



EPR & BEYOND

Extended Responsibility Throughout The
Packaging Value Chain

RECYCLING IN THE UK

For the 2019/20 financial year, according to a report from the Department for the Environment, Food and Rural Affairs (DEFRA) the official 12-month recycling rate for household waste collected by local authorities in England was 45.5%. This represented a very slight increase of 0.4% on the year before.

The report showed that the previous five years had seen total household waste by weight remain fairly constant and, with some ups and downs, the recycling rate very gradually increased.

What has also increased in recent years though – and there's been nothing gradual about it – is the environmental awareness of the general public, and their demand for urgent action to better protect the environment. Documentaries, especially David Attenborough's Blue Planet II, have been a massive contributing factor to this shift in mindset and attitude and there is now a very strong sense in Government and among the public that incremental improvement is no longer enough.



**Some Councils
Are Recycling
Over 60% Of
Collected Waste**

In this paper we look at the recycling landscape in the UK and consider the multiple factors that need to be considered if we are to make real environmental progress and find genuine long-term change.

Waste management on a national level is extremely complex, and while we all want to see more products recycled and less going to landfill – we must be wary of overly simplistic solutions that may only serve to trade one set of problems for another.

In this opening section we outline some of the key issues and challenges that need to be considered and addressed.

The Postcode Lottery

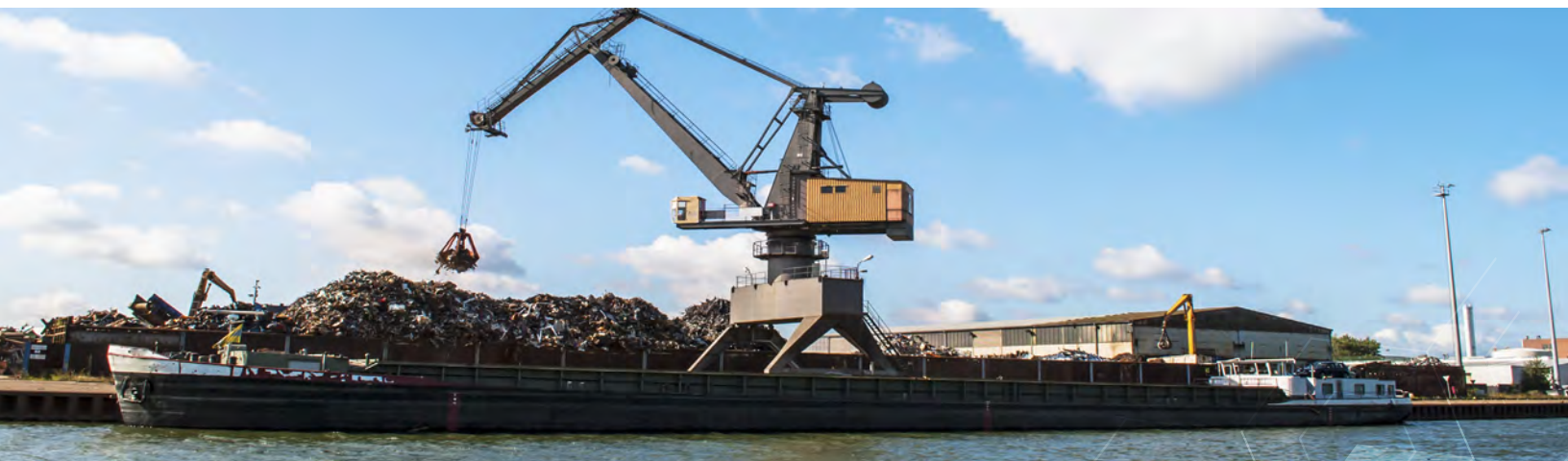
In the UK, local authorities are responsible for household waste collection and recycling. The rate at which waste is recycled differs dramatically by local authority – with figures for England indicating that some councils are recycling over 60% of collected waste, while others are managing less than half of that. There are several factors behind this, with relative wealth being one of them. Data clearly suggests that, on average, more affluent areas recycle more.

Another factor behind the discrepancies though, is a lack of consistency when it comes to the types of materials (particularly plastics and laminated paperboard materials) which councils will collect for recycling.

