

Expanded Polystyrene

Recycling Roadmap

BPF British Plastics Federation

British Plastics Federation
EPS GROUP

The EPS Group serves as the leading voice of the UK expanded polystyrene industry, spanning the Construction and Packaging sectors, and is open to all organisations engaged in the supply, manufacture, or recycling of EPS products nationwide.

Since its formation in the early 1990s, the BPF EPS Group has played a central role in fostering collaboration within the UK market. The Group works collaboratively with industry bodies at both national and international levels, engages constructively with sustainability and environmental organisations, and maintains dialogue with key NGOs. It also provides a dedicated platform for communication and knowledge-sharing across the EPS network. Today, the EPS Group serves as the leading voice of the UK EPS Construction and Packaging industries.

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Executive summary

Expanded Polystyrene (EPS) is a lightweight, high-performance material used extensively across the packaging and construction sectors. Featured in the BPF's second edition Recycling Roadmap, EPS was recognised alongside other plastics for its potential in supporting a circular economy. Building on this, the EPS Recycling Roadmap provides a dedicated focus on the material's recycling progress and future potential, using the latest available data, from a 2024 baseline, to offer a clear, sector-specific outlook.

This roadmap examines the current state of EPS recycling in the UK and outlines what is achievable with the right support mechanisms. Expert analysis from across the EPS value chain has been used to model realistic, data-driven projections that reflect the industry's capabilities and commitment to sustainable progress.

With coordinated action, the UK could achieve a 68% recycling rate for EPS packaging by 2030, and 80% by 2035. In parallel, establishing greater transparency in construction recycling data will enable the sector to develop a clear baseline and set measurable future targets, ensuring progress can be tracked and interventions effectively prioritised. These improvements would significantly reduce the volume of EPS sent to landfill or incineration and help avoid thousands of tonnes of CO_2 emissions annually.

To reach these goals, progress must be underpinned by four key enablers: increased investment in recycling infrastructure, optimising key legislation within the EPS industry to support future developments, communication and improving collection systems.

By implementing targeted measures and encouraging collaboration between industry, government, and wider stakeholders, the EPS sector is well placed to increase recycling rates and support the transition towards the goal of reaching a circular economy.



Contents

Introduction **4**

Applications of EPS **5**

Where are we now? **8**

Packaging 8

Packaging recycling rates 12

Collection infrastructure 14

Construction 22

Construction recycling rates 26

End markets 29

Plastic waste flows **30**

Forecast methodology, key assumptions and changes **32**

Strengthening regulatory framework and policies **34**

Projected forecast **37**

Packaging 37

Construction 40

Conclusion **41**

Glossary **42**

Abbreviations **42**

Endnotes **43**

Introduction

The next decade presents both significant challenges and exciting opportunities for the UK EPS industry as it strives toward a circular economy.

This roadmap sets out an ambitious vision for tackling EPS waste in the UK by 2030 and 2035, demonstrating what the industry can achieve with the right measures in place.

It draws on the latest industry insights and data, gathered through analysis of available market information and expert input from across the EPS sector, to provide a clear picture of where we are today and a practical path forward for more effective EPS waste management nationwide.

It builds on the foundations established in the second edition of the *BPF Recycling Roadmap*, with a dedicated focus on the EPS sector.

It aims to provide a clearer understanding of:

- **The current landscape of EPS recycling**
- **Identify key challenges and opportunities**
- **Outline practical steps to enhance circularity**

The roadmap highlights the most up-to-date placed on the market (POM) data for EPS in key sectors and provides an overview of current recycling rates. It will also explore future strategies for managing waste, including the potential opportunities of emerging non-mechanical recycling technologies. A key aspect of this vision is to reduce the UK's reliance on export markets for recycling EPS.

The EPS industry is driving innovation to achieve a circular economy and is actively adopting a full lifecycle approach. This approach covers the entire EPS value chain, from design and manufacturing, through the use phase, collection, sorting, reprocessing, and end-of-life management. The roadmap will identify the fundamental drivers of change to make this ambitious vision a reality.

The EPS recycling roadmap focuses on strengthening waste management infrastructure, increasing recycling rates and minimising environmental impact.

Applications of EPS

EPS is a lightweight, durable, and valuable material used across multiple sectors, including packaging, construction, civil engineering and marine, to name a few. Its closed-cell structure delivers excellent thermal insulation and impact resistance with minimal material, making it ideal for protecting goods in transit, enhancing energy efficiency of buildings and providing a low-carbon solution across sectors.

In packaging, EPS is widely used to protect fragile and high-value items during transport from mechanical damage, including electronics, white goods, pharmaceuticals, fresh produce, seafood and other temperature-sensitive products. Its benefits include insulated properties in a lightweight yet durable structure that is hygienic and moisture resistant. Whilst ease of custom shaping ensures efficient use of material and space, all contributing to reduced product damage, food waste and fuel consumption during transport.

EPS is valued across construction and civil engineering for its lightweight, durable, and high-performance properties. In buildings, it enhances energy efficiency by maintaining stable indoor temperatures as part of thermal insulation systems, such as underfloor heating and beam and block infill, while its moisture resistance ensures long-term durability.

In civil engineering, it is used as lightweight fill for roads and embankments, elevated platforms and other load-bearing structures, reducing pressure on the foundations and improving overall structural efficiency, whilst reducing emissions. It is easy to handle, cut, and shape on site, which can reduce construction time and provide cost-effective project delivery, while its excellent compressive strength, thermal insulation, and ease of handling make it ideal for long-lasting structural performance.

Thanks to its versatile characteristics, EPS is also used in a wide range of applications beyond packaging and construction, including:

- **Marine:** EPS's low density, high buoyancy and hydrophobic properties make it well-suited for use in floating pontoons, docks, and flotation devices. Its ease of handling and shaping also supports applications in boat construction.
- **Art installations:** Supports the fabrication of large-scale, lightweight, and intricate creative designs, including architectural models and props for film, theatre, and exhibitions. Examples of recent art installations can be found at EPS: The Creative Material Behind Today's Most Imaginative Art Installations
- **Beehives:** Provides an insulated and protective outer enclosure, supporting stable internal temperatures and resistance to moisture ingress.
- **Car seats:** Function as an energy-absorbing core material that enhances occupant safety and protection during impact.
- **Helmets:** Absorb and cushion impacts to protect the head.
- **Plant trays:** Plant propagation trays and frost protection materials.
- **Sports equipment:** Used in protective padding and lightweight sporting goods such as shoulder pads, bicycle seats, and surfboards.
- **Life jackets:** Acts as a buoyant core material in life jackets and flotation aids, ensuring sustained, reliable flotation performance.

Since its invention in 1949 by BASF chemical engineer **Fritz Stastny**, the material has continued to evolve through ongoing innovation across industries.[1]

Explore the evolution of EPS and its diverse applications in the EPS Timeline of Innovation that showcases the material from its early beginnings as a lightweight foam to its modern uses in packaging, construction and civil engineering.[2]

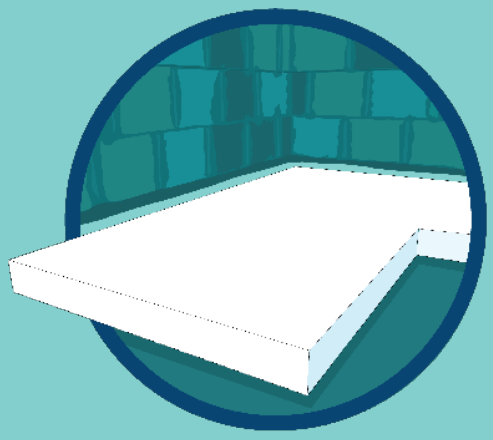
EPS has consistently evolved to meet the growing demands of both innovation and sustainability.



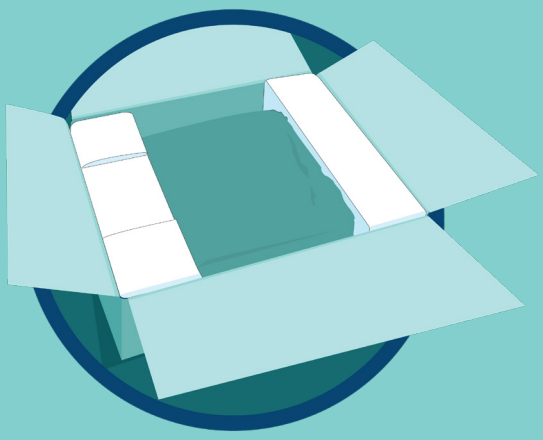
EPS MEDICAL PHIALS



EPS FISH BOXES



EPS INSULATION



EPS PROTECTIVE PACKAGING

The unique combination of key properties has enabled the material to become highly versatile across a wide range of applications.

Thermal performance

As a high-performance thermal insulator, EPS plays a vital role in the construction sector, improving building energy efficiency and reducing heating and cooling demands. Its thermal properties are also critical in packaging applications, where it protects food and temperature-sensitive products such as vaccines, transplant organs, fish and seafood, ensuring safe transport and preserving quality.

Moisture resistant

Thanks to its closed-cell structure, EPS resists moisture, allowing it to be installed in all weather conditions, including flood-prone areas and flat roofs, without compromising performance.

Lightweight

EPS is a lightweight material that reduces fuel consumption during transport and is easy and safe to handle. In packaging, it reduces weight, making items easier to handle without the need for machinery. On construction sites, its lightweight properties allow safe manual handling, reducing the risk of injury for handlers and operators.

Density

A unique factor of EPS is that it can be moulded to achieve a wide range of densities. This enables it to be used across many construction applications, meeting a variety of product requirements.

Durable

Moulded EPS is highly durable, minimising waste throughout its use. In construction, it replaces heavier materials like concrete blocks, improving thermal performance and reducing machinery needs. Its strength supports civil engineering projects, reducing heavy material transport and environmental impact.

Protective

EPS is an effective impact attenuation material used for child car seats and bicycle helmets to protect against accidental injury to the human body. It is also used to protect high-value items such as large screen TVs and other potentially fragile items in transit, reducing the waste of broken or damaged items and the need to replace, re-transport and re-package items, avoiding additional production and waste of energy and materials.

Chemically inert

EPS is chemically stable and inert, releasing no harmful gases or chemicals. This makes it suitable for food packaging and construction, supporting long-term sustainability.

The combination of thermal insulation, lightweight durability, shock absorption, moisture resistance, and moldability makes EPS a highly versatile material.

Its applications range widely, making it an indispensable component in modern manufacturing and everyday life.

Where are we now?

In 2024, the global EPS market is estimated at USD 17.82 billion, with growth projected to reach approximately USD 29.04 billion by 2033.[3] This steady expansion is fuelled by strong demand across construction, e-commerce, automotive, and consumer goods sectors. EPS's lightweight performance, thermal insulation, and impact resistance continue to drive its use in building applications, protective packaging, and vehicle components. At the same time, sustainability initiatives, particularly recyclable EPS solutions and the rise of green building standards, are creating new market opportunities. Ongoing infrastructure investment and industrial development in emerging regions further support long-term demand. Together, these trends underscore the importance of achieving the ambitions set out in this roadmap.

This roadmap provides a comprehensive assessment of the most up-to-date data for the UK EPS industry. It includes POM statistics and waste arising in the packaging and construction sectors, which are the largest sectors for EPS applications.

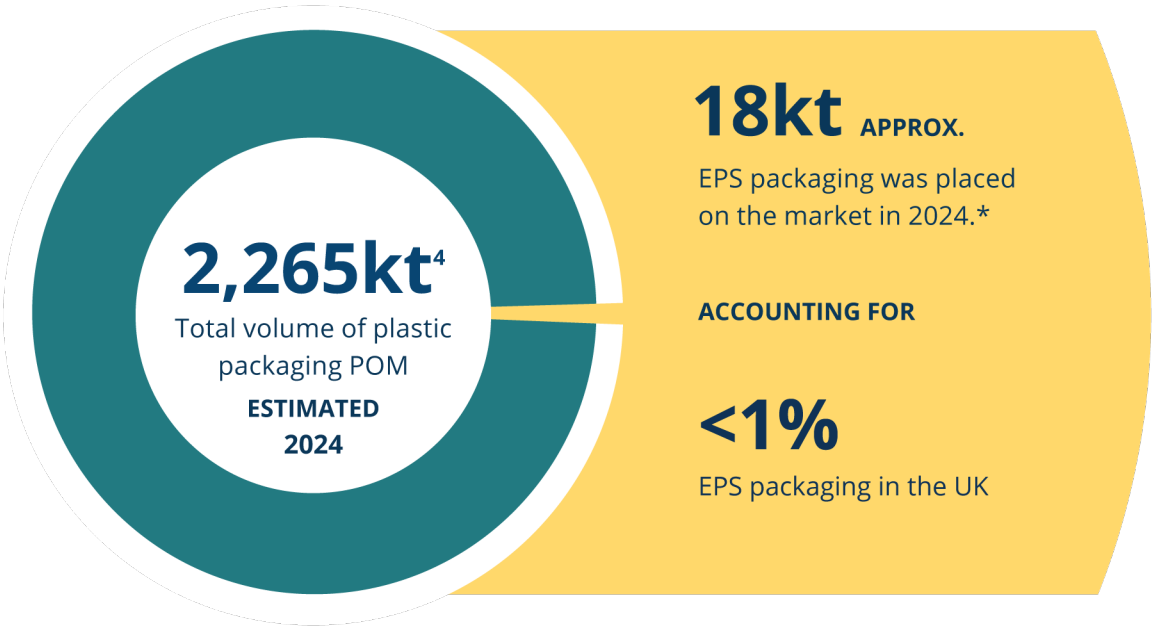
Packaging

The most recent data indicates that approximately 18kt of EPS packaging was placed on the market in 2024.* This figure reflects a stable level of demand, with annual volumes remaining relatively consistent in recent years. When considered in the context of the broader plastics packaging landscape, the total volume of plastic packaging POM is estimated at 2,265kt.[4] EPS packaging accounted for less than 1% of total POM packaging in the UK in 2024. While niche, EPS offers essential properties necessary for specific packaging applications, as demonstrated in **Figure 1** and **Table 1**.

