# Getting liquid carton recycling sorted

From collection to sorting and reprocessing – how Extended Producer Responsibility can drive a more effective recycling system for liquid cartons

# Table of Contents


2 Message from our CEO

4 Our asks of government

5 About liquid cartons

6 Understanding the issue

7 Beyond Simpler Recycling

8 Unlocking better recycling through smarter sorting

9 Case study: AI-powered sorting helps recover liquid cartons at Veolia Southwark

10 Building the infrastructure for circularity

11 About liquid carton reprocessing

12 Liquid carton reprocessing and PolyAl facilities 09/2026

13 From effective collection to world class recycling – a roadmap for change

14 The carton industry declaration

# Message from our CEO

The UK's progress in collecting liquid cartons is one of the quiet success stories of modern recycling policy.

When ACE UK was established in 2010, only a small number of local authorities accepted cartons through household collections. Recognising the need to provide consumers with practical recycling opportunities, the liquid carton industry invested in a nationwide bring-bank network while working closely with councils, waste management companies and policymakers to expand kerbside collections.

Over the following decade, that partnership approach steadily increased access to recycling services across the country. The results speak for themselves. As of August 2026, 90% of UK local authorities are collecting cartons at the kerbside - up from 66% at the start of 2025. The success was driven by a combination of investment from industry, establishing reliable routes to reprocessing, collaboration across the value chain and government intervention through policies like Simpler Recycling, the Welsh Collections Blueprint and the Scottish Charter for Recycling and Code of Practice.

But collection is only the first step.

When a carton is collected for recycling, it should be effectively sorted, sent to a suitable reprocessor and ultimately returned to productive use.

Today, that journey is not consistent enough.

Too many collected cartons can still be lost into mixed paper and card streams, where they will not be recycled as effectively despite the availability of established reprocessing routes. Packaging Extended Producer Responsibility (pEPR) has the potential to change this, by ensuring that fees paid by producers are used to bring about a step change in sorting, driving vastly improved recycling outcomes.

This paper makes the case for shifting the focus from collection to impact - from whether cartons can be placed in recycling containers, to whether they are ultimately recycled in the most effective way.

Mandy Kelly, Chief Executive
**ACE UK**

# Our asks of Government in all four nations of the UK:

## Ensure pEPR fees are spent on better sorting and recycling

PackUK should establish a transparent mechanism requiring pEPR fees to be invested in the collection, sorting and reprocessing activities for which they are intended. Where higher fees are levied, those funds should demonstrably support local authorities and waste management operators in delivering improved sorting performance and directing materials to dedicated recycling facilities.

## Finish the job on consistent collections

It is fantastic that 9 in 10 local authorities now collect cartons at the kerbside – we must ensure that the remaining councils introduce collections as soon as possible. How cartons are collected matters too. England, Scotland and Wales recommend collecting cartons alongside plastic and metal containers and away from paper and card to deliver improved sorting outcomes.

## Make certain that materials collected for recycling are recycled

Establish a legal requirement that materials mandated for household collection are demonstrably sorted into appropriate material streams and directed to dedicated recycling facilities wherever appropriate. Materials must not be blended into other material streams, sent for energy recovery or landfill.

