

FUTURE OF PACKAGING

06 FIVE INCLUSIVE DESIGN TRENDS FOR 2023

10 FINDING A PURPOSE FOR PLASTIC WASTE

14 A CLIMATE CASE FOR DIGITAL TRACEABILITY



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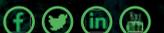


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DEMAND

Packaging sector unwraps a nightmare before Christmas

The festive season is always a crunch point for the packaging industry but this year manufacturers have faced even stronger headwinds. How can they adapt?

Rich McEachran

It's one of the joys of Christmas: opening gifts that have been carefully packaged and beautifully presented. But as consumers get into the holiday spirit, there will be little festive cheer for the packaging industry.

Christmas and the preceding Black Friday and Cyber Monday events are an annual crunch point for the packaging industry. This year, however, there are additional issues at play. While the pandemic-induced pressures may have thawed, supply chains are feeling the pinch in other ways.

"This peak period puts a huge strain on the packaging industry every year. This year, the pressure is even harder. A combination of raw material price rises, material shortages and inflation are resulting in cost pressures as well as availability problems," says Emile Naus, partner at consultancy BearingPoint and previously head of logistics strategy at Marks & Spencer.

Rewind to 2020. Back then, packaging was in hot demand, particularly corrugated cardboard boxes. The pandemic caused an online shopping boom, with paper mills asking customers to put in orders weeks ahead of the usual schedule to ensure availability.

On top of this, some paper mills shut down production because of Covid-19 outbreaks. Meanwhile, recycling efforts also slowed down; many consumers were hoarding cardboard boxes, which didn't help. This fuelled a cardboard shortage and pushed up prices.

Demand for cardboard has fallen in the past few months as the cost-of-living crisis has forced consumers to rein in their online spending habits. In a trading update for the six months to the end of October, packaging giant DS Smith, which supplies Amazon, KP Snacks and PepsiCo, said that like-for-like corrugated box volumes were slightly lower compared to the same period last year. Another leading provider, Smurfit Kappa, reported that its volumes were flat in the nine months to the end of September.

With raw material and energy prices remaining high and volatile in the near term, some cardboard manufacturers have taken the decision to hike the prices of products to pass cost inflation onto customers. Smurfit Kappa said on its most recent earnings call that its prices had crept up 2% to 3% in the third quarter, although it added that the



Tashi-Dolek via Getty Images

price hike would likely be over for now, after spot gas prices and waste paper prices had cooled.

But it's not just soaring energy and transportation costs weighing on packaging supply chains. Volatility in foreign exchange rates – triggered by September's calamitous mini-budget – has been an unforeseen obstacle in the run-up to Christmas.

"When the value of sterling fell to its lowest against the US dollar, it affected international trade of raw materials. Because of freight lead times, the impact of this won't really

have been felt by UK companies until they are into the December peak period," says Dale Brimelow, operations director at packaging manufacturer and consultancy Duo.

Some companies might have avoided any issues by building a buffer of cardboard boxes for the peak season, explains Naus. But packaging takes up a lot of space compared to its value, so holding huge inventories of materials doesn't necessarily make economic sense.

"Companies that have opted to purchase on the spot – or that take a

shorter term approach to purchasing and planning – are more likely to be in the danger zone when further supply chain disruptions take place during the lead-up to the busy Christmas period," comments Vinny Gidley, who heads up supply chain management and business process outsourcing at Paragon Customer Communications.

Lead times for cardboard boxes can vary depending on the quantity and size required. They typically take as little as one to two weeks to be delivered but seasonal pressures mean this can easily stretch to up to six to eight weeks.

This festive season's lead times could have been a whole lot bleaker if proposed industrial action had gone ahead. Thousands of workers at both DS Smith and Smurfit Kappa voted to strike over a pay dispute before union members agreed an 8% pay rise at the end of November.

Industrial action in 2023 can't be ruled out. But even if it doesn't materialise, workers who feel underpaid and undervalued are an indicator of a bigger problem: packaging manufacturers could struggle to attract and retain the talent that could help them weather future industry headwinds and seasonal pressures.



According to a 2021 survey of industry senior leaders by executive search firm Heidrick & Struggles, 70% of respondents preferred to source talent from within the industry. Packaging companies are in a Catch-22 situation. The top talent often seek roles in innovative companies but the industry will struggle to innovate without first attracting that top talent. A perceived lack of innovation was cited by the respondents as a main barrier to the ability to hire executive talent.

“One of the biggest threats to packaging supply chain stability in the UK is labour scarcity. Packaging manufacturers have experienced a drain in talent since Brexit and the pandemic, with people moving both out of the sector and the UK. There’s no pipeline of emerging talent to fill jobs,” warns Brimelow.

Packaging manufacturers need government-level support to address recruitment challenges, Brimelow says. There needs to be an overhaul of apprenticeship schemes as well as a flexible skills fund to enable companies to attract talent.

“It’s a problem that urgently needs fixing,” he says. “If not, companies in the UK will increasingly have to rely on imports of finished packaging. This approach isn’t sustainable in an economy that’s striving to be greener and more circular.”

The additional pressures on the industry ahead of this festive season have raised several questions about whether and how packaging manufacturers, brands and retailers can respond to consumer demand for sustainable packaging.

Research by fashion retail authority Drapers, in partnership with Smurfit Kappa, found that consumer appetite for sustainable packaging isn’t waning, even if inflation means they’ll have to pay a premium.

A third of 2,000 consumers surveyed for the *Sustainability and the Consumer 2022* report said they had bought a product from a retailer based on the sustainability of its packaging. What’s more, 41% have purchased a product specifically because of sustainable materials; this rises to 56% among those aged between 18 and 24.

Just under two-thirds (64%) of respondents indicated that they



There is a lot to be said for toning down the luxury finishes, even on premium products. It’s a visual cue that a brand is taking steps to keep prices affordable

would be more likely to buy from a retailer that uses sustainable packaging. And although around half (51%) said they wouldn’t be willing to pay extra for sustainable packaging – the figure is higher (65%) among 55- to 60-year-olds – younger shoppers aged 18 to 24 would be willing to pay more. In this age group, 64% said they would be happy to absorb the cost.

While the survey covers consumer purchasing habits in the fashion sector, it’s emblematic of continued support for sustainability among consumers more widely, despite the rising cost of living.

Brands and retailers face a challenge – are they in the financial position to keep procuring sustainable packaging in the current high-inflation environment? Or will they have to default to more cost-effective solutions such as plastics and non-recyclable films used to wrap and seal boxes?

“We have moved from a market where sustainability could command a premium price tag to a market where sustainable packaging is price-led,” explains Mike Lammas, managing director of printing company Herbert Walkers, which produces packaging for cosmetics and chocolates and boxes for bottles of premium spirits.

“Sustainability is still a consideration but in the current competitive market, shelf appeal is king,” he says. “Sustainability is less of an altruistic goal and more of a differentiator.”

Herbert Walkers advises clients about the small changes they can make to deliver similar experiences



Kinga Krzeminska via Getty Images

for consumers. For example, reducing the weighting of cardboard cartons cuts raw-material usage and lowers costs. Such a change will be imperceptible to most consumers and will therefore have little to no negative effect on shelf appeal.

By taking a smarter approach to design – such as ensuring that multiple packs can be cut from a single piece of cardboard, which minimises wasted raw material – it’s possible that sustainability can remain a priority in a high-inflation environment, says Lammas.

“There is also a lot to be said for toning down the luxury finishes, even on premium products. It’s a visual cue for consumers that a brand is taking steps to keep prices affordable,” he argues.

Focusing on the small gains to generate cost savings was deemed to be sound commercial practice even before inflation started to bite. Now, rising inflation and the cost-of-living crisis have simply accelerated the case for smart design.

“The need to keep prices lower by designing for reduced material consumption could actually prove an important catalyst for improved sustainability,” observes Lammas.

A word of caution, though. If packaging companies continue to find their margins are being squeezed, then redesigning packaging products for the sake of sustainability and to ensure brands and retailers can still attract consumer attention might not always be the answer. If it isn’t approached correctly, it could lead to inferior quality finishes that negate the role that packaging is meant to play in the first place: to protect products when they are being transported and handled.

Naus thinks that while there might be some options to reduce costs through clear design of the packaging, he cautions that “experience shows that excessive cost reductions simply translate into more damages during shipment. And that would simply have knock-on issues for brands and retailers.”

Margins in the packaging industry are relatively tight. If packaging companies must raise the prices of their raw materials, this will squeeze brands and retailers even more. This is particularly true for those that rely on ecommerce sales as online is typically less profitable than in-store sales.

Raw material prices will remain in flux beyond Christmas and the new year. Spot gas prices will be elevated well into 2023 and any sudden macroeconomic event could easily trigger a new spike, driving up fuel and transportation costs as well.

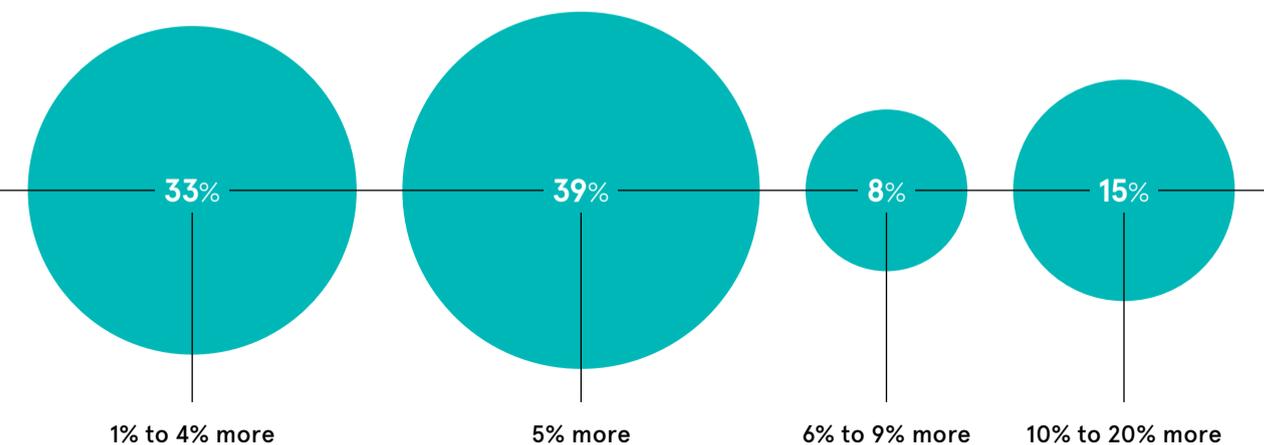
These factors are out of the control of packaging manufacturers. Other than taking a smart approach to design, manufacturers must nail down a solid, long-term strategy, alongside a contingency plan for any future supply chain challenges.

