled and how that can be achieved. If we only rely on old, outdated waste-management systems, then it won't work."

"We want a 21st-century recycling superhighway to take packaging at the end of its life and make sure the materials are recycled. This requires infrastructure that can collect, sort and recycle packaging, and put the materials back into the circular economy. Packaging delivers functionality and safety for products; the next step in the circular economy is for the material to be reused as packaging or as something different. That enables the carbon footprint of the food we eat become smaller and smaller."



**From a climate change point of view, reducing food waste is more important than reducing the use of plastics**

For more information please visit [huhtamaki.com](http://huhtamaki.com)

**Huhtamaki**

## DESIGN

# Balancing sustainability with beautiful design

It is possible for companies to balance eco-friendly packaging with impactful branding, both attracting discerning consumers

Sarah Dawood

Given our love of online retail, it is not surprising the UK is one of the world's largest producers of packaging waste, at 2.4 million tonnes a year. The good news is 70 per cent of this is recycled.

While single-use plastics have dominated headlines, the industry's carbon footprint results from many factors, notably excessive use of cardboard and non-economical production processes. Coronavirus has exacerbated the issue, causing our consumption of disposables to skyrocket and our recycling bins to fill up.

Brands have this to contend with, alongside creating original packaging designs that stand out in crowded markets. So which companies are successfully balancing impact and sustainability?

In 2018, global beer brand Carlsberg launched its Snap Pack, which is a way to connect packs of four cans using adhesive glue, rather than plastic rings. Carlsberg tested 4,000 types of glue before choosing one that burns off in the recycling process.

Pete Statham, sustainability manager at Carlsberg Group and UK, says removing the rings improves user experience and allows the cans to showcase branding.

"I don't think it has to be a compromise," he says. "The plastic rings detract from the consumer experience. Now, the packs are more satisfying to open as they snap apart and we've been able to do interesting things, like create a banner effect across the cans."

Statham says the biggest challenge in rethinking the packaging design has been lack of space for messaging. "The more space you reduce, the harder it is to communicate

what you've done. We tackled this through out-of-home marketing," he adds.

Carlsberg is also developing its green fibre bottle, a recyclable, biodegradable bottle made from wood

**“You have to analyse the brand you're working with and create a 'design for life' proposition**

fibre. It still contains a plastic inner lining, which will be stripped out before launch. It retains Carlsberg's distinctive green, and the logo and slogan have been embossed.

"The end vision is for it to be completely polymer free," says Statham. "When it's finished, it will have a super low carbon footprint."

Feminine care brand Callaly hired agency Design Bridge to produce "uplifting, desirable packaging", and steer away from the "boring, sanitised" look normally associated with period products, says Jody Elphick, head of brand and content at Callaly.

It uses a vibrant palette of yellow, blue and pink, and its outer packaging is a discreet box that fits through a letterbox. All the packaging is sustainable; the cardboard

gets recycled and the wrappers are either biodegradable or compostable so can go in general waste or the compost bin and disintegrate without creating toxins.

The main challenge was sourcing materials. "It was tricky finding compostable wrappers we could print on," says Elphick. "We ended up cutting into large rolls of patterned material, so every product looks slightly different. But this variation has actually created a selection box of lovely shapes and colours."

While brands like Callaly believe they are creating solutions, waste disposal is not keeping up. "The UK's recycling infrastructure is not set up to deal with compostable plastics. Having a clear system that's easy for consumers to understand will be imperative," says Elphick.

Agency Pearlfisher helped Wagamama improve the recyclability of its takeaway packaging. Its takeaway offering aims to replicate the restaurant experience, providing consumers with plastic bowls that can be washed and reused up to 100 times at home, says Jen Newell, head of realisation at Pearlfisher. Once exhausted, they can be recycled. The design team tested several different materials for food quality preservation and temperature retention.

Originally black, the bowls were changed to grey in 2019, making them easier to recycle, as black plastic often goes undetected by scanners at recycling plants. Outer cardboard sleeves have been replaced with smaller inserts that slot into the lid.