# About liquid cartons

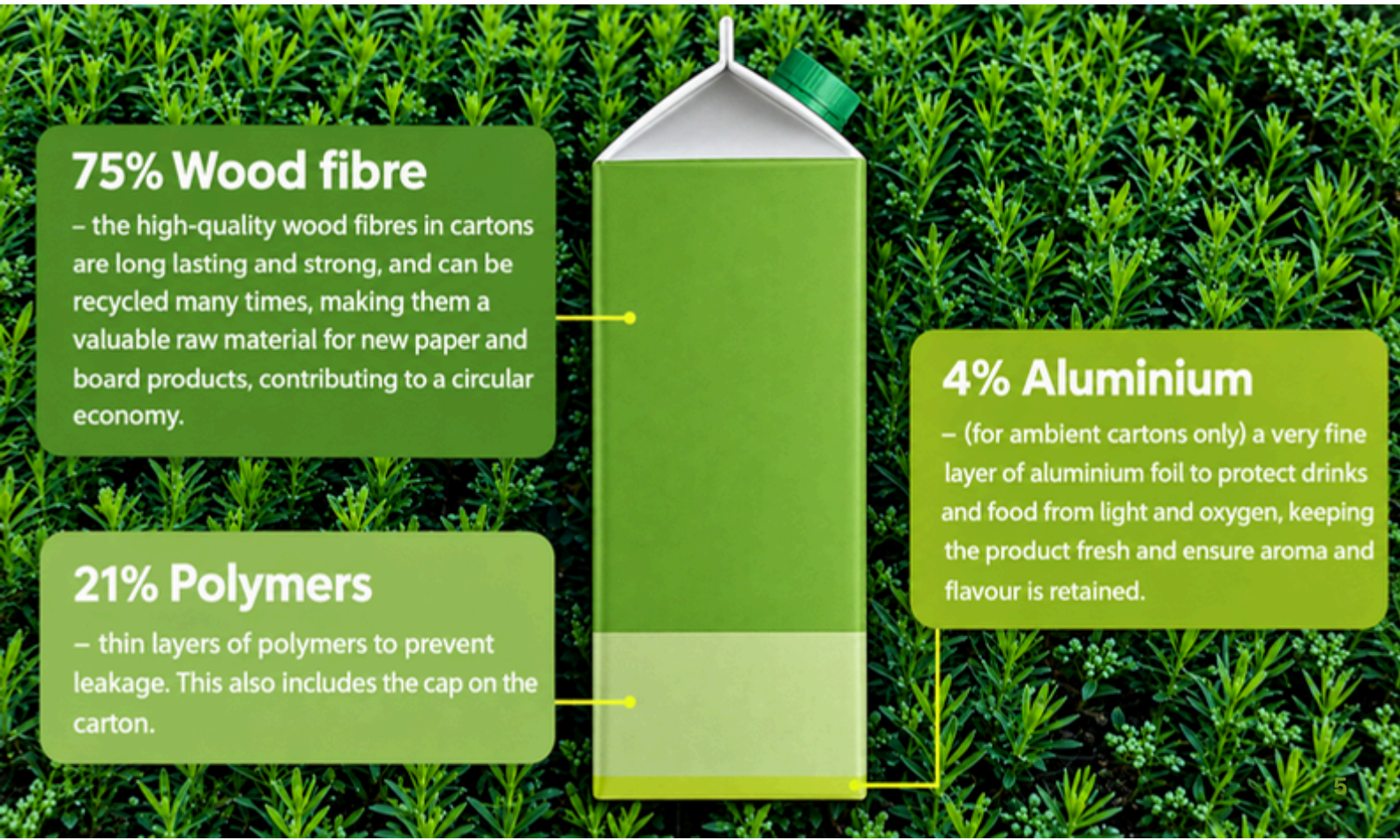
Liquid cartons protect food and beverages from degradation while preserving essential qualities like flavour and nutrients. They are a sustainable packaging solution, which can reduce the carbon impact of transporting and storing various products. For example, aseptic cartons enable items like UHT milk to be stored for up 6-12 months without refrigeration, reducing energy use. By extending shelf life and preventing spoilage, liquid cartons play a crucial role in reducing food waste and supporting food security.

Cartons are primarily made from wood fibre, a renewable resource sourced from sustainably managed forests. On average, about 75% of a carton on the UK market is made of wood fibres, essential for producing the paperboard.

To ensure safety and extend shelf life, food and beverage cartons include barrier materials like low-density polyethylene (LDPE), LDPE prevents moisture from entering or exiting, keeping contents fresh. Additionally, cartons may feature a plastic closure made from high-density polyethylene (HDPE). This allows the carton to be resealed, preserving freshness. The polymers make up about 21% of an average carton.

Aseptic cartons also use a thin layer of aluminium as a barrier against oxygen and light, which accounts for approx. 4% of the pack.

With cartons offering a wide range of sizes and functions, the composition can vary across the full product range – the above figures represent an industry average carton to serve as an illustration.



# Understanding the issue

Liquid cartons are now collected at the kerbside by 90% of UK local authorities. They are designed for recycling, against an agreed specification at a European level.