“Our industry faces several serious challenges at the moment,” says Gidley. “Those who understand the value of good strategic planning and economies of scale can reduce the negative impact these added pressures are having on supply chains.”

Lean, efficient operations can lead to cost-performance improvements and even help packaging manufacturers gain an advantage. By building resilience and flexibility into their strategies, packaging manufacturers can put themselves in the best position to deal with complications and reduce the risk of future macroeconomic events creating a nightmare before Christmas. ●

FIFTY-TWO PER CENT OF UK CONSUMERS WOULD PAY MORE FOR SUSTAINABLE PACKAGING. BUT HOW MUCH MORE?

Additional amount that UK consumers would pay for goods using sustainable packaging



INSIGHT

The trends shaping packing design in 2023

Adam Ryan, head of Pentawards and creative director, packaging, Easyfairs, and Naomi Stewart, marketing manager, Easyfairs, reflect on the latest developments in packaging design

It's December 2022, and we are reflecting on what has happened over the last 12 months. Through the Pentawards competition and Easyfairs packaging events, Naomi and I have had the privilege to access thousands of pieces of packaging and have seen the latest developments in packaging from around the world. From all of this, we have identified three key trends that are set to shape packaging in the year to come.

Packaging that caters to a wider variety of consumers is becoming a must-have for many brands. With 1 billion people around the world living with some form of disability, this actually shouldn't be a trend – we should always design for humans, not consumers.

A great example created in partnership with people with disabilities is the packaging for Microsoft's Surface Adaptive Kit, which was designed to be both accessible and sustainable. The packaging contains special labels that cater to those with visual impairments, with features including integrated loops for easy removal, as well as an embossed, braille QR code.

This trend is bound to develop as brands' understanding of the diversity of their audiences and their needs evolves. At the Pentawards Festival 2022, Jeremy Lindley, global design director of Diageo, has emphasised the danger of unconscious bias and the importance of empathy in design. He has also spoken about playfulness being one of the most important tools for creating truly inclusive design. We expect to see many more 'playful' packaging designs for diverse audiences in the next few years.

With the personal care and beauty industry producing more than 120 billion units of packaging every year, it's no secret that brands and agencies have been looking for ways to reduce their impact. While this is not new, we have seen more brands communicate with consumers about what more can be done to create a sustainable life cycle for packaging.

Last year, we saw a lot of brands telling their own sustainability story through packaging, but communication around sustainability has progressed in the past year. By educating consumers on how they can dispose of various elements of packaging places some responsibility on the consumer and turns them into active participants in the creation of an environmentally friendly model.

Colgate's 'Recycle Me' toothpaste tube, which is the first of its kind, aims to raise awareness of recycling and promote behaviour change in consumers. Similarly, Carte D'Or's Affogati line of ice cream has switched to 100% compostable and recyclable paper, with instructions on what elements to recycle or compost.

There is a real opportunity here for brands to involve consumers in the sustainability and recyclability story of their product and packaging. This in turn could foster greater loyalty between consumers and brands as they feel a shared responsibility for the planet.

Brands are continually finding new ways to communicate and engage with consumers. In recent years, we have seen a sharp rise in smart and connected packaging, which has allowed consumers to engage more with the product and the brand.

FaceGym is an environmentally friendly, sports-inspired beauty brand complete with unique personal trainer-like application techniques only accessible via QR code. They created a tactile pull-off tab to open the product in a unique and memorable way, capturing the consumer's attention and piquing interest. Cleverly hidden codes were then revealed, which the user could scan to improve their results.

With technology and social media becoming increasingly sophisticated, we look forward to seeing new and innovative ways of brands connecting with consumers beyond what's displayed on the box. We also expect a lot of this content to engage consumers with topical issues as well as the sustainable story behind each product. ●



Adam Ryan
Creative director, packaging portfolio, Easyfairs



Fedrigoni paper and self-adhesive solutions for luxury packaging

Why sustainability needs to be your first thought for packaging

Packaging is all about first impressions, so paying lip service to ESG no longer cuts it

For decades, companies looking to develop distinctive packaging went little further than thinking about how to place their label front and centre of every product they offered. The focus was aesthetics first and environmentally-conscious packaging second.

Things have changed since then. We're waking up to the impact on our planet of conspicuous consumption. And a rapid rethinking of packaging is required to meet the needs of today and tomorrow.

"Sustainability is not an option anymore," says Ilan Schinazi, chief commercial officer for paper at Fedrigoni Group, a leading paper and self-adhesive material manufacturer. "It's a must." That's a significant change in recent years, driven by the market – and by the demands of consumers.

Sustainable packaging takes a number of different formats for businesses, from reducing the volume of packaging to nearshoring your supply chains for packaging. There's also concern about the life cycle of packaging products. Previously, Fedrigoni Group would work

with customers who wanted fashionable paper for their packaging, including metallic spots and plastic inserts. Now that's not the case. "Now ESG is the first thing they talk about," says Schinazi. "Fifteen years ago, it was the last thing. It's a radical, radical change."

Market conditions are also driving the push for sustainability: the world has been blighted by a shortage of paper products and cardboard boxes, meaning that businesses are looking to get smarter with their packaging to handle macroeconomic issues.

It all comes against a backdrop of hugely shifting demands for packaging. Ecommerce – particularly in Europe, the Middle East and Africa – is advancing at pace. Some of the largest brands have increased e-commerce as a share of their total sales from 10 or 15% pre-pandemic to closer to 50% now.

Yet developments in ecommerce packaging haven't kept pace. Standardisation of boxes and containers means that some customers receive a single lipstick in a massive cardboard box; an online shopper could open up three separate boxes before they get to their bottle of champagne. "There is a lot of reflection at this moment," says Schinazi. "Some brands are really moving forward and trying to reduce their packaging or inventing new packaging. But this is still the beginning of the revolution."

It's a revolution that Fedrigoni is trying to stay ahead of. "We are investing heavily in research and new technologies to provide our customers with viable luxury solutions with high ESG features," adds Micaela Di Trana, marketing and R&D director at Fedrigoni Paper.

As a paper manufacturer, Fedrigoni Group doesn't make the packaging products but supplies the raw materials to its converter clients. However, Fedrigoni helps with its own sustainability-focused inventions, as well as partnering with

external designers to offer, for example, the right paper for foldable-to-size boxes. Another two developments are helping the life cycle of products too: scratch-resistant and water-resistant papers, which reduce the need for plastic lamination to protect against wear and tear and damage from the elements. This makes the paper easier to recycle at the end of the product's life. "We try to bring to the party as many innovations as we can, in partnership with the brands and the converters," says Schinazi.

Another futuristic development which has the potential to overhaul the future of packaging is the integration of RFID technology, which has been widely adopted for the purposes of customer engagement, anticounterfeiting and tracking. "Today, customers expect packaging to be smarter, personalised and reusable," says Antonio Linardi, chief transformation officer at Fedrigoni Self Adhesives. "That means RFID becomes the means to enable the paper to interact with the consumer in different ways – from the beginning to the moment of recycling." Of course, RFID technology doesn't just benefit customers; it benefits businesses too, by helping with inventory management and checking the progress of deliveries.

It's a bold new future for packaging – and one that's testament to its increasing importance for businesses big and small around the world. "Packaging will become more and more fundamental, particularly in e-commerce and in luxury experiences," says Schinazi.

For more information visit
[fedrigoni.com](https://www.fedrigoni.com)

FEDRIGONI

DESIGN

5 inclusive packaging design trends to watch in 2023

Packaging is a powerful tool to drive inclusivity. Here are five design innovations to keep an eye on in 2023

Rebecca Stewart

Until recently brands have designed for the masses, which has ignored a sizable market that calls for more thoughtful packaging solutions.

But in a crowded space, companies are now playing catch-up. From Nike to Unilever to Lego, businesses are starting to design for as wide a

range of people as possible and packaging is the next frontier.

According to the World Health Organization, 16% of the global population is disabled. Yet many items sold in supermarket stores and online still don't take into account the diverse range of needs among this community.

Inclusive packaging is about much more than accessibility, though. It responds to differences in language, culture, gender and age – it builds for use cases across the entire human experience. As we look ahead to 2023, we chart here the noteworthy inclusive packaging design trends to note.



Participatory design

Underserved communities navigate a world that doesn't take their needs into account, so they have a wealth of expertise on how to build things better. In 2023, brands, agencies and designers should lean into this and invite stakeholders into the process from the outset.

This is already under way in some sectors. In entertainment, Apple's 2022 Academy Award-winning movie *CODA*, which tells the story of a majority-deaf family, involved deaf creators throughout the production. Elsewhere, Google's Project Euphonia

is working to provide reliable voice recognition technology to people whose speech has been affected by neurological conditions such as Parkinson's. It uses speech samples from would-be users to inform its AI.

Marie Stafford is global director at ad agency innovation think tank Wunderman Thompson Intelligence. For her, brands need to work with, not speak to, the marginalised communities they serve. "It means acknowledging our own narrow world view and bringing in those with the authentic lived experience to inform and shape design from end to end," she adds. Stafford believes the

goal of brands should be to go beyond collaboration and integrate people from diverse backgrounds into the business, putting them in positions of influence. "It's about allowing this talent to lead the conversation, elevating and acknowledging their contributions and underlining the value of the expertise that lived experience delivers," she explains.

Stafford says companies can also forge relationships with "inclusivepreneurs" – people in marginalised groups who have launched their own businesses or products. It's an opportunity for brands to learn from them and support their businesses.

One size doesn't fit all

In 2021, Unilever-owned personal care brand Degree (known as Sure in the UK) unveiled the world's "first adaptive deodorant" for people with visual impairment and upper-limb motor disabilities.

The ergonomic prototype won multiple innovation awards. But it wasn't such a hit with users who told Unilever they wanted solutions personalised to their mobility and dexterity needs. Degree has gone back to the drawing board for its easy-grip solution and is developing a set of accessories that can be made with 3D printers and attached to all existing Degree deodorant sticks. This rethink highlights that brands shouldn't be afraid to test and learn.

Another company gearing itself up for an education is Diageo, which, in October, launched a company-wide inclusive design training initiative for its marketers to drive deeper inclusivity across its products, marketing and physical brand experiences.

Jeremy Lindley is global design director at Diageo and says the organisation wants to set a standard for the wider industry.