Newell says there is no generic approach to packaging design, with solutions assessed on a brand-by-brand basis and constantly reviewed. "You have to analyse the brand you're working with and



create a 'design for life' proposition," she says. "The infrastructure isn't there yet for compostables; only a small number of local authorities recycle them and they can take ages to break down. The environmental impact can be worse than using recyclable plastic."

Loop, owned by TerraCycle, provides a sustainable alternative to single-use packaging. Consumers "rent" packaging; they buy their favourite brands from the Loop website with an additional deposit and receive products in containers made from steel, aluminium, glass and durable plastic. Loop then picks up the empty reusables, cleans and redistributes them back to manufacturers to refill, while consumers get their deposit back.

Tom Szaky, founder and chief executive at TerraCycle, says this shift from disposable to "borrowed" could enable more investment and

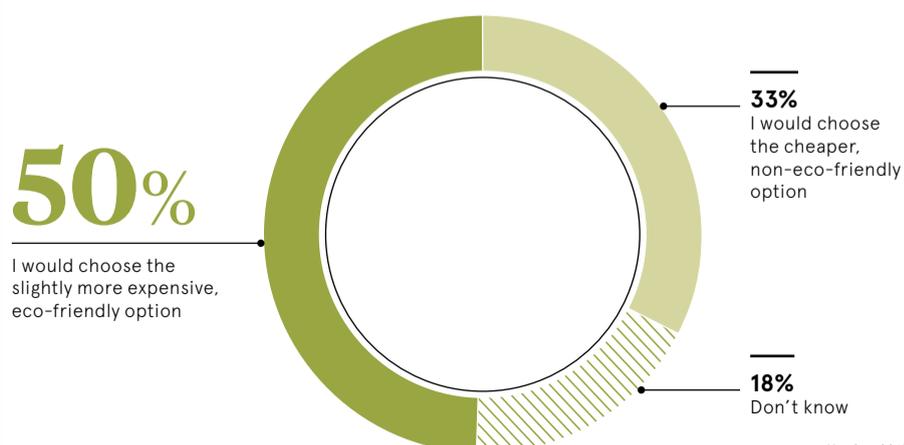
innovation in packaging design. "This allows brands to think about higher-quality materials and unique design improvements," he says. "Many of our partners, like Coca-Cola and evian, say their food and drink taste better in glass."

Häagen-Dazs, distributed by Loop, has used this theory to improve its packaging, marrying "reusability, beauty and functionality", says Szaky. The new stainless steel carton is more durable, has a stronger seal, enables the ice cream to stay frozen longer and has a concave bottom, designed for use with a spoon. Japanese food brand Ajinomoto is investigating temperature and humidity sensors to tell consumers how fresh their food is.

"This is absurd with disposable packaging, but affordable when borrowed," says Szaky. "If packaging shifts in this way, the possibilities are endless." ●

## PAYING A PREMIUM

Whether British consumers are willing to pay more for eco-friendly alternatives when faced with two similar products





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## REFILLS

# The future for refillables

Benefits of refillable packaging are numerous, but there is still a way to go before it becomes mainstream

Oliver Balch

**F**ew businesses can rival the 2020 pandemic success of Loop. Such has been customer demand that the innovative, online refillable packaging service has just opened across all forty-eight contiguous US states, up from a mere nine when it launched in May last year.

Loop, which is also available in the UK and France, is fast becoming the poster child of a reusable packaging trend that is spreading globally as consumers increasingly seek out alternatives to single-use plastics.

“From the consumer demand we’ve seen around the world, the growth of refill and reuse models promises to be extraordinary,” says Stephen Clarke, head of communications for Loop Europe.

In addition to its eco-friendly credentials, Loop has developed an ecommerce platform where consumers can buy household brands – products from Ecover, Danone, Coca-Cola and Nivea are among those on offer – rather than flogging its own-brand (read less trusted) alternatives.

The system works like any other online shopping experience: you log on, select your item and pay. The difference is your products then arrive in a recyclable padded container – the Loop Tote – which acts like a recycling bin. In go the empty bottles and then, courtesy of one of Loop’s retail partners – Tesco in the UK, for instance – back they go to Loop’s parent company TerraCycle for recycling.