Dedicated reprocessing outlets exist across Europe, with the next generation of UK reprocessing in development. Producers of Fibre Based Composites (FBCs), including cartons, already pay a higher packaging pEPR fee than other materials. One reason for this is because cartons are being collected for recycling for the first time in many areas and add to the number of materials to be sorted.

Yet in too many areas, cartons collected for recycling are never separated into their own stream and sent to a dedicated reprocessing facility. Instead, too often they are blended into bales of mixed paper and card and exported to paper mills in other countries, where the recycling outcomes are unknown.

While pEPR has the potential to transform the system, currently there is no correlation between the payments that councils receive and their performance. This means that a local authority will receive the same payment per tonne for liquid cartons whether they are sorted and sent to a dedicated reprocessing facility, sorted with mixed paper, or simply not collected for recycling at all.

The environmental and economic benefits of recycling are only realised when collection is matched by effective sorting and high-quality reprocessing. These three stages are interdependent. Investment in one supports investment in the next. More material collected provides the confidence to invest in sorting infrastructure, and more available feedstock supports the case for increased investment in reprocessing.

For reprocessing to grow to the stage where 100% of cartons sold in the UK can be recycled domestically, industry needs certainty on feedstock availability.

Therefore, the policy landscape and pEPR system must ensure that once collected, cartons are sorted and sent to a dedicated reprocessor.

# Beyond Simpler Recycling

For much of the past two decades, recycling policy has focused on one overriding objective: increasing participation.

Governments, local authorities and industry have worked together to ensure more households can recycle more materials through simpler, more consistent collection systems. Recent reforms, including Simpler Recycling in England and equivalent approaches across the devolved nations, represent the culmination of that work.

These changes matter. Consistent collection reduces confusion, improves participation and provides greater certainty for local authorities and producers alike. It establishes the foundations upon which a circular economy can be built. But collecting more recyclable material is only one part of the challenge.

Every item placed in a recycling bin begins a journey through a complex system of collection, sorting and reprocessing. Weakness at any point in that chain limits the environmental and economic value that recycling can deliver. As collection systems mature, policy should evolve alongside them.

The next phase of reform should focus on ensuring that materials collected for recycling are consistently directed towards the most appropriate recycling pathways.

Rather than measuring success solely by collection rates, we should recognise that collection, sorting and reprocessing are interdependent, and that improvements at one stage create opportunities throughout the value chain.

# Unlocking better recycling through smarter sorting

Sorting is where the potential of collection is realised. A carton placed correctly in a household recycling bin is only the first step in a larger process, most of which the householder never sees. While some councils have a kerbside sort system in place, a large volume of cartons must pass through a Materials Recovery Facility (MRF), where they need to be correctly identified, separated from other packaging and directed toward the right reprocessing route.

Because cartons represent only a small amount of the UK's household packaging mix and have only recently started being collected in many areas, there is a mixture of approaches taken to sorting across the UK.

In many areas of the UK, cartons are successfully sorted from other materials in bales and sent to a dedicated reprocessing facility where their valuable materials can be recovered. But in others, MRFs are not yet able to sort cartons from other material streams, and often they are baled with mixed paper, card and other fibre-based composites. These mixed bales are then typically exported for reprocessing outside of the UK and EU.

Before the pEPR system was introduced, the liquid carton industry invested in state-of-the-art AI powered sorting infrastructure in a number of key strategic MRFs. These installations demonstrated that for a modest investment and minimal disruption to processes, it is possible to effectively sort materials like cartons, even where existing technology has proven impractical.

# Case Study

# AI-powered sorting helps recover liquid cartons at Veolia Southwark

## ↘ The Challenge

With more liquid cartons entering the recycling stream, effective sorting is important to ensure they can be recovered and sent for specialist recycling.

## ↘ The Solution

ACE UK supported the installation of an **AI-powered robotic sorting system** at Veolia's Southwark Integrated Waste Management Facility in South London.

Using computer vision, the system identifies materials as they move along the conveyor. A six-axis robotic arm then picks out targeted materials, including liquid cartons, paper, card and mixed plastics, from the aluminium sorting line.

## ↘ The Outcome

The system enables liquid cartons to be separated from the aluminium stream and sent for dedicated recycling.

Recovered liquid cartons are transported to a specialist recycling facility where they form part of the stock for manufacturing a wide range of paper and card products

# Building the infrastructure for circularity

Collection and sorting are only valuable if they lead to high-quality recycling.