"We're learning every day. And by empowering our marketing teams to challenge how they've traditionally approached design, we hope to bring us all closer to a more tolerant and inclusive world," he explains.

In 2023, expect to see a more flexible and all-encompassing approach to packaging, marketing and design from FMCG companies.



Going beyond braille

For people who are blind or partially sighted, accessing product information on a package can be a big challenge. The Royal National Institute of Blind People says nine out of 10 blind and partially sighted people find it "quite difficult" or "impossible" to access information on medication or food packaging.

For some brands, the solution to this has been to print braille on the packaging. But of the 2 million people in the UK classified as having

sight loss, it's estimated that just 20,000 read Braille. In response to this, companies have embraced technological innovation that will include the blind community. Kellogg's is among those to sign up for NaviLens, a QR code technology that can read aloud ingredients, usage and recycling information.

More recently, Microsoft worked with Sensodyne owner Haleon to expand the functionality of Seeing AI, Microsoft's read-out app, so that it can provide more detailed labelling information for consumers in the UK and US.

Tamara Rogers, chief marketing officer at Haleon, explains that this is just one of the brand's "first initiatives" in its journey to make health products more inclusive.

"We're always told to follow the dosage instructions correctly – but what if you can't read them?" she asks, adding that this collaboration is about empowering people to take better care of themselves.

Such tools also have potential for other communities, too, including those with dyslexia, learning difficulties or limited literacy skills. In 2023, brands are likely to further explore technology as an alternative to tactile language.



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Frustration-free packaging

Since 2011, the charity Age UK has campaigned for businesses that value and include the elderly.

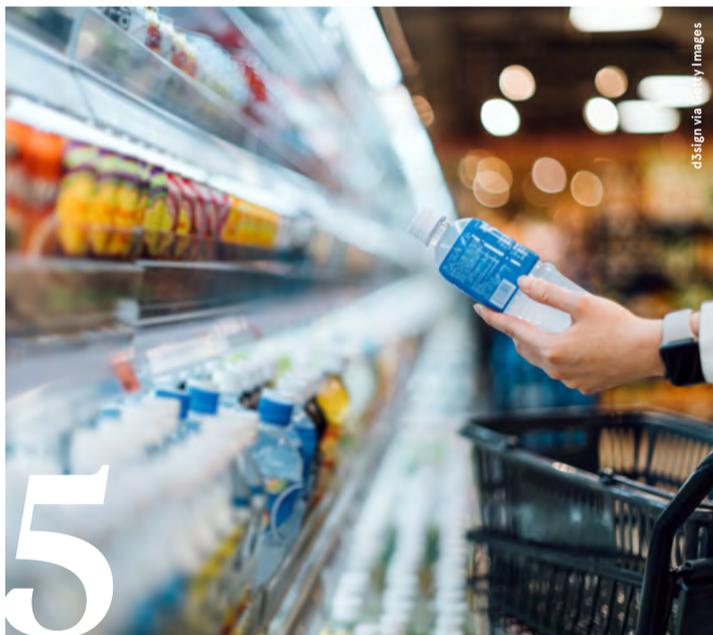
The organisation's work with retailers and the Research Institute for Disabled Consumers has seen an increase in the use of 'frustration-free' packaging, which is designed for those who might struggle with mobility, dexterity and strength.

Meanwhile Amazon, which delivers 5.4 billion packages a year in the UK, has been expanding its certified Frustration-Free Packaging (FFP), a set of packaging guidelines that sellers on the platform must meet. This type of packaging is 100% recyclable

and can be opened without the use of any cutter or other sharp object.

Through 2021 and 2022, Amazon has offered incentive payments to vendors who can optimise for this standard, and more than 2 million sellers are already in the programme. With the double benefit of both minimising the environmental impact of packaging and Amazon's growing grip on the ecommerce market, it's anticipated more brands will adopt this standard next year.

Others might choose to bring their own FFP efforts directly to supermarket shelves, taking inspiration from Procter & Gamble's new Ariel laundry capsule box, which the company says was "designed with inclusivity in mind".



Temperature-sensitive tags

Mimica Touch is a temperature-sensitive tag that provides an accurate, real-time indication of food freshness across packaging used for juice, dairy and red meat produce.

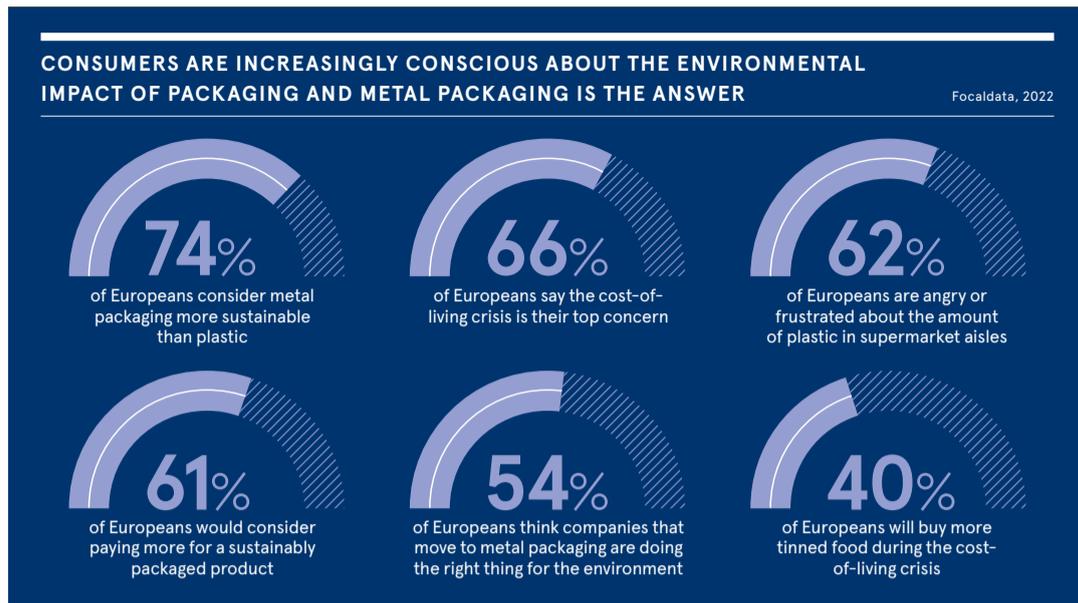
The 2017 invention was a response to the estimation that, in the UK, 60% of food waste occurs at home. But Mimica also helps people who are blind, partially sighted or unable to read for any other reason, to know whether food is safe to eat.

Brands such as dairy company Arla have already trialled the technology. Mimica's first tactile cap will be rolled out in 2023, with pilots planned with a major retailer and a large European juice manufacturer.

Wunderman's Stafford says that, until now, many inclusive packaging designs have failed to get beyond the concept stage or been distributed widely enough. But because initiatives such as Mimica and Seeing AI are so simple and ubiquitous they could drive change.

"I think this shift to what we call mass inclusive design will start to take off in the next few years, bringing accessible packaging into the mainstream," she says.

She points to Wunderman's own data, which reveals that 63% of people would be more likely to purchase from a brand that they think accurately represents them. ●



Why smart, sustainable packaging matters more than ever

Modern consumers are acutely aware of the environmental impact of packaging and brands must respond. Eviosys explains how tin-plated steel packaging can help brands meet their sustainability goals and boost sales

Consumers are increasingly conscious about the environmental impact of packaging and crying out for more sustainable options. At the same time, they expect packaging to be recyclable, safe and high quality.

In this context, a familiar packaging material is often overlooked. Tin-plated steel is the most recycled of all packaging materials. Unlike paper or plastic, it is also synonymous with quality, as demonstrated by its widespread use in the packaging of premium food and beauty products.

Eviosys is Europe's largest converter of tin-plated steel for packaging and works with some of the world's biggest names in the fast-moving consumer goods (FMCG) sector. The group, whose roots in packaging go back 200 years, combines design expertise, world-class manufacturing quality and the very best materials to help businesses boost their sales and meet their environmental goals.

Lee Bradley leads commercial activities for aerosols at Eviosys. He says

“Consumers are increasingly alienated by packaging waste and want more sustainable alternatives

tin-plated steel wins in terms of functionality, sustainability and cost.

"It is among the most durable packaging materials, and a better material to ensure safety where it is critical such as for the aerosol industry. Our expertise in UK and other European-based productions enable us to offer our customers an outstanding level of quality they can really rely on," he says.

Stephane Viret heads up Eviosys's promotional packaging commercial activities, helping clients in a range of industries. He says brands are increasingly waking up to the possibilities of tin packaging, despite it having been used for centuries.

"Many brands have increased their use of plastic and carton packaging in recent years, believing it's cheaper. But consumers are increasingly alienated by packaging waste and want more sustainable alternatives. It's a trend that will accelerate and tin-plated steel will play a central role in the future."

Tin-plate packaging also exudes quality, which helps brands to build customer loyalty in an ever more competitive retail market.

"A well-decorated tin is more than just a container: it's an emotional object that tells a story about your brand," says Viret. "Tins also make great gifts and consumers tend to keep and reuse them. They can also be recycled forever."

Increasingly, governments are cracking down on plastic packaging, and many single-use plastics can no longer be sold across the European Union. Such rulings are forcing brands to rethink their approach to packaging, with tin-plated steel becoming a more popular choice.

Take the grocery sector, where cans have long been used for certain items but are now favoured for a wider variety of foods and beverages.

Canned food for years suffered from the misconception that it is somehow less fresh and requires more preservatives. But nothing could be further from the truth, says Aidan Ruddock, Eviosys' commercial director in the UK and Ireland.

"Canned vegetables are actually often fresher than vegetables found in fresh food aisles," he says. "Sweetcorn for example is usually canned several hours after it is picked which halts the biodegradation process, but it can take a week to transport a cob of corn from field to supermarket."

He adds: "At a global scale, our plants are located close to our customers. In the UK alone we have six Eviosys plants."

Canned food also helps consumers and businesses to save energy as it doesn't need to be frozen or refrigerated.

Overall, brands must look again at the vast opportunities that tin-plated steel packaging offers. In a climate where consumers are spending less because of surging inflation but expecting more in terms of environmental standards, smart and sustainable packaging will be key to helping brands cut through.