The strong product value that consumers experience via Loop helps

build on people’s growing willingness to try solutions that tackle the wastefulness of single-use packaging, says Tim Debus, president and chief executive of the US-based Reusable Packaging Association.

“Active support and participation from consumer product brands and retailers are key ingredients to creating product value and connecting with consumers on the positive experience,” he adds.

A report last year from the Ellen MacArthur Foundation cites 69 refillable packaging ventures in markets around the world, from water refill vending machines, such as Dasani’s pilot PureFill stations, through to deposit-return schemes like the refillable gas cylinder service offered by sparkling water venture SodaStream.

Global consumer good giant Unilever is one of those getting in on the act. In addition to producing some refillable versions of its own best-selling brands, like a concentrated version of its Cif bathroom cleaning spray, it is partnering with other reuse specialists to help them scale.

An illustrative example is its support for Algramō in Santiago, Chile. The startup uses electric tricycles to deliver a selection of Unilever’s homecare products to people’s homes. On arrival, the products are dispensed into returnable containers by an automated dispensing unit, which is connected to an app that allows users to place their order and pay virtually.

“There isn’t a one-size-fits-all solution. To deliver a range of options that work, we continue to adopt a ‘test, learn and refine’ mentality,”



says Richard Slater, chief research and development officer at Unilever.

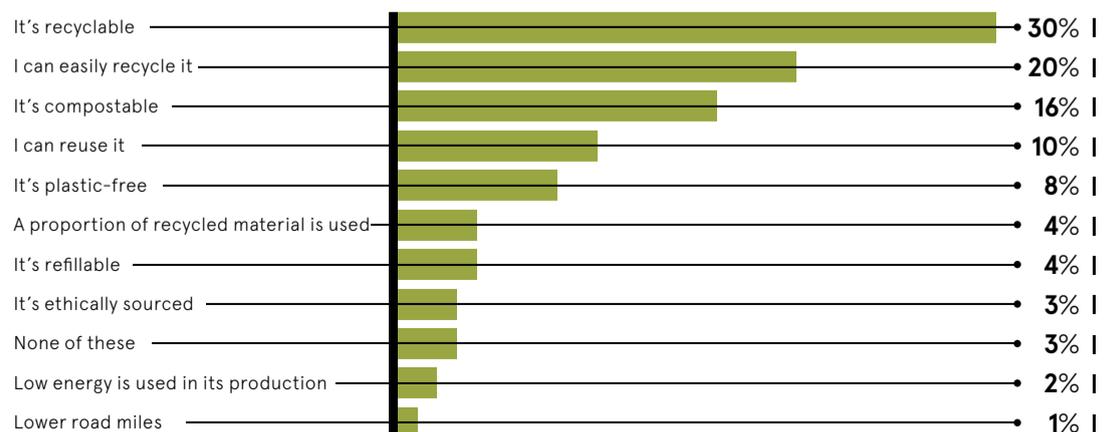
Hitting on the right answer promises lucrative rewards. If just one fifth of existing plastic packaging were to be replaced by reusable or refillable alternatives, it could open up a \$10-billion business opportunity, the Ellen MacArthur Foundation estimates. PepsiCo’s 2018 purchase of SodaStream for \$3.2 billion offers an inkling of the money at stake.

The eco-concerns and general adaptability of younger consumers put them in the vanguard of the refillable packaging movement. A study of 2,000 16 to 24 year-olds by market analysis firm GlobalData late last year found that more than two-fifths (44 per cent) had used a refill station in the previous 12 months.

The coronavirus pandemic has had a “dampener” effect on some initiatives, as consumers return to single-use packaging due to hygiene concerns, Emily Salter, retail analyst at GlobalData, concedes. She gives the example of Waitrose’s decision not to extend its popular Unpacked trial, which has seen a dedicated refillable zone and a frozen goods

## REFILLS NOT YET AT THE TOP OF ECO PRIORITIES

The factors which UK shoppers consider to be most important when identifying if an item of packaging is better for the environment





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**We need to look beyond premium designs and focus on plainer, more standardised packaging**

pick-and-mix option introduced into four pilot stores.