Reprocessing is the stage at which collected materials are transformed into new products, retaining their value within the circular economy and reducing demand for virgin raw materials.

For liquid cartons, this means recovering the high-quality paper fibres that make up most of the pack, while increasingly seeking opportunities to recover the polymer and aluminium layers (PolyAl) that protect products and extend shelf life. Without effective reprocessing, a recycling system cannot be truly circular.

Recognising the need for dedicated recycling infrastructure, the liquid carton industry made a landmark investment in UK reprocessing capacity. In 2013, a dedicated liquid carton pulping line was fully funded and commissioned in West Yorkshire.

In 2026, operations at the dedicated UK carton pulping line came to an end following the conclusion of the existing contractual arrangements. The change was not related to carton recyclability, feedstock quality or the value of the recovered fibre.

To ensure uninterrupted recycling, ACE UK has secured access to dedicated liquid carton reprocessing facilities in Germany, France and Spain. These modern facilities represent some of the most advanced carton recycling infrastructure in Europe, recovering high-quality paper fibre while also providing established routes for recycling the polymer and aluminium (PolyAl) fraction.

Like many recyclable materials, including paper, card and metals, exporting material to established recycling facilities is a normal part of today's circular economy. The environmental objective is not simply to recycle materials within national borders, but to ensure they are recycled through the highest-quality, most appropriate facilities available.

The case for future investment has never been stronger and the industry's long-term ambition remains unchanged: every liquid carton collected for recycling in the UK should ultimately be reprocessed within the UK.

# About liquid carton reprocessing

Because their primary resource is fibre, liquid cartons are reprocessed using standard processes common across the paper and card sector.

While there will be some fibre extraction when cartons are reprocessed at standard paper mills, dedicated liquid carton pulping lines can recover a higher percentage of fibre and effectively separate the secondary resource of polymers and aluminium (PolyAl).

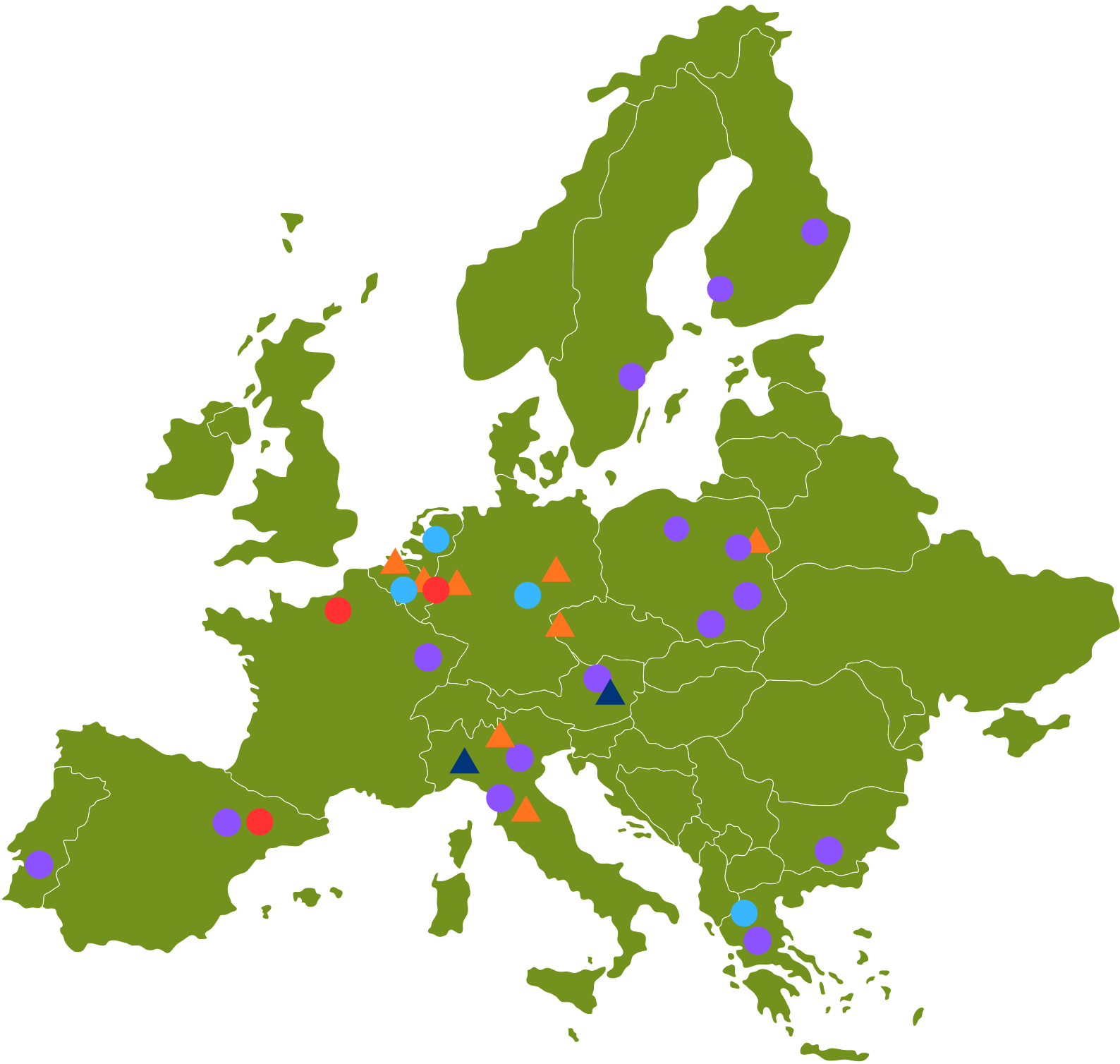
Where a carton pulping line is used, liquid carton reprocessing is a two-stage process, which involves separating the primary fibre resource from the secondary PolyAl output.