The Eviosys team will be at the Paris Packaging Week, 25 - 26 January. Contact Eviosys here to schedule a meeting eviosys.com/contact-us



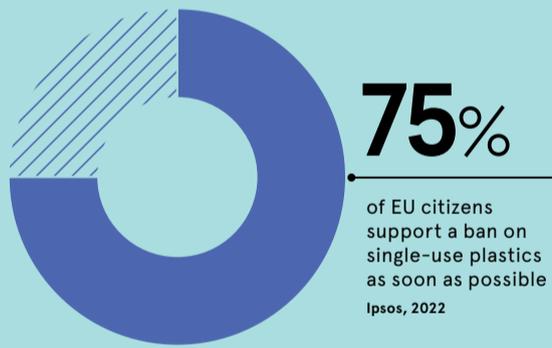
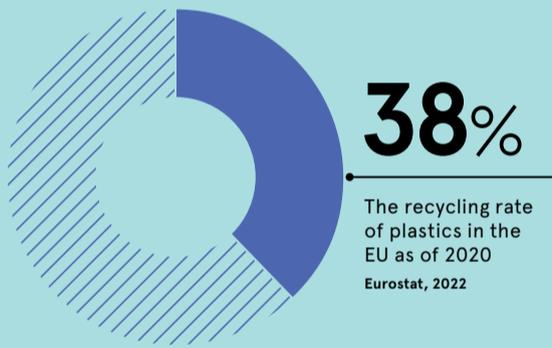
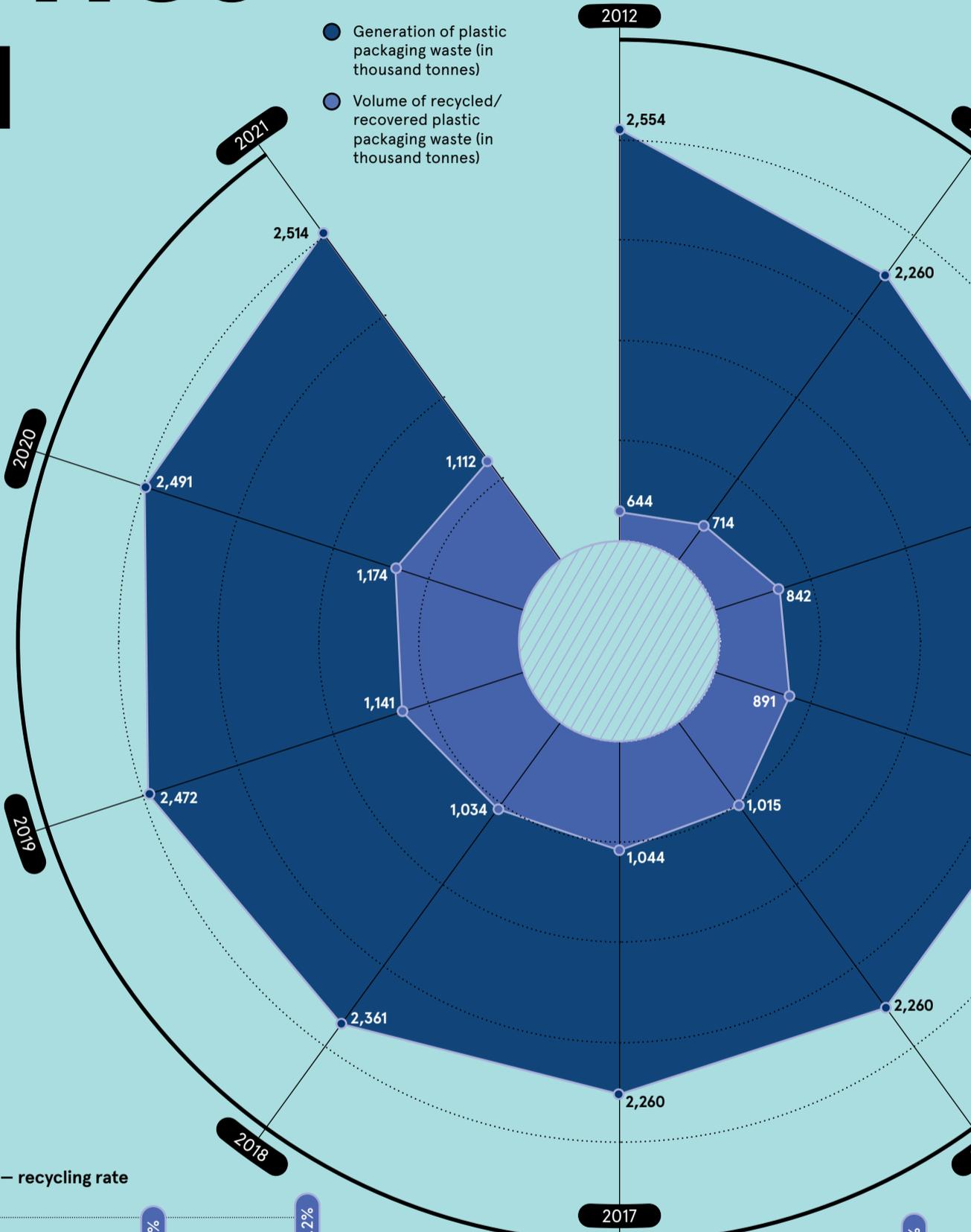
THE PLASTICS PROBLEM

With roughly 2.5 million tonnes of plastic packaging waste generated each year, the UK is perhaps unsurprisingly one of Europe's top plastics consumers. But although there's much progress to be made, the UK is also among the top recyclers in Europe. So how serious is the plastic problem in the UK? How do its treatment methods compare to its European neighbours? And what should be done to deal with plastic packaging waste more efficiently?

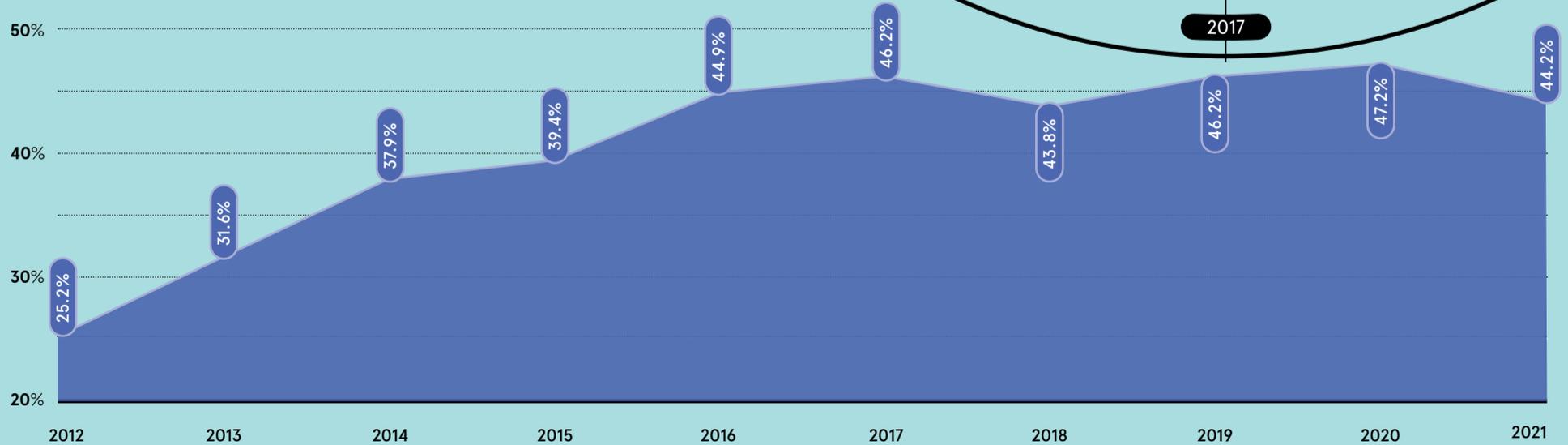
THE SCALE OF THE UK'S PLASTICS PROBLEM

Generation and recycling of plastic packaging waste in the UK

Gov.uk, 2022



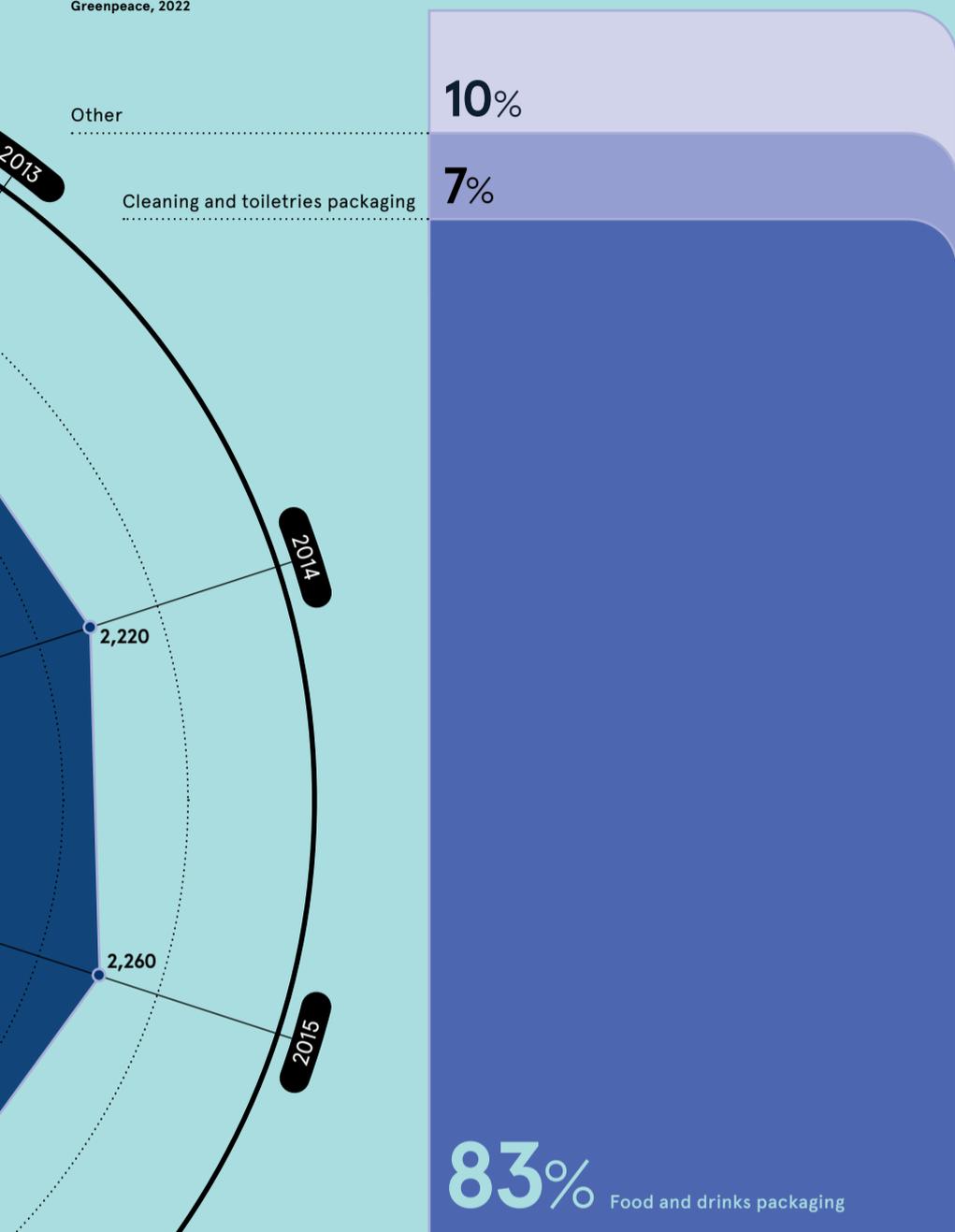
Generation and recycling of plastic packaging waste in the UK – recycling rate



WHAT GETS THROWN OUT?