Helping offset health concerns, however, has been the huge appeal of doorstep refillable services during lockdown. Algramō, for example, which also dispenses a pet food brand for Nestlé, reported a 356 per cent increase in demand between April and June while Santiago residents were confined to their homes.

Welsh startup Splosh experienced much the same. The concentrates specialist, which sells a range of home essentials, from shower gels to toilet bowl cleaners, has seen demand for its subscription-based service peak in recent months. “At times, we’ve struggled to cope with demand,” says the firm’s founder Angus Grahame.

Another reason behind the success of Splosh and other refillable services like it comes down to one word: ease. A small minority of consumers are motivated enough by environmental concerns to go the extra mile to limit their use of plastic packaging, says Annette Lendal, a circular economy expert at the Ellen MacArthur Foundation. Most, however, are not.

Making refillable packaging easy to use, therefore, is critical. In Splosh’s case, it has designed a delivery package (recyclable of course) that allows it to post its product concentrates through conventional letterboxes, avoiding the need for customers to be at home.

Digital technology is also making refilling easier for customers.

UK campaign group City to Sea, for instance, has developed an easy-to-use app that identifies the 20,000 or so locations where people can fill up their water bottles for free.

In a similar vein, this summer it launched a campaign for the reintroduction of reusable cups and containers by coffee shops and food outlets, many of which desisted from doing so for health reasons after COVID-19 hit.

“All our campaigns are rooted in behaviour change theory that will inspire, nudge and provoke people into taking action on tackling plastic pollution. Making an action easy for people to do is absolutely a core component of this,” says campaign manager Steve Hynd.

Other ventures are experimenting with consumer incentives to win over everyday punters. Chile’s Algramō, for instance, offers loyalty rewards for reusing its packaging, recoupable via its dispensing machine. UK organic food retailer Abel & Cole, meanwhile, throws in a freebie to loyal customers, offering the tenth refill of the same product without charge.

Refillable schemes can be as easy and attractive as possible, but too many still focus on the premium end of the market, says Lendal at the Ellen MacArthur Foundation. The trend is understandable. Refillable options not only require rejigging standard packaging design, but also a re-engineering of how products are dispensed, delivered and returned; so-called reverse logistics.

The trick is to ditch bespoke solutions, she says, and instead invest in standardised reusable packaging that is physically robust, simple to clean and interchangeable between brands.

“To reach the mainstream, we need to look beyond premium designs and focus on plainer, more standardised packaging. The big brands get this and it’s something I think we’ll now start to see increasingly,” Lendal concludes. ●

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# Eating into the problem of food waste

In their efforts to become more sustainable, businesses have tended to focus on climate change or plastic pollution, overlooking the equally serious problem of food waste

**B**oth food and plastic waste can be best tackled by ensuring the optimum disposal route is considered for the product involved, while a broader adoption of compostable packaging has a critical role to play.

About a third of the waste we create is biodegradable and should be composted, but around half still ends up in landfill where it rots and produces methane gas, one of the most damaging greenhouse gases driving climate change.

Opportunities to turn this bio-waste into clean energy or soil-enriching compost are also lost, along with the energy and water that went into producing the wasted food in the first place.

UK consumers are alive to the issue, as seen by the growing adoption of compostable packaging, acceptance of imperfectly shaped fruit and vegetables, and uptake of apps to reduce food waste.

Indeed, the wider problem has been recognised by the UK government that has set out plans in the Environment Bill for food waste to be collected separately from all households in England by 2023. The Department for the Environment and Rural Affairs (Defra), meanwhile, has committed to eliminating food waste from landfill in England by 2030.

According to Defra, if all local authorities provided kerbside food waste collection, the amount collected would increase by 1.35 million tonnes by 2029, reducing greenhouse gas emissions by an estimated 1.25 million tonnes a year.

Collection and infrastructure are evolving fast and there are already more than 50 facilities in the UK taking in compostable packaging with their organic waste.

# 85%

of British consumers believe more compostable packaging should be used to wrap food as an alternative to plastic

## What can brands do?

Big brands have been slow to see that consumers' views are changing on composting and food waste. According to a recent Populus survey, commissioned by the compostable packaging company TIPA, some 85 per cent of British consumers believe more compostable packaging should be used to wrap food as an alternative to plastic.