Of the 18 kt of EPS packaging POM, 15 kt is manufactured in the UK. The remaining tonnage is attributable to EPS packaging associated with both imported goods and goods exported from the UK.*

EPS is the material of choice for packaging applications where its unique properties are essential for protecting sensitive or perishable products throughout the supply chain, particularly during transportation, helping to ensure product integrity and reduce waste.

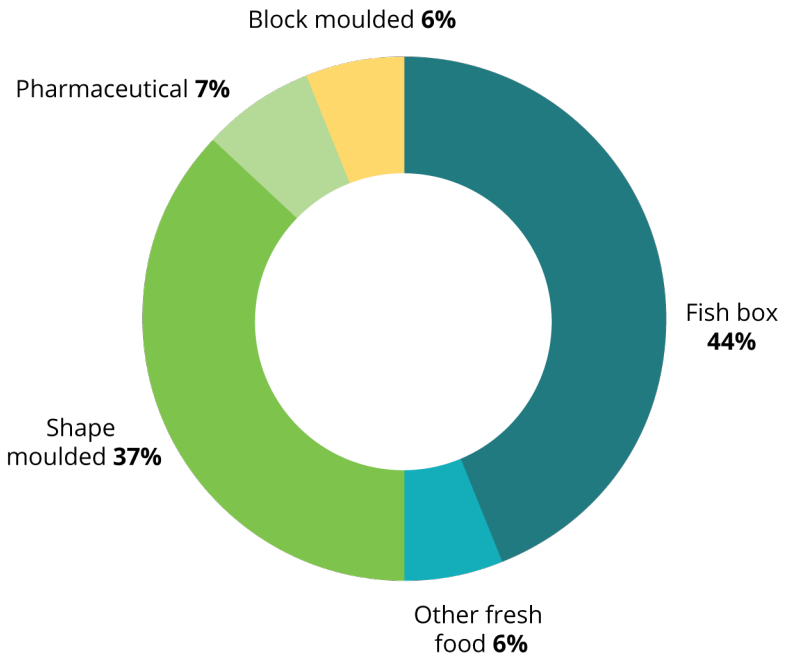
Packaging and EPS placed on the market data



Source: EPS Group Data*

* Raw data and estimates have been used by industry experts to calculate the total.

Figure 1: EPS breakdown of packaging applications in 2024*



Source: EPS Group Data*

* Raw data and estimates have been used by industry experts to calculate the total

Table 1: EPS packaging applications

PACKAGING	TYPE	DESCRIPTION	EXAMPLES
FISH BOX	Non-consumer	Fresh fish and seafood protective boxes.	Boxes to transport fish and seafood.
FRESH FOOD	Consumer	Fresh food protective packaging.	Fruit, vegetables, baked goods, meat and poultry packaging.
SHAPE MOULDED	Consumer	EPS formed into custom shapes for protective packaging.	White and brown goods protective packaging, e.g., fridges, freezers, ovens, washing machines, TVs.
PHARMACEUTICAL PACKAGING	Non-consumer	Protective packaging for the pharmaceutical industry.	Vessels for transporting vaccines, medicine trays for test tubes, cylinders and sensitive medical vials and bottles.
BLOCK MOULDED	Non-consumer	Rigid foam blocks, which are cut into sheets or shapes for protective packaging.	Custom-cut inserts that protect products securely during transport, e.g., furniture, machinery parts, automotive parts and precision tools.

Figure 1 illustrates that fish boxes represent the largest share of EPS Packaging application POM, highlighting EPS's essential role in the seafood industry. Its superior thermal insulation, impact resistance, and lightweight properties ensure fish and seafood remain at optimal temperatures from catch through to delivery, reducing spoilage and meeting strict food safety standards. Its superior insulating properties help maintain a stable temperature inside transport containers or vehicles, reducing the risk of spoilage for perishable goods. This eliminates the need for active refrigeration, which lowers energy consumption, reduces operating costs, and decreases carbon emissions. In addition, it allows goods to be transported over long distances without compromising quality, making supply chains more efficient and sustainable.

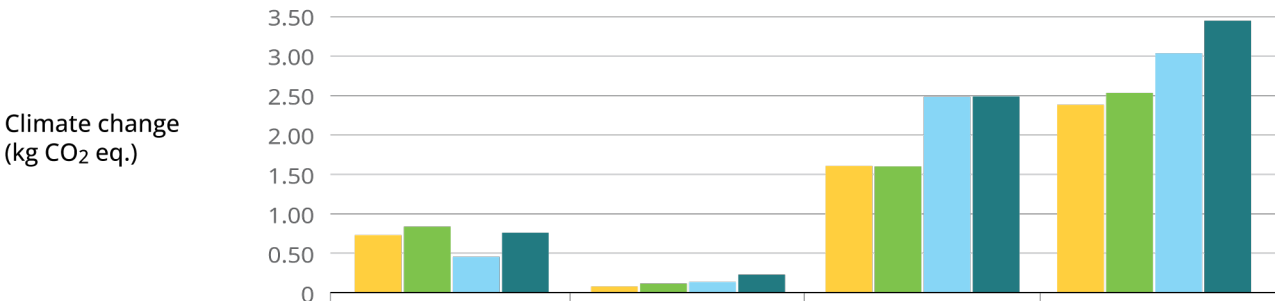
For these reasons, it makes EPS fish boxes the preferred choice for both domestic and international supply chains.

Scottish salmon is the UK's largest food export, sent to 48 countries worldwide and valued at £844 million in 2024.[5] It is a market that is critical to the UK economy and relies on EPS fish boxes to maintain product quality, ensure food safety, and support efficient cold-chain logistics from catch to delivery.

The latest Life Cycle Assessment (LCA) study from RDC Environment, 2025 confirms EPS's environmental and functional advantages in cold-chain logistics. For transport distances above 900 km, EPS delivers the lowest environmental impact, and at 1,250–2,800 km, it is the only option that maintains minimal climate and environmental costs. Across 4 of 5 environmental indicators, EPS outperforms cardboard and reusable plastics, while also reducing spoilage and maintaining stable, low temperatures. Challenges for alternative materials include higher ice demand, food waste risk, and return transport and washing burdens.[6] This underscores EPS's critical role in long-distance seafood supply chains.



Figure 2: Comparison of the overall climate change impacts of different alternatives for TVs[7]



	Packaging	Transport	Product loss	Total
EPS	0.71	0.06	1.60	2.38
EPP	0.81	0.10	1.60	2.51
Corrugated/paper board	0.42	0.11	2.50	3.03
Moulded pulp	0.75	0.20	2.50	3.45

The second largest EPS packaging application is shape-moulded consumer packaging, which provides both impact resistance and lightweight protection. This format plays a vital role in safeguarding goods throughout transportation.

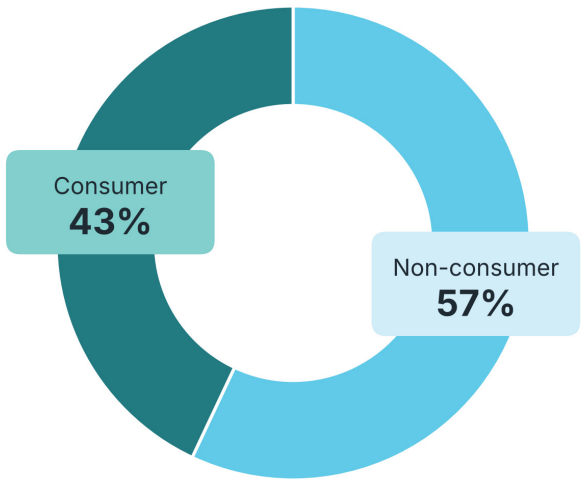
A recent study from the Netherlands Organisation for Applied Scientific Research (TNO) 2025, evaluates the environmental performance of shape moulded packaging for EPS, EPP, corrugated board and moulded pulp to protect televisions and washing machines. It considers production, transport, and product damage during distribution. The findings show that even small increases in damage rates can significantly raise the overall environmental footprint[7].

Materials with superior protective performance, such as EPS, reduce product loss and lower lifecycle impacts compared to alternatives. Assessing packaging solely on material production can be misleading; functional performance, especially protection against damage, is critical.

Pharmaceutical and fresh food packaging represents a small yet vital segment, delivering essential thermal insulation and safeguarding temperature-sensitive goods. A niche yet important packaging application is block moulding, which produces sheet and block products later cut or fabricated for packaging and other purposes. Collectively, these applications highlight the versatility of EPS in addressing a wide spectrum of packaging requirements.

Figure 3 displays how these applications are distributed across consumer and non-consumer packaging categories.

Figure 3: EPS packaging breakdown



Source: EPS Group Data*

* Raw data and estimates have been used by industry experts to calculate the total.

Packaging recycling rates

EPS is 100% recyclable, where collection systems exist and thousands of tonnes are recycled every year from the UK and sent to Europe for recycling. In 2024, over 11,000 tonnes (11kt) of EPS was collected for recycling, with 61% of all EPS packaging disposed of in the UK (including consumer and non-consumer packaging) being recycled.* This is based on data collected from UK EPS converters alongside UK and EU recyclers. Raw data and estimates have been used by industry experts to calculate the total recycling rate. This is an important milestone for the industry, but it remains crucial to continue increasing recycling rates and to encourage further investment in domestic recycling. The EPS industry is heavily reliant on export markets for recycling and requires government support to expand recycling infrastructure in the UK, ensuring a more sustainable and circular approach to EPS waste management.

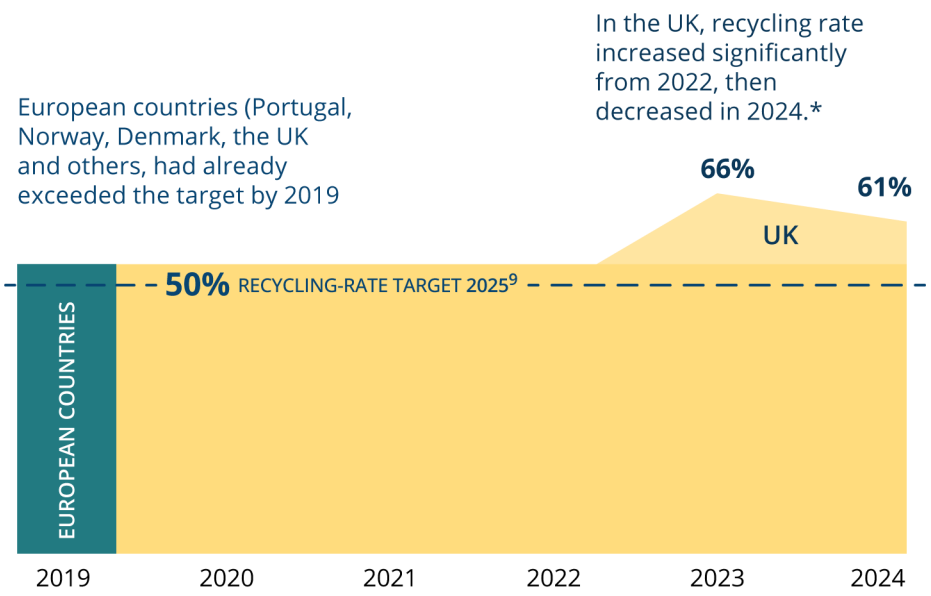
Alongside this, EPS is currently recycled in 72 countries across 5 continents. [8]

Recent reports by Conversio [9] and the European Commission's Joint Research Centre (JRC) [10] highlight the remarkable progress achieved.