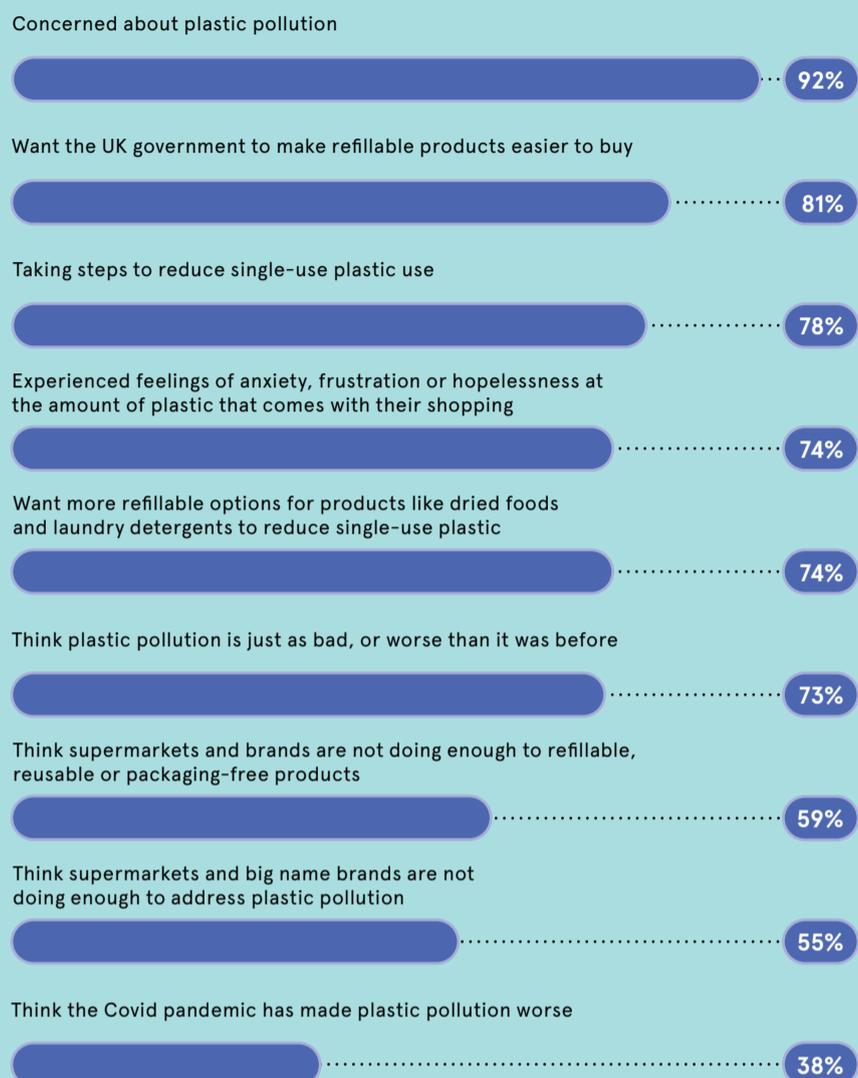
Distribution of plastic packaging waste types thrown out by households in the UK

Greenpeace, 2022



WHAT DO THE PEOPLE THINK?

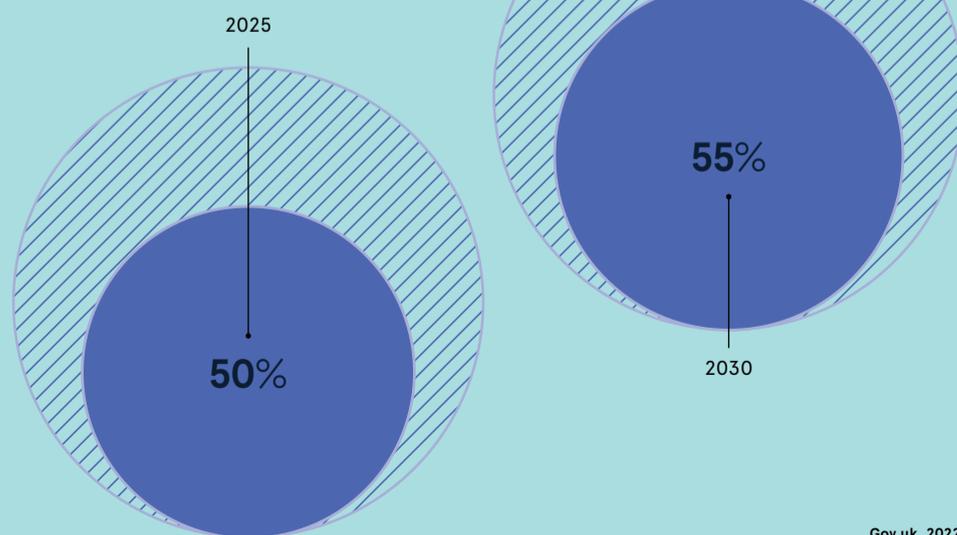
Concerns and opinions about plastic waste pollution in the UK



Friends of the Earth, 2021

TARGET RECYCLING RATES

Target rates for plastic packaging recycling in the UK

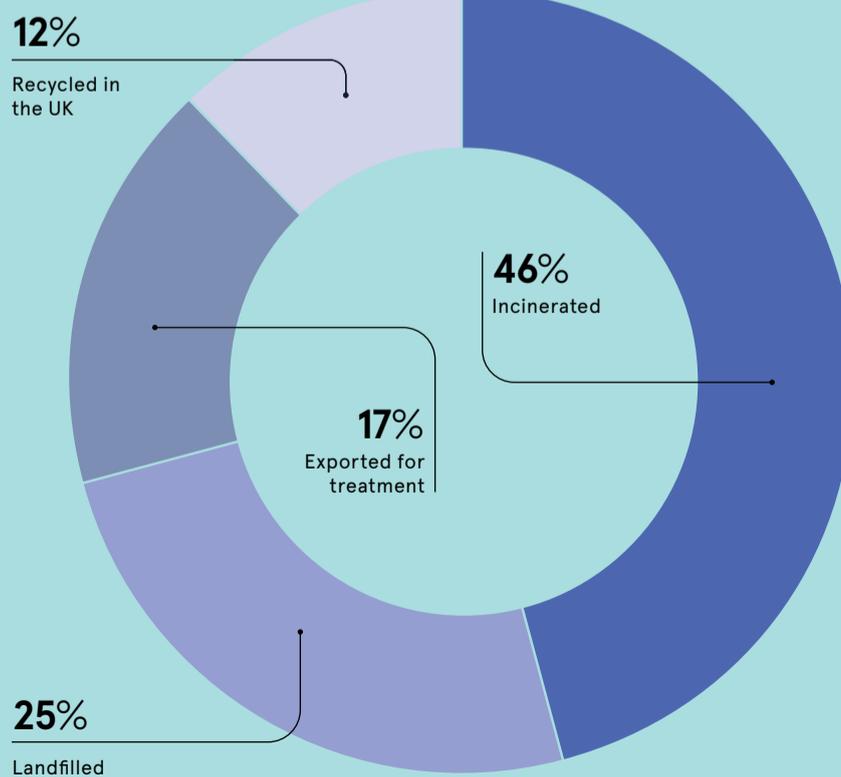


Gov.uk, 2022

HOW IS PLASTIC WASTE TREATED?

Plastic waste treatment methods in the UK

Greenpeace, 2022





SUSTAINABILITY

Chemical recycling: the formula for plastic waste?

As the agendas of the circular economy and climate action converge, some experts think chemical recycling could help the plastics sector adjust to a sustainable future

Jim McClelland

Chemical recycling offers a tantalising prospect: the ability to break down plastic into its constituent parts. Could it be the answer to plastic waste?

Also known as advanced, feedstock or tertiary recycling, the process creates new chemicals and plastics, with the same high quality and performance characteristics as virgin raw materials. It can tackle problematic packaging materials such as films, laminates and polystyrene, which do not currently meet the criteria for kerbside recycling and go straight in the bin.

Chemical recycling is a more sustainable option than last-resort incineration or landfill, says Yoni Shiran, partner at systems change company Systemiq. These pyrolysis-based chemical recycling technologies – which typically use thermal degradation in the absence of oxygen to convert plastic waste back into a gas or liquid oil – are suitable for common types of packaging made from polyethylene or polypropylene, he says.

“Studies show that scaling these up as a solution for hard-to-recycle plastic waste would lead to lower greenhouse gas emissions than relying on waste-to-energy incineration.”

A key investment driver for all players with net-zero targets in the plastics industry is this potential for carbon reduction compared to other waste disposal options, says Marc van den Biggelaar, director of advanced recycling EMEA and APAC at materials-science giant Dow.

“Advanced recycling processes are expected to save approximately 1.5 tonnes of carbon dioxide per tonne of plastic recycled, compared to incineration,” he explains. “The CO₂ emissions inherent in advanced recycling will definitely come down as we see greater investment and adoption of the technologies, which are evolving at pace.”

Can chemical recycling really solve packaging’s problem with plastic waste? It already has the backing of big brands such as Colgate Palmolive, PepsiCo and Mars, which are among the signatories of an open letter from the Consumer Goods Forum that expresses support for the development of sustainable solutions to chemical recycling.

The letter, issued to suppliers, regulators and investors by the Coalition of Action on Plastic Waste, calls

for 800,000 tonnes of chemically recycled plastics a year by 2030.

PlasticsEurope, the trade association representing manufacturers, forecasts that planned chemical recycling investment will almost triple in the back half of this decade, from €2.6bn (about £2.2bn) in 2025 to €7.2bn in 2030.

