

Rethink plastic innovation

with sustainable
secondary
multipacking



A guide for European
food and beverage brands

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Don't ditch it!

Rethink, reuse, and recycle secondary plastic multipacking

Plastic plays a significant role in our environment. Due to misinformation and sensationalised negative news, it's also the subject of widespread environmental criticism.

But amid growing scrutiny, the conversation around plastics is shifting. With rising concerns over pollution, single-use culture, and waste generation, both consumers and brands are rethinking how plastic is made, used, and reused.

Truth is, plastic isn't merely convenient - its durability and performance advantages are essential in many different sectors. It's safe to say that plastic isn't going anywhere. Yet not all plastic is created equal. How it's made, used, and reused determines whether it can fulfil its sustainability potential to help drive more sustainable packaging solutions forward. So, it's time to move away from the question of "Plastic or no plastic?" and instead ask ourselves "How can we live sustainably with plastic?"

Where plastic is the right solution in specific use cases, the onus is on us to figure out how we can do better with plastic. That's where PakTech secondary packaging solutions come in. When sourced and managed

responsibly, recycled and recyclable plastic options like recycled HDPE (rHDPE) can actively help brands reduce their environmental impact and meet their corporate sustainability goals. Maybe that means reducing their carbon footprint through lightweight multipacking. Or increasing the recycled content in their products to reduce overall wastage.

But to make the right multipacking decisions in line with your sustainability, performance, and business goals, you first need the right data-driven insights on the benefits and trade-offs of different materials and options. So, we commissioned a survey of 500 European industry professionals - from sustainability leads and procurement managers to marketers and R&D specialists across France, Germany, Italy, Spain and the UK. Our goal: to better understand their attitudes toward sustainable secondary packaging.

Curious? Let's dive in!



Brandon Rogers
CEO, PakTech

"34 years ago, we started making multipacking solutions when a dairy company reached out and sought to combine two one-gallon jugs of milk so they could enter into the new bulk market, Costco.

Today, we're still solving packaging problems, and we haven't looked back. PakTech products are from 100% recycled plastic. We turn milk jugs and juice bottles that people toss into recycling bins into durable packaging handles. Basically, we make recycling work."

What do European industry professionals think about plastics use?



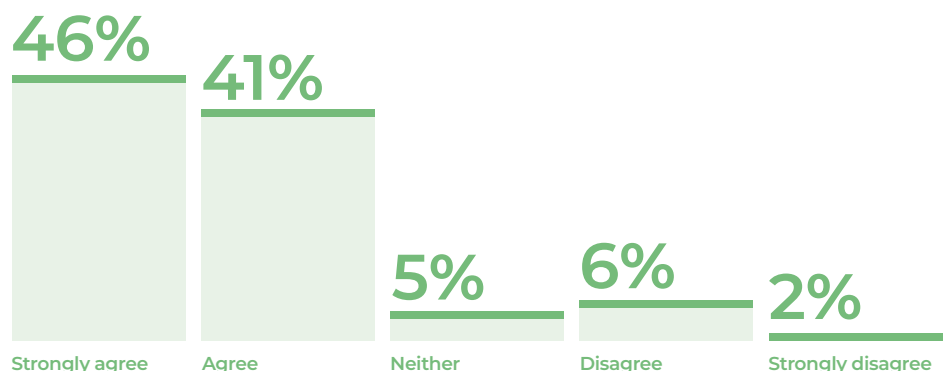
We asked them where plastic belongs in their operational, procurement, sustainability and marketing strategies - and what's stopping them from using it more responsibly.

This is what they said...

“Plastic is necessary for certain circumstances, and we *need* to find a way to live with it sustainably”

Contrary to prevailing consumer attitudes¹, over 85% of industry professionals across Europe either strongly agree or tend to agree that plastics are essential to the supply chain, led by sustainability specialists, who showed the greatest support.

¹ Walker, T.R. et al. (2023) “Plastic Pulse of the Public: A review of survey-based research on how people use plastic” Cambridge Prisms: Plastics, 1, p. 8.



The big opportunity

Brands are certainly open to responsible plastic solutions.

When asked about the most important benefits of recycled plastic secondary multipacking, many European industry insiders cited sustainability and environmental benefits - especially around the circular economy. While responsible plastics use isn't a panacea for all environmental ills, it can go a long way to help meet our business challenges in more sustainable ways. Brands considering sustainable plastic solutions will need to navigate credibility, product quality, brand alignment, commercial viability, tangible benefits to the end consumer and, last but perhaps most critically, consumer opinions about plastic.

The consumer is king:

How their needs and attitudes toward plastic impact brands

In Europe, the consumer has significant influence over the race to reduce plastic waste, since public perception impacts how brands respond to sustainability challenges.

To learn how consumers are shaping brands' approach to plastics use, we explored their attitudes on topics ranging from willingness to engage in sustainable practices to expectations of brand responsibility.

Start by picturing the average European consumer



Urbanised populations



Limited home storage



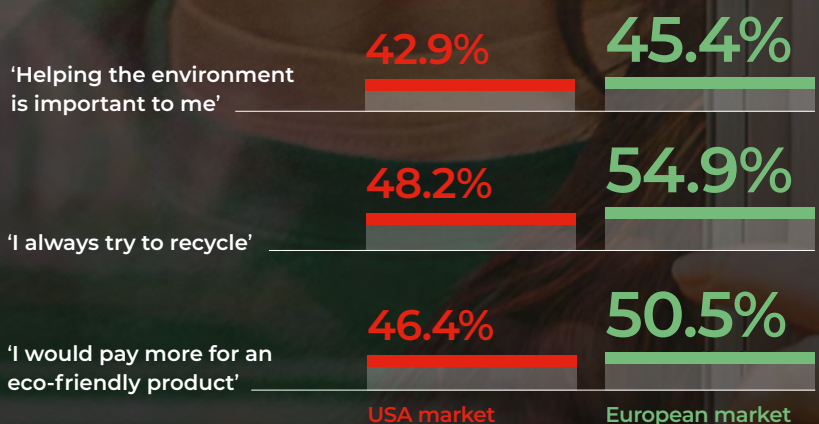
Frequent shopping, small baskets



Selective bulk buying
(e.g. beverages, promotions)

Zooming into their eco-conscious streak

Compared to the US, Europeans are more likely to value helping the environment (over 45% consider it important). Almost 55% claim that they always try to recycle, and over 50% are willing to pay more for an eco-friendly product.



Consumer sentiments: Regional snapshots by country



French consumers are strongly committed to recycling, with 90% preferring fibre-based packaging.



Recycling rates vary widely between 54-71% across Italy, depending on region and economic context.



75% of Germans consider reducing the amount of plastic waste released into nature a key policy priority.



Over 3 in 4 UK consumers claim to recycle, and over 60% claim to reduce plastics use, with affordability to buy responsible plastic being a key concern.



Compared to the rest of Europe, Spanish consumers favour restoring nature (60% vs 49%), over the circular economy (53% vs 58%) to protect the environment.

Brands are expected to do their part for the environment too

Eco-consciousness isn't just an individual consumer choice, either. Almost one in two European consumers (45.2%) - led by the French (53.2%) and German (50%) markets - want brands to be eco-friendly.

That means the challenge for brands goes beyond seeking more sustainable multipacking solutions to addressing consumer opinions and perceptions on this issue. For instance, brands facing negative consumer perceptions of plastic can often feel great pressure to avoid even sustainable plastic options, just to sidestep any potential backlash.

But life cycle analysis (LCA) data can empower brands to examine their packaging material options more objectively and find compelling ways to speak to consumers' misconceptions and worries. Maybe that involves opening people's minds to the complexities of packaging material choices and their impact on consumer experience, operations, logistics, businesses and the environment. Or being transparent and concrete in justifying business principles and decisions to go with one type of packaging material over another. Ultimately, brands are answerable to consumers and must make packaging material choices they can stand by.



"Based on its quality and durability, we've found that recycled plastic is the best option for making multipacking with excellent performance.

Then, our mission was to create the most sustainable and best performing solution. That's how we arrived at our 100% post-consumer recycled and fully recyclable HDPE multipacking."



Keenan Hoar Perez

Regional Sales Manager for EU, UK and LATAM at PakTech

Debunking common myths about plastic

First, we need to unpack consumers' reservations on this front. Let's dig deeper into the prevailing sentiments and popular misconceptions around plastic materials.

Myth 1

'All plastic is *bad*'

While plastic has all too often been painted as a big environmental villain, industry professionals tend to appreciate plastic's functional importance in our world.

Where their company's sustainability goals were concerned, over 2 in 3 industry professionals were pursuing more responsible plastics use rather than completely eliminating it. Ultimately, it's important to understand the full story - from how plastic is used and recycled to how it impacts the environment, along with its potential as a highly viable sustainable choice in relation to other materials.



33.6%

aimed to reduce plastics use while accepting that they were sometimes necessary



33.4%

continued to use plastics while aiming to move to more sustainable plastics



33.0%

focused on eliminating plastics use altogether

Myth 2

'Recycled plastic is still *not* environmentally friendly'

When it comes to recycled plastic secondary packaging, even industry professionals express reservations that its eco-friendly benefits are limited. These attitudes stem from concerns around pollution, resistance to degradation and challenges around production and recycling costs and infrastructure.

Limited understanding around plastic recycling may be at play. When it comes to comparing the recyclable vs actually recycled amounts of plastics used by their company, few industry insiders understood that there was a gap between these amounts, while 41% were either unsure or regarded these to be the same. Over half of industry professionals also underestimate or significantly overestimate the number of times plastic can be recycled, believing this number to be either 2-5 times (32%) or unlimited (25%).



Case in point:

LDPE can be recycled for up to 40 times, and HDPE up to 10 times, without significant change to processability and long-term mechanical properties.^{2,3,4}

However, these figures represent recycling the same material without adding anything new to it. In practice, recycling processes typically blend recycled material with new material, which means an rHDPE handle can be recycled virtually indefinitely. This demonstrates that the industry as a whole appears to recognise there's a far greater untapped potential for plastics to be recycled and used responsibly.

² H. Jin et al. (2012) "The effect of extensive mechanical recycling on the properties of low density polyethylene" *Polymer Degradation and Stability*, 97, pp. 2262–2272.

³ N. Benoit et al. (2017) "High Density Polyethylene Degradation Followed by Closed-loop Recycling" *Progress in Rubber, Plastics and Recycling Technology*, 33 (1).

⁴ M. Mihelčič et al. (2022) "Influence of Stabilization Additive on Rheological, Thermal and Mechanical Properties of Recycled Polypropylene" *Polymers*, 14 (24), p. 5438.

'Fibre is *always* greener'

When it comes to sustainable packaging, fibre often gets a 'green halo' as many consumers and even industry insiders consider it the more natural - and therefore more environmentally-friendly - choice. But that perception doesn't stack up against the evidence.

A Sphera life cycle analysis study found that PakTech's 100% rHDPE handles have the lowest carbon footprint in relation to paperboard carriers and cartons⁵, for example. Among industry professionals, who are more aware of the complexities around packaging materials and their environmental impact, over half (53%) consider recycled plastic to be more sustainable than recycled fibre (47%).

Did you know?

Sphera's LCA data shows that if beverage manufacturers were to switch from paperboard carton or carriers to PakTech rHDPE handles, which have the lowest carbon footprint at up to 0.034 kg CO₂ equivalent, they would achieve around 2 to 5 times lower Global Warming Potential (GWP).⁶



PakTech 100% recycled HDPE

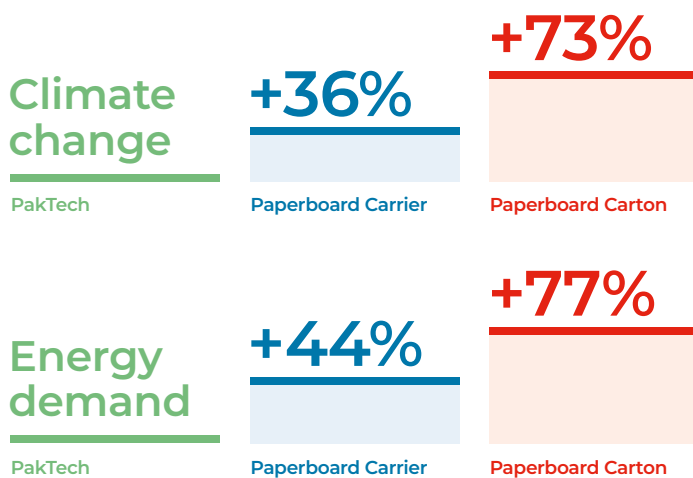
6 can beverage packaging carbon footprint GWP in kg CO₂ equivalent



Generic Paperboard Carrier

Comparative 6 Pack Cradle-to-Grave LCIA Analysis

Reflecting the environmental impact % increase of paperboard vs. PakTech's rHDPE handles.*



Generic Paperboard Carton

* The life cycle assessment (LCA) study has been conducted according to the requirements of ISO 14044 (ISO, 2006) and compares the environmental performance of PakTech's beverage packaging handle designs to two competing paperboard designs.

⁵ Sphera (2023) PakTech Beverage Packaging Comparative LCA Report.

⁶ Sphera (2023) PakTech Beverage Packaging Comparative LCA Report.

'Fibre and plastic perform equally well'

Not quite. Some fibre-based packaging materials are at risk of being crushed resulting in product loss. It is also extremely susceptible to moisture damage when it's humid or wet.

In contrast, plastics like rHDPE are moisture-resistant, meaning they can effectively maintain structural integrity, relatively high tensile strength, and impact resistance under varying conditions.

Fibre packaging has limited durability and performance, along with significantly greater risk of product loss.

'If it's sustainable and recycled, it can't be strong'

There is a persistent belief that recycled plastic compromises on quality. Yet recycled plastic solutions like rHDPE can truly deliver on both sustainability and performance fronts.

Around 80% of industry professionals say they're aware of the benefits of rHDPE, with many citing rHDPE's strength, durability, lightness, recyclability, sustainability and relatively low cost as advantages. Some, however, associated its disadvantages with brittleness, limited colouring options and usability, and the fact that it's not renewable with limited 'lives' as a secondary recycled material.

rHDPE packaging 1, forklift 0

Distribution and transportation pose significant challenges for FMCG businesses. So, PakTech designed its reusable rHDPE handles to withstand extreme conditions and support the circular economy without compromising functionality.

Businesses can therefore minimise waste and overall carbon footprint, prevent product damage and rest assured that their product will safely reach end consumers, who can effortlessly and securely carry and organise their products.



"One of our brewery clients was happy to find out that our handles were still usable after accidentally running them over with a forklift."



Ronnie Mellor

Industrial Design
Engineering Manager
at PakTech

Here's how brands can step up and stand out

Where misinformation and simplistic 'plastic = bad' thinking continue to fuel the anti-plastic sentiment, brands can lead by educating consumers on the bigger, more complex picture, and show how recycled and recyclable plastics must be part of the solution.

It's time to go beyond embracing the circular economy to actively championing it - using real-world success stories of high-performance, recycled packaging that demonstrate impact in a compelling way.

Fully
recycled.

Fully
recyclable.

No
compromise.



At PakTech, we do plastic differently. Because you shouldn't have to choose between performance and sustainability.

While others chase plastic elimination, we focus on what works. Being part of the solution means doing better with what we can control, so we don't just recycle plastic - we rescue it. To help close the loop on plastic and move the industry towards a fully circular economy, every product we make starts with waste we've pulled from the system.

By using rHDPE instead of conventional plastic, we cut down on:



Greenhouse gases by

78%



Energy use by

90%



Virgin petroleum use by

100%

All without sacrificing strength, performance and durability. That's how we're building a future where packaging doesn't add to the problem. Instead, it's part of the solution.

What makes our rHDPE handles so special?

Using only 100% recycled HDPE from products such as milk, water, juice, and other unpigmented household containers, our second life rHDPE handles are fully recyclable for a third life as composite lumber, park benches, planter pots, new PakTech handles, and more.

Plus, they offer these advantages:

- Lightweight and minimal but mighty in performance
- Durable, heat and water resistant - to reduce product damage and waste
- Protective and hygienic
- Cost-effective
- Customizable

We handle things differently.

Be part of the solution with PakTech



About PakTech

PakTech is a designer and manufacturer of 100% recyclable injection moulded handles made from 100% recycled HDPE for the food, beverage, and consumer goods industries.

Founded in 1991, PakTech is a global industry leader in using fully recycled HDPE plastic to create fully recyclable packaging handles and automated application equipment.

Headquartered in Eugene, Oregon, PakTech is a full-service company that specialises in creating injection moulded handles for multi-packing products. PakTech makes it easy for consumers to grab, carry, and release multiple products using a simple, minimal, 100% recycled and recyclable handle.