The Conversio study estimated the recycling rate for EPS packaging waste across Europe at 37.3%-40.7%, based on 2017–2019 data and the average annual growth rate over the past decade. This aligns closely with the JRC's mid range estimate of 40%, notably above the 35% median reuse/ recycling rate calculated across all packaging streams[10]. In fact, by 2019, several European countries (including Portugal, Norway, Denmark, the UK, and others) had already exceeded the

> EPS is 100% recyclable, and thousands of tonnes are recycled every year from the UK

EPS packaging recycling





72 countries

have access to EPS recycling

3rd

MOST WIDELY RECYCLED

packaging material

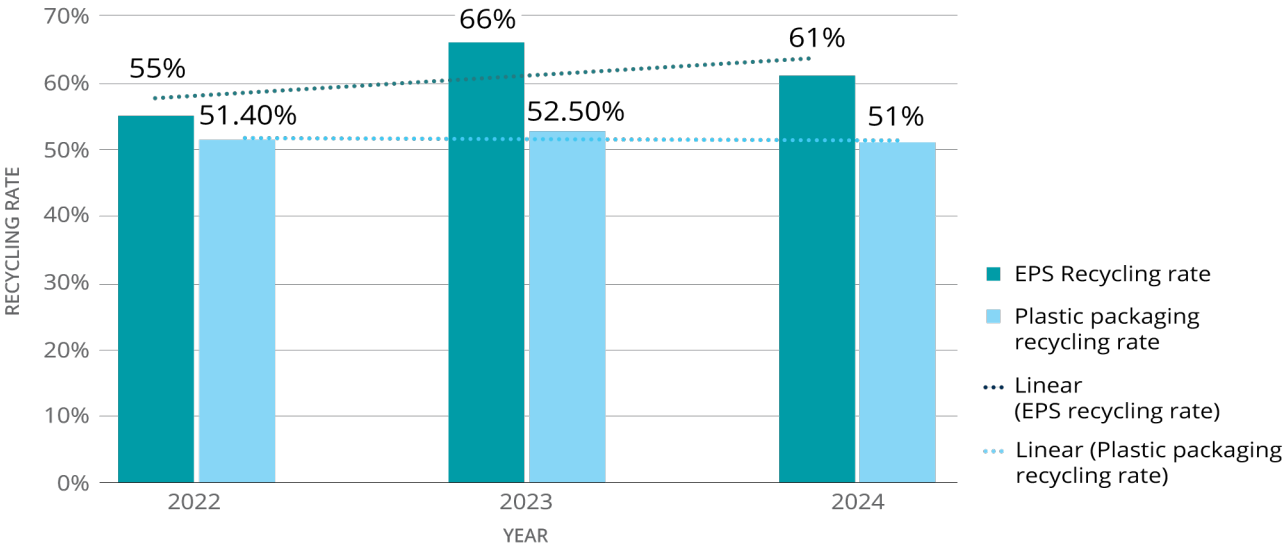


EPS represents LESS THAN 2% of all packaging produced.[12]

Source: EPS Group Data*

* Raw data and estimates have been used by industry experts to calculate the total.

Figure 4: EPS packaging recycling versus all plastic packaging recycling rates



50% recycling-rate target set for 2025.[9]

Building on these earlier findings, the 2024 JRC Mass Flow Analysis further strengthens the evidence base by modelling an approximate 42% recycling rate for EPS packaging, placing EPS among the highest performing polymers in the JRC's plastic packaging dataset.[11]

Globally, billions of people have access to EPS recycling in 72 countries. [8] It is the third most widely recycled packaging material. This is especially impressive given that EPS represents less than 2% of all packaging produced.[12]

Figure 4 illustrates the recycling rate of EPS packaging alongside the overall plastic packaging recycling rate from 2022 to 2024. The overall plastic packaging recycling rate remained relatively stable during this period, starting at 51.4% in 2022, rising slightly to 52.5% in 2023, and then settling at 51% in 2024.[4]

The EPS packaging recycling rate increased significantly from 2022, reaching 66% in 2023, then decreasing to 61% in 2024.* This fluctuation reflects variations in non-standardised collection systems in the UK, which contributed to the decline. The initial increase was primarily driven by strengthened business-led collection programs and optimised logistics, improving the recovery and recycling of both post-consumer and non-consumer packaging.

The linear trend line for EPS indicates a rising pattern with increasing rates, while the trend for plastic packaging remains relatively flat in comparison. The roadmap outlines strategies to further boost the EPS recycling rate.

Plastic waste flows from the EPS packaging sector are predicted to remain relatively stable, following the patterns observed in previous years. However, the percentage of both consumer and non-consumer packaging captured from residual waste and recycled is expected to increase gradually over time, particularly if the roadmap's recommendations are implemented.

EPS packaging is expected to enter the waste stream within the same year it is placed on the market, meaning improvements in collection and recycling practices can have an immediate impact on recovery rates.

Collection infrastructure

Post-consumer packaging

The sustainability of EPS is dependent on the accessibility of dedicated collection and recycling infrastructure. Unlike many other widely recycled materials, EPS post-consumer packaging is not collected through standard household collection schemes and relies on alternative collection methods, which vary throughout the UK. This is unlikely to change in the future, as under the Simpler Recycling reforms for England, EPS is not one of the core materials that local authorities (LAs) are required to collect from households.[13]

Alternative collection methods from LAs exist; there are 1,025 household waste recycling centres (HWRCs) across the UK, but only 1% of LAs currently collect EPS for recycling.[14] However, the limited number of HWRCs that do accept EPS are successfully collecting and recycling it. In some cases, these sites have mechanical compactors on site to compact the material, removing the air through compression and producing compacted blocks. Mechanical compactors, which can be large stationary units or smaller mobile units, are selected based on local authority requirements. The compaction process increases storage capacity, reduces transport costs, and enhances the efficiency of downstream recycling.

Once the material is transported to a recycler, it is sorted, cleaned and then processed, often through mechanical and/or thermal compaction before being sent for reprocessing into new



CASE STUDY

Currys - Packaged up and into a new life

Expanded Polystyrene (EPS) plays a vital role in protecting large electricals on route – but once products are unpacked, it can be difficult to recycle and easy to waste.

By collecting EPS at the doorstep and using existing delivery and logistics networks, Currys has found a practical way to keep packaging in use and out of the bin.

Packaging has an important job to do. When large electricals travel from Currys warehouses to stores, distribution centres and customers' homes, they need to arrive in one piece with no damage. That's where Expanded Polystyrene (EPS) comes in, offering lightweight protection and absorbing bumps along the journey.

But once that job is done, things become more complicated. EPS is bulky, awkward to handle and expensive to transport in its loose form. It is not widely accepted through kerbside recycling, meaning packaging that has done its job can quickly become difficult to deal with next.

Currys saw an opportunity to tackle this head on. EPS is fully recyclable, but it only retains value if it is captured cleanly and handled correctly. Once mixed with household waste, its recycling potential is often lost.

Rather than focusing on disposal, Currys looked at how the packaging could be given a new lease of life. By capturing EPS immediately after appliances are unpacked, and before it becomes waste, the material remains clean, usable and suitable for recycling.

As part of its standard home delivery service, Currys teams unbox large appliances in customers' homes, removing EPS packaging straight away. This leaves no bulky packaging behind, reduces empty return journeys, and ensures EPS can be recycled properly.

No additional vans or specialist collections are needed. EPS is backhauled through existing delivery routes, processed at delivery centres in specialist machines, and compacted into dense briquettes ready for reprocessing.

A proportion of these briquettes are supplied to specialist recyclers and converted into insulation materials used in Sustainable housing projects across Europe. EPS that once protected appliances goes on to help improve building thermal performance.

Good for customers, good for the planet, good for Currys.



Volker Gruppe has launched an innovative initiative to enhance EPS collection and recycling across Scotland.

CASE STUDY

Volker Gruppe by BEWI – Boosting EPS recycling in Scotland

Volker Gruppe by BEWI, one of the UK's largest dedicated EPS recycling and processing facilities with a strong European presence, has launched an innovative initiative to enhance EPS collection and recycling across Scotland. Operating in Glasgow, Edinburgh and Stirling, the project is delivered in partnership with 7 Household Waste Recycling Centres (HWRCs) and local council waste and recycling departments, showcasing an effective collaboration to drive recycling of EPS.

Volker Gruppe by BEWI is dedicated to driving the circular economy of EPS and clearly demonstrating their commitment to environmental sustainability. As part of this project, they are collaborating with the University of Glasgow and arranged the collection of EPS from 4 campuses. The project is yielding great results so far, with direct diversion from landfill. This collaboration has resulted in more than 14.7 tonnes of EPS being diverted from landfill and into recycling streams.

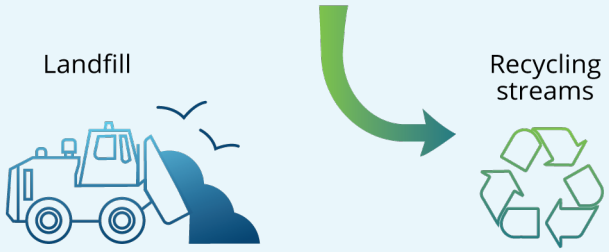
This case exemplifies how targeted, geographically focused EPS recovery programs can yield significant results. It demonstrates the power of combining local authority engagement, institutional partnerships, and established recycling infrastructure to create effective, scalable solutions across both urban and educational sectors.



RESULT

14.7 tonnes

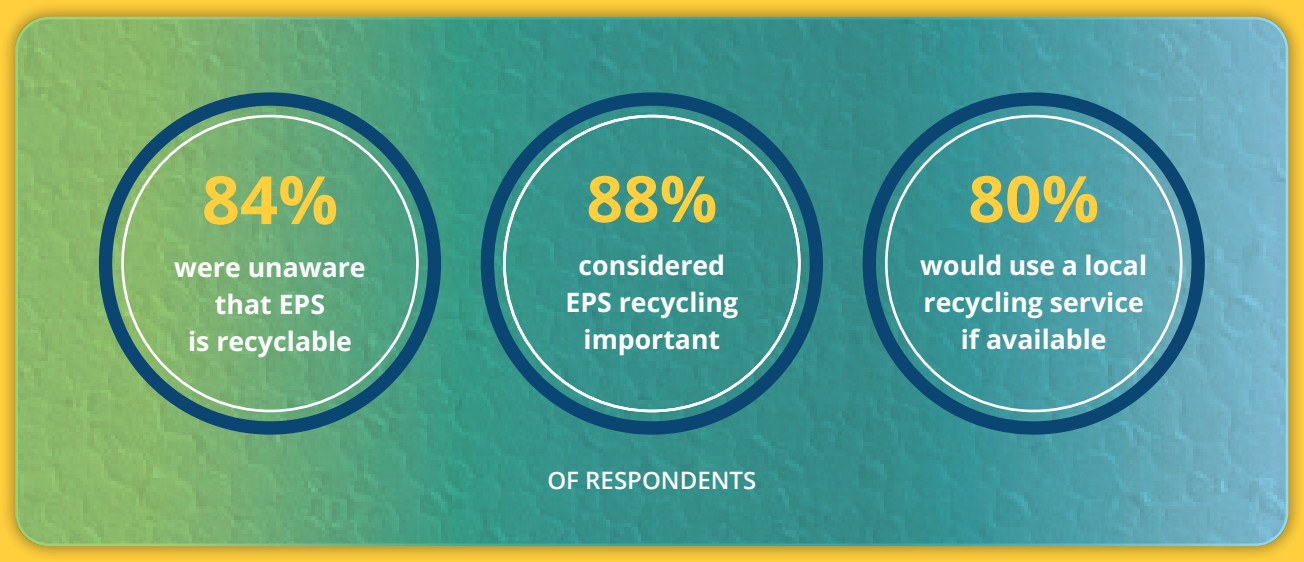
OF EPS



→ **For more information see** www.eps.co.uk

YouGov Survey results

A 2025 YouGov survey commissioned by the BPF highlights strong public support for enhanced EPS recycling infrastructure:[15]



These findings present a clear opportunity to expand collection points and improve public awareness through targeted communication.

This is particularly important given that EPS is often perceived as non-recyclable, largely due to EPS not being collected via household collection services.

Addressing this misconception by increasing access to recycling infrastructure and clearly communicating available options could help support circularity and better align with community expectations.

Non-consumer packaging

Despite limited household collection infrastructure, the industry reached a 61% recycling rate in 2024 across consumer and non-consumer packaging. This progress reflects coordinated efforts between businesses and recyclers to establish consistent recycling streams and improve the capture of non-consumer material.

To demonstrate this, EPS fish boxes represent 44% of EPS packaging applications POM (commercial and transport) and are widely collected and recycled. In the UK, regional distribution centres often collect the fish boxes and compact them using mobile compactors on-site to send for recycling. An example of this is Morrisons invested in an EPS compactor at their Grimsby processing site to compact EPS fish boxes that were used to transport salmon from Norway.[16]

EPS transport packaging has been recognised by the United Nations Environment Programme (UNEP) as being widely and effectively recycled at scale worldwide. In its latest *Plastic Pollution Science* report, UNEP highlights EPS packaging (specifically highlighting EPS fish boxes) as a material that is *"recycled in practice and at scale."* [17]

To further increase recycling rates, the EPS industry must tackle the dual challenge of limited awareness of recycling opportunities and access to collection points. Progress will need to be driven primarily through the commercial sector. The industry should therefore prioritise the expansion of business collection systems, including retailer and direct-to-consumer e-commerce take-back schemes as well as dedicated commercial collections, to increase collections and ensure more material is effectively recycled.