Taking plastics as one example, analysis by the BBC in 2018 highlighted the fact that some councils accepted a much broader range of plastics than others – and two (Rotherham and Tonbridge and Malling) did not accept any at all – not even clear PET drink bottles and containers – widely considered to be the most straight-forward plastic to recycle. Both councils have since introduced plastic recycling collections – but it certainly remains the case that some local authorities collect far more recyclables than others.

This feeds confusion and causes even easily and widely recyclable products to be sent for incineration or to landfill if they cannot easily be separated from non-recyclables.

A more inclusive approach to recycling collections would give consumers certainty and would lead to an overall increase in the proportion of recyclable material finding its way to the right place for processing. More direction from central government would be welcome to try to encourage local authorities to adopt a more uniform approach.



Off-shoring

Recyclable household waste collected by local authorities throughout the UK, if it is not composted, recycled, incinerated or sent to landfill, is sent abroad for processing. This practice has become hugely more controversial in recent years and, even if it were not, the countries who were accepting this waste from the UK and other OECD countries, until very recently, are now increasingly reluctant. This has highlighted a lack of national capacity to process locally generated waste as the most popular export markets have, one-by-one, tightened up the criteria for what they will accept.

Until 2017, China was by far the largest recipient of UK waste exports, but in early 2018, the Chinese Government introduced far more [stringent requirements](#) around the type of waste they would accept and how it had to be sorted. This meant it was no longer economically possible to export waste to China on anything like the same scale. Malaysia then briefly took over as the primary destination, but when they too changed their policies along similar lines, Turkey [moved to the top of the list](#), and in 2020, this was the destination for 39% of the nearly half a million tonnes of UK waste sent abroad. Another 12% went to Malaysia, 7% to Poland and much smaller quantities were sent to more than 50 other countries around the world.

Investigations, such as a [recent one by Greenpeace](#), have highlighted the problems and the lack of accountability with this policy. Exported waste is regularly dumped, inevitably finding its way into rivers and waterways. Other waste is burned in an uncontrolled and largely unregulated environment – causing air pollution and generating carbon emissions.

With Turkey now also looking to reduce the quantity of waste received from countries like the UK, it's increasingly clear that – even aside from the strong ethical case – there is an urgent need for better domestic recycling systems and processes.

All of this of course requires investment, and the question of 'who pays' is what lies at the heart of the proposed [Extended Producer Responsibility for Packaging \(EPR\)](#) legislation that the UK Government was consulting on, but now the discussion is evolving around how to implement the [Environment Act](#). The Government credits the existing “producer responsibility for packaging” system (in place since 1997) as having helped to increase the recycling of packaging waste from 25% at the time it was introduced, to 63.9% in 2017. With the new EPR scheme scheduled to begin a phased introduction in 2023 – the Government is setting a target of 73% of packaging waste recycled by 2030.

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Confusion on laminated paperboard

One of the more nuanced recycling conversations, both in the UK and elsewhere, is the recycling of paper-based laminated (or mixed material) packaging. This includes beverage cartons, as well as an increasingly large amount of fibre-based food packaging which incorporates layers of polymers and aluminium to preserve shelf life. In the case of rigid paper containers, these may also include a plastic lid for easy re-sealability and a metal base for package strength and product protection.

Though there are well over a hundred facilities globally that can recycle paper-based double-sided laminate packaging, many standard papermills in the UK require further investment to facilitate the separation of materials without causing contamination to the recovered fibre in laminated paperboard material. Currently, the only facility in the UK to recycle double-sided laminated packaging is the TESSA pulper at the Stainland recycling plant in Halifax, West Yorkshire. Opened in 2013, the pulper was financed by ACE UK and is run by Sonoco.

Since the installation of the TESSA pulper at the Stainland recycling facility, there has been a steady increase in local authorities who now carry out kerbside collection for beverage cartons and send them to Stainland for processing. In all,

[67% of local authorities in England](#) will now collect beverage cartons with household recycling – and residents in the local authority areas which do not do so, have access to bring banks or similar alternatives.

The postcode lottery discussed in the previous section undoubtedly adds confusion here, as laminated paperboard materials that are collected in one area may well not be in another. And to further add to the confusion, some local authorities collect beverage cartons in a separate stream, while others collect them in a mixed stream and sort them out later either through a manual or automated process. This inconsistency inevitably leads to more waste than necessary ultimately going to landfill or for incineration.