Already we are seeing ethical and challenger brands adopt such packaging to good effect and, if bigger brands want to be part of the change, they must embrace it too for the right products.

Futamura, a Japanese company with manufacturing sites in the UK, United States and Japan, is one of the compostable packaging manufacturers leading the way in this area. It produces a fully compostable transparent film for food packaging that offers the performance of conventional plastic and is used by large food and pharmaceutical companies around the world.

Rather than using petrochemicals, the material – marketed as NatureFlex – is made from readily renewable cellulose derived from wood pulp, sourced exclusively from responsibly managed tree plantations.

It is light, durable and delivers an excellent barrier to maintain freshness and reduce waste from start to finish, or farm to fork. It can be used in a host of different ways, including as packaging for snacks, fresh produce, medicine, confectionery, tea and coffee, bakery goods and cheese.

## Plastics versus compostables

Brands do not need to abandon plastics to make good use of compostable packaging. Certain types of plastic packaging, such as soft drinks bottles, can already be recycled effectively and may remain an appropriate choice in sustainability terms.

Instead, brands should focus on packaging that is harder to recycle or where contamination by residual food takes place. Take, for example, a ready meal tray, where the tray itself may be recyclable but the plastic film that covers it is not, making it impossible to recycle the whole thing.

Tea bags, fruit labels and sandwich skillets often contain plastics, which mean they will not get recycled and could inadvertently contaminate compost. Once these plastics are dispersed into the environment, they do not biodegrade and may harm ecosystems.



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Biowaste that is properly managed can become a huge asset for the UK

Yet all these applications can now be delivered in compostable solutions. Similarly, how can it be acceptable to use a plastic coffee pod when compostable solutions exist, offering the same performance and consumer convenience?

Currently, biowaste facilities must limit the contamination rate of plastics and other non compostables to around 5 per cent by weight. However, the UK Environment Agency wants to tighten this to just 0.5 per cent, amid mounting concerns over microplastics entering the environment. Compostable packaging will reduce this problem.

For brands looking to lead the way on this issue, robust and independent

certification is key. Futamura's products hold the Programme for the Endorsement of Forest Certification, which is a gold-standard designation for wood harvested from forests that are managed, socially beneficial, environmentally conscious and economically viable.

It means Futamura's films are independently confirmed as compostable through certification to relevant global standards for industrial and home composting.

## Benefits of compostable packaging

Brands have spoken out effectively about issues such as climate change, race and gender equality, and organic waste is set to become another such hot-button topic. However, most brands have only taken baby steps towards changing their practices.

Some are put off by the upfront cost of some types of compostable packaging, but as consumers respond positively to the brand's actions, sales typically rise, more than compensating for the initial investment. Conversely, doing nothing can alienate customers, costing the business more in the long run.

Biowaste that is properly managed can become a huge asset for the UK.

For every tonne that is composted, 1,000 KgCo2eq of greenhouse emissions are saved and 300KWh of electricity is generated, enough to power a family home for a month. In addition, 850 litres of fertilising digestate is created that can be combined with garden waste to create optimum fertilising and soil-structure remediating compost.

The "circular economy" has become a buzz term in business, but few companies truly embody the philosophy. Embracing renewable and compostable packaging for their products offers companies the chance to demonstrate true circularity, from farm to fork and back to the farm again. With focus on the plastic waste problem, consumers have never had more power to influence the packaging choices of the future.

For more information please visit [Natureflex.com](http://Natureflex.com)

 **FUTAMURA**

HYGIENE

# Embracing packaging which cleans itself

As public interest in hygiene reaches its zenith, new innovations, such as self-cleaning plastic, have never been more welcome

Rich McEachran

**H**ave you ever considered how many people have handled a bag of salad or packet of pasta before it has made its way onto a supermarket shelf? Or how many shoppers have picked it up and then put it back?

There's no evidence to suggest coronavirus can be passed on through touching packaging and the official stance from the World Health Organization is that packaging is an unlikely transmission route, despite the fact that the virus can survive on plastic for up to 72 hours. Nevertheless, attitudes and behaviours have understandably shifted over the past few months.