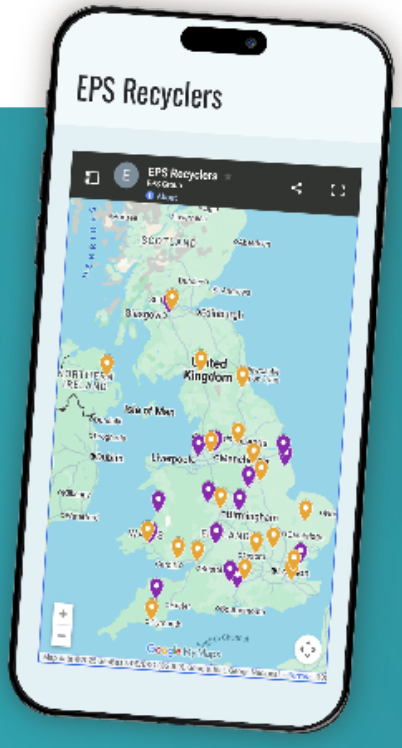
Investment in recycling infrastructure alongside awareness of recycling opportunities and guidance for businesses will be essential to boosting participation and recycling rates across the UK.

To support better recycling infrastructure, the EPS Group launched the EPS Recyclers Map in January 2025, providing businesses, organisations, and LAs with a centralised resource to locate EPS recycling facilities across the UK.[18] This user-friendly tool enables users to identify drop-off points and access contact information, representing a meaningful step towards reducing waste and supporting a more circular economy.

→ **For more information on where to recycle EPS**, see www.eps.co.uk

What does this map offer?

- A comprehensive list of EPS recycling centres near you
- Easy-to-navigate features to find drop-off locations and contact details
- A step forward in reducing waste and promoting a circular economy





CASE STUDY

Regenthill - Driving EPS recycling through collection-led infrastructure

Regenthill is a family-run recycling business with over 25 years of experience in the UK plastics sector. Operating from a dedicated reprocessing facility in Hampshire, the company is recognised for its focus on compliance, traceability, and long-term partnerships with commercial and industrial clients.

Regenthill specialises in the recycling of expanded polystyrene (EPS), with a clear operational focus: improving how material is collected, not just how it is processed. This reflects a key challenge identified across the sector – while EPS is fully recyclable, limited and inconsistent collection infrastructure continues to restrict recovery rates.

While EPS is fully recyclable, limited and inconsistent collection infrastructure continues to restrict recovery rates.

Regenthill specialises in the recycling of expanded polystyrene (EPS), with a clear operational focus: improving how material is collected, not just how it is processed.



Rather than relying solely on inbound material, Regenthill has developed a collection-led model designed to capture EPS at source. This approach directly addresses one of the most significant barriers to increasing recycling rates in the UK.



Targeting high-volume waste streams

Regenthill collects EPS from high-volume, commercially driven waste streams where material arises consistently and at scale.

These include:

- Fish markets and seafood supply chains, where EPS boxes are widely used for temperature-controlled transport
- Local authority bulking sites and HWRC-linked operations
- Commercial logistics networks, including retailer and courier systems

By integrating EPS recovery into existing operational flows, Regenthill ensures material is captured at the point it becomes waste. This reduces reliance on fragmented disposal routes and aligns with industry-wide efforts to expand business-led collection systems and reverse logistics.

Embedding recycling into logistics networks

A core strength of Regenthill's model is the integration of EPS collection into established logistics infrastructure. Through backhauling and reverse logistics, EPS waste is collected using vehicles already operating within supply chains.

This approach:

- Reduces transport inefficiencies
- Lowers costs associated with standalone collections
- Increases capture rates without adding operational burden to waste producers

This model directly supports the EPS Roadmap's emphasis on optimising collection systems and scaling commercially viable recycling solutions across the UK.

Flexible, bespoke collection solutions

Regenthill designs tailored collection systems based on the specific requirements of each waste stream and client.

These may include:

- Regional bulking and consolidation sites
- On-site compaction and storage solutions
- Integration with existing distribution and transport routes

The objective is consistent: to make EPS recycling practical, efficient, and commercially viable at scale. This flexibility is critical in a market where collection methods are not standardised, and infrastructure varies significantly across regions.



Scaling recovery through infrastructure and partnerships

This collection-led approach has enabled Regenthill to achieve consistent year-on-year growth in EPS volumes processed. By focusing on infrastructure and partnerships, the business is actively increasing the amount of material diverted from landfill and energy recovery.

This aligns with broader industry priorities, where improving access to collection systems and investing in infrastructure are essential to increasing UK recycling rates and reducing reliance on export markets.

Supporting a circular economy for EPS

Demand for recycled EPS feedstock continues to grow, driven by applications across packaging, construction, and manufacturing. Regenthill is actively seeking additional material streams and is primed to support growing demand.

By transforming EPS from a disposal challenge into a viable resource, the company plays a practical role in advancing circularity. Its operations demonstrate that, when supported by effective collection systems, EPS can be recycled in practice and at scale – a key objective set out in the UK EPS Recycling Roadmap.

Conclusion

Regenthill's experience highlights a critical point for the sector: improving recycling outcomes for EPS depends on solving collection, not just processing.

Through a clear focus on infrastructure, logistics integration, and commercial partnerships, the company provides a scalable model for increasing EPS recovery across the UK. This approach supports industry-wide ambitions to improve recycling rates, strengthen domestic capability, and move towards a more circular, resource-efficient system.

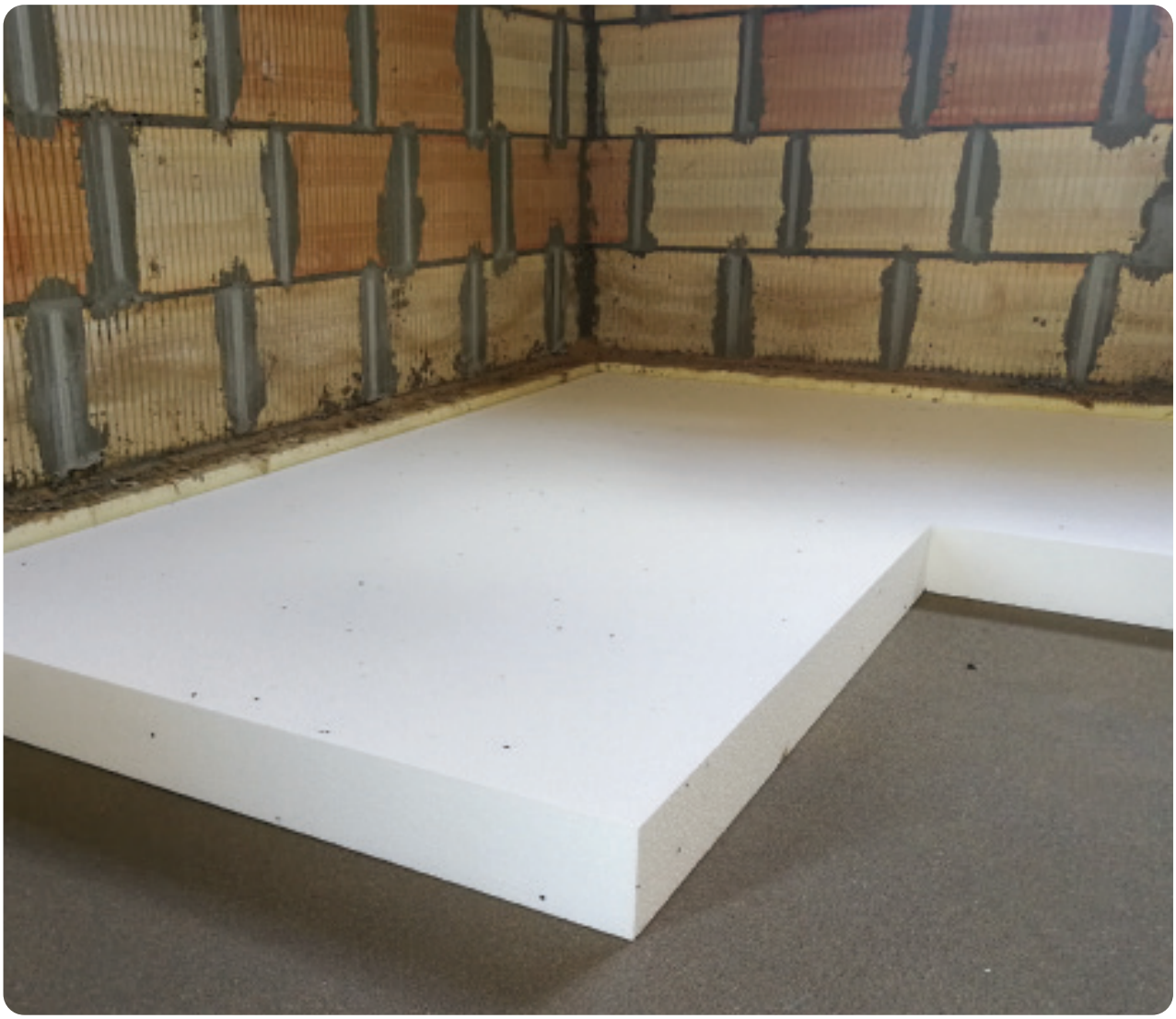
Construction

Within the construction sector, it is estimated that approximately 41kt of EPS were placed on the market in 2024. This volume reflects a stable and sustained level of demand observed over recent years, underscoring EPS's continued importance as a critical insulation material.

Recent and upcoming UK Building Regulations are tightening thermal performance requirements for walls, floors, and roofs, driving greater demand for high-performance insulation materials like EPS. Updates to Part L of the Building Regulations, a key component of energy efficiency standards, were introduced in 2022.[19] These will be followed by the Future Homes and Buildings Standards, published in March 2026, which come into force on 24th March 2027. [20] Together, they require lower U-values and improved energy efficiency, supporting net-zero goals. [20] A U-values measures the rate of heat transfer through a building element, such as a wall, floor, roof, or window, per square meter for each degree of temperature difference between inside and outside. It is expressed in W/m^2K. Lower U-values indicate better insulation and less heat loss.

As building regulations continue to tighten energy-efficiency and U-value requirements, demand for high-performance insulation materials like EPS is expected to grow. EPS will see increased use in both new builds and retrofits to improve thermal performance, support low-carbon heating systems, and meet net-zero targets.

→ **For more information** on EPS in Construction





CASE STUDY

BASF closes EPS recycling loop and launches Neopor® Mcycled™ containing recycled material

- Neopor® F 5 Mcycled™ contains recycled material and boasts proven product properties for use in the building industry
- Certified recycled material from mechanically recycled expanded polystyrene (EPS) waste
- New EPS raw material with an improved sustainability profile: Neopor® Mcycled™ complements the mass-balanced products Styropor® Ccycled™ and Neopor® BMB

Ludwigshafen, Germany, 11 March 2022 – BASF has expanded its portfolio of graphitic expandable polystyrene (EPS) granulate. Neopor® F 5 McycledTM contains 10 per cent recycled material and is suitable for numerous applications in buildings, particularly facade insulation. The new raw material is produced using the extrusion process and offers the same proven mechanical properties and optimised insulation performance as Neopor® F 5200 Plus.

→ **For more information**, see chemicals.basf.com

Mechanically recycled EPS for building insulation

BASF has developed the new raw material together with Karl Bachl GmbH & Co KG and turned it into a market-ready product. The quality of the recycled material used plays a pivotal role in meeting the exacting product demands in the various construction applications. This high-quality standard is one of the keys to the success of the cooperation between BASF and Bachl. Both the recycled material used, and the insulation raw material are REDcert²-certified. The recycled material comes from mechanically recycled EPS waste. Currently (Conversio study from 2019), at least 42% of the EPS packaging waste in Germany is recycled.[1] "Today's EPS insulation materials from the construction and packaging sectors can be fully recycled. At present, the high-quality recycled material is mainly sourced from waste streams from the packaging sector. That means we can already ensure that the recycled material is of the necessary high quality," says Michael Küblbeck, Managing Director of Karl Bachl GmbH & Co KG.

EPS POM within the construction sector is intended for long-term use, resulting in the material typically not entering the waste stream for over 50 years.[21] **Figure 5** shows the lifespan of construction products.