According to recent analysis by BloombergNEF, the US has become a net importer of plastic waste for the first time. This is primarily because of the combination of rising domestic demand linked to the programme to build new chemical recycling plants in the country.

It’s not surprising that big names in plastics and packaging have started making their moves.

In France, US chemical company Eastman has identified a site in Normandy as the preferred location for its planned \$1bn (around £800m) investment in a molecular recycling plant. The project is set to create employment for approximately 350 people and lead to an additional 1,500 indirect jobs in recycling, energy and infrastructure.

Across Europe and the US, Dow is working with technology partner Mura to add as much as 600 kilotonnes of advanced recycling capacity by 2030. Their initial project, in Teesside, UK, is expected to be operational by 2023. This plant will be the first in the world to use Mura’s supercritical steam process to convert materials such as flexible and multi-layer plastics, previously deemed unrecyclable.

In 2025, a much larger new Mura facility in Germany will deliver approximately 120 kilotonnes of capacity per annum, co-located on an existing Dow site in Böhlen.

Not everyone is convinced that chemical recycling is the answer. Zero Waste Scotland argues the process should not be classified as recycling at all, labelling much of it as forms of thermal and material recovery, instead.

Broad concerns remain about the levels of emissions involved, as well as market viability, especially given some of the negative perceptions resulting from initial bad press. The news that one of the early UK proponents, Swindon-based Recycling Technologies, was forced to call in the administrators in September has only fuelled the fires of doubt.

We should start by putting chemical recycling back in its place within the packaging waste hierarchy, suggests Shiran.

“The first step is to make it abundantly clear that chemical recycling is not a ‘silver bullet’ solution to enable ever-growing production of single-use plastics,” he insists.



The first step is to make it abundantly clear that chemical recycling is not a ‘silver bullet’ solution to enable ever-growing production of single-use plastics

“Efforts to reduce avoidable uses of packaging, design packaging for recycling, and (where appropriate) move from single-use to reusable or refillable packaging must come first,” he adds.

As with any emerging technology, there are also calls for better transparency and data, to provide robust evidence of performance benefits as well as to allay market fears, comments Jack Payne, a PhD researcher at the University of Bath Institute for Sustainability.

“Traditionally, chemical recycling methods have been limited by their cost, energy intensity and emissions, or waste,” he says. “Moving forward, it’s imperative that life-cycle analysis and techno-economic analysis are included at the outset, to ensure any chemical recycling processes we do develop are actually economic and truly sustainable.”

But if market demand stays strong, then investment in R&D will likely follow. Ongoing innovation holds a potential fix for some of the early issues, adds Payne.

“There are a number of ways to improve the sustainability credentials of chemical recycling, for example through sophisticated equipment engineering, such as reactor design,” he says. “Another way is through the use of a catalyst, which can help make processes more efficient, cost-effective, less energy-intensive and reduce waste.”

In fact, researchers at the Centre for Sustainable and Circular Technologies at the University of Bath have recently developed a new and simple method for the chemical upcycling of polycarbonate waste at room temperature, in the presence of a zinc-based catalyst. Polycarbonates are a robust class of plastics which are commonly used in construction and engineering, so the ability to convert them back into their chemical constituents makes them valuable to recycle.

The bigger question for the packaging sector moving forward arguably does not concern either the technology or the process but its commercial application. There is a risk of unintended consequences, plus the possibility that the plastics recycling industry will knowingly

cannibalise itself by using chemical recycling for materials that would have been subjected to more traditional forms of recycling, effectively stealing from one waste stream to feed another.

The challenge is not just to make a business case for chemical recycling, but to make one that is responsible and sustainable in the wider waste context, says Shiran.

“The industry must demonstrate the benefits of chemical recycling and ensure that it fulfils its promise of producing high-quality, contact-sensitive plastics from hard-to-recycle plastic waste, and is not simply competing with mechanical recyclers for supplies.” Mechanical recycling essentially means collecting plastic waste and processing it for secondary use without significantly changing the material’s chemical structure — and so it can result in lower quality.

There are, though, trade-offs. Chemical recycling processes generally require much higher energy consumption and generate more greenhouse gas emissions than mechanical recycling.

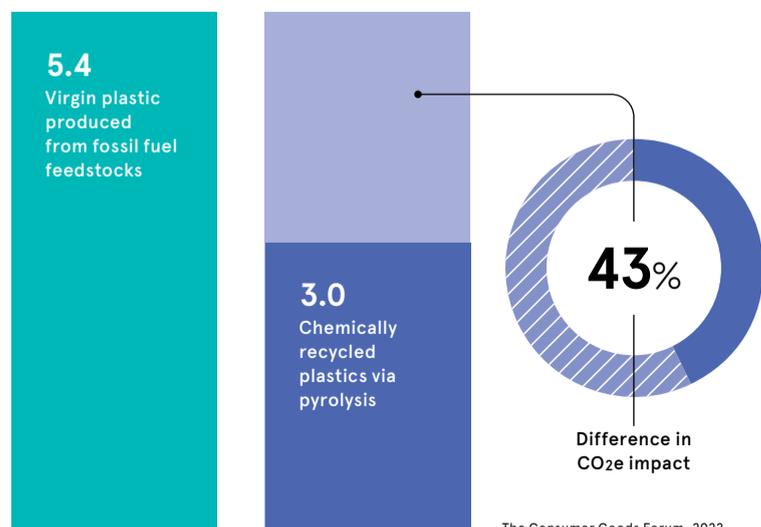
On the other hand, chemical recycling can claim some advantages over mechanical, notably in its ability to repeatedly create recycle that can compete like-for-like with virgin material, eliminating down-cycling — when the secondary material is of lower quality or functionality than the original — and transforming plastic waste into value-added products.

The two recycling methods boast different merits and suit different uses. The hope is that the market can make informed and sustainable choices, concludes van den Biggelaar. “Advanced recycling is critical to getting to net zero. Understanding the complementarity of mechanical recycling and advanced recycling is key — because one should not be at the expense of the other — and enhanced waste sorting will help both types of recycling grow.”

Chemical recycling represents a global growth market, for right now and for the future. It might not be the only answer to packaging’s problem with plastics but it is undeniably part of the solution. ●

CHEMICAL RECYCLING COULD REDUCE CARBON IN THE PRODUCTION PROCESS

Climate impact of plastics production by method (million tonnes of CO₂e)



Reusing garment hangers is key to slashing packaging emissions

Eliminating plastic packaging waste and slashing carbon emissions is best tackled with a closed-loop reuse model. Here’s why



Single-use plastic packaging produces large quantities of waste and a significant carbon footprint. Vast volumes of waste are still sent to landfills or are incinerated. Plastic coat hangers used in clothing stores are a case in point. For many years, they’ve been considered a disposable item — billions are thrown away every year. But reuse solutions based on the circular economy are now tackling this issue.

Many retailers and consumers believe recycling plastic hangers is the answer. Yet there’s still limited kerbside collection for them in the UK. Grinding down used plastics and separating the metal hooks from plastic bodies requires energy, resources and time. From a sustainability perspective, it makes more sense to preserve materials in their original form and reuse hangers as many times as possible.

“Waste is not waste, until you waste it. Plastic hangers aren’t waste; this resource should be seen as an asset. Reusing this essential packaging item up to 15 times reduces a company’s carbon emissions, saves money and helps brands become more sustainable. It should be seen as a competitive advantage to reuse garment hangers,” explains Theresa Garside, general manager for the UK at Pact Retail Accessories, which helps reuse more than 2 million hangers and accessories a day. Spanning nine countries and working with more than 8,000 retail stores, Pact works with clients such as Tesco, Matalan and Pep&Co in the UK, Target in the US and Kmart in Australia.

Single-use hangers can have just as detrimental an impact on the environment as single-use plastic bags, straws or bottles. A great deal of carbon emissions



We have to shift this from a waste to an asset management issue, then commercially and environmentally we can make it work for retailers

are generated when making the hanger. By creating quality hangers that are durable, they can be shipped around the globe and reused for several years and throughout many usage cycles.

Reusing hangers can also reduce emissions by up to 64% when compared with manufacturing new ones from virgin plastic resin. But behavioural change has been slow to evolve among fashion buyers and brands themselves. Despite being around for 10 years, packaging as a service — where a third party manages the circulation of hangers — is still relatively small in the UK. Yet this circular model of reuse represents the best way to slash emissions.

The new plastic packaging tax has helped. This is payable by British businesses that manufacture or import plastic packaging, including hangers, which is not composed of at least 30% recycled plastic, forcing firms to look at new solutions. Companies now have to tackle Scope 3 emissions along their supply chains, which includes hanger use. For some fashion labels, nearly half

their total plastic use comes in the form of garment hangers. Consumer awareness of this issue is also on the rise.

“Consumers are increasingly realising the need to leave garment hangers at the checkout for reuse. Plastic, when used and reused wisely, is still the most efficient solution compared to the majority of cardboard hangers that are recycled. We have to shift this from a waste to an asset management issue, then commercially and environmentally we can make it work for retailers,” details Garside.

Some retailers are now advertising that their garment hangers are reused. The circular economy for preloved, used clothing is also taking off as an antidote to fast, disposable fashion — an industry that is considered one of the largest contributors to greenhouse gas emissions, globally.

“Closed-loop reuse solutions for garment hangers, which we’ve been involved in for decades, haven’t been seen as important until now. It’s not just hangers, but security tags, boxes and cartons — reuse is crucial. We’re looking at all types of packaging along the supply chain now,” says Garside.

“We can help brands eliminate single-use plastic with our innovative circular economic models. The time is now.”

Delivering sustainable solutions to the fashion world
www.pactgroup.com/hangers





Simpleimages via Getty Images

POLICY

Bottling it? The trouble with the UK's deposit return scheme

To tackle plastic pollution and litter, the government announced a new scheme to return drinks containers in 2018. But it keeps getting delayed – what's standing in its way?

Sam Haddad

The UK announced plans for a deposit return scheme (DRS) in 2018, after the TV series *Blue Planet II* sparked outrage over plastic pollution in the marine environment. How has the scheme fared and what challenges remain?

A DRS sees consumers pay a small deposit when they buy a drink in a single-use container, which is then redeemed when they return the empty bottle or can. While the nature of the scheme has yet to be unveiled in England and Wales, the Scottish scheme, which is set to begin in autumn 2023, will see a contracted operator collecting the cans and bottles, with the brands then responsible for processing their returned products.

Such initiatives with glass bottles were once common in the UK. But with the emergence of plastic bottles

in the 1980s, drinks manufacturers lobbied to end the return system. This was to take greater advantage of the new single-use containers, which they could design with innovative shapes and colours to help their products stand out on the shelves, rather than being subject to the standardised glass bottles.