A survey conducted by FMCG Gurus, published in April, found 26 per cent of respondents across 18 countries, including the UK, United States and China, said they would now like more information about how products on shop shelves have been handled, while 42 per cent said they are paying more attention to the quality of packaging.

The pandemic has made people more anxious about germs and hygiene etiquette. Supermarkets and shops have taken measures to lower the risk of COVID-19 spreading, including installing hand-sanitising stations. But even once a vaccine has been found and administered, there will be shoppers who are likely to remain



wary about germs being passed on by touching and handling products.

One solution to the problem, and the issue of contamination in the supply chain in general, could be self-cleaning plastic.

Researchers at McMaster University in Canada made headlines last December when they announced they had developed an anti-bacterial, non-stick plastic surface through a combination of clever chemistry and engineering. The transparent wrap is effective

in repelling all forms of bacteria, including superbugs MRSA and Clostridium difficile, as well as viruses with a similar structure to COVID-19. It could potentially be used to shrink-wrap all kinds of things, from door handles to food.

The science for self-cleaning plastic is established, but it could be some time before bacteria-repellent materials are used to wrap products found in supermarkets.

Kinross-based Exporta, a packaging solution firm, which sells an anti-bacterial, self-adhesive film that can be applied to hand railings, tables and chairs, supplies clients in the agriculture, pharmaceutical and healthcare industries.

Don Marshall, Exporta's head of e-commerce and fulfilment, says: "I can see the film's application on the bulk side of distribution on plastic pallets, containers and boxes. Surfaces in the supply chain for moving goods are already hygienic and can be easily sanitised, but this would offer an extra level of protection.

"The problem with any technology, though, is that it remains expensive. Our film, which isn't exactly self-cleaning, costs more than £1,000 a roll. So, if self-cleaning plastic was used for product packaging, it would add a hefty amount of cost to each product and increase the price of goods, which are already price sensitive."

Industry analysis, published by Ipsos in August, has indicated that consumers might be more willing to buy a product if the packaging has proven hygiene qualities. However, a balance will need to be struck between hygiene, sustainability and value.

A survey of 16,000 people across 16 countries, conducted by the market research firm, asked what the two most important factors in deciding between two products of similar quality and features are. Nearly five in ten said lower price, 29 per cent voted for hygienic packaging and 24 per cent would prefer a product that came in eco-friendly packaging.

Even if bacterial-repellent materials were to become mainstream, reluctance from manufacturers and retailers could stand in self-cleaning plastic's way.

Stafford-based supplier of additives for plastics and textiles, Addmaster's most innovative development is a coating for packs of fresh chicken that comes in both a liquid and powder form and helps to prevent the spread of bacteria, such as campylobacter, a common cause of food poisoning.

According to findings from the Food Standards Agency, campylobacter is present on 5 to 7 per cent of all chicken packaging. Cook-in-the-bag chickens, which are sold as a product where consumers don't

## HOW LONG DOES CORONAVIRUS LIVE ON SURFACES?

**72 hours**

Plastic

**48 hours**

Stainless steel

**24 hours**

Cardboard

**4 hours**

Copper

**3 hours**

Still air

New England Medical Journal 2020

## CONSUMERS STILL CHOOSE PRICE OVER HYGIENE

Global customers were asked to pick the top two reasons which are most important to them when deciding between similar household products



Ipsos 2020

have to touch raw meat, can also be contaminated on the outside.

"The technology only adds 0.25p to the average price of a whole chicken, but numerous retailers and chicken suppliers have told us that this is too much, because of the amount of the meat eaten in the UK," says Paul Morris, Addmaster's managing director. "It's tremendously frustrating to have the solution available, yet be hitting a brick wall with retailers that are putting profit before safety."

Morris is hopeful the pandemic will mean retailers become more receptive to the technology. More shoppers now want anti-bacterial protection and raising hygiene standards will help companies increase their profits.