Due to the long service life of insulation materials, the construction sector faces the ongoing challenge of managing legacy additives, including Hexabromocyclododecane (HBCD), a flame retardant previously used in EPS insulation. HBCD is a brominated flame retardant that was banned in the UK in 2016 after being listed as a persistent organic pollutant (POPS). [22]

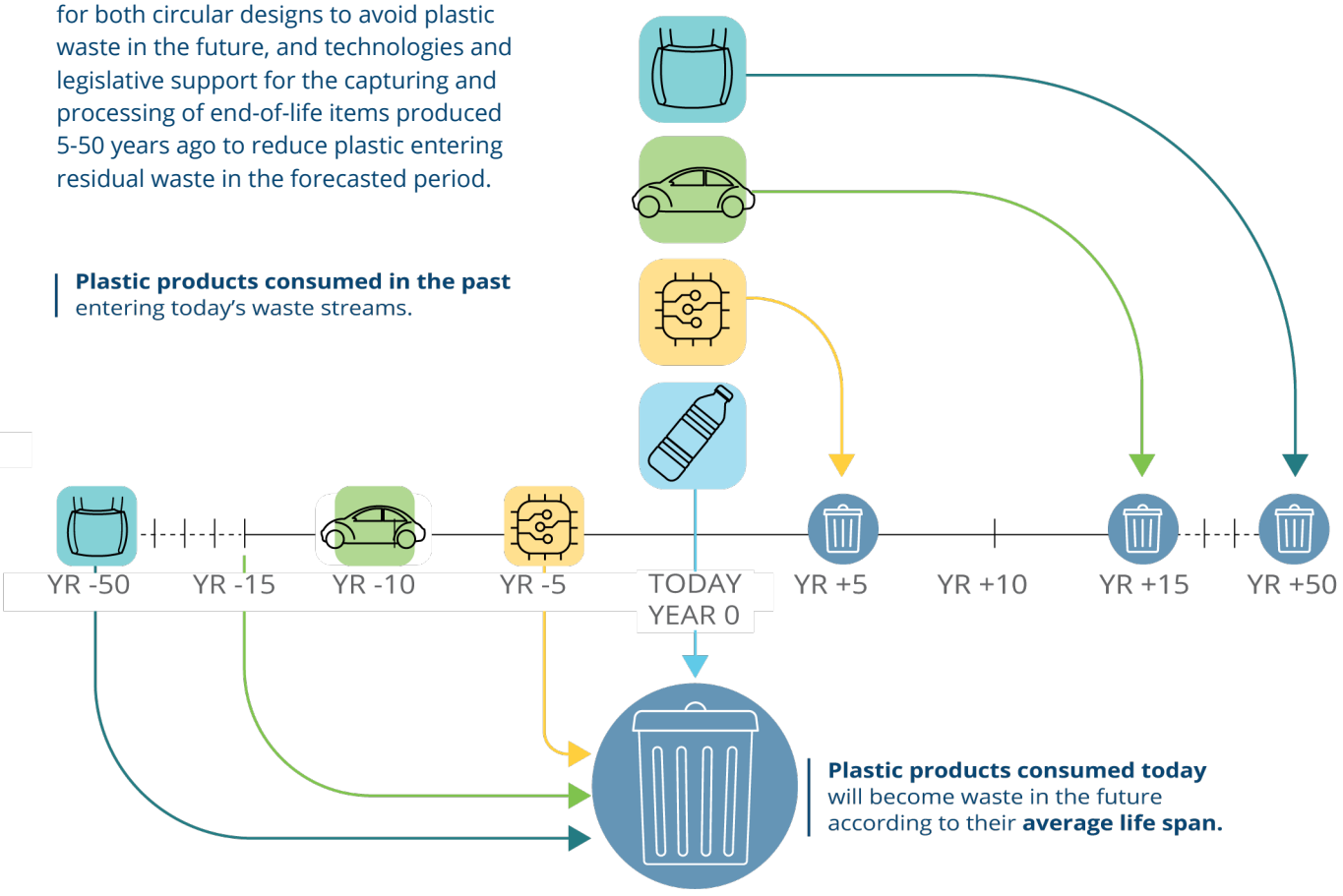
As older buildings are renovated or demolished, EPS insulation containing HBCD enters the waste stream. Due to contamination risks, these materials cannot be recycled through conventional mechanical recycling processes. As the volumes of HBCD-containing EPS waste currently available for recycling remain relatively low, incineration is often the state-of-the-art technology to recover heat and destroy HBCD.

The EPS industry has demonstrated that closed-loop recycling of HBCD-containing EPS is technically feasible through the successful completion of the PSLoop project. Through this achievement, PSLoop stakeholders proved that the innovative solvent-based recycling technology can effectively remove HBCD from EPS demolition waste, enabling the production of recycled material suitable for new applications and supporting the transition to a circular economy.

Figure 5: Plastics Europe circular economy report

Design decisions made now will help mitigate plastic waste growth in the 5-50 years to come; however, they won't help with the waste streams projected for the coming 10-15 years. There is a need for both circular designs to avoid plastic waste in the future, and technologies and legislative support for the capturing and processing of end-of-life items produced 5-50 years ago to reduce plastic entering residual waste in the forecasted period.

Plastic products consumed in the past entering today's waste streams.



Plastic products consumed today will become waste in the future according to their **average life span.**

Building and construction Automotive Electronical and electronics Packaging

CASE STUDY

The PS Loop project[23]

Over the past decade, PSLoop has invested significant resources in the project, a demonstration facility in Terneuzen, the Netherlands, established to validate a proprietary solvent-based recycling technology capable of removing the legacy flame retardant HBCD from EPS waste. The medium-scale plant successfully operated on a continuous basis, producing high-quality recycled polystyrene 'LoopPS'.

A key achievement of the project was meeting the United Nations requirements for unintentional trace contaminants (UTCs), demonstrating that the technology can effectively remove HBCD and enable the safe recycling of EPS waste containing this legacy additive. This milestone is particularly important as it enables the recycled material to meet the regulatory requirements for use in EPS and XPS construction applications.

The LoopPS recyclate was successfully converted into new polystyrene raw material and subsequently moulded into insulation products, demonstrating for the first time that closed-loop recycling of demolition EPS waste containing HBCD is technically achievable. PSLoop, has shown that solvent-based recycling can provide a viable route for managing legacy HBCD-containing EPS while supporting circular economy objectives. The project has therefore successfully demonstrated the technical readiness of the technology and provides a strong foundation for future commercial-scale recycling plants.

PSLoop has fulfilled its principal objective, and shareholders have decided to sell their shares. As experienced by many UK and EU recyclers, the project's commercial viability has been challenged by high energy costs, growing administrative burdens, and legal uncertainty around waste management, particularly with cross-border shipments. In addition, competitive pressure from imports of low-cost virgin materials imported from regions with less stringent health and safety standards has further weakened the business case for domestic recycling.

Unlocking the commercial-scale deployment of the PSLoop technology will depend on creating the necessary policy and market conditions to support the recovery and recycling of HBCD-



containing EPS waste. Priority actions include mandatory collection and sorting of demolition waste, robust systems for identifying and managing HBCD-containing materials, and landfill diversion measures for recyclable EPS. Establishing these framework conditions will be critical to securing sufficient feedstock volumes, attracting investment, and enabling the scale-up of advanced recycling solutions for legacy EPS waste streams.

The EPS industry remains committed to increasing recycling rates and advancing a circular economy. As a fully recyclable material, EPS is already recycled across the UK and Europe, and a range of complementary technologies, including mechanical, solvent-based and future chemical recycling, will be needed to manage different waste streams.

There is no single solution for HBCD-containing waste. The most appropriate treatment option should be selected based on waste characteristics, while prioritising the most resource and energy-efficient approach. As long as volumes of HBCD containing EPS waste remain low, energy recovery through incineration remains the most practical option, ensuring the safe destruction of HBCD and preventing landfill. As feedstock volumes increase, advanced recycling technologies could play a greater role in managing these legacy waste streams.

→ **For more information**
see here

Construction recycling rates

In the UK, recycling from the construction sector is occurring primarily through the collection of offcuts and surplus materials from building sites. While these efforts contribute to reducing waste and promoting circularity, there is currently a lack of comprehensive data on the volume of material being recycled. As a result, establishing a baseline recycling rate for the construction sector is currently not feasible, yet there are significant opportunities to both enhance recycling efforts and establish a reliable baseline in the future.

Recycling rates for EPS in construction can be driven by incorporating design-for-recycling principles from the outset. This includes measures such as on-site material segregation and the recovery of EPS during building demolition and refurbishment. To make this work in practice, contractors need training in deconstruction methods that allow EPS to be removed in its entirety. A key barrier is that EPS is often mixed with general construction waste, which can cause contamination. Therefore, implementing best practices on-site is essential. Training building contractors alongside providing dedicated collection bins and integrating sorting protocols into site waste management plans can help ensure clean, recyclable material is captured effectively.

Additionally, there are opportunities for construction companies and contractors to implement take-back schemes for offcuts, surplus material, or post-use EPS collected directly from sites. Stronger collaboration with waste management providers can further increase recycling rates, for example, by establishing local collection points and deploying mobile compactors on site to cut transportation costs.

Applying these principles early in the project lifecycle enables architects, builders and material suppliers to ensure that EPS offcuts, surplus, and post-use materials are recovered efficiently and free of contamination.

In the UK, although recycling from construction sites is occurring, data on EPS recycling within the sector remains limited, presenting an opportunity to implement waste tracking and reporting mechanisms. Improved data collection and transparency will allow more accurate assessments of EPS waste flows and recycling rates, supporting targeted initiatives and encouraging innovation and collaboration across the value chain. The adoption of digital waste tracking (DWT) can help measure the volume of recyclable EPS, uncover additional recycling opportunities and identify materials containing legacy additives that require specific recycling processes.

EPS construction site offcuts are already recycled in the UK and Europe. One example is through the EPSolutely project in Austria, which collects clean insulation board offcuts from construction sites and reprocesses them into secondary raw material for new EPS products, supporting closed-loop circularity. [24]









CASE STUDY

BEWI - Closing the loop for EPS in the construction sector

BEWI is supporting the transition into a circular economy within the plastics sector, through the development of closed-loop recycling systems for expanded polystyrene (EPS). Post-industrial and post-consumer EPS waste can be collected, compacted and reprocessed into recycled raw material that can be used in the manufacture of new insulation products. EPS is fully recyclable and can be recycled multiple times without losing its performance properties, making it well suited to circular construction practices.

Across Europe, BEWI continues to invest in recycling infrastructure and industry partnerships to improve the collection and processing of EPS waste. Working alongside organisations such as EUMEPS, the company supports initiatives aimed at increasing recycling rates and reducing landfill. These efforts demonstrate how the insulation and construction sectors can contribute to a more circular plastics value chain while maintaining the performance standards required for building materials.

A key element of this strategy is BEWI Circular, which focuses on expanding the collection and recycling of used EPS. The initiative works with municipalities, retailers, recyclers, construction sites and industrial partners to recover EPS waste and return it to the material cycle.

Collected EPS is processed into recycled General-Purpose Polystyrene (rGPPS). This recycled polymer can then be converted back into new raw material and used in the manufacture of products such as insulation panels and other construction materials, supporting a closed-loop system for polystyrene. BEWI Circular currently operates recycling capacity capable of producing around 3,000 tonnes of rGPPS per month, supporting growing demand for recycled plastic feedstock.

EPS is recovered from a range of sectors, including the seafood industry, logistics platforms and industrial waste streams. In addition to recycling operations, BEWI Circular provides waste collection systems, compaction solutions and material trading services to support efficient material recovery across the supply chain.

In 2025, BEWI Circular collected approximately 38,400 tonnes of used EPS, with collection networks continuing to expand across Europe.

In the UK, BEWI is working with partners such as the Volker Group to support EPS recycling initiatives within construction projects. These partnerships demonstrate how EPS offcuts and packaging materials can be collected on site and returned to recycling streams.

Figure 6: The process - a closed loop for EPS



Collaboration between manufacturers, contractors and waste management organisations continues to strengthen EPS recovery across the construction and packaging sectors. Industry bodies such as the British Plastics Federation support knowledge sharing and promote improved segregation and collection practices.

In the UK, BEWI's Howden site serves as the company's flagship recycling hub, supporting the collection of EPS and ensuring the material is kept within the circular economy.

As part of a vertically integrated European EPS recycling network, our group collects and reprocesses expanded polystyrene across the UK and Europe, converting waste into fully recycled raw material that we transform into new packaging solutions in the UK - delivering a truly circular approach to EPS.

Alongside our recycling operations, BEWI is also integrating recycled material back into new products through its **GreenLine** range. GreenLine insulation and construction solutions can contain up to 100% recycled EPS, with product performance identical to conventional EPS because the cellular structure of the material remains unchanged during recycling. By choosing GreenLine, customers can significantly reduce the carbon footprint of their projects while maintaining the same technical characteristics and durability expected from BEWI products.

GreenLine insulation and construction systems are produced using recycled EPS material collected from used products such as fish boxes, protective packaging and construction site waste. These materials are recovered, processed and converted into new raw material through BEWI's recycling operations before being reintroduced into the production of new insulation products. This closed-loop approach helps reduce the need for virgin fossil resources while maintaining the performance and durability required for construction applications.

By combining recycled content, improved material recovery and lower carbon production processes, the GreenLine range demonstrates how EPS products can contribute to a more circular and resource-efficient value chain across construction, food packaging and logistics sectors.