Aberdeen City Council is the only UK local authority that collects fibre-based, carton board food packaging with metal ends such as Pringles tubes) at kerbside, despite the fact that the Stainland recycling facility can, and does, recycle these items as well as beverage cartons and has plenty of spare capacity. Though it is one of only two specialist recycling plants in



97% of Local Authorities in the UK have access to food & drink carton collections:

- **67% of Local Authorities in the UK collect food & drink cartons through their kerbside household recycling collections.**
- **Where there is no kerbside collection of cartons, ACE UK provide a Bring Bank collection service in 30% of the remaining Local Authorities in the UK.**

the UK for laminated paperboard materials – Stainland's TESSA pulper is under-utilised; it has the potential to recycle far more waste which is currently condemned or sent abroad for recycling. Boosting the number of local authorities offering beverage carton kerbside collection – and introducing kerbside collection for paperboard containers with metal ends would be a huge step forward and make a significant and immediate difference to packaging recycling rates.

Technology and development continuously increase fibre-based content of laminated paperboard material packaging. Sonoco produces a wide range of rigid paper container (RPC) products, including a paperboard can with a paper end, and an all-paper (RPC) solution – GreenCan® – which is fully recyclable in a standard paper mill. Sonoco is working to increase the fibre-based content of all its RPCs to 95% across the UK and Europe.

Most packaging companies and brands share this vision of working towards increasing the percentage of fibre content in their fibre-based packing, but this is a gradual process. In the immediate term, it is vital to recognise the valuable role that laminated paperboard materials play – both in the protection and preservation of foodstuffs and in offering a practical and effective alternative to plastic. Yes, these materials pose some recycling challenges, but these are not insurmountable, and their benefits cannot be ignored.

WHAT DOES IT MEAN TO BE A RESPONSIBLE PRODUCER?

The primary purpose behind the UK Government's EPR legislation, is to shift the cost burden for waste collection and processing – including litter collection – from local authorities to the packaging producers themselves. This is an extension of the existing producer responsibility act which has been in place in the UK since 1997. But the EPR scheme is far more ambitious in scope. The focus is predominantly on discouraging the use of materials deemed difficult to recycle – and on imposing costs on packaging producers for waste and litter collection to try to encourage 'responsible production'. But a degree of nuance and flexibility is important here, and to build a true picture of what a 'responsible producer' looks like, there is a lot more to consider than the type of packaging material they use. Creating recyclable packaging is important, but it is just one aspect of being a responsible, sustainable producer. An EPR scheme that truly encourages responsible production should look at the full picture.

Packaging producers should be judged by their overall environmental and societal impact. Are they using production methods that reduce waste and minimise the amount of water, energy and raw materials used? Can they demonstrate a reduction in carbon emissions? Are the materials they are using sustainably sourced? Are they making maximum use of recycled and renewable content? Are materials as lightweight as possible so that less fuel is required for their transportation? And is the packaging sufficiently robust and airtight to maximise shelf life and minimise damage to the packaged product, thereby reducing food waste?

Are they innovating all the time to find new and better product designs to minimise environmental impact and to aid the collection and sorting process? And are they making recycling simpler, with clearly labelled packaging to explain how to recycle it? If it is not recyclable with household waste, are there systems in place – such as deposit schemes or bring banks – to offer a viable alternative? Are they working with partners to maximise the circularity of material?

Shared responsibility

The EPR proposal rightly highlights the responsibility of producers to do their part, and to make recycling and waste disposal as straight-forward as possible for consumers. Additionally, retailers, consumers and legislators all have responsibilities to implement a functioning circular economy which minimises the environmental footprint. This needs to be an individual and collective effort at all points of the packaging value chain, so producers should not be held solely responsible for improperly disposed of or littered packaging. Individuals must still take responsibility for their own actions. Better enforcement of littering laws and harsher penalties – alongside more consistent waste collection policies at a national level all need to be considered alongside the suggestions of the EPR consultation.

FOOD WASTE

One of the most critical roles that packaging plays is in the reduction of food waste. The ecological footprint of food is usually higher by order of magnitude in comparison to its packaging. In other words, with the application of packaging, packaging producers help to prevent wasted emissions from food production. Emissions from food waste also have a negative impact on the environment, and wasting food is unjustifiable in a world where people face hunger, food shortages and food unaffordability. It is vital to minimise food waste for both environmental and societal reasons.