"Instead of a circular model, they created a linear model," explains Sam Harding, executive director of ReLoop Platform, a non-profit that advocates for policy change towards a circular economy. In a linear economy a product is used only once, whereas a circular model means that it can be reused.

"The cost of waste management was transferred to the taxpayer, thanks to the introduction of kerbside recycling in the 1990 Environment Protection Act," she adds.

The arguments made against the DRS in the 1980s are similar to those heard today, Harding explains.

"Collecting, cleaning and recycling or refilling bottles involves costs and logistics. In contrast, though, if you blow a little plastic pellet into a bottle and fill it then you don't have to think about it again," she says.

But today the beverage companies are not on the same page. "In the past the divide was clear; it was the green blob versus industry. But since 2018, when the DRS was announced, the dynamic has shifted and there are disagreements within the industry itself," Harding says.

Coca-Cola has said it is broadly supportive of the DRS because the plastic packaging tax – which came into force this year – means that it must include 30% recycled content

in its bottles. This will be impossible to achieve through kerbside recycling collections alone.

"They want a deposit system to get their hands on the materials," claims Harding. She speculates that some brands might be tempted to run their own DRS system so they can manage the costs, flows and logistics themselves, rather than being part of a centrally managed system. "This is one of the final pieces in their supply chain because if they can own their materials, they'll then get the first option to buy the recycled content. And that's a very virtuous circle."

Some of the big supermarkets are, however, less supportive. This could partly be because they make their own branded drinks and don't want the increased costs and logistics. It could also be because they would need to host some of the bottle and can collection points. Supermarkets would receive a handling fee to do so but they would also need to allocate some of their real estate and staff to the process.

"I've seen amazing recycling hubs in Switzerland and some European retailers are making money from deposit schemes because they've optimised how their staff deal with the system," says Harding.

Post-Brexit, it's been hard to promote successful examples of DRS schemes from Europe to the UK's Conservative government, according to Harding. "The statements were always: 'We will match or exceed the ambition of the EU,'" she says.

Finland operates a gold standard scheme, she observes, which is owned jointly between the beverage industry and retailers and boasts an overall return rate of 93%. Germany and Norway are also operating extremely successful schemes.

There has also been some controversy in the UK over the position of glass in the scheme. Some brands, such as Coca-Cola, want it included but the representative body British Glass and some of the major retailers do not – because they don't want to deal with glass return points.

"Once you look at the littering impacts of glass it's inconceivable you would introduce something that reduces litter but leaves the most dangerous terrestrial material just out in the wild," says Harding.

The Scotland DRS is planned to go live in 2023 and is set to include glass. The Wales and England schemes will follow in 2024 but will not, though, include glass.

There could be a benefit to the Department for Environment, Food

EACH YEAR, UK CONSUMERS GO THROUGH...

14 billion

plastic drinks bottles



9 billion

drinks cans



5 billion

glass bottles



Gov.uk, 2019

and Rural Affairs (Defra) taking so long to implement the scheme, says Harding: the fact that more schemes that include glass have come online in other countries. This could help to twist Defra's arm.

The idea of starting a scheme in Scotland before England and Wales, rather than at the same time, will also present challenges to brands working across the nations.

Sarah Greenwood is a packaging technology expert at the University of Sheffield's Grantham Centre for Sustainable Futures and director of the Many Happy Returns project on refillable packaging. She thinks the biggest disappointment of the proposed DRS scheme is that it doesn't have provision for reusing and refilling containers. Instead, the focus is just on recycling.

"I'm from a generation that had milk delivered in glass bottles to the doorstep. For these schemes to be successful in moving us towards a circular economy there needs to be an investment in reverse infrastructure and logistics," she says. "We've spent the last 50 years streamlining everything, so any changes we make will be difficult to introduce and require an enormous amount of capital investment. But the DRS could be a route to getting a bit closer to reusable packaging."

But she concedes that for the scheme to work, you'd need all the brands to agree on uniform standards – one of the great things about the old milk bottle service. ●



We've spent the last 50 years streamlining everything, so any changes we make will be difficult to introduce and require an enormous amount of capital investment

Q&A

Driving a circular model in packaging

Maximilian Heindl, incoming CEO of European paper and corrugated cardboard giant Progroup, explains how the packing industry can respond to the challenges of sustainability

Q What will be the biggest future challenges and opportunities in packaging?

A The short-term challenges relate to energy and the economy. Packaging sales link closely to GDP, so it's tough when economies show uncertainty. But we are highly competitive. Progroup has young, efficient assets and is well organised. We are not afraid of the economic challenges but rather looking for opportunities to work towards energy independence.

Paper and cardboard are highly renewable and recyclable materials, but production is energy- and capital-intensive. It is important to focus on green, renewable energy as much as possible to become a zero-carbon industry.

We have already made great progress towards independence from fossil fuels – a good example of this is our Eisenhüttenstadt site in Germany. The energy we need there for paper production is largely supplied by our connected waste-to-energy power plant.

The power plant recycles waste material to supply the paper machine with energy via steam. The waste used in this process is residual materials that are partly biogenic and originate from our paper production. The power plant also

produces electricity and the amount of electricity generated corresponds to about 50% of our second paper machine's (PM2's) electricity needs, thus reducing the use of fossil fuels and significantly saving CO₂.

Q How else is Progroup driving sustainability?

A Sustainability starts with our hi-tech facilities, which run particularly efficiently, and continues with our environmentally friendly products, which we are developing constantly.

The PM2 paper machine is also a good example of this – the path of our resource-saving papers began with the design of this paper machine more than 10 years ago. We designed this innovative generation of machine to produce paper that uses less fibre but maintains stability. Even today, few machines produce such light papers and its basis is 100% recovered paper. After use, papers are returned to the 'green cycle' as waste paper.

In combination with our waste-to-energy power plant, we pursue a consistent zero-waste system in Eisenhüttenstadt. We will gradually roll out this model to other sites.



For example, at our site near Leipzig we invested €500m in our latest paper machine (PM3), of which €100m was put toward sustainability measures. We are also investing €135m in a fossil-fuel-free power plant, on the same site, starting construction next year and completing in 2025.

Of course, we do not only keep an eye on energy consumption, but on water consumption too. Our PM1 near Magdeburg was the first paper machine to have a 100% closed-loop water system. Here, process water is cleaned of fibre fragments and then reintroduced into the production process – this means no wasted water is produced. PM3, which started two years ago, made that loop even more efficient with a new, integrated type of recirculating water treatment system.

It works like a biological kidney, treating the process water used and returning it to the closed-loop system

“

It is important to focus on green, renewable energy as much as possible to become a zero-carbon industry

of paper production. Waste paper impurities are biologically degraded during this process and converted into biogas. As a result, the entire plant consumes 10% less fossil resources.

Q Why is long-term thinking so crucial in this industry?

A As mentioned, our industry is still energy- and capital-intensive, and we will need huge, long-term projects to achieve our sustainability goals. It is a great advantage that we are a family business. We think ahead and plan far into the future with the next generation in mind. Our entire strategy is geared towards the long term. This means we are already looking at projects today, such as carbon capture and storage to reduce carbon emissions. We are even thinking about methods for creating a negative carbon balance – as part of the bioeconomy, this is prospectively possible with our business model.

We are also looking at how we can use hydrogen within our entire corporate strategy, which is designed for the long-term.

Q What else do you plan to do after taking over as CEO?

A We are well positioned for the future, but we are not resting on

our laurels. Some things will need to adjust due to our growing size – organisation, people and culture become even more important. And we continue to develop our core values of innovation and cooperation.

My ambition is to successfully advance our family business, together with all our colleagues, with the employees in the team. Progroup will continue to grow. And we will operate sustainably and with our vision to be a technology leader.

Q How do you feel about taking the helm on 1 January 2023?

A It will be a lot of responsibility, but I've grown up with this company over 30 years. We have been preparing this transition for six years. So it feels natural to take over. I am very much looking forward to the future. And I am looking forward to continuing my father's successful business model and leaving my own mark on it.

Q How will Progroup's story continue?

A We see lots of room and potential in our markets. We have many projects on the go, including our latest corrugated sheet-feeder plant in Poland, which will start official production in a few weeks, plus three more plants in Germany, Italy and France.

Even with a leadership change, we will maintain our growth strategy and focus on our strengths. That continuity is important as we keep aiming to set the standard for sustainability and technological innovation in packaging.

For more information please visit progroup.ag

progroup
consistently successful



Paper plant EHS via Knut Leeder



Morsa Images via Getty Images

collecting data on packaging waste, while fees must be paid if packaging waste is released onto the market.

This will give money to local authorities to deal with the issue and encourage producers to reuse, reduce or make packaging more recyclable. The hope is to incentivise more circular economic models. A deposit return scheme is planned to start in Scotland in 2023 and in England and Wales in 2024.

The EU will roll out a digital product passport scheme in 2023 for textiles, batteries and electronics. This will eventually mandate firms to provide key data for circularity and sustainability. "This will be standardised and machine-readable and will likely have details on packaging. Ultimately, adoption of transparency standards and technology will no longer be a choice, and that will be good for all of us, as well as the planet," explains Winograd.

There are opportunities if companies get digital ID solutions right. Consumers will be able to choose brands that take a more sustainable approach to packaging based on trusted data. It will also help brands to communicate their environmental credentials, for example through QR codes on product wrappings.

"The returns could be exponential rather than linear. The more traceability and sorting data we have, the more we can learn how to improve packaging sustainability. Digitised packaging also allows brands to educate consumers on how to recycle," explains Ken Suckles, chief product officer at Digimarc, a product digitisation firm.

Positive feedback is also likelier if brands invest in traceability and realise the benefits resulting from an increased supply of higher quality, recycled materials.

"When it comes to accelerating the use of more sustainable materials, such as those produced with bio-based resources, digital ID solutions can help," notes Mercedes Alonso, executive vice-president, renewable polymers and chemicals at Neste, which produces renewable feedstocks for the chemical industry.

"They allow us to boost transparency and hence trust in more sustainable solutions along the value chain. It's the future." ●

purposes or legislation enforces it," he notes. "Once this hits mass adoption, then roll-out shouldn't be too much of a challenge."