By strengthening collection networks and improving material recovery, the UK can play an important role in supplying recycled EPS feedstock into wider European recycling systems, helping ensure EPS remains a valuable resource within a circular economy.

→ **For more information**, see **bewi.com/UK**

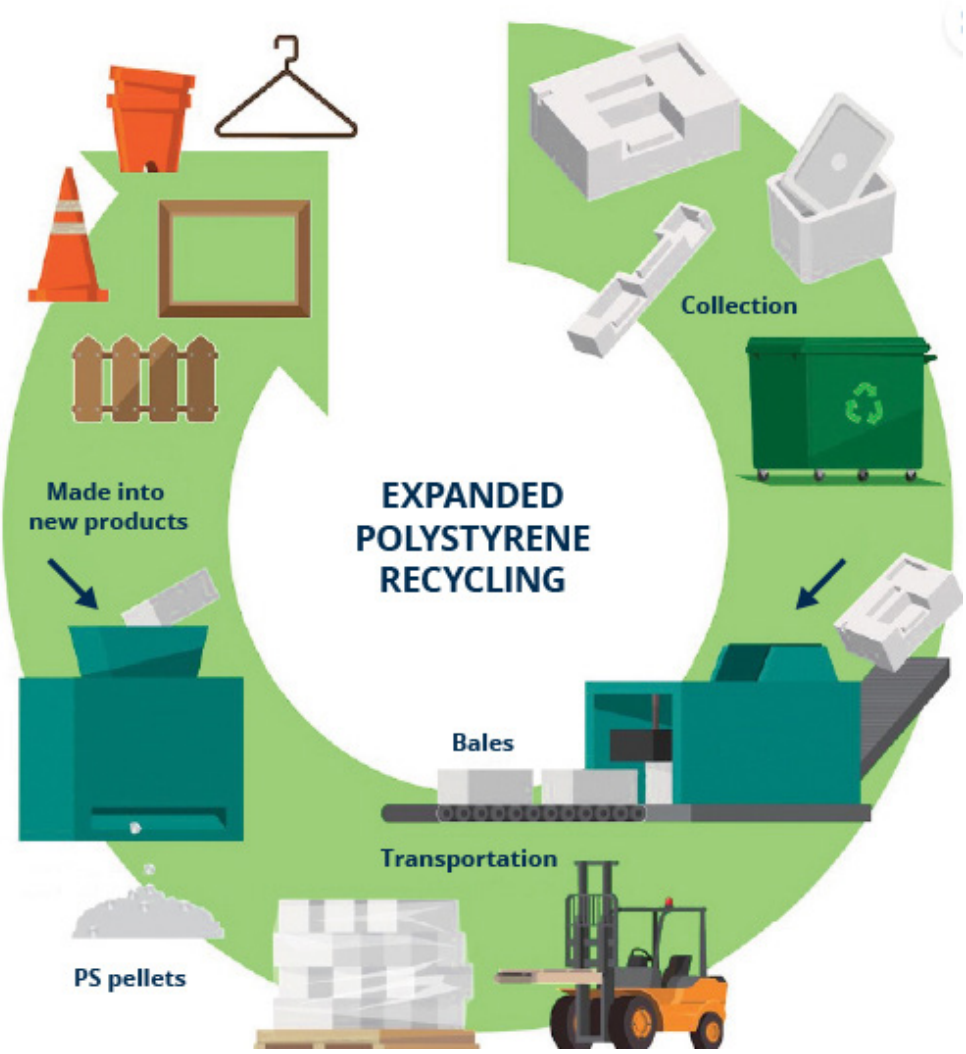
End markets

Once recycled, EPS can be reintegrated into a wide range of durable, high-value products across multiple sectors. In construction, it becomes insulation boards, while in infrastructure and civil engineering, it's used for void formers, road sub-base materials, and geotechnical fill. The consumer goods sector uses recycled EPS in items such as coat hangers, picture frames, garden furniture and more. Novel applications that use recycled EPS content include automotive components, countertop surfaces, lightweight concrete and pipe insulation.[25]

Recycled EPS can also be converted into solid polystyrene pellets, such as General Purpose Polystyrene (GPPS), which serve as feedstock for new packaging and rigid plastic products, or further processed into XPS.

These circular applications help reduce landfill use, conserve resources, and support the development of closed-loop systems in both packaging and construction sectors.

Figure 7: Expanded polystyrene recycling



Plastic waste flows

In its second edition, the BPF's Recycling Roadmap presented a bold vision for the future of plastic use in the UK, setting a target of 70% reuse and recycling by 2035. To achieve this, the roadmap proposes that an additional 23% of plastic waste be mechanically recycled domestically, with a further 6% processed through chemical recycling. It also anticipated a 15% reduction in plastic waste going to energy recovery and aims for 13% of all plastic waste to be reused.[26]

Realising these ambitions will depend on scaling up recycling infrastructure, making better use of current systems and ensuring that legislation supports progress. The roadmap underlines the critical role of improved collection schemes and clearer public communication to boost participation in reuse and recycling initiatives.

Meeting these goals will require collective action. The BPF calls on government, industry leaders, and the public to work together in shifting towards a more circular, resource-efficient economy.

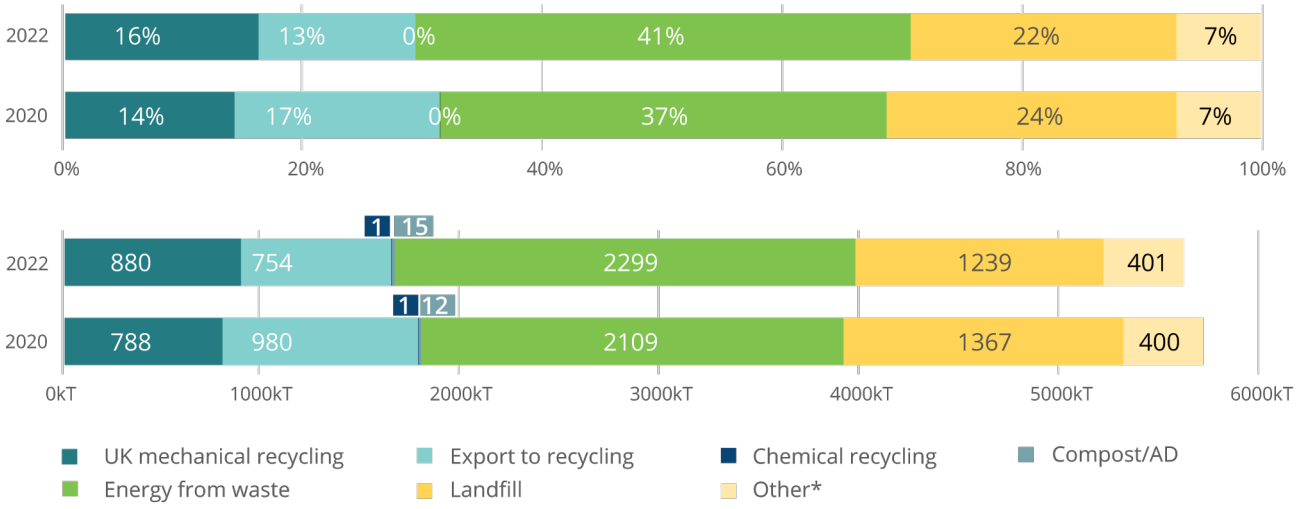
The targets outlined in the roadmap present both a challenge and an opportunity for the EPS sector. As mentioned earlier in the report, to contribute meaningfully to the circular economy, the industry will need greater access to recycling infrastructure, including expanded take-back schemes, broader acceptance of EPS in collection systems, and enhanced communication. With the right support and investment, the EPS industry can scale up recycling in both packaging and construction applications. Given its lightweight, durable properties and recyclability, EPS has the potential to be a key contributor to achieving recycling targets, provided it is properly collected and recycled.

Table 2: UK Plastic flows in 2020 and 2022[26]

	UK PLASTICS WASTE FLOWS			
	2020		2022	
	kT	%	kT	%
TOTAL PLASTIC WASTE	**5657**		**5589**	
UK MECHANICAL RECYCLING	788	14%	880	16%
EXPORT TO RECYCLING	980	17%	754	13%
CHEMICAL RECYCLING	1	0%	1	0%
TOTAL RECYCLING	**1769**	**31%**	**1635**	**29%**
COMPOST/AD	**12**	**0%**	**15**	**0%**
TOTAL REUSE AND RECYCLING	**1781**	**31%**	**1650**	**29%**
COMPOST/AD	12	0%	15	0%
ENERGY FROM WASTE	2109	37%	2299	41%
LANDFILL	1367	24%	1239	22%
OTHER*	400	7%	401	7%
TOTAL RESIDUAL	**3876**	**69%**	**3939**	**71%**

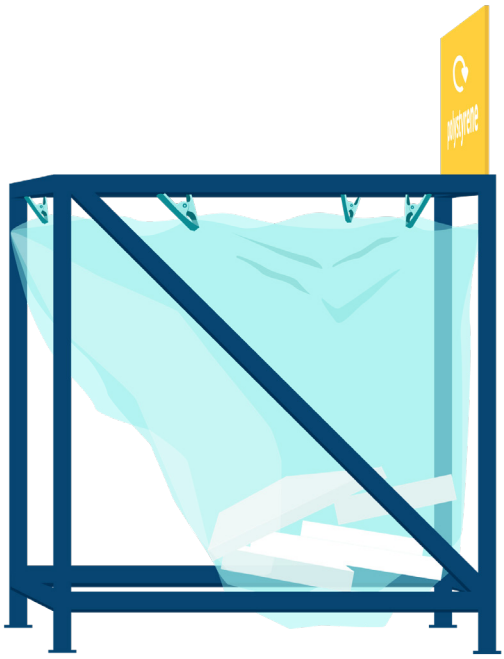
Figure 8 and **Table 2** display the total UK plastic waste flows in 2020 and 2022 for all materials and sectors for plastic waste, including packaging, construction, automotive, healthcare, household, leisure and sport.[26] Although a total of 880kt of material was mechanically recycled in the UK in 2022, there remains limited recycling infrastructure to recycle EPS domestically. As a result, the majority of EPS waste is exported for recycling to EU countries, including Belgium, the Netherlands, Portugal and Spain. The primary driver is the UK's constrained domestic recycling capacity, most notably in relation to EPS processing. These established EU facilities offer the necessary infrastructure and technical capability to process EPS at scale, ensuring that the material is effectively recovered and reintroduced into new products.

Figure 8: Plastic flows in 2020 and 2022 in percentage and tonnage[26]



To enhance the sustainability of EPS, stakeholders across the value chain are actively exploring innovative solutions to improve recovery and recycling rates. One particularly promising development is the advancement of chemical recycling technologies, which offer the potential to process EPS waste, including challenging streams from construction applications, more effectively. However, the chemical recycling industry is still in its early stages, with most facilities operating at demonstration or pilot scale. There is a clear and pressing need for greater investment in chemical recycling infrastructure for the sector to reach its full potential.

The lack of dedicated domestic EPS recycling infrastructure for mechanical and chemical recycling in the UK presents a clear barrier to improving national recycling rates and achieving circularity targets. Investment in recycling capacity for EPS is essential to reduce the reliance on export, lower the carbon footprint of waste management and support a resilient, UK-based recycling industry.