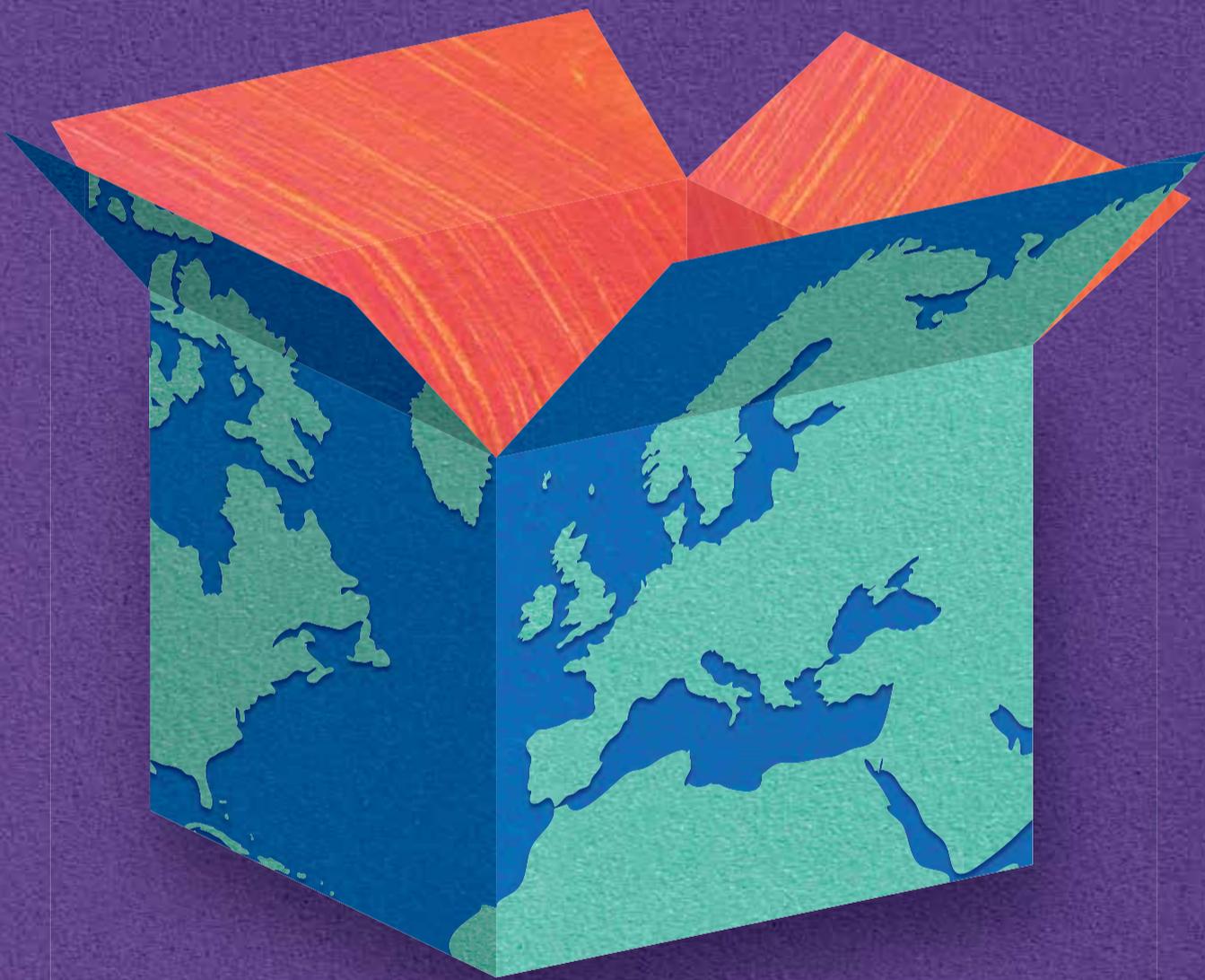
"Companies are beginning to realise that if they don't up their hygiene game, then consumers will move to those that do," he adds.

Similar hurdles face self-cleaning plastic. However, if the price is right, then it should become commercially viable.

"The development and rollout of self-cleaning plastic is definitely possible," says Marshall at Exporta. "Like all new technologies, we need to see an increase in supply and demand, as well as adoption, for prices to drop to a point where it could be viable to have bacteria-repellent materials used for a packet of cornflakes." ●



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