Liquid carton reprocessing uses standardised processes, common across the papermaking industry. A batch hydropulping process extracts the fibre and separates it from the PolyAl material.

The liquid pulp is then transferred to the main mill stock preparation tanks, where it forms part of the stock for manufacturing a wide range of paper and card products.

The remaining secondary material is then released, passed through a screw press and baled. It can then be sent for further reprocessing, where it can be used in a variety of applications to replace virgin plastic or wood.

# Liquid carton reprocessing and PolyAl facilities 09/2026



- Liquid carton reprocessing
- Liquid carton reprocessing plant project
- ACE UK reprocessing partners
- PolyAl recycling facility
- PolyAl on construction/on hold

# From effective collection to world class recycling – a roadmap for change

The next phase of UK recycling policy should build upon the success of recent reforms rather than replacing them. By 2030, the UK should aspire to a recycling system where:

- Materials collected for recycling are consistently sorted into dedicated recycling streams.
- EPR funding is transparently linked to infrastructure improvements and measurable outcomes.
- Local authority performance is assessed not only by collection rates but by recycling outcomes.
- Greater volumes of high-quality material support increased domestic reprocessing capacity.
- Citizens can be confident that the materials they recycle complete the journey back into productive use.

# The carton industry will play its part by -

- Continuing to invest in dedicated UK reprocessing capacity, building on the advanced talks already underway with UK paper manufacturers.
- Maintaining export routes to dedicated European facilities so no collected carton needs to go to waste while UK capacity is built.
- Providing local authorities and MRFs with clear technical guidance on sorting and baling cartons correctly.
- Engaging proactively with the value chain to match suppliers of baled cartons with routes to high-quality, traceable reprocessing.
- Investing to support markets for the polymer and aluminium layers (PolyAl) as the flexible plastics reprocessing market continues to develop.

# About ACE UK

The Alliance for Beverage Cartons and the Environment (ACE) UK is a not-for-profit trade association dedicated to ensuring that as many liquid cartons as possible are collected, sorted and reprocessed.

It acts as a bridge between industry, the recycling value chain and decision-makers, providing evidence, insight and practical solutions with a focus on improving recycling outcomes.

Its members - Elopak, Tetra Pak and SIG Group - manufacture the vast majority of liquid cartons on the UK and European market.

The Innovation Centre
Sci-Tech Daresbury
Daresbury, Warrington
WA4 4FS

**Phone:** +44 (0)1606 530320
**Email:** enquiries@ace-uk.co.uk
Website: www.ace-uk.co.uk

ace UK