Forecast methodology, key assumptions and changes

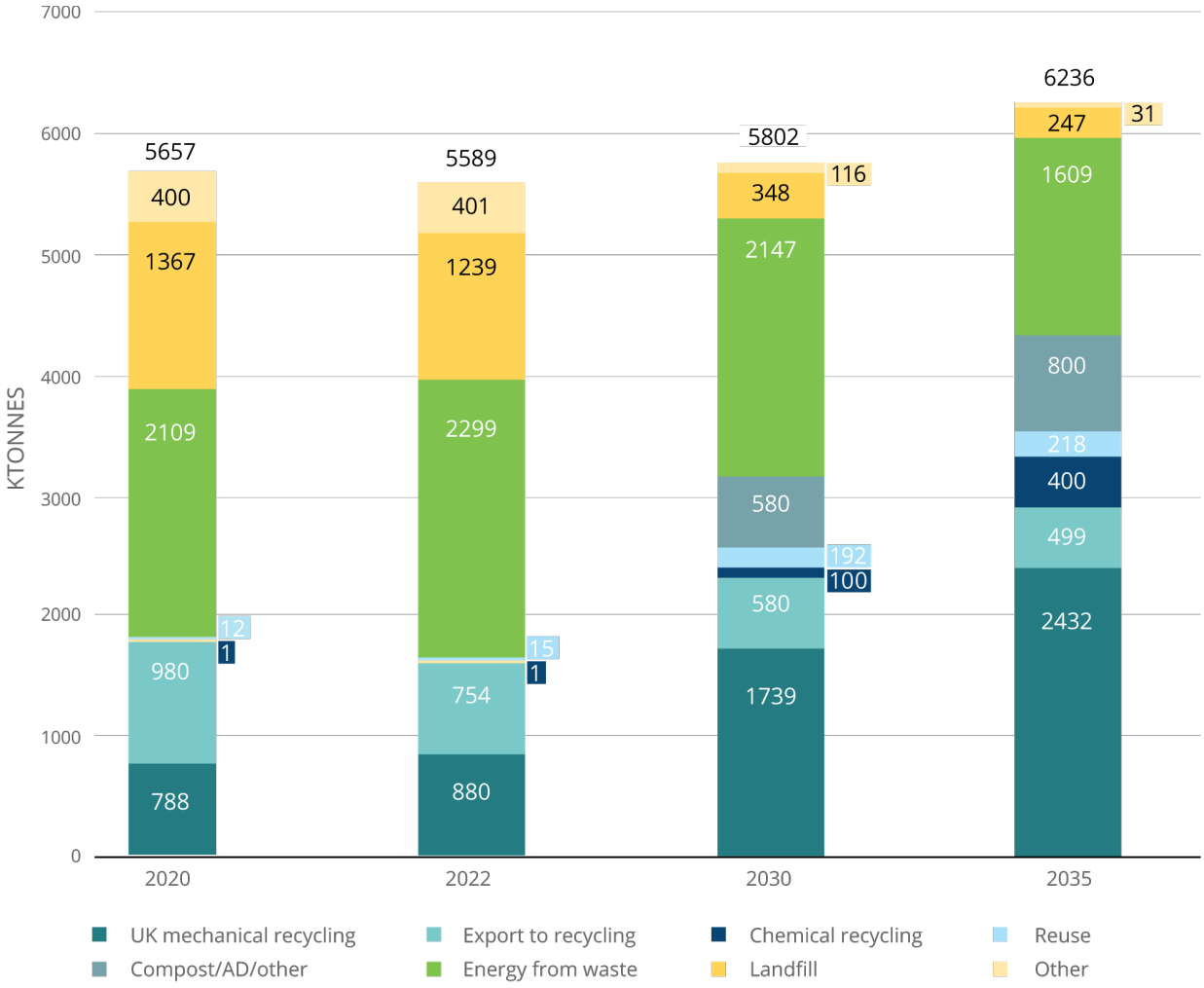
Looking ahead, the BPF Recycling Roadmap forecasts that 100kt of chemically recycled material (all plastics) will be processed annually by 2030, with this figure projected to rise to 400kt by 2035.[26] The recent commitment from the government to allow a mass balance accounting system within the plastic packaging tax (PPT) is expected to take effect from 2027.[27] This provides further optimism as it is expected to stimulate greater investment in chemical recycling technologies.

Table 3: Plastic waste flows[26]

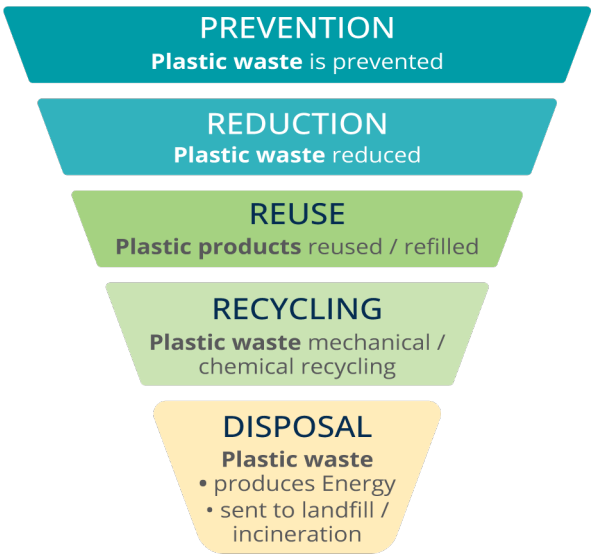
	UK PLASTICS WASTE FLOWS				UK PLASTICS WASTE FLOWS - FORECAST			
	2020		2022		2030		2035	
	kT	%	kT	%	kT	%	kT	%
TOTAL PLASTIC WASTE	5657		5589		5802		6236	
UK MECHANICAL RECYCLING	788	14%	880	16%	1739	30%	2432	39%
EXPORT TO RECYCLING	980	17%	754	13%	580	10%	499	8%
CHEMICAL RECYCLING	1	0%	1	0%	100	2%	400	6%
TOTAL RECYCLING	**1769**	**31%**	**1635**	**29%**	**2419**	**42%**	**3331**	**53%**
COMPOST/AD/OTHER*	12	0%	15	0%	192	3%	218	4%
REUSE					580	10%	800	13%
TOTAL REUSE AND RECYCLING	**1781**	**31%**	**1650**	**29%**	**3191**	**55%**	**4349**	**70%**
ENERGY FROM WASTE	2109	37%	2299	41%	2147	37%	1609	26%
LANDFILL	1367	24%	1239	22%	348	6%	247	4%
OTHER*	400	7%	401	7%	116	2%	31	0%
TOTAL RESIDUAL	**3876**	**69%**	**3939**	**71%**	**2611**	**45%**	**1888**	**30%**

A scenario-based approach was used to calculate this data. The scenario-based approach shows that if the UK continues in Business as Usual by 2030 the reuse and recycling rate would be 40% with 48% by 2035 which is significantly below the ambitions of the industry. This would also prevent the zero waste economy the government is aiming for. The worse case scenario signifies the urgent need for action on the key changes set out as in this situation by 2035 the plastic recycling would only reach 35%.

Figure 9: Plastic waste flows[26]



While challenges remain, the proven functional benefits of EPS combined with advancements in collection and recycling highlight the material's potential to contribute meaningfully to a sustainable, circular economy. By embracing innovation and strengthening infrastructure, EPS can remain a valuable resource in a low-waste future, moving material up the waste hierarchy.



Strengthening regulatory framework and policies

Key changes

The following outlines the key changes needed to achieve the 2030 and 2035 forecasts.

Increase investment

Greater investment is essential to improve recycling and strengthen the UK's transition towards a circular economy. Recognising waste and resource management as critical national infrastructure will provide the long-term stability and funding for the recycling sector. While the sector is not currently classified as part of the UK's Critical National Infrastructure,[28] it should be recognised and treated with similar strategic importance as other essential sectors to ensure supply chain resilience and sustainable development in the EPS industry.

Since its introduction on 1 April 2022, the Plastic Packaging Tax has raised approximately £1,064 million. [29] Reinvesting revenues and supporting the development of innovative recycling solutions will enable the UK to scale innovative technologies, enhance recyclate quality and expand domestic processing capabilities.



Optimising legislation and existing systems

To accelerate circularity and strengthen the UK's recycling system, targeted policy interventions are essential to generate greater investment in the recycling sector.

The PPT is a key policy instrument with the potential to drive substantial progress across the industry. It is key that the government ensure that mass balance is implemented by the 2027 deadline, as it is vital to incentivising investment in UK chemical recycling. Additionally, the PPT requires robust, well-designed verification and traceability requirements for recycled content, supported by independent third-party certification. This is essential to provide confidence in recycled content claims and ensure a level playing field for all businesses.

Accelerate the implementation of the UK-EU Sanitary and Phytosanitary (SPS) Agreement to support the use of recycled plastics in food contact applications. EPS is widely used in food packaging, but there is currently no UK food contact material authorisation permitting the use of recycled EPS in materials intended to come into direct contact with food. [30] Companies must obtain regulatory approval from the Food Standards Agency (FSA) to use recycled plastics, including recycled EPS, in food contact materials to ensure they meet UK food safety standards.

Accelerating the implementation of the UK-EU SPS Agreement would provide an opportunity to strengthen regulatory cooperation and improve alignment on food contact materials. Greater harmonisation between the UK and EU would help reduce barriers to the approval and use of safe recycled plastics, provide greater certainty for businesses investing in advanced recycling technologies, and support the development of a circular economy while maintaining high food safety and hygiene standards.

Another key policy driver is Extended Producer Responsibility for Packaging (pEPR). One of the aims of pEPR is to increase recycling and drive circularity.[31] Under the current framework, EPS



is featured on the red list within the recyclability assessment methodology (RAM), meaning EPS producers pay higher fees as it is not collected via standard kerbside collections.[32]

However, EPS is widely collected and recycled via dedicated retailer takeback schemes, business-led collections, and at some HWRCs that together ensure EPS packaging is effectively recycled. A key policy request is to remove EPS from the red list, recognising its widespread recyclability and recycling at scale.

Producer fees under the RAM are set to escalate rapidly over the first 3 years of implementation. The fees will increase from 1.2× (+20%) of the base fee in 2026–27, to 1.6× (+60%) in 2027–28 and reach 2.0× (+100%) by 2028–29.[33] As EPS is currently classified within the red category, this trajectory will lead to substantial cost increases for producers. However, without these higher fees being directed toward supporting the collection of EPS, these escalating charges will not drive the circularity of EPS. Instead, they disproportionately penalise the industry and risk not delivering the intended policy outcomes. Therefore, revenue generated from EPS producers should be ringfenced to support ongoing collection reinforcing an effective, evidence-based approach to resource management and helping to achieve policy objectives.

Lastly, the successful implementation of DWT will further support transparency, reduce fraud, and streamline reporting for businesses and regulators.

Improving communications and collection systems

Effective communication and engagement are essential to maximise EPS recycling. Clear and concise messaging to businesses, supported by regular awareness campaigns partially funded through pEPR, will help raise understanding and participation in recycling collection points.

Packaging EPR fees generated from EPS packaging should be reinvested in improving EPS collections, including retailer-led take-back schemes and local authority collection initiatives.

On construction and demolition sites, maximising the separation of EPS waste through clear requirements and practical guidelines will improve recycling rates, while a robust data collection mechanism through DPPs will track material sources, and flows, enable more efficient collection and ensure that valuable EPS is effectively recovered and reintegrated into the circular economy.

Key policy asks summary



Increase investment

- Government recognition that Waste and Resource management is critical infrastructure.
- Funds from the PPT to be invested into developing recycling infrastructure.
- Support for innovative and effective sorting and recycling technologies and their commercialisation in the UK.



Optimising legislation and existing systems

- Accelerate the SPS implementation agreement between the UK and EU to enable more 'novel technology' approvals for food contact material.
- Ensure that mass balance legislation incentivises investment in UK chemical recycling facilities and aligns with the 2027 implementation target.
- Requirements for well-designed verification and traceability for recycled content, with independent certification aligned to recognised standards.
- EPS is removed from the pEPR red list, reflecting its widespread recyclability, with pEPR funding directed towards expanding EPS collection and take-back schemes.



Improving communications and collection systems

- Clear, concise communications to businesses with regular campaigns funded in part via EPR.
- Reinvest a proportion of packaging EPR fees generated from EPS packaging in expanding EPS collections, including retailer take-back schemes.
- Introduce standardised guidance for construction and demolition sites to maximise the segregation and collection of EPS waste for recycling.
- Implement Digital Product Passports for construction products to provide information on the location, quantity and material composition of EPS within buildings, enabling more efficient identification, collection and recycling at end of life.

Projected forecast

Packaging

This projected forecast displays the expected outcomes based on the key actions that the industry will undertake to achieve its targets. It highlights how coordinated initiatives and sustained efforts across the sector are expected to drive progress and deliver measurable improvements over time.

Achieving this vision to achieve the set targets for 2030 and 2035 will require significant changes across the value chain, alongside crucial investment in EPS collections and recycling infrastructure.

Looking ahead, EPS recycling in the UK is projected to grow steadily over the next decade, supported by continued investment, critical policy interventions, expanded takeback schemes and promotion of EPS recycling opportunities.

From a 2024 baseline recycling rate of 61%, the rate is expected to reach 68% by 2030, implying an average annual increase of 1.4%. By 2035, the recycling rate is projected to rise further to 80%, representing a continued annual increase of approximately 2.4%. This is ambitious but achievable with the support of government, industry and consumers. **Table 4** displays the breakdown of these targets in an improvement forecast.