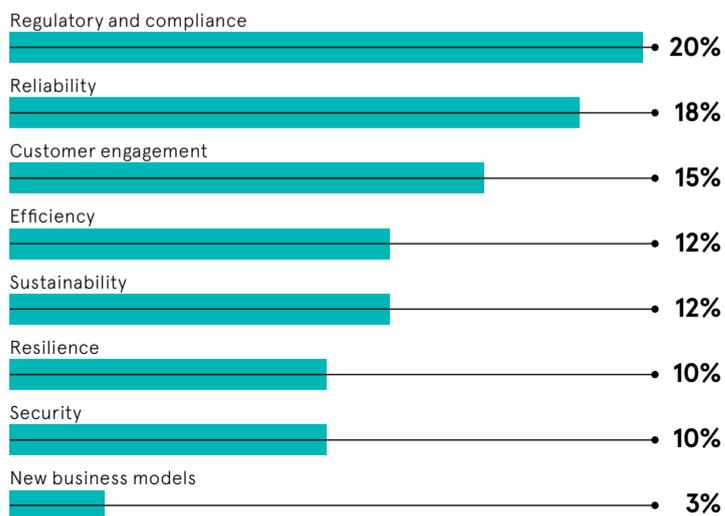
Legislation from central governments is likely to be a crucial driver of change. In an industry where margins are wafer-thin, only policy changes are likely to unlock significant, industry-wide investments in digital ID solutions.

"When waste and recycling companies can see that it's commercially advantageous to adopt digital technology, then we will see greater investment," says Ewence.

In the UK, extended producer responsibility legislation is due to come into effect from January 2023 and will answer some of these challenges. Businesses will need to start

DIGITAL TRACEABILITY GOALS

Executives' top goals for traceability initiatives in the supply chain



Bain, 2021

Plastic, not cardboard, is the future of circular packaging

As businesses try to cut emissions, plastic packaging should not be demonised. By deploying a circular economic model it can be our saviour

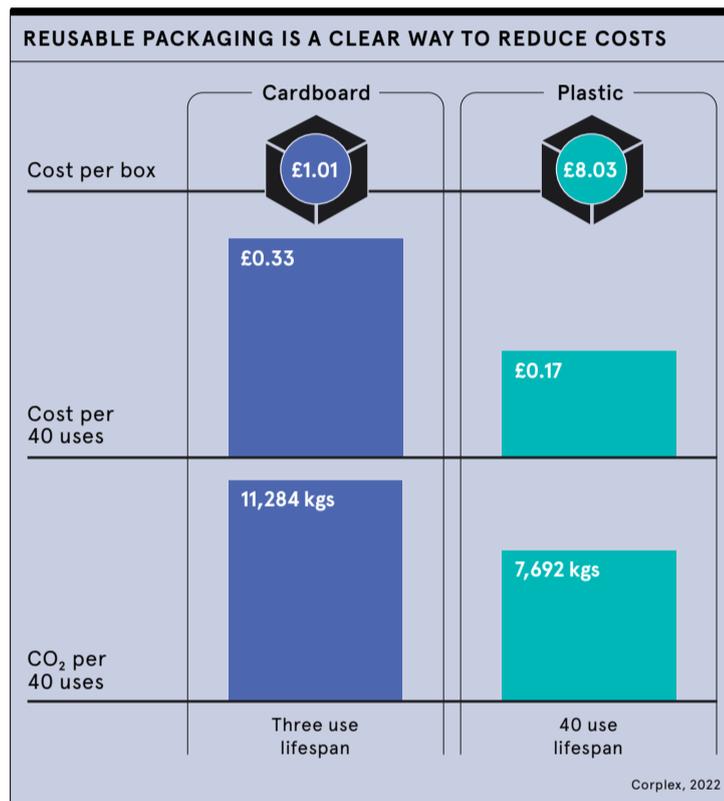
We need to rethink our relationship with plastic packaging. In a more sustainable economy plastic never becomes waste or pollution. It's used and reused; it is not 'used up'. No materials are lost and nothing goes to landfill. If society is to take the pursuit of net-zero emissions seriously, making packaging reusable is an excellent way to start.

The concept of the circular economy is fast becoming mainstream, yet it is still nascent. Society cannot recycle or incinerate its way out of the plastic packaging challenge it faces. Closed-loop reuse business models are vital and they can eliminate single-use packaging. Plastic as a material itself is not the problem. Used and reused wisely, plastic can be a more sustainable solution than cardboard.

"The easiest gains, where businesses can slash emissions immediately, involve tertiary packaging. These are the bulk and transit containers that are used to transport goods between businesses. Eliminate single-use packaging and deploy strong, reusable, lightweight plastic boxes and you can reduce scope-one, scope-two and also scope-three emissions," explains Lucas van der Schalk, CEO of Corplex, a global leader in extruded circular plastic solutions, with 11 facilities in Europe and the US.

"Right now, we need to dispel the myth that plastic is bad. If collected, used and reused again with little or no loss of material it becomes a powerful solution for many corporations."

After seven usage cycles a plastic box has a lower carbon footprint or global warming potential than one made of cardboard. With a lifespan of 40 reuses and up to 10 years in circulation, thanks to their durability and versatility, plastic boxes outperform their cardboard counterparts hands down. Moreover, at the end of life the material is reground and recycled into



new foldable, corrugated plastic boxes – completing the closed-loop.

Recycling one tonne of cardboard produces 330kg of carbon dioxide and consumes up to 90% more water than recycling the same amount of plastic, which releases only 184kg of carbon dioxide.

"With fossil fuel prices sky high and fluctuations in commodities affecting businesses significantly it makes sense to have packaging in a closed loop of continual use and reuse. It means that if the cost of plastic quadruples businesses are immune. They only have to buy the raw material once – the boxes are made, reused and recycled with hardly any loss in plastic," details the CEO of Corplex, which handles 45,000 tonnes of plastic generating up to £200m a year.

The challenge for many businesses when first adopting a closed-loop model involves managing returns and reverse logistics for packaging. However, most companies have logistics providers that deliver products, so collections of collapsible, lightweight packaging ready for reuse does not become an issue, especially if it saves businesses money.

"One customer's packaging cost plummeted from £3m to £1m. There was an upfront investment in plastic assets, but this was paid off in six months. There aren't just benefits from slashing emissions, the circular economic model also builds loyalty since the packaging

assets are shared and circulated by customers," says van der Schalk.

Reusable plastic containers have an advantage in industries where humidity is an issue, such as meat, fruit and vegetables. Closed-loop reuse models are also being used effectively in the transport of pharmaceutical and automotive parts.

Corplex is also keeping pace with packaging-as-a-service trends. "With the cost-of-doing business crisis, capital expenditure can be an issue. Servitisation models, where we charge businesses by the day for managing their packaging, are becoming increasingly popular. The more single-use cardboard we can replace with reusable plastic, the more sustainable our future will be," details van der Schalk.

"My personal mission is to help businesses reduce their carbon footprint by building reusable packaging solutions – the future is circular."

Find out more about circular plastic solutions: corplex.com or info.marketing@corplex.com



“We need to dispel the myth that plastic is bad. If collected, used and reused again with little or no loss of material it becomes a powerful solution

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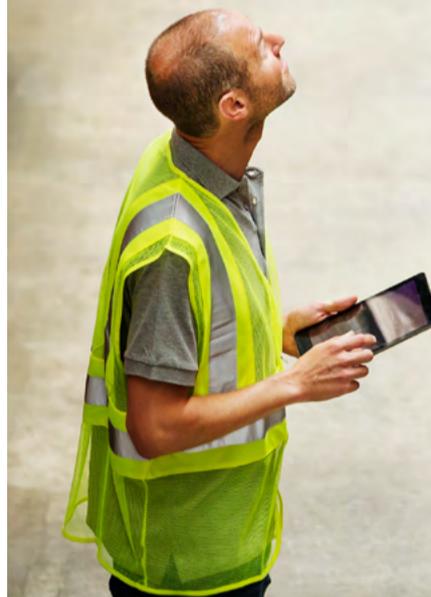
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DIGITAL

Time to think outside the box



The provenance of your packaging matters. Digital markers could boost transparency on its origins, cut emissions, and help us reuse and recycle

Nick Easen

Pick up a bag of potatoes in the supermarket and you'll often find details on its origin, the grower and more. Consumers increasingly demand traceability and transparency as they want to know where their food comes from. That's also now possible for the packaging it comes in.

Although global supply chains are infinitely complex for plastics, paper, metals, chemicals and other critical materials, there's a growing armoury of data-led solutions that can monitor packaging in granular detail. This includes QR codes, chemical tracers, radio-frequency identification (RFID), near-field communication, digital product passports and digital watermarks.

Materials can now be traced, providing insight into their exact origins, even down to the molecules used, says Mesbah Sabur, founder of Circularise, which helps track these types of flows. This can now be done without risk of data corruption. "Once information is entered, it can be protected on a private cloud using blockchain systems with encryption," Sabur explains.

Soon you could be able to pick up any type of packaging, take a picture of it with your mobile phone and instantly learn what materials it's made of, where it was sourced and

manufactured, and how to handle it for recycling. The piece of packaging is represented in the cloud with a digital twin and accompanying data on the whole value chain.

This could improve resource reuse while reducing packaging's environmental impact and helping to shift the industry from fossil fuel feedstocks to sustainable alternatives. It could usher in a circular economy for packaging, where materials are maintained in use at their highest value. But there is a long way to go before a fully functioning, digitally empowered, circular economy for packaging is realised across Europe.

"The potential for digitalisation is huge. But the industry's conventions mean that we're commencing

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Ultimately, adoption of transparency standards and technology will no longer be a choice, and that will be good for all of us

from an analogue start-line," says Ed Ewence, assistant commercial director at Clarity Environmental, a packaging compliance company. "The plastic industry is also not working together to look at traceability as a solution, mainly because it remains largely unaware that technological solutions exist."

Suppliers of raw materials must, then, share more data about sourcing and the origins of what they are selling. Their customers also need to insist on having more accurate information on materials. Right now, there is no single source of truth on packaging information.

"The biggest challenge is to establish a global standard on the exchange of data along the packaging life cycle and create acceptance for it. Only if this succeeds will companies be willing to apply it on a broad scale," says Benedikt Brenken, director of the R-Cycle Initiative, a company focused on the circular economy for plastic packaging.

There must also be better cohesion and data-sharing across the packaging ecosystem. A more digitised, uniform, data-led approach could help, as could EPCIS 2.0 – a global supply chain standard for storing and sharing data. Such systems would allow claims on 'lower carbon footprint' or 'recycled materials used' to be properly verified.

Max Winograd is vice-president of connected products at Avery Dennison Smartrac, which offers product digital ID technology. "Most of the technologies that can help, such as QR codes and RFID, are standardised and open. But waste handlers won't start instructing staff to scan for these codes until brands are commonly using them for recycling



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