The carbon footprint of food waste

The environmental impact of food waste is constantly under-estimated, and its consequences forever under-appreciated. When food ends up in landfill – whether it is the scraps off people’s plates or food that has gone unnoticed in the fridge or kitchen cupboards for too long – it rots, and as it does so, deprived of oxygen it releases methane, a greenhouse gas that is a significant driver of climate change. In fact, measured over a 20-year period, the global warming potential of methane is more than 80 times higher than carbon dioxide. When food waste goes to a composting facility, the organic matter decomposes in equipment which ensures adequate ventilation and availability of oxygen. In this case, the emissions are mostly carbon dioxide. When food waste ends up in landfill however, there is no ventilation and, in the absence of oxygen, the decomposition of organic matter creates methane, which eventually migrates to the atmosphere.

A 2019 study by Zero Waste Scotland calculated that the carbon footprint of food waste collected from Scottish households that year was nearly three times that of plastic waste collected over the same time period, at roughly 1.9 million tonnes of carbon dioxide equivalent. By comparison, the carbon footprint of the plastic was estimated to be 0.73 million tonnes of carbon dioxide equivalent.



Is it really empty?

Aside from the shelf-life preservation aspect of food packaging – there is another important factor of packaging design that can significantly reduce food waste: ‘emptiability’.

A significant amount of food waste is discarded with packaging when it proves too difficult to fully empty. Packaging design that ensures that all contents can be emptied from the packet and not discarded with it, is a critical, and often over-looked, part of food waste reduction.

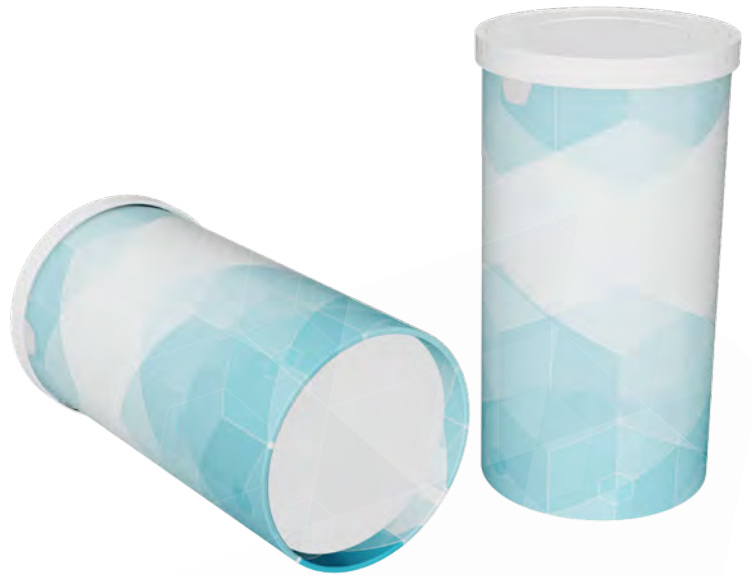
A 2019 study of dairy products found that “poor technical emptiability” of packaging leads to even higher environmental impacts than the production and waste management of the packaging itself.

SONOCO'S APPROACH: DESTINATION "ALL PAPER"

Sustainability used to be about reducing carbon footprint and enhancing corporate reputation. It's still both of those things. But it's also about survival: increasingly, consumers will no longer buy from or work for brands they think are damaging the planet.

Consequently, almost all consumer packaging producers are taking sustainability seriously. They realise customers gravitate towards more sustainable products and reject non-sustainable ones.

Sonoco's approach to sustainability and responsible production is driven by a 'can do' ethos. A "first now, and also then" strategy of acting both in the immediate term, wherever possible, to address urgent concerns – while at the same time planning for the long-term.



Smart and sustainable packaging design

Sonoco's rigid paperboard containers (RPCs) offer the food preservation advantages of plastic, as well as being far more lightweight than tin or glass. They are being used for an ever-greater variety of food products and are undergoing constant improvement to the design to reduce environmental impact still further. Research and trials to try to increase the fibre-based content and to reduce the ecological footprint of the packaging, are ongoing.