Figure 10: Targets

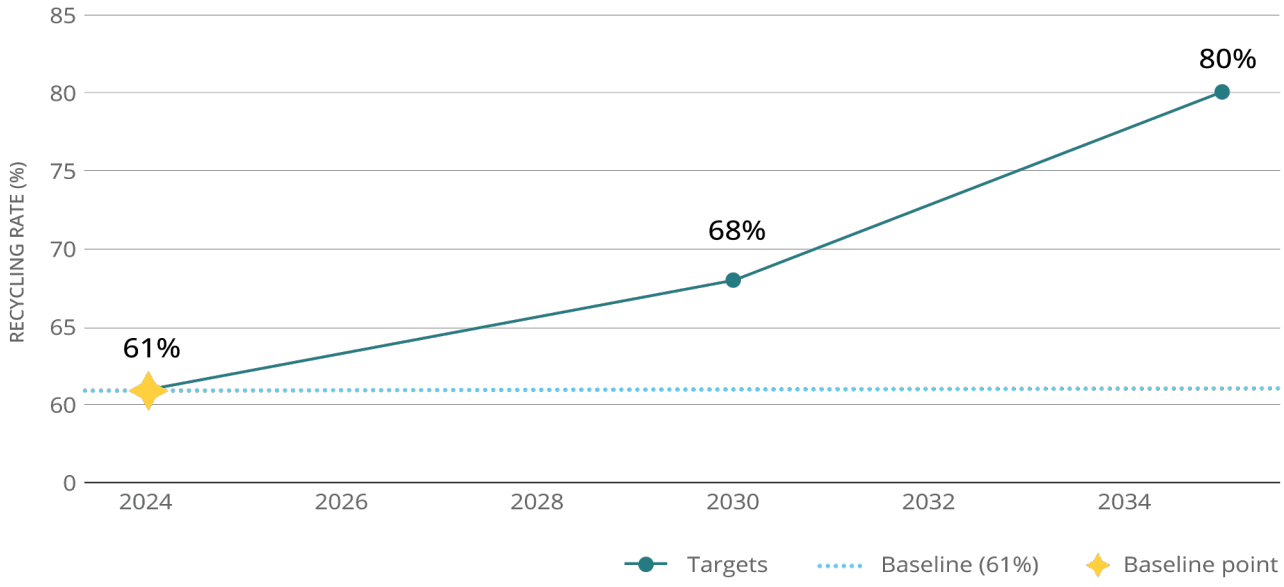
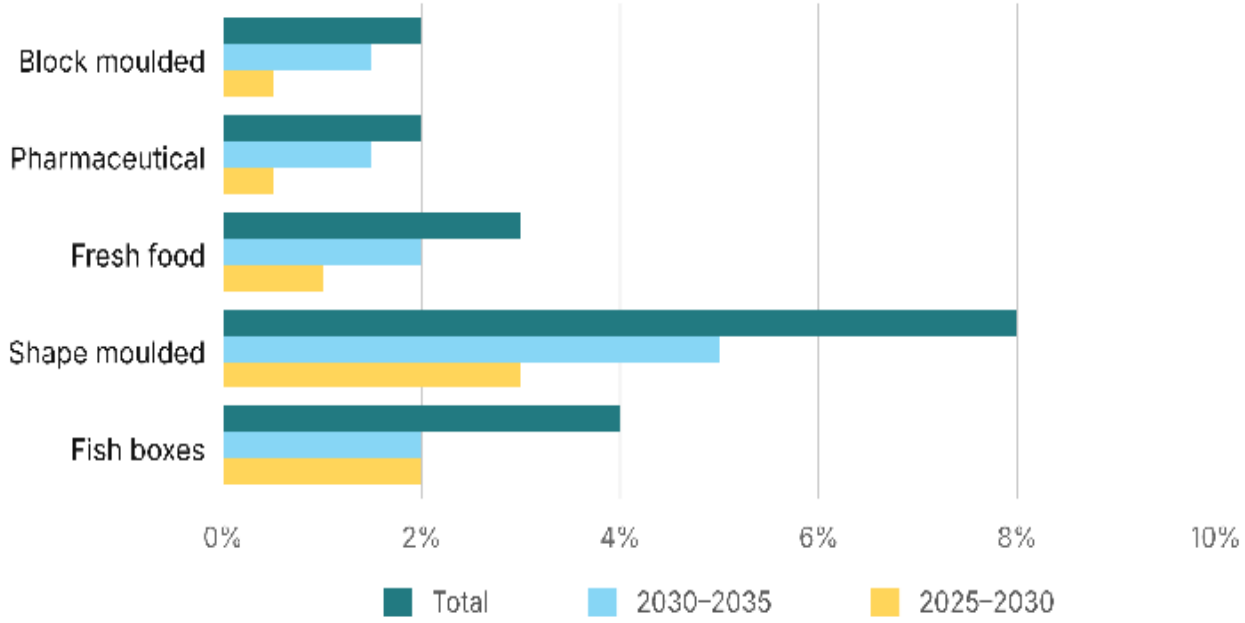


Table 4: EPS packaging recycling improvement forecast

PACKAGING APPLICATIONS	CURRENT STATUS	KEY BARRIERS	ACTIONS	EXPECTED OUTCOME FROM 2025 - 2030	EXPECTED OUTCOME FROM 2030 – 2035
SHAPE MOULDED	Collected mainly through retailer take-back schemes.	Reliance on voluntary commitment from retailers; limited access to collection points for some retailers.	Expand retailer take-back schemes; promote the EPS recycling map to businesses; increase the number of collection depots nationwide.	**+3%** Significant increase in take-back schemes.	**+5%** Further increase in collection and recycling.
FISH BOXES	Widely recycled via business collections.	Logistics challenges in remote areas; seasonal usage variability.	Expand business collection networks; promote the EPS recyclers map; raise awareness among businesses.	**+2%** Maintain high recycling rate; increase in EPS collections.	**+2%** Maintain growth and efficiency.
FRESH FOOD	Can be contaminated with food residues; limited business collections.	Reliance on voluntary commitments from retailers to engage recycling partners.	Promote the EPS recycling map to businesses; explore chemical recycling for contaminated EPS.	**+1%** Moderate growth potential with improved segregation.	**+2%** Further increase with better collection and processing.
PHARMACEUTICAL	Limited business collections.	Strict contamination and traceability rules; low awareness in medical logistics.	Collaborate with distributors on closed-loop systems; encourage hospitals to separate EPS waste; broaden chemical recycling opportunities.	**0.5%** Greater industrial stream capture.	**+1.5%** Further growth in collection and recycling.
BLOCK MOULDED	Limited business collections.	Lack of takeback schemes with manufacturers; low awareness of recycling opportunities.	Promote reverse logistics; raise recycling awareness in industry; expand chemical recycling opportunities.	**0.5%** Greater industrial stream capture.	**+1.5%** Further growth in collection and recycling.

Figure 11: Projected increase in recycling targets by application



The greatest opportunity to drive up recycling rates and achieve the targets is to expand retailer takeback schemes and increase the number of collection depots nationwide. Shape-moulded packaging is the second-largest packaging application, and it is estimated that less than a third is collected and recycled within existing takeback schemes.*

Although fish boxes are already widely collected and recycled, investment in recycling infrastructure alongside the expansion of new business collections could drive up rates even further. These projected targets must be supported with ongoing promotion of recycling opportunities for manufacturers, distributors, retailers, and online merchants to improve the collection of EPS from industrial waste streams to achieve the recycling targets. Alongside this, the industry urgently needs the government to refine legislation, to drive the right outcomes of achieving higher recycling rates by ensuring funding is directed toward expanding investment in both chemical and mechanical recycling.

The EPS industry is committed to achieving these targets within the set timeframe and driving circularity. Success will depend on coordinated efforts and strong government support, alongside collaboration across the entire value chain.

Construction

Given the current lack of robust data to establish a reliable baseline for EPS recovery in construction applications, it is not yet appropriate to set specific recycling targets for 2030 and 2035. Limited information on collection and recycling rates makes it challenging to define meaningful or measurable goals at this stage. Instead, efforts will focus on improving data collection and transparency to inform evidence-based targets in the future. The immediate focus will be on mapping material flows and identifying key opportunities for circularity within the construction value chain.

The transition to a circular economy requires greater transparency across the entire product life cycle, from the initial stage of product design to the end of life. There are two emerging digital tools; Digital Product Passport (DPP) and Digital Waste Tracking (DWT), both of which have complementary but distinct roles in supporting this transition.

The aim of introducing DPPs and DWT for construction products is to enhance transparency, traceability, and circularity throughout the built environment. DPPs provide detailed, accessible information on material composition, origins, production, performance, and end-of-life options, enabling designers, contractors, and recyclers to make informed decisions. It will allow more accurate sorting and treatment of products, improve material recovery rates and create greater confidence in secondary raw material markets. Complementing this, DWT allows for accurate monitoring of material flows, ensuring that construction and demolition waste is properly collected, sorted, and recycled.

DPPs are being introduced under the revised EU Construction Products Regulation (CPR) (Regulation (EU) 2024/3110).[34] While the legal framework for DPPs is in place, the specific requirements and timelines for construction products are being finalised. It is anticipated to be mandated between 2026 and 2030. Additionally, provisions under the EU Ecodesign for Sustainable Products Regulation (ESPR) similarly make DPP mandatory for priority product groups.[35] In parallel, the UK is exploring similar measures through its *Construction Products Reform Green Paper 2025.*[36]

Digital Waste Tracking (DWT), by contrast, is a regulatory mechanism to monitor waste movements in real time. It replaces paper-based transfer notes with a centralised digital system that records waste from the point of production throughout its lifecycle. Mandatory digital waste tracking in the UK was introduced from October 2026, with permitted or licensed waste-receiving sites required to record details of waste movements using the national digital waste tracking service. [37]

For the recycling sector, this system will improve data quality, enhance traceability, and reduce illegal waste activity. Importantly, it will also provide policymakers and industry with reliable evidence on waste flows, supporting investment in infrastructure and policy interventions.

Together, DPPs and DWT form critical enablers for circularity. DPPs ensure products enter the market with the right information to enable sustainable management, while DWT ensures that once those products reach the end of life, their movement through the waste and recycling system is visible, accountable and optimised for resource recovery.

As this evidence base develops, it will enable the industry to set realistic targets that accurately reflect recycling potential, ensuring that future milestones are both credible and achievable.

*Source: EPS Group Data - Raw data and estimates have been used by industry experts to calculate the total

Conclusion

This roadmap provides a comprehensive overview of EPS recycling in packaging and construction, highlighting the latest recycling data, key challenges, and opportunities for circularity. Current challenges include limited recycling infrastructure, inconsistent collection systems, and gaps in policy frameworks. Opportunities include more accessible take-back schemes, investment in recycling infrastructure, and adoption of DPPs and DWT to improve transparency and traceability.

Achieving ambitious targets of 68% by 2030 and 80% by 2035 is challenging but feasible with strong collaboration between industry, government, and stakeholders, alongside targeted policy interventions and sustained investment. A baseline recycling rate of 61% for EPS packaging has been established for 2024, and further work is needed to develop a comparable baseline for construction applications.

Successful implementation will require coordinated action across the value chain, robust regulatory frameworks, investment in advanced recycling technologies, and continuous innovation. Continuous monitoring, evaluation, and strategic adaptation will ensure the UK progresses toward a fully circular, resource-efficient EPS economy in both packaging and construction. These efforts will be supported by the BPF, which will be actively monitoring progress and encouraging coordinated efforts to drive up recycling rates.

Glossary

Brown Goods: Consumer electronics and home entertainment products, such as TVs, radios, and audio equipment.

Consumer Packaging: Packaging sold to consumers or used around items sold to consumers.

Digital Product Passport (DPP): A standardised digital record that provides accessible, structured information about a product's origin, composition, sustainability, compliance, and lifecycle, as required under EU legislation to support transparency, circularity, and regulatory enforcement.

Digital Waste Tracking (DWT): A digital system that records and shares standardised information on waste generation, movement, treatment, and disposal across the value chain, enabling regulatory compliance, traceability, and improved environmental oversight.

Life Cycle Assessments: (LCAs) is a method used to evaluate the environmental impacts of a product, process or service throughout its entire life cycle from extraction of raw materials, manufacturing and distribution through use and reuse to recycling or final disposal.

Non-consumer: Packaging that is not intended for use or disposal by individual consumers and does not typically enter household waste streams. It is used within commercial, industrial, or business-to-business settings for containment, protection, handling or transport of goods and is usually managed through dedicated commercial or industrial waste streams.

Post-consumer: Waste generated by households or by commercial, industrial and institutional facilities in their role as end users of the product, which can no longer be used for its intended purpose. This includes return of material from the distribution chain or the installation of plastic product (e.g. off-cuts from insulation, flooring or wall covering boards).

U-Value: measures the rate of heat transfer through a building element, such as a wall, floor, roof, or window, per square meter for each degree of temperature difference between inside and outside. Lower U-values indicate better insulation and less heat loss.

White Goods: Large household appliances, typically used for domestic tasks, such as refrigerators, washing machines, ovens, and dishwashers.

W/m^2K: Watts per square meter per Kelvin. It is the unit used to measure U-values, which indicate how much heat is lost through a building element. It describes the rate of heat transfer per square meter of material for each degree of temperature difference between the inside and outside.

Abbreviations

CPR Construction Products Regulation

DPP Digital Product Passports

DWT Digital Waste Tracking

EPP Expanded Polypropylene

EPS Expanded Polystyrene

ESPR Ecodesign for Sustainable Products Regulation

FSA Food Standards Agency

GPPS General Purpose Polystyrene

HBCD Hexabromocyclododecane

HWRCs Household Waste Recycling Centres

Kt Kilo Tonnes

LAs Local Authorities

LCA Life Cycle Assessment

pEPR Packaging Extended Producer Responsibility

POM Placed on the market – plastic that has entered a market for commercial consumption

POP Persistent Organic Pollutant

PPT Plastic Packaging Tax

RAM Recyclability Assessment Methodology

SPS Sanitary and Phytosanitary Agreement

XPS Extruded Polystyrene

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