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Industry Council for Packaging and the Environment



Using Less Packaging

INCPEN PACKAGING FACT SHEET SERIES

February 2025

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Using Less Packaging

Reductions in the amount of packaging used – ‘lightweighting’ – didn’t start when environmental awareness emerged. Manufacturers have always sought to use less packaging to keep costs down and as technology has developed, packaging has become lighter and lighter.

Less packaging doesn’t necessarily mean the lesser environmental impact (covered in fact sheet *Too Much Packaging?*). But ‘lightweighting’ or ‘right weighting’ is an important part of the ongoing process of making packaging more and more resource-efficient and is a move towards a circular economy.

From time to time, a technological breakthrough, such as the introduction of a new material or manufacturing process, enables a major step-change and significantly less packaging can be used. More often though, lightweighting involves shaving off tiny amounts of material as small improvements can be made somewhere in the system. Over time these small improvements add up and provide benefits within the end-to-end infrastructure.

Lightweighting / right weighting – a constant process

Commercial pressures for lightweighting pre-date the political interest in packaging minimisation. For packaging manufacturers, making ten packs rather than five from the same amount of raw materials halves their cost in a very price-competitive industry. For manufacturers and retailers, the lighter the packaging, the more units can be stacked in a warehouse or loaded onto a vehicle. Reduced warehouse space, fewer lorries on the road and better shelf utilisation all save money.

Although the amount of packaging on most individual products has reduced over the years, according to recent data, the UK still generates around 100 kg of packaging waste per person per year compared to 70kg a decade ago. This includes all types of packaging materials such as paper, cardboard, glass, metal, and plastic. (Source: UK statistics on waste published by the Department for Environment, Food & Rural Affairs (DEFRA) September 2024). This increase per person over the past decade reflects UK social trends in consumer habits and spending. We are buying more packaged products than we did, largely reflecting rising demand for prepackaged easy-to-prepare foods.

One of the most efficient ways to use less material in packaging has been to combine layers of small amounts of different types of materials so their protective properties work together to keep the product safe. This is the principle behind laminate packaging, such as bags for ground coffee which are made of thin layers of paper, plastic and aluminium or cartons for liquids such as milk, juice and detergents which are laminated layers paperboard, aluminium and plastic. Multi-layer packaging is not necessarily better than other types of packaging as many other factors need to be considered, such as shelf and storage life, type and amount of transport packaging needed and the stresses and strains of the distribution system. Multi

material packaging usually leads to less packaging weight and material used per product, but the materials are more challenging to recycle than single material packaging.

Choosing and designing the best packaging for a product incorporating the magnitude of requirements that need to be considered is a skilled science. Focusing on a single aspect of product packaging can distort the decision-making process. For example, a decision to package in a single material for the apparent environmental benefit of recycling ease can have a negative environmental impact in terms of total material used and wasted and resulting energy used over the full product life cycle. These considerations can be further complicated by whether packaging is single use or will be used many times.

Packaging has *always* needed to be designed for inclusivity, quality and protection of products being balanced with costs. In recent years, environmental sustainability has also become a major factor in packaging design as the global issues of climate change, plastic pollution and biodiversity crises play out in political, social and economic spheres.

Recent UK developments reflect this growing importance of environmental considerations as packaging design and manufacture will now need to meet the Packaging Extended Producer Responsibility (pEPR) requirements coming into force in the UK from January 2025. pEPR is one of a suite of statutory changes underway as part of the **UK Packaging Reforms**. *In addition to* pEPR these include the introduction of Simpler Recycling, Deposit Return Schemes and the Plastic Packaging Tax.

Packaging reduction and voluntary agreements

Voluntary agreements have been instrumental in driving collaborative action across the UK food chain to reduce environmental impacts, including packaging waste. In a concerted effort to bring about an absolute reduction in packaging material use, retailers representing over 90% of the grocery market signed up to the first of a series of sector voluntary agreements, *The Courtauld Commitment*, in 2005.

The original aims of *The Courtauld Commitment* were to design out packaging waste growth and deliver absolute reductions in packaging waste with a series of targets agreed by WRAP, the government's resource management advisory service at the time, and supported by many of the major food and drink sector brands and manufacturers. These were joined by the top DIY retailers and brands in subsequent versions of the agreement. The *Courtauld Commitment* series had an impact on packaging reduction in the UK. E.g. during *Courtauld Phase 3* (2013-2015), there was a 7% reduction in the carbon impact of food and drink packaging and the weight of grocery product and packaging waste was reduced by 3% (against a backdrop of packaging growth in similar economies).