These trials include:

- ◆ Providing a paperboard can with a paper end instead of tinplate for applications that don't need the added strength the tin plate end provides
- ◆ Reducing the foreign content of plastic and metal
- ◆ Changing the material composition for better compatibility with sorting and recycling
- ◆ Replacing plastic lids with paper lids
- ◆ Offering paper products with the use of certified fibres
- ◆ Increasing recycled content (currently 35% to 60% for various can types and sizes), improving the circularity of packaging
- ◆ Assessing the environmental impact by life cycle assessments (LCAs) and looping back the results as input for the next development cycle

Collaboration

There's only so much anyone can ever achieve alone – which is why Sonoco collaborates with like-minded business partners to organise the collection and processing of waste. Working with ACE UK Sonoco has made its products available for collection in a nationwide network of bring banks for beverage cartons and RPCs. It was also with ACE UK that Sonoco helped to set up a specialist recycling facility in West Yorkshire to process laminated paperboard materials and use the recovered fibres for new paper packaging products. Non-fibre material is extracted during the pulping process so that it can be sent for chemical recycling – ensuring that as much material as possible is recycled.

Working with partners, Sonoco also runs trials to assess performance in:

- ◆ Collection process
- ◆ Lab scale pulping
- ◆ Sorting plant (MRF)
- ◆ Industrial scale pulping

The process of packaging production, product distribution and the eventual collection of waste for processing is complex but Sonoco always asks itself questions at every step of the process to find out if there is a better way of doing things. Sonoco is fully committed to the circular economy for packaging and solutions that are truly sustainable in the long-term.



MEMBER OF



The recycling plant in West Yorkshire was upgraded to enable the recycling of laminated paperboard material packaging within the UK – prior to its creation the only means of doing this was to send it off-shore. The plant remains to this day the only one of only two in the UK able to recycle laminated paper products and material from all over the country is sent there for processing.

Sonoco is also an active member of trade bodies and non-profit associations dedicated to improving sustainability across the industry – these include INCPEN, CPI, the CEPI's 4Evergreen initiative and Holy Grail 2.0 – a scheme to pioneer watermarks for Improved sortation in recycling facilities in the EU.

Destination “all paper” containers

Sonoco's Paper Container portfolio is part of the EnviroSense® family. The range is produced using recycled fibre and can be tailored to product and supply chain needs across a broad variety of markets.



**Next Gen
Paperboard Can
with Paper Bottom
(95% Paper)**



**Paperboard Can
with Metal End**



**Paperboard Can
with Paper Bottom**



**Paperboard Can
with Paper Bottom
Square**

**GREENCAN®
Paperboard Can
(92%-98% Paper)**



GreenCan®

Recently, Sonoco acquired Can Packaging, a privately-owned designer and manufacturer of sustainable paper packaging and related manufacturing equipment, based in Habsheim, France.

This strategic acquisition allows more innovations, and includes patented technology to produce a recyclable, high performance all-paper package, that can be made round, square, rectangular, oval, oblong or triangular.



Case study: The Kellogg story so far – the evolution of the Pringles tube

Through the Kellogg's Better Days commitment, the leading global food company is working to create Better Days for 3 billion people by the end of 2030. Sustainable packaging for its beloved foods is a critical element of that commitment: Kellogg is working toward 100% reusable, recyclable or compostable packaging by the end of 2025. And that includes the iconic Pringles tube.

In September 2020, Kellogg trialed a next-generation Pringles tube from Sonoco, made of recycled and recyclable paper, which was trialed in three select Tesco stores in East Anglia, UK. This development came following an analysis of the recyclability of its original Pringles tube, which – containing foil, paperboard, metal and plastic – is not widely accepted in kerbside recycling programs.

Kellogg has since partnered with ACE UK so empty Pringles tubes can be collected and then recycled by ACE UK's Bring Bank system. ACE UK provides a platform for the industry to profile and benchmark cartons as a renewable, recyclable and low-carbon packaging choice and to drive its environmental initiatives, including running the industry's carton recycling programme.

The Bring Bank scheme offers consumers a simple and effective way to recycle used paper container products. The Bring Banks are located in supermarkets, retail centre car parks, household recycling centres and other public locations. Through increased TerraCycle public drop-off locations and the continuation of ACE UK Bring Banks taking containers with metal ends, consumers are able to recycle current metal bottom Pringles tubes in up to 85% of council areas across the UK. Material collected from the Bring Banks is sent to Sonoco's Stainland recycling facility – run in partnership with ACE UK – in West Yorkshire. Fibre from the recycled cartons is fed directly into Sonoco's paper mill on the same site, to be turned into industrial coreboard.

This is just the beginning.

Kellogg's desire to continue moving towards completely sustainable packaging solutions for all its products is matched by Sonoco's commitment to its own product development as identified in the company's 2030 sustainability goals.