A further voluntary agreement, the *UK Plastics Pact (UKPP)* was initially convened in 2018 by the Ellen MacArthur Foundation and WRAP. The aim was to implement solutions towards a circular economy for plastic, ensuring that plastic packaging be designed to be easily recycled and made into new products. The initial UKPP brought together businesses from across the entire plastics packaging supply chain, including manufacturers, retailers, and NGOs and set ambitious targets for plastic packaging reduction by 2025:

1. **Eliminate problematic or unnecessary single-use packaging** through redesign, innovation, or alternative (reuse) delivery models.
2. **100% of plastic packaging to be reusable, recyclable, or compostable.**
3. **70% of plastic packaging effectively recycled or composted.**
4. **30% average recycled content across all plastic packaging.**

The UKPP (which became part of a wider Global Plastics Pact network) will conclude in 2025 and is currently on track to reach or make significant progress towards the original four targets. A new agreement is planned looking towards 2030 with the next phase of targets are yet to be finalised. New targets around plastic packaging reduction and circularity will take into account the UK Packaging Reforms which herald policy mechanisms aimed at driving up recycling collections and support investment in recycling.

The complete package

‘Packaging’ is more than simply the wrapping or container we see on the supermarket shelf. In the UK, packaging is generally categorised into three main types: primary, secondary, and tertiary packaging.

1. **Primary Packaging:** This is the first layer of packaging that directly encloses the product. It is essential for protecting the product and often includes important information such as ingredients/instructions and branding elements. Examples include bottles for liquids, cans for beverages, and boxes for solid goods.
2. **Secondary Packaging:** This type of packaging groups multiple primary packages together. It is used for easier handling, storage, and transportation. Examples include cartons, shrink wraps, and trays.
3. **Tertiary Packaging:** This is used for bulk handling and shipping. It ensures that large quantities of products are transported safely and efficiently. Examples include pallets, crates, and large shipping containers.

These categories help in organising and optimising the packaging process, ensuring products are protected and efficiently transported from manufacturers to consumers.

Companies keen to reduce their primary packaging may find that they need to increase the strength of the secondary packaging to maintain sufficient protection for the product. Unless they think about the system as a whole when redesigning packaging, they could end up increasing their overall material usage.

The issue of consumer perception is crucial to brands and manufacturers as shoppers are mostly exposed purely to primary packaging. This may influence brands/ manufacturers to focus on this visible part of the packaging value chain when seeking packaging material reductions. However, there is sometimes more potential for savings in secondary packaging than in primary packaging. This is particularly true for products from the Far East, when the UK importer is likely to be able to have greater influence over the transport packaging than over primary packaging which is made for many different markets.

Over-packaging and under-packaging

The challenges facing packaging technologists continue to grow; keeping costs down, avoiding having to build new plants, increasing factory filling speeds which put greater strain on the integrity of the packaging. Consumer expectations have risen too – people expect delicate electronic products to work first time when taken out of the box, even if they have been shipped across the world.

Inadequate packaging is usually far worse for the environment than over-packaging, since 10-15 times more energy and materials are locked up in household goods and food than in the packaging around them. This means that if an item is over-packaged by 10%, then 10% of the resources needed to produce the packaging are wasted and extra fuel is needed to distribute it. However, if the item is under-packaged and it is spoilt or damaged, that wastes 100% of the resources used to produce both the contents and its packaging, and all of the fuel used to distribute it.

For producers and manufacturers, damage to goods in transit caused by packaging failure can result in big financial losses including fines by retailers, rejection of entire consignments and even possible total loss of a business if a retailer switches to an alternative supplier. When weighed against this risk, packaged goods producers are understandably cautious about reducing their packaging. Large companies have the resources to carry out investigations and implement improvements. Smaller companies have fewer resources and may not enjoy the same returns from their investment.

To help companies minimise their packaging without endangering quality, industry experts collaborated in developing a European standard, EN 13428:2004, which explains how companies can review their packaging systematically to identify the point at which it should not be reduced further. There are also several design guides available in the sector which promote best practice.

Industry Council for Packaging and the Environment, February 